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THE RELATIONSHIP BETWEEN THE TENDENCY TO EXCESSIVELY USE GENERATIVE ARTIFICIAL INTELLIGENCE AND THE DEGREE OF SATISFACTION OF BASIC PSYCHOLOGICAL NEEDS

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Purpose: With the rapid development and widespread adoption of artificial intelligence, discussions regarding potential risks—including the consequences of excessive use of these technologies—are becoming increasingly relevant. The purpose of this article was to present the results of a study examining the relationship between the tendency to excessively use tools based on generative artificial intelligence (GenAI) and the degree of satisfaction with basic psychological needs among IT workers.

Design/methodology/approach: The study included 79 emploeeys (47 men and 32 women) from IT industry. The study was cross-sectional in nature. The study used the *Generative AI Dependency Scale* by Goh, Hartanto, Majeed, the *Basic Psychological Need Satisfaction and Frustration Scale* (BPNSFS) by Chen et al. and self-designed survey.

Findings: The results of the study indicate a positive correlation between the tendency to overuse GenAI and the frustration of the needs for relatedness and competence. Furthermore, detailed testing of the correlations across the dimensions of the *Generative AI Dependency Scale* revealed a positive correlation between negative consequences and the frustration of the needs for relatedness and competence, as well as a positive correlation between the withdrawal dimension and the frustration of the need for relatedness.

Research limitations/implications: One of the limitations of this study is the use of self-reported measurement tools. Furthermore, the study was cross-sectional in nature, which limits the inferences that can be drawn regarding possible cause-and-effect relationships between the variables.

Practical implications: The study highlights the importance of risks associated with excessive use of GenAI tools. Awareness of these risks also applies to the workplace. An employee who tends to become addicted to GenAI tools and whose needs for connection and competence remain unmet may be less effective and achieve lower job satisfaction. This knowledge provides important guidelines for management. These include, amongst other things, raising staff awareness of the risks associated with the use of GenAI, as well as designing programmes to mitigate these risks in the workplace.

Originality/value: The literature on the subject highlights the numerous benefits of solutions offered by GenAI, but still little attention is paid to the risks associated with this technology. This study expands our understanding of the psychological risks associated with excessive use of GenAI tools, in conjunction with the level of basic psychological need satisfaction.

Keywords: GenAI, excessive use of GenAI, needs: autonomy, relatedness, competence.

Category of the paper: Research paper.

1. Introduction

The development of artificial intelligence (AI) has initiated a profound change in the functioning of the economy, work, and many areas of social life. The emergence of AI has popularized work using digital data analysis and automation. This technology has increased the efficiency of many processes, changed the structure of the labor market, accelerated the development of science, and simultaneously created new social, legal, and ethical challenges. Another technological advancement began with the development of so-called generative artificial intelligence (GenAI), which is a subset of artificial intelligence, that focuses on creating new textual and multimodal content using large language models, art-based models and video-based models (Wharton School, 2023). GenAI is used in creative and informational activities, such as accelerating content creation, automating tasks that require imagination, and increasing the pace of innovation. A significant advantage of GenAI is the support it offers users in the decision-making process. (Chuma, Oliveira, 2023; Hao, Demir, Eyers, 2024), the availability of these tools in contexts where human interaction is limited or unavailable (Hu et al., 2025; Hung et al., 2025; Siddals, Torous, Coxon, 2024), as well as the versatility of applications (Giannakos et al., 2024; Shaji, 2023). These factors are causing GenAI to gain increasing popularity not only in the professional sphere but also in the context of personal life, simultaneously creating new legal, ethical, and social challenges. Concerns are growing about the possible negative consequences of excessive use of AI tools, manifesting themselves in cognitive and emotional functioning. Research indicates that excessive reliance on AI systems can, among other things, undermine a sense of agency and critical thinking, negatively impacting motivation, cognitive engagement, decision-making ability, interpersonal relationships, and professional performance. (Gajda, Krzyżowska, Randak-Jezierska, 2025). The risk of addiction to AI-based tools may also pose a significant threat. There are numerous studies in the literature on behavioral addictions resulting from the use of digital technologies, for example, pointing to destructive patterns of internet use (Venkatesh et al., 2019), social networking site overuse (Ryan et al., 2014; Xue et al., 2018) or smartphone addiction (Gerlach, Cenfetelli, 2020; Hitcham et al., 2023). However, there is still a lack of research on the addictive potential of relatively new GenAI-based tools. Expanding knowledge about GenAI is important because these technologies fundamentally distinguish themselves from others through interactive design features that elicit immersive engagement via self-disclosure (Kim et al., 2022). Furthermore, the dynamics of these functions may increase the potential for compulsive use of these tools to a greater extent than is the case with other technologies (Yu, Chen, Yang, 2024).

