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GENERATION OF ANXIETY? SUBJECTIVE GENERAL HEALTH STATUS IN THE CONTEXT OF CHARACTERISTIC OF INTERNET USE AMONG POLISH YOUTH

Abstract

The aim of this paper is to present verification of the links between the characteristics of Internet use among Polish youth (the most popular content, dominant social media, time spent on the Internet, etc.) and subjective (declared, perceived) general health status of Polish youth in the perspective of actor-network (ANT), general strain (GST) and interaction ritual chains (IRC) theories. Theories which also describe main factors of the transhumanist era of society (so called society 5.0). Present era of society influences of course the adaptive strategies (also failed, dysfunctional) of contemporary youth, called by J. Haidt as the anxious generation *(title of the article of course refers to the work of J. Haidt). In this context the original statistical research covered 521 people (youth, young adults, purposeful selection with elements of quota sampling), using correlation, determination mechanisms and a linear regression models, while maintaining the main research assumptions, adding to the main tool a component regarding pornographic content and a sense of anxiety (related to the social media content). The comparative plane are the date from ESS11 (subset for Poland). General research results are the basis for the implementation of broadly understood public policy for youth, as well as detailed preventive programs in terms of reducing the risk of addiction to all mechanisms of the network society that determine the reduction of subjective general health. The significance of the project is therefore purely* applied *(implementative), and the post-research conclusions and their validity imply the construction of models of cross-sectoral activities to reduce the risk of long-term consequences of the virtualization of the lifestyle of contemporary youth.*

Keywords: *anxiety, Internet, subjective general health, Polish youth, self-esteem, adaptive problems*

Introduction

Current social changes are holistic and multifactorial (Suleyman, Bhaskar 2024, pp. 83-226, Kurzweil 2024, 17-126). This state of affairs impacts especially on the socio-emotional functioning of youth, young people in the adolescence process (permanent feeling of anxiety, Haidt 2024, pp. 63-138). There are a number of current terms and labels for today's stage of development of the socio-economic system (Mariański 2010, 19-74). We can call it for example society 5.0 (Salgues 2018, pp. 1-20; Gladden 2019, pp. 3-39) or transhumanist society (Bloom 2020, pp. 274-264; Swan 2019, pp. 513-527), the era after postmodern and postindustrial era, strictly related to the artificial intelligence – AI and digital interactions, next stage of the so called network society (Castells 2012, pp. 355-407) and risk

society (Beck 1992, pp. 129-153). In the authors' conviction the perspective of actor-network theory (ANT) contains the main factors of transhumanist factors of society, which creates with interaction ritual chains theory (PRC) and general strain theory (GST) the useful operational basis for the empirical research, along with the paradigmatic basis – the framework and structure of analyses described in the methodological part of the article.

According to the French sociologist B. Latour, creator of the actor-network theory, the analysis of the behavior and attitudes of individuals and groups in contemporary reality should therefore encompass not only interactions with other social actors but also relationships with all objects and devices that reshape the functioning of the mind (Latour 2005, pp. 1-17). Beyond contacts with other people, the individual's network of interactive connections encompasses complex relationships with non-human factors, used both for purely utilitarian purposes and for entertainment. The fundamental element structuring social reality is the actant – a factor influencing other factors. An actant can therefore be a living organism, a person, a device, a mode of communication, an idea – in other words, any element of the external world to which meaning is attributed and which becomes a component of the individual's overall system of symbolic references in the perception of reality.

Of course, individual interactions may result in different, varying outcomes and individual feelings. The starting point of the theory of interactional ritual chains is the situation, not the individual. The situation is primary for the individual; the individual finds themselves in a specific situation they didn't create. It is, of course, possible to transform situations and create other situations based on the individual's baseline situation. Moving from situation to situation, individuals seek functional interactional meanings (symbols) that, through a principle of *reinforcement* motivate them to enter into further relationships. Emotional energy, in this case, will be the sum of positive meanings, *the amount of emotional power flowing from one's action*. R. Collins, the creator of this approach, explains that "circumstances that combine a high degree of mutual attention, i.e., a high level of intersubjectivity, with a high level of emotional charge (…) lead to a sense of belonging linked to cognitive symbols, as well as to the emergence of emotional energy in individual participants, giving them a sense of self-confidence, enthusiasm, and a willingness to act in

