THE SIGNIFICANCE OF GEOGRAPHICAL PERSONALITY DIVERSITY WITHIN THE EUROPEAN UNION FOR ITS LAWS

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Abstract

Psychometrics enables the precise analysis of human personality traits (e.g. in the justice system, mediations, recruitment processes), but also the analysis of geographical diversity of personality traits. The development of ICT has radically increased the number of opportunities to use these long-standing study methods. A spectacular example of related risks is the use of psychometric methods in political marketing, and revealing the influence of profiling millions of Internet users on election results in various countries. In order to counteract such e.g. risks, profiling of EU citizens has been included in the new uniform legal framework. However, since psychometric studies show territorial personality diversity, it is also worth considering how GIS could be used to update them, and how such differences could be considered in processes of European and national law-making and law application.

Key words: European Union, law, GIS, psychometrics, profiling, personality, Cambridge Analytica, Facebook

Introduction

Psychometrics is a field of study concerned with the theory and technique of psychological measurement . This includes e.g. studies of personality traits, which date back to the first half of the twentieth century. The "Big Five Model", discovered and initially tested in lexical studies and then interpreted and developed theoretically in psychometric studies, is one of the most widely known psychological concepts. The five factors have been defined as openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism, often represented by the acronyms OCEAN or CANOE. It is assumed that these five factors exist in real terms, are constant, universal (i.e. independent of race, gender or culture), and biologically conditioned. Beneath each proposed global factor, there are a number of correlated and more specific primary factors (CIECIUCH, ŁAGUNA, 2014). For example, extraversion is said to include such related qualities as gregariousness, assertiveness, excitement seeking, warmth, activity, and positive emotions. Due to the time-consuming nature of the questionnaire consisting of thirty scales, six of which refer to each of the five factors (a total of 240 items), a shortened version was also developed in 1980s: NEO-FFI (NEO-Five Factor Inventory), consisting of 60 items. (STRELAU, 2000; https://en.wikipedia.org/wiki/Psychometrics). In the sphere of law, these questionnaires are used e.g. in prosecution of crimes, mediations and expert witnesses' work.

Use of psychometrics to obtain spatial information

Psychometric methods enable to obtain spatial information. In international studies the results of which were published in 2006, the Big Five Model was used to analyse the personality diversity of citizens from 49 countries/cultures in order to verify stereotypes regarding national personalities. The studies also included the Member States of the European Union. The compilation of data relating to the EU14 shows the differences between personality traits of their respective citizens. The largest data difference involves conscientiousness [18.7], whereas the smallest – agreeableness [10.4]. The neuroticism level is highest in Poland, Hungary and Croatia, whereas lowest in Spain. The conscientiousness level is highest in Germany, whereas lowest in Croatia and Spain. Furthermore, the other Big Five dimensions [openness to experience, extraversion, agreeableness] are at a similar average level in Croatia, Germany and Poland, but are highest in the case of Italy and Spain (TERRACCIANO et al., 2005).

When referring to these studies, it must be explained that they were carried out by an international study team on a total sample of 3,989 questionnaires. In Poland, they were performed by scientists from Kraków and Lublin, i.e. the southern and eastern part of the country; the available data do not show whether

or not the selection of respondents took into account any significant regional diversity in personality traits of Polish citizens. Due to the popularisation of these studies in the Polish Wikipedia, they are still cited today (https://pl.wikipedia.org/wiki/Wielka_pi%C4%85tka). Studies of personality diversity on a regional scale were later carried out in the USA and UK. (RENTFROW et al., 2015; MCGREAL, 2015).

Psychometric software, used for psychometric analysis of data from tests, questionnaires, or inventories reflecting latent psychoeducational variables, is also developed. While some psychometric analyses can be performed with standard statistical software like SPSS, most analyses require specialized tools. The information connecting GIS tools with the Big Five personality model appears in the context of studies involving personality of users of such tools; however, e.g. on the You Tube channel, Joe Hammer published the World map of the Big 5 Personality Traits in 2013 (https://www.youtube.com/watch?v=-avoCvBR_zk), which confirms the potential of existing spatial information systems and the IT tools that support them.