This article therefore focuses on presenting the results of an analysis of the tendency to use GenAI tools excessively, based on a study of the relationship between excessive use of GenAI and the degree to which basic psychological needs are met among a group of IT sector employees.

2. Research Background

As the development of GenAI-based tools has progressed, the problems arising from this phenomenon have become increasingly apparent. A large-scale study by Open AI and MIT Media Lab, covering over 4 million interactions and 4000 surveys, observed disturbing behavior patterns among ChatGPT users. (Phang et al., 2025). ChatGPT has been observed to mimic and amplify user tendencies and may also provide affirmation and fostering emotional reliance. Users reported that intensive use of ChatGPT was associated with limited social interactions, increased emotional dependence on the system, and signs of addictive use. The findings of the study highlight potential risks, whilst also emphasising the importance of gaining a thorough understanding of GenAI addiction, analysing its nature, underlying causes and risk factors.

As mentioned in the introduction, there is still insufficient research to explain the nature, mechanisms responsible, and scale of GenAI addiction. Existing publications highlight various mechanisms underlying excessive GenAI use. For example, Goh, Hartanto, Majeed (2025) base their research on a conceptualization of GenAI dependence that incorporates established patterns such as salience, compulsive use, negative consequences, and withdrawal. Salience means being so absorbed in using GenAI that it becomes dominant over other activities. Compulsive use refers to an uncontrollable urge to use GenAI tools – attempts to limit usage are unsuccessful. Over time, the negative consequences of overuse become apparent, manifesting in psychological and social functioning, including in the sphere of professional activity. Withdrawal, on the other hand, refers to a palpable state of discomfort and tension resulting from the lack of, or limited access to, GenAI. In turn, Zhou and Zhang (2024), in their analysis of the mechanisms underlying GenAI addiction, adopted the cognition-affect-conation (C-A-C) model, which explains how beliefs and knowledge influence emotions and actions. The authors point out that cognitive factors such as perceived anthropomorphism, perceived interactivity, perceived intelligence, and perceived personalization influence emotional factors: flow experience and attachment, both of which further affect user addiction. In other studies (Deng, Deng, 2025), a neurocognitive perspective has been proposed to explain the mechanisms underlying GenAI addiction (using ChatGPT as an example). The authors defined ChatGPT addiction as a cognitive imbalance between impulsive and reflective cognitive systems, which results in the strengthening of compulsive use of the system and cognitive miserliness.

Increased impulsive activity—triggered by contextual stressors (e.g., stressors related to job demands) combined with reduced reflective regulation due to impaired self-control (e.g., temporal myopia) — leads to nonconstructive, dependency patterns of ChatGPT use. The authors also emphasize the modulating role of self-construal, distinguishing between independent and interdependent orientations. Individuals with an independent orientation more frequently relied on the impulsive cognitive system, whereas those with an interdependent orientation more frequently engaged the reflective system.