a way they consider morally appropriate" (Collins 2012, pp. 17-58). Moments of intense emotional energy give meaning to individual biographies and are also constitutive events for particular groups. The classic definitions of rituals by E. Durkheim and E. Goffman have thus been supplemented with the aspect of social change resulting from ritual sequences – individuals and groups can create new rituals, and above all, by gaining emotional energy, they are ready to continue social activities oriented *outward* (allocentrically). In light of the above, how should we define an interactional ritual itself? It is *a mechanism of mutually focused emotions and attention, creating a temporarily shared reality, which in this way generates solidarity and symbols of group belonging*. In summary, some interactions determine the feeling of tension, while others provide emotional energy. Obviously, all relationships saturated with emotional energy will be desired by individuals, while those that bring discomfort and tension should be limited or eliminated as effectively as possible.

What about the situations when individual hasn't got sources (mental or social, relational) to reduce the interactional tension? Negative reactions from the environment towards an individual influence the experience of tension, leading to reactions that contradict the norms of a given group or society as a whole (Agnew, Bylica 2011, p. 233). Although general strain theory originally referred to attempts to explain criminal activity, it is currently one of the most current concepts explaining diverse risky behaviors among youth. The experience of tension is associated with participating in events or existing in conditions that are unpleasant for the individual. Tensions can be objective – referring to the socially accepted, widespread perception of certain events as negative – or subjective – social actors may differ in their reactions to situations rife with objective tensions (Agnew 1992, pp. 47-87). Furthermore, situations that do not determine the tension of individual individuals or groups can cause a significant emotional problem for other individuals and groups.

General strain theory therefore focuses on the following dimensions of interaction with the environment (Urban 2000, pp. 205-215):

- the social relationships in which the individual participates (broadly defined),
- the individual's relationships with the immediate environment (microstructural),

- negative connections with others as a source of interactional strain.

Deviant behavior can therefore be both a consequence of external social pressures and the result of strictly individual interpersonal relationships with negative connotations. Among the strains experienced by the individual, four main types can be distinguished:

- relative deprivation,
- a sense of injustice,
- traumatogenic events,
- all socialization, educational, and interactional dysfunctions.

In terms of adaptive strategies in situations of tension, GST envisages three main adaptive dimensions:

- emotional – focused on anger as the main emotional factor leading to so-called corrective measures (including, for example, retaliation towards people perceived as the source of relational tension), compulsive, escapist use of psychoactive substances, or relaxation techniques, but not reflective ones,
- cognitive (reflective) – related to the process of neutralization and rationalization, minimizing negative feelings and maximizing positive ones, or alienating acceptance of responsibility, internalizing consequences as *deserved punishment*,
- behavioral – focused on social actions aimed at reducing factors influencing tension – purposive-rational actions or retaliatory (revenge) actions.

The combination of above mentioned conditions determines new and deepens previous problems with establishing an adult way of perceiving reality. J. Arnett calls it the process of emerging adulthood (Arnett 2000, pp. 469-480). According to the above mentioned author, the processes determining the search, the declared goal of which is to achieve adulthood in a broad sense, are related to an identity gap or inconsistency. The main factors influencing this include:

- lack of stability,
- self-focus,
- a sense of being in between,

- a sense of having many options (equally attractive),
- an inability to make decisions.