The Big Five Model and the Internet

The development of the Internet has enabled to carry out complex personality studies involving large groups of Internet users. The automatic analysis of data left on the Internet makes profiling much faster and cheaper in the public and private interest, in a both honest and dishonest manner (SALIK, 2018).

The application "MyPersonality", launched by David Stillwell and Michał Kosiński of the Cambridge University, was available on Facebook in 2009 – 2012. By answering questions similar to the OCEAN questionnaire, its users were provided with a personality assessment based on the Five Factor Model, whereas, in return, the researchers were given permission to access data in their profiles Gigantic amounts of data from posts, shares and likes were automatically analysed. Then, a correlation was sought between these activities and answers provided in the questionnaire; personality and behavioural traits were linked. In 2012, based on 68 likes, the algorithm enabled to determine e.g. the political support for a given party with 85% accuracy . According to press releases, the creators did not want to sell their method or the algorithm developed for scientific purposes. (https://sites.google.com/michalkosinski.com/mypersonality; YOUYOU et al., 2014). However, in 2013 another researcher from Cambridge University, Aleksandr Kogan, created a personality quiz app. It was installed by around 300,000 people who agreed to share some of their Facebook information as well as some information from their friends whose privacy settings allowed it. Given the way our platform worked at the time this meant Kogan was able to access some information about tens of millions of their friends. In 2015, journalists from The Guardian revealed that Kogan had shared data from his app with Cambridge Analytica Ltd (CA). It was a British political consulting firm which combined data mining, data brokerage, and data analysis with strategic communication for the electoral process. It was started in 2013 as an offshoot of the SCL Group. This company used the data obtained on Facebook from 87 million people, mainly from the US, but also 2.7 million of EU citizens, to influence election results in the US, the UK and many other countries. The predictive profiling mechanisms enabled to determine e.g. what a given user feared most, and predict his or her reaction to specific messages. After revealing Facebook's role in the Cambridge Analytica data scandal, and spreading fake news by organisations associated with the Russian special services, Marc Zuckerberg has declared in 2018 that Facebook's privacy policy in the EU would be fully aligned with requirements of the EU laws (Hearing before The United States House Of Representatives Committee on Energy and Commerce. April 11, 2018 Testimony of Mark Zuckerberg, Chairman and Chief Executive Officer, Facebook).

Profiling according to Regulation no. 2016/679

The influence of mass profiling of Internet users on election results was revealed at a time when profiling of EU citizens was included in a new uniform legal framework.

In theory, profiling refers to two groups of activities performed by a data processor. The first one is a set of data mining techniques from various sources that are known to refer to the same identified person and be of sufficient quality to produce an added value together. The second one involves creation of group profiles in which traits of many people are collected, enabling statistical inference in respect of the occurrence of a trait that we do not know in respect of a given person, based on the fact that this person belongs to a population that demonstrates the same traits as the ones we have already identified in that person. The first method primarily interferes with the person's information autonomy, resulting in the data on the person to be compiled beyond the legal norm and beyond the scope to which the person has agreed. The second one leads to the creation of false profiles where the error is not significant (it is underestimated) for the assessment of the processor, which poses a large risk of infringement of citizens' rights and freedoms, in particular discrimination. Findings based on statistical data are usually used to infer some data,

and if there is a lot of reliable data, multiple simulations can be carried out on them as to the fact that a given person's belongs to model groups. (WIEWIÓROWSKI, 2016; HILDEBRANDT, S.GUTWIRTH, 2008)

Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC, refers to profiling in its preamble [recitals: 24, 60, 63, 70, 71-73, 91] and in the Articles: 4, 13, 14, 21, 22, 47 and 70.