Although the phenomenon of GenAI addiction is not sufficiently understood, it can be expected that, like other addictions, it will lead to negative consequences for the individual's functioning. One of the most frequently mentioned consequences is the impact on users' intrinsic motivation for critical thinking, autonomous problem-solving, and creative exploration (Deng, Deng, 2025; Gajda, Krzyżowska, Randak-Jezierska, 2025; Zhou, Zhang, 2024). However, the negative impact of destructive GenAI usage patterns extends beyond the cognitive sphere. Neglecting real-life responsibilities and interpersonal relationships may also be a significant issue (Zhou, Zhang, 2024). In the previously cited large studies, the authors proved that longer time of using GenAI tools is correlated with worsening socialization (Phang et al., 2025). Similar conclusions were obtained in the study by Fang et al. (2025) involving 981 participants. In turn Maral et al. (2025) demonstrated that problematic ChatGPT use is associated with increased psychological stress and decreased self-control, which are associated with lower overall well-being, however Yu et al. (2024) demonstrated a positive association between problematic ChatGPT use and depression. The relationship between basic psychological needs and the tendency to overuse GenAI is also important. This is because excessive engagement in GenAI-based activities may be a way to temporarily satisfy needs such as the need for autonomy, competence or relatedness, but on the other hand, using AI tools as a primary means of satisfying needs in the long run may weaken the capacity for self-regulation (Salah et al., 2023). For example, the satisfaction derived from interactions provided by GenAI tools may be short-lived. Although these tools offer immediate gratification by simulating real human interactions, the depth and authenticity of human interactions remain unmatched. Therefore, it can be concluded that this relationship is a feedback loop: the desire to satisfy needs may be a motivator for using GenAI tools, but when this activity becomes excessive, self-regulatory mechanisms may be disrupted, and the satisfaction of needs may be shallow and unsustainable.

This study therefore sought to analyse the relationship between the fulfilment of needs and excessive use of GenAI tools. The study utilized the assumptions of Self-Determination Theory (SDT) developed by Deci and Ryan (1985), according to which an individual's psychological well-being and healthy functioning are contingent on the satisfaction of three basic categories of needs: autonomy, relatedness, and competence. The need for autonomy is expressed in a sense of agency, an internal locus of control, and the ability to make decisions independently (Oszwa, Knopik, 2023). The need for competence is related to the belief in one's personal ability

to cope with challenges, as well as the belief in the possibility of development and achieving success. The need for relatedness, in turn, expresses the need for connection with others, affiliation, and community membership. Importantly, the deprivation of even one of these three needs can result in a significant disruption to motivation and may pose a risk of mental health problems. Conversely, strengthening even one of these needs increases the level of satisfaction of the others and positively impacts intrinsic motivation. This study was conducted among a group of IT industry employees, the choice of which is justified by the possibly greater awareness of these employees regarding the potential and possibilities of using GenAI tools and potentially more frequent contact with this type of systems, which may pose a greater risk of excessive activity within these systems. This study therefore aims to answer the following research question:

Is there a relationship between excessive use of GenAI tools and the degree of satisfaction of basic psychological needs?

In this way, the results of the analysis are intended to add to our knowledge of possible connections between patterns of GenAI tool use that bear signs of addiction and the perceived level of satisfaction resulting from the satisfaction of basic psychological needs.

3. Methodology of the research

3.1. Participants

The study was conducted online in January-February 2026. The study was aimed at IT industry employees. Respondents were informed in the introduction that the study would assess the impact of using generative AI tools on employee performance. The selection criteria for the study included: formal consent to participate in the study, being at least 18 years of age, having sufficient Polish language skills to independently understand and answer the questionnaires, current employment in the IT industry, and at least 3 years of professional experience in the IT industry. The criterion of having at least three years of professional experience was adopted to include individuals with established experience in the IT industry and with sufficiently long exposure to the demands of the work environment, including the use of GenAI tools in daily duties. This limited the participation of individuals just starting their professional careers, whose work practices and patterns of using new technologies may still be unstable.

Of the employees who agreed to participate, 79 individuals qualified for the study (7 respondents were ineligible due to incomplete questionnaires): 47 men and 32 women, aged 26,5 to 52 (mean = 38,61; standard deviation = 6,47). Detailed characteristics of the study group are presented in Table 1.

Table 1.
Characteristics of the Study Group

		n	%
Employees	females	32	40,51
	males	47	59,49
		M	**SD**
Age (years)		38,61	6,47
Length of service in the IT industry (years)		11,78	4,52
		n	**%**
Education	higher	52	65,82
	secondary	22	27,85
	vocational	5	6,33
Workstation	data scientist	27	34,18
	programming specialist	17	21,52
	service support specialist	12	15,19
	IT application specialist	11	13,92
	cloud engineer	7	8,86
	other	5	6,33

3.2. Measures

The following research tools were used in the study.