Adolescents who deeply internalize these feelings participate in social life as so-called young adults (kidults, adultescents). The criteria for separating adults from young people have become unclear, and sometimes even ambiguous. The moment at which a person becomes an *adult* is difficult to define, and the age range for those experiencing the mental changes characteristic of this stage is expanding, encompassing ages from 15 to even 40. Changes in the labor market, the growing demand for highly qualified specialists, increased competitiveness in the context of widespread education and demographic changes – these processes have opened up a multitude of opportunities for young people to choose their own development path and shape their own lives. These possibilities, however, are inherently linked to the intensification of social threats and growing uncertainty and anxiety (Recalcati 2019, pp. 1-42). J. Grotowska-Leder argues that the defined life cycle organized around professional work in modernist society, in which education, professional work, economic independence, marriage, and parenthood followed linearly and in a specific chronological order, is being replaced today by a new model characterized by destandardization, deinstitutionalization, and dechronologization. Life paths during the transition from youth to adulthood have become increasingly diverse, but also uncertain and unpredictable (Grotowska-Leder 2019, pp. 6-12). What is especially interesting the existential determinants and developmental cognitive horizons of young individuals are correlated with class differentiation. Young people from lower classes associate adulthood primarily with objective markers – finding a job and starting a family, while those with higher socioeconomic status, particularly those from larger urban centers, tend to define adulthood as a multidimensional phenomenon, emphasizing psychological factors and self-fulfillment (also based on subjective indicators). However, young people face a dual risk: on the one hand, a lack of opportunities fails to meet the ambition of shaping one's identity in line with one's own expectations (lower classes); on the other, an excess of opportunities can lead to disorientation and the temporary nature of the chosen identity (upper classes). *An additional problem with*

self-definition in the era of liquid modernity is having too many choices in shaping one's self-image, when all choices seem equally attractive (Urbaniak 2014, pp. 5-27; Kudlińska-Chróścicka 2019, p. 41).

All of the above mentioned processes, related to the so-called digitization and virtualization of everyday life, determine the fluctuations of self-esteem and consequently fluctuations of the subjective (declared, perceived) state of health of young people. Thus, the aim of this paper is to present verification of the links between the characteristics of Internet use among Polish youth and subjective general health status.

Materials and methods

Paradigmatic foundations of authors' empirical research are focused on the R.K. Merton's concept of middle-range theory (Merton 2002, pp. 221-252; Pawson 2000, pp. 283-325) with the conceptual apparatus related to the symbolical interactionism paradigm and its relational component (social actor, symbol, meaning, significant others, Blumer 1986, pp. 4-16). Due to the complexity of the youth category and the multiplication of factors influencing their socio-emotional functioning, extrapolation on a global scale is not possible, but it is possible to verify current conditions with an advanced prognostic potential.

The research base is focused on the:

- statistical meta-analysis related to the data from European Social Survey 11 (present, actual, representative data for Poland; the selected subset was created and used, N=1413),
- statistical analysis related to the authors' empirical research of the characteristic of Internet use among Polish youth (N=521, the main part of the sample aged 18-26 and two subsamples aged 13-18 (to conduct research among young people under 18 years of age consent was obtained) and 26-34 – early youth and young adults; purposeful sampling with elements of quota sampling and logic of the small area estimation – SAE, see in this context for example Kalton 2024, pp. 9-29; Pfefferman 2024, pp. 30-32; Okrasa, Rozkrut 2024, pp. 53-54, Ghosh 2024, pp. 57-77; Gershunskaya, Lahiri 2024, pp. 37-44).

In the analytical structure there were used statistical mechanisms such as (Lindley 1990, pp. 237-243, Kneusel 2022, 153-182):

correlation sets (r-Pearson)
r-squared sets (r^2)
lineal regression models
principal component analysis (PCA)

The whole quantitative analysis is consistent with the principle of statistical significance (α=0,05), in parametric and non-parametric approach and the research sample was also tested in terms of normality of distribution using the Kolmogorov-Smirnov test and Shapiro-Wilk test (Yap, Sim 2011, pp. 2141-2155). The main research hypothesis was as follows:

- the characteristic of Internet use determines the feeling of tension and, consequently, lower self-esteem and subjective (perceived) general health.