For the purposes of this Regulation:

- 'profiling' means any form of automated processing of personal data consisting of the use of personal data to evaluate certain personal aspects relating to a natural person, in particular to analyse or predict aspects concerning that natural person's performance at work, economic situation, health, personal preferences, interests, reliability, behaviour, location or movements(Art. 4(4));
- 'personal data' means any information relating to an identified or identifiable natural person ('data subject'); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person; (Art. 4(1));
- 'processing' means any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction (Art. 4 (2)).

The preamble (recital 26) clarifies, that personal data which have undergone pseudonymisation, which could be attributed to a natural person by the use of additional information should be considered to be information on an identifiable natural person. To determine whether a natural person is identifiable, account should be taken of all the means reasonably likely to be used, such as singling out, either by the controller or by another person to identify the natural person directly or indirectly. To ascertain whether means are reasonably likely to be used to identify the natural person, account should be taken of all objective factors, such as the costs of and the amount of time required for identification, taking into consideration the available technology at the time of the processing and technological developments. This Regulation does not therefore concern the processing of such anonymous information, including for statistical or research purposes.

Articles 13 and 14 oblige to inform the data subject about profiling. Art. 21 establishes possibility of the data subject objecting to profiling, Art. 22 provides, that he data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her. However, paragraph 1 shall not apply if the decision: 1. is necessary for entering into, or performance of, a contract between the data subject and a data controller; 3. is authorised by EU or Member State law to which the controller is subject and which also lays down suitable measures to safeguard the data subject's rights and freedoms and legitimate interests or is based on the data subject's explicit consent. Art. 47 states, that the binding corporate rules shall specify the rights of data subjects in regard to processing and the means to exercise those rights, including the right not to be subject to decisions based solely on automated processing, including profiling. Art. 70 states, that Board issue guidelines, recommendations and best practices in accordance with point (e) of this paragraph for further specifying the criteria and conditions for decisions based on profiling. The Regulation provides for high fines for personal data breaches.

National law implementing the 1995 Directive proved to be too weak; it is assumed that the uniform, restrictive Regulation (EU) 2016/679, complemented only by Member State law, will improve the effectiveness of these provisions.

Regulation (EU) 2016/679 is an example of introduction of new legal restrictions on data processing to prevent risks that unfold when ICT advances overturn traditional organisational and technical barriers ensuring protection of individuals and the public interest (SZPOR, 2016).

Impact of territorial personality diversity on the effectiveness of law

In studies regarding the model to regulate openness of the data, access to information and its limitations, which results as part of the MRJ project subsided by the National Centre for Research and Development were published in the 12 volumes of the monograph (SZPOR, 2013-2016) it has been assumed that law is effective (in a general sense) if its rules, directly or indirectly through individual acts and their application, produce effects consistent, to a sufficiently high degree, with the goal aimed at by the legislator or by other actors. It is linked with the "threshold effectiveness" of law, i.e. the determination of the minimum consistency level of effects of law with the set goal exceeding of which enables to refer to law as

effective . In the referred studies in respect of the achievement of goals of direct provisions, i.e. behaviours consistent with the norm, a distinction is made, according to J. Wróblewski, among behavioural effectiveness [behaviour of the addressee is consistent with a norm provision if a certain goal is to be achieved or regardless of the set goal], psychological effectiveness [if the information on the norm affects the selection of behaviour of the addressee consistently or inconsistently with it, and then the norm effective in psychological terms is not behaviourally effective], finistic effectiveness [of obtaining the state of affairs desired by the legislator], and social and educational effectiveness [involving the shaping of desirable attitudes of addressees of legal norms and other actors as a consequence of the motivational impact of law, in particular its observance in the society]. In Italian studies, R. Bettini has identified effectiveness understood as observance of applicable laws (efficacia-effettivitá del diritto) and effectiveness assessed from the viewpoint of the function of law (efficacia-funzionalitá del diritto), and determined that ensuring the first one is a necessary condition for the second one, but one that is not sufficient due to the possibility that full observance of law could not have the effect for which it had been established, as law operates together with other social control systems, such as morality, religion, customs. Pointing out that behaviour of individuals is the outcome of influence of various factors, it was also emphasised that, in the assessment of the effectiveness of administrative legal provisions, one should additionally take into consideration the determinants of public administration activities, and technical determinants. According to A. Podgórecki, understating administrative productivity enables to determine profitability of effects of individual acts with given expenditure allocated for the development and maintenance of its activity that, as assumed by J. O. Friedman, is legitimised by efficiency (KMIECIAK, 2013).