To investigate tendencies towards excessive use of GenAI-based tools, the *Generative AI Dependency* Scale (Goh, Hartanto, Majeed, 2025) was used with the authors' permission. The scale has been translated into Polish. The scale measures the extent to which individuals develop a psychological and behavioural reliance on GenAI tools. The tool consists of 11 items forming three dimensions: cognitive preoccupation (constant mental engagement in GenAI activities related to the internal need of usage), negative consequences (symptoms of impaired functioning, such as reduced productivity or a diminished sense of self-efficacy arising from the use of GenAI tools), and withdrawal (stress, frustration and discomfort experienced when access to GenAI is restricted). The cognitive preoccupation dimension comprises 3 statements, whilst the negative consequences and withdrawal dimensions each comprise 4 statements. The participant responds to each statement using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The scale demonstrates strong psychometric properties (internal consistency - α =.92–.93, test-retest reliability - ICC = .87).

To examine basic psychological needs, the *Basic Psychological Need Satisfaction and Frustration Scale* (BPNSFS) by Chen et al. (2015), adapted into Polish by Kuźma et al. (2020), was used. The tool is designed to measure the level of satisfaction and the level of frustration regarding three basic psychological needs: autonomy, relatedness and competence. It is worth noting that the distinction between satisfaction and frustration is justified by differences in experiences resulting from low need satisfaction and experiences of frustration related to needs. The former may be associated with reduced vitality and limited enthusiasm for physical activity, whilst the latter is more often expressed as controlled motivation, amotivation and even burnout and other pathological behaviors (Ryan et al., 2016; Vansteenkiste, Ryan, 2013). Therefore,

these constructs can be treated asymmetrically, as low need satisfaction does not necessarily involve need frustration. The scale consists of 24 items forming 6 subscales: 3 for need satisfaction and 3 for need frustration, respectively. Respondent provides responses on a 5-point Likert scale Likerta (from 1 – „not at all true" to 5 – „totally true"). In Polish validation studies, Cronbach's alpha coefficient for individual subscales ranged from .72 to 87 (Kuźma et al., 2020).

In addition, the study used a self-administered questionnaire while taking account of the following data: the respondent's age and gender, education, length of service in the IT industry, position held in the company.

3.3. Data Analysis

The study was cross-sectional in nature. In order to examine the relationship between the tendency to excessively use GenAI and the level of need satisfaction and frustration, a nonparametric test - Spearman's rank-order correlation was used. The statistical program STATISTICA 13.3 from Statsof was used for the calculations and a statistical significance level of $p < 0.05$ was adopted.

4. Results

Tables 2 and 3 present a statistical description of the variables under study. Table 2 presents the participants' results regarding the tendency to excessively use GenAI tools, measured using the *Generative AI Dependency Scale*, while Table 3 presents the results regarding the degree of satisfaction and frustration of basic psychological needs (scores on individual subscales and the overall score) based on the *Basic Psychological Need Satisfaction and Frustration Scale*.

Table 2.
A tendency to overuse GenAI tools among the surveyed group of employees

Scale dimensions	M	SD
cognitive preoccupation	9,60	2,28
negative consequences	13,43	5,32
withdrawal	11,71	4,81
overall score	34,75	7,47

M – medium, SD – standard deviation.

Table 3.
The degree of satisfaction and frustration of basic needs among the surveyed group of employees

Needs	satisfaction		frustration	
	M	SD	M	SD
autonomy	15,09	4,56	11,25	5,78
relatedness	14,04	4,67	12,32	5,11
competence	14,20	4,67	11,81	5,31

M – medium, SD – standard deviation.

Table 4 presents the results of testing the relationship between the tendency to excessively use GenAI tools and the degree of satisfaction and frustration of basic psychological needs (autonomy, relatedness, competence).