There were distinguished 46 variables – 4 socio-demographic variables and 42 aggregated basic variables. Subjective general health was defined according to European Social Survey 11 (ESS 11) definition included into the codebook as the answer to the following question on a five-point Likert scale – *How is your health in general? Would you say it is…* (ESS 2024). In the case of perceived tension, a network tension index was constructed based on the following component variables:

- stress related to the inability to immediately respond to a received message,
- pressure from other users to be constantly present in social media,
- feeling the need to constantly keep up with new trends,
- relative deprivation regarding social life compared to other users,
- relative deprivation regarding an interesting life compared to other users,
- relative deprivation regarding the perception of one's own body and the physicality of others,
- overwhelmed by negative information online,
- exposure to graphic headlines and its reception,

- exposure to quasi-pornographic and pornographic content and its reception,
- concern about the possibility of being a victim of online fraud,
- concern for loved ones in the context of being a victim online.

Research results

Main results of the empirical research were presented in the nine tables below – two correlation tables, six lineal regression models tables and one factor analysis table.

Tab. 1. *Frequency of the Internet use and age (correlation)*

X (Independent variable)	Y (Dependent variable)	R (rPearson value)	p (P-value, α=0,05)
Age	Internet use (how often)	-0,549	<0,001

Source of data: European Social Survey 11 (ESS 11, 2023-2024), https://www.europeansocialsurvey.org

Young generations use Internet more than two times often than the other generations and Internet use is negatively correlated (statistically significant) with the age of individual – combination of this variables is presented in the table above.

The second table contains correlation (statistically significant) between the frequency of Internet use and subjective general health.

Tab. 2. *Frequency of Internet use and subjective general health (correlation)*

X (Independent variable)	Y (Dependent variable)	R (rPearson value)	P (P-value, α=0,05)
Internet use (how often)	Subjective general health	-0,347	<0,001

Source of data: European Social Survey 11 (ESS 11, 2023-2024), https://www.europeansocialsurvey.org

Internet use is negatively correlated with subjective general health (statistically significant) in 34,7% (r=-0,347). It means – according to the results presented in the previous table – that among youth frequency of Internet use is correlated with decrease of subjective general health two times higher, nearly 70%, which also means that the impact of Internet use on subjective general health is about 48% (r^2=-0,481).

The data from ESS 11 emphasize the impact of frequency of Internet use but are not deepened in analysis of characteristic of Internet use, therefore it's necessary to turn to data from original research in this area. In this context five lineal regression models will be presented.

Tab. 3. *"Network" anxiety and change in self-perception*

X (Independent variable)	Y (Dependent variable)	R (rPearson value)	R^2 (r-squared)	F (test F)	P (P-value, α=0,05)
Overwhelmed by negative information online, changes in the perception of one's body and the physicality of others, behavioral changes influenced by social media, gender	Impact of social media on self-image	0,487	0,237	39,831	<0,001

Source of data: Authors' research.

Independent variables such as: overwhelmed by negative information online, changes in the perception of one's body and the physicality of others, behavioral changes influenced by social media and gender correlate with impact of social media on self-image (r=0,487) which means that above-mentioned variables determines the impact by 23,7% (r^2=0,237). This model is statistically significant and of course internally covariate (F=39,831).

Tab. 4. *"Social mirror" and stress level when unable to reply to a message*

X (Independent variable)	Y (Dependent variable)	R (rPearson value)	R^2 (r-squared)	F (test F)	P (P-value, α=0,05)
Influence of social media on self-image, „I miss out on a lot in my social life", „others on the Internet lead more interesting lives than me", pressure from others to be constantly present on social media	Stress when unable to reply to a message	0,462	0,213	34,787	<0,001

Source of data: Authors' research.

Independent variables such as: influence of social media on self-image, *I miss out on a lot in my social life*, *others on the Internet lead more interesting lives than me*, pressure from others to be constantly present on social media correlate with stress when unable to reply to a message (r=0,462) which means that above-mentioned variables determines this type of stress by 21,3% (r^2=0,213). The model is statistically significant and internally covariate (F=34,387).

Tab. 5. *"Social Mirror" and changes in the perception of one's body and the physicality of others*

X (Independent variable)	Y (Dependent variable)	R (rPearson value)	R^2 (r-squared)	F (test F)	P (P-value, α=0,05)
To what extent does viewing content on social media affect your self-image, self-esteem, „I miss out on a lot in my social life", „others on the Internet lead more interesting lives than me"	Changes in the perception of one's body and the physicality of others	0,417	0,174	26,975	<0,001

Source of data: Authors' research.