Analysing more broadly the theoretical findings at the beginning of the MRJ project, referred here in a synthetic manner, a clear absence of techniques enabling their crystallisation was noticed. It was stressed that "applied modern study methods (developed in psychology, sociology, economic sciences) meet minimum needs for the collection and development of empirical data concerning not only breaches of legal norms [the easiest ones to observe], but also related to respecting law, experiences of addressees of bans and orders, and achievement of goals assumed in the legislation". (KMIECIAK, 2013). Psychologists also assessed the level of studies involving the psychological sphere of law to an insufficient extent. By pointing out self-critically that they have often came up with findings without looking into jurisprudence, they have accused lawyers of referring to psychological determinants mainly in the context of ethics and morality. (STANIK, 2011). Although later studies of the MRJ project (SZPOR, 2013-2016) and separate studies on the effectiveness of EU administrative law (WEGNER-KOWALSKA, 2017) have taken greater account of empirical data, the postulate of interdisciplinary development of new techniques to use such data and quantifiable approaches remains valid.

Since the category of psychological effectiveness of law is permanently present in legal studies, and psychometric studies show the territorial personality diversity, it is worth considering whether or not and how such differences could be taken into account in processes of European and national law-making and law application.

A comparison of findings made on the basis of the theory of law and related to the effectiveness of provisions with the structure of factors of the OCEAN questionnaire enables to make a preliminary assumption that in order to increase this effectiveness, it could be a good idea to include in the law-making process the fact that, on different parts of the territory covered by them, addressees of norms are, in specified proportions: extroverts with intensive social interactions and introverts; people with greater and lesser tolerance to novelties; altruists willing to show trust and egoists antagonising relations; more and less conscientious people; people with emotional and neurotic stability: prone to experiencing negative emotions (fear, anger, guilt) and those susceptible to psychological stress. Understanding the regional variety of personality dominants may also be useful to pass individual acts or shape local law.

When taking on this challenge, it would be necessary to determine, in a multidisciplinary discussion, whether or not the determination of personality traits in a geographical context in order to support the effectiveness of legislation was possible using Big Data methods, based on the resources of existing public information systems (SZPOR, GRYSZCZYNSKA, 2015). Regulation (EU) 2016/679 clearly states that statistical and scientific goals may be pursued also with the use of personal data, and such would be the goals of studies focusing on the maximisation of effectiveness of these multi-level EU provisions

Conclusions

Effective data processing with the use of algorithms, software and hardware on which the software is installed should be limited by public law when this poses risks, but supported where benefits outweigh them. Business people who have linked profiling with Big Data have become the richest people in the world within a dozen or so years, but they have also generated huge risks for human privacy and rationality of human behaviour in public affairs. National legal provisions, focusing in the EU on goals set out by the

Directive of the European Parliament and of the Council of 1995 and the EU agreements with the USA – Safe Harbour and Shell, proved to be too weak to prevent such risks. The uniform restrictive Regulation (EU) 2016/679, complemented only by Member State legislation, may improve the situation. On the other hand, the territorial personality diversity of EU citizens may hinder the achievement of effectiveness of multi-level law; therefore, it is worth using Big Data and GIS methods to prepare assessments related to the EU area. Taking such spatial information into account and using business experience with psychometrics in studies regarding determinants of effectiveness of law and in the practice of law-making and law application is in the public interest. Increasing the psychological effectiveness of norms, trust in public authorities, and acceptance of institutions of modern multi-centric law are important conditions for the sustainability of a democratic political and organisational system.

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