Table 4.
The relationship between the tendency to overuse GenAI tools and the degree of need satisfaction and frustration among the surveyed group of employees

Variables	satisfaction			frustration		
	autonomy	relatedness	competence	autonomy	relatedness	competence
	rho	*rho*	*rho*	*rho*	*rho*	*rho*
cognitive preoccupation	0,088	-0,087	-0,024	-0,097	0,189	-0,067
negative consequences	0,029	0,021	0,256	-0,075	**0,242***	**0,449***
withdrawal	-0,103	0,064	0,023	0,118	**0,253***	0,112
overall score	-0,089	-0,071	0,162	0,024	**0,375***	**0,309***

rho - Spearman's rank-order correlation coefficient, *$p < .05$.

The test results revealed statistically significant ($p < 0.05$) positive correlations between the 'negative consequences' dimension of the *Generative AI Dependency Scale* and frustration of the needs for relatedness ($r = 0.242$) and competence ($r = 0.449$). Similarly, a positive correlation was found between the *Generative AI Dependency Scale* – withdrawal dimension and frustration of the need for relatedness ($r = 0.253$). In terms of the overall tendency to excessive use of GenAI, positive correlations were obtained with need frustration: relatedness ($r = 0.375$) and competence ($r = 0.309$). No statistically significant correlations were found with regard to the satisfaction of needs.

5. Discussion

The literature on the subject still lacks sufficient empirical data on the relationship between GenAI tool use, particularly in patterns of use that pose a risk of addiction, and the level of need satisfaction. To fill this gap, this article examines the relationship between the tendency to excessively use GenAI tools and the degree of satisfaction of basic psychological needs: autonomy, relatedness, and competence. The obtained results indicate that the greater the

tendency to excessively use GenAI, the higher the degree of frustration of relatedness and competence needs. Furthermore, detailed results regarding the dimensions indicate that the greater the stress and discomfort experienced due to restricted access to GenAI, and the more symptoms of impaired functioning arising from the excessive use of GenAI tools, the higher the level of frustration regarding the need for connection with others. Negative consequences are also associated with a higher level of need deprivation, expressed by the desire to influence the environment, be effective, develop skills, and achieve intended outcomes.

The few existing studies confirm that excessive GenAI use may be directly related to unmet needs (Goh, Hartanto, Majeed, 2025); or may result in temporary or even apparent need satisfaction (Salah et al., 2023). It is also worth emphasizing that the cause-and-effect relationships between the variables studied can be complex and ambiguous. For example, based on a study of online activities, Park (2026) described a paradox resulting from AI use, where on the one hand, users experience a sense of fulfillment in terms of the needs of autonomy, relatedness, and competence, but on the other hand, through mechanisms such as prompting, augmenting, and interacting, they may experience frustration of these needs. Although this study cannot determine which variable is the cause and which is the effect (due to the cross-sectional nature of the research), it is worth pointing out likely directions justifying the obtained relationships. It is possible that the adverse consequences arising from excessive use of GenAI tools, e.g. in the form of difficulties in professional functioning, are also directly linked to problems in social functioning, including in the area of interpersonal relationships. As the emergence of harmful consequences associated with GenAI use reflects a substantial degree of engagement in these activities, which may affect various domains of an employee's life. Importantly, gradually increasing impairment in functioning may lead to increasing difficulties in establishing and maintaining existing relationships, which may result in an increased need to engage in virtual relationships offered by GenAI systems. However, as the paradox described by Park (2026) suggests, these relationships may ultimately prove to be artificial and emotionally shallow, which in turn leads to frustration of the need for relatedness. Similarly, the link between impaired functioning and the frustration of the need for competence can be explained. Problems in everyday functioning may gradually lead to a weakening of the sense of efficacy in action and the ability to independently cope with challenges - components of the competence need (according to Self-Determination Theory) (Ryan, Deci, 2004). The opposite direction of influence is also possible, where impaired functioning can be treated as a behavioral manifestation of frustration of the need for competence. As usage of GenAI may weaken human agency (Moon, Boudreaux, 2026), which, according to Bandura's classical views, determines the direction of attention and the exertion of effort to cope with the demands of a given situation, influences the perception of obstacles as challenges, and motivates even greater effort (Bandura, 1982). This, in turn, translates into more effective functioning in various areas of life, such as, amongst others, professional work, education, and citizenship engagement (Fida et al., 2025; Judge, Bono, 2001; Nuutila et al., 2020; Stajkovic, Luthans, 1998). However, when