Independent variables such as: to what extent does viewing content on social media affect your self-image, self-esteem, *I miss out on a lot in my social life*, *others on the Internet lead more interesting lives than me* correlate with changes in the perception of one's body and the physicality of others (r=0,417) which means that above-mentioned variables determines this type

of changes by 17,4% (r^2=0,174). The model is statistically significant and internally covariate (F=26,975).

Tab. 6. *FOMO, unterestimated body self-esteem and the level of influence of social media*

X (Independent variable)	Y (Dependent variable)	R (rPearson value)	R^2 (r-squared)	F (test F)	P (P-value, α=0,05)
Changes in the perception of one's body and the physicality of others, „I miss out on a lot in my social life", the need to constantly keep up with new trends, „others on the Internet lead more interesting lives than me"	Level of influence of social media on self-image	0,369	0,136	15,977	<0,001

Source of data: Authors' research.

Independent variables such as: changes in the perception of one's body and the physicality of others, *I miss out on a lot in my social life*, the need to constantly keep up with new trends, *others on the Internet lead more interesting lives than me* correlate with the level of influence of social media on self-image (r=0,369) which means that above-mentioned variables determines this type of changes by 13,6% (r^2=0,136). The model is statistically significant and internally covariate (F=15,977).

Tab. 7. *(Un)safety on the Internet and the level of influence of social media on self-image*

X (Independent variable)	Y (Dependent variable)	R (rPearson value)	R^2 (r-squared)	F (test F)	P (P-value, α=0,05)
Stress that someone close to you may be a victim of fraud, fear of being a victim of fraud, the impact of social media on self-image, „I'm missing out on a lot in my social life", being overwhelmed by negative information online and drastic headlines	Level of influence of social media on self-image	0,367	0,135	15,831	<0,001

Independent variables such as: stress that someone close to you may be a victim of fraud, fear of being a victim of fraud, the impact of social media on self-image, *I'm missing out on a lot in my social life*, being overwhelmed by negative information online and drastic headlines correlate with the level of influence of social media on self-image (r=0,367) which means that above-mentioned variables determines this type of changes by 13,5% (r^2=0,135). The model is statistically significant and internally covariate (F=15,831).

Tab. 8. *"Social Mirror", underestimated body self-esteem, FOMO and self-esteem*

X (Independent variable)	Y (Dependent variable)	R (rPearson value)	R^2 (r-squared)	F (test F)	P (P-value, α=0,05)
The impact of social media on self-image, changes in the perception of one's own body and the physicality of others, „others on the Internet lead more interesting lives than me", „I miss out on a lot in my social life"	Self-esteem	0,302	0,091	12,8	<0,001

Independent variables such as: the impact of social media on self-image, changes in the perception of one's own body and the physicality of others, *others on the Internet lead more interesting lives than me*, *I miss out on a lot in my social life* correlate with the self-esteem (r=0,302) which means that above-mentioned variables determines deterioration of self-esteem by 9,1% (r^2=0,091). The model is statistically significant and internally covariate (F=12,8).

It's well visible that characteristic of Internet use among Polish youth – full of stress, tension, pressure and anxiety – determines the problems with self-esteem and consequently in subjective general health (perceived). Which of the above analyzed variables are crucial in this context?

Tab. 9. *Total explained variance (Factor Analysis – Principal Component Analysis, five main components)*

Component (variable)	Overall	Variance (%)
„I miss out on a lot in my social life"	3,105	25,872
Pressure from others to be constantly present on social media	1,446	12,052
To what extent does viewing content on social media affect your self-image	1,252	10,432
Does viewing content on social media affect your self-image	1,071	8,925
Overwhelmed by negative information online	0,926	7,718

Source of data: Authors' research.

Five main components presented in the table above (containing results of the factor analysis conducted with the principal component analysis) are as follows and account for 65% of the variability in the sample:

- *I miss out on a lot in my social life* (when compared with other social media users),
- pressure from others to be constantly present on social media,
- to what extent does viewing content on social media affect your self-image,
- does viewing content on social media affect your self-image,
- overwhelmed by negative information online.

So, in summary, we have in this dataset various types of FOMO, various types of *social mirror* (problems with looking-glass self) and reception of the negative or drastic information online. The cumulated mean of determination (r^2) synthesized from the values of above-mentioned lineal regression models in the field of impact on deterioration of self-esteem, strain and decline in subjective general health is about 17% (cumulated mean of r^2=0,17).

Discussion

Results from authors' research are not fully representative, because of the specificity of the constructed sample, but due to meeting the criteria of the normality of the distribution have the value of partial representativeness. Research results clearly correspond with the macrostructural tendencies in Poland and in the majority of developed countries in the field of decline in self-esteem and deterioration of subjective general health which determines the extent of depression.

Current research on the socio-emotional functioning of contemporary youth indicates that Polish Generation Y and Generation Z have serious adaptation problems in a turbulent and uncertain social reality (Adamowicz, Gąsior et. al. 2022, pp. 12-85; see for more data Łukaszewski 2022, pp. 71-77; Łukaszewski, Szot et. al. 2024, pp. 241-249):

- 71% of school-age youth experience stress at least sometimes, 41% often or always (14%),
- Polish students are among the most stressed in the world, according to the WHO,
- • In terms of teacher support, Polish youth rank last, according to the WHO,
- 46% of students are often or *more than often* bored at school,
- • 16% rarely, never, or almost never experience joy at school,
- • 30% experience violence, drugs, and discrimination,
- Polish youth are characterized by low psychological well-being, low childhood satisfaction, low social and communication skills, lack of a positive attitude towards their own body, very low life satisfaction, high stress levels and the highest suicide rate among developed countries,
- 20% of Polish youth show symptoms of advanced depression, 24% of moderate depression, the most socially engaged are most at risk of depression,
- 72% of young Warsaw residents know at least one person addicted to the Internet and a computer, 65% know at least one person with

depression or other problems/disorders, 47,5% know a person addicted to alcohol or using aggression/violence.

It should be also emphasized that young people's attitudes are not synonymous with complete passivity – a widespread belief (94%) in the value of volunteering is evident, 71% have a regular group of friends, and 32% belong to *some* organization, 16,5% of which are sports organizations. Despite adaptation difficulties and low self-esteem, 70% of young people try to look to the future positively. The breakdown of the institutional sphere and the lack of pro-development, adequate offerings for young people are noticeable here – young people prefer spending time in shopping malls rather than participating in institutional offerings.

Of course, the described dependencies can be considered as a reflection of the tendencies from countries that have previously reached a certain level of development and digitalization of the public sphere, especially in the context of so called *smartphone revolution*. The example of USA should be emphasize here particularly – after the *smartphone revolution* and the release of Instagram service the percent of depression of American teenagers increase two times during the period 2011-2020 (Haidt 2024, p. 50).

Conclusions

It should be mentioned that according to presented data – generally – the present strategies of counteracting the deterioration of subjective general health of youth also in terms of broadly understood mental well-being are not effective in the algorithmized world (Barbieri 2023, pp. 107-128; Barassi 2021, pp. 27-44, 67-84). Italian sociologist V. Barassi calls young people as the *children of algorithms* which are monitored, tracked and profiled from birth. Y. Varoufakis indicates in this light the problems with individual identity in the world of so called technofeudalism (Varoufakis 2024, pp. 48-83). In the last three decades in Poland the clinical approach dominates the public debate about adaptation problems of Polish youth. Dynamic social changes in terms of not only the digitalization but strictly algorithmization of social reality force a paradigm shift towards environmental methods focused

on the evidence based policy concept (Pawson, 2006, pp. 4-16). There is a well visible need to deepen activities grounded in action research theory and pratice (Stringer 2014, pp. 16-31; Lewin 1946, pp. 34-46) for example creating youth clubs based on interests and activities undertaken to achieve common goals and build group and then also individual identity. *Back to reality* is not possible without organizing the local community for this purpose, according to the classic definition of social problem – an undesirable action from the community's point of view, which can only be resolved through group action (Sztumski 1977, pp. 215-224).

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