human agency is weakened as a result of excessive engagement with GenAI-related activities, the effectiveness and efficacy of one's actions may be reduced, thereby reinforcing perceptions of incompetence. In turn, attempting to explain the relationship between withdrawal and the frustration of the relatedness need, one can refer to the compensatory function of digital technologies. As Kardefelt-Winther (2014) explains, based on the theory of compensatory internet use, unmet needs are one of the motivations for engaging in online activities. This may mean that the more frustrated the need for relatedness is, the more intense the attempts to compensate for it through human-AI interactions become, resulting in stronger symptoms of discomfort when access to the system is lost. GenAI use can therefore be a source of responsiveness, psychological presence, and emotional regulation, while loss of access to the system can mean the loss of an important compensatory mechanism and increases perceived emotional discomfort. However, the relationship may also take the form of a feedback loop, as excessive use of these tools may lead individuals to satisfy their need for relatedness largely through interactions with virtual systems. As a result, perspective of restrictions in access to such systems may intensify the frustration of this need. The lack of a statistically significant relationship between the cognitive preoccupation dimension and need frustration also warrants comment. As is well known, need frustration is associated with perceived tension, discomfort, and negative emotions such as anxiety, regret, or anger (Ryan, Deci, 2000). In contrast, the cognitive preoccupation dimension, due to its cognitive nature (focusing attention on GenAI activities, mental preoccupation), may be a less sensitive indicator of emotional dysregulation and loss of control and thus may correlate less strongly with the emotional component than the other two dimensions. Interestingly, no relationship emerged between any of the dimensions and the deprivation of the need for autonomy, meaning that this need has no significant effect size in situations of excessive GenAI use, compared to the deprivation of a sense of control, influence, decision-making, competence beliefs, or the deprivation of the need for connection with others. Finally, however, it is worth emphasizing that to understand the exact relationships between the variables under study, along with the mechanisms that moderate these relationships, further detailed research must be conducted, which will also allow for the verification of causal relationships.

Conclusions

This study, conducted on a group of Polish IT professionals, confirmed a link between excessive use of GenAI tools and degree of frustration regarding the needs for relatedness and competence. This means that as problematic GenAI use patterns develop, users more often experience unmet competence needs and the need to maintain satisfying relationships with others. The present study provides further empirical evidence for considerations regarding the

relationship between GenAI tool use and psychological needs. At the same time, the findings may lend support to existing scholarly speculations that excessive engagement in GenAI-based activities may serve as a means of temporarily satisfying psychological needs, but maladaptive use of these tools may ultimately contribute to a lack of satisfaction in the fulfilment of those needs (Park, 2026; Salah et al., 2023). As mentioned, the obtained results do not allow for causal inferences, but they nevertheless provide important practical implications, pointing to possible risks associated with long-term and intensive use of GenAI tools, particularly in the context of users' psychological well-being. This knowledge is particularly important in the context of the workplace, for an employee whose pattern of GenAI use is problematic and whose needs for relatedness and competence remain unsatisfied is unlikely to function effectively at work. Moreover, such an employee's sense of agency, work motivation, and job satisfaction may be diminished. The findings of the present study therefore provide an important basis for recommendations directed at managers regarding the need to increase employees' awareness of the risks associated with GenAI use, as well as to enhance awareness of the design and implementation of programmes aimed at preventing and mitigating these risks in the workplace. It is also important to be able to identify those employees who rely excessively on GenAI as a source of cognitive and emotional regulation, while simultaneously assessing their sense of professional efficacy and the quality of their interpersonal relationships at work. Therefore, it is not only important “how much” an employee uses GenAI, but also “how” they use it and whether this use is displacing activities that build competencies and relationships in the real world.

Limitations

One of the limitations of this study is the use of self-reported measurement tools, which are susceptible to measurement error resulting from intentional or unintentional distortion of responses. Furthermore, the study was cross-sectional in nature, which limits the ability to draw conclusions about possible cause-and-effect relationships between the variables under study. At the same time, this provides a reason to design similar studies in the future, which would allow for a thorough understanding of these relationships.

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