



EPS NPS PROJECT

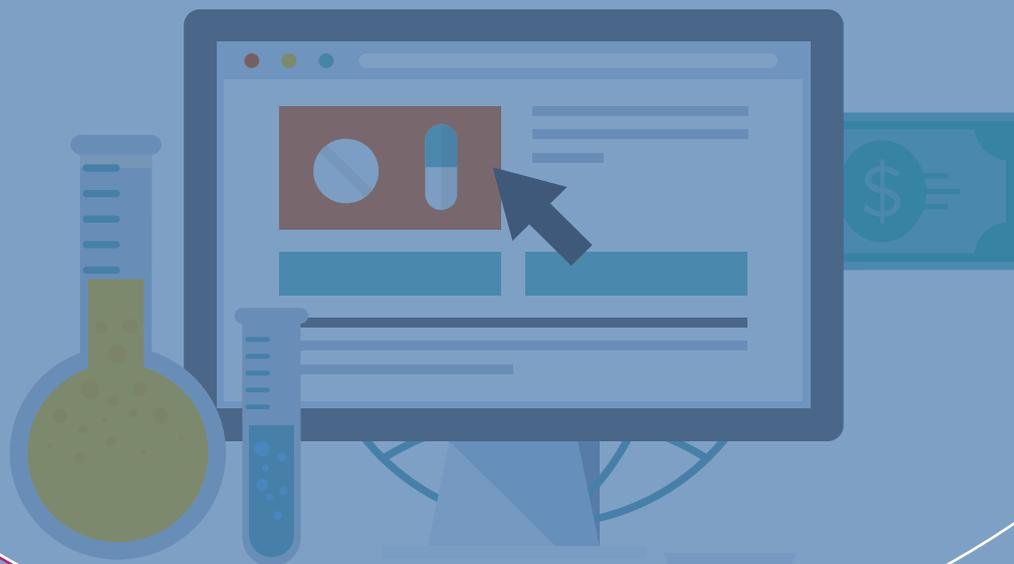


QUALITATIVE ANALYSIS OF THE **ONLINE DRUG SCENE**

**Netnography of using and purchasing
Novel Psychoactive Substances (NPS)**

SHORT RESEARCH REPORT ON PRELIMINARY FINDINGS BY
EÖTVÖS LORÁND UNIVERSITY, FACULTY OF EDUCATION AND PSYCHOLOGY, INSTITUTE OF PSYCHOLOGY

QUALITATIVE ANALYSIS OF THE ONLINE DRUG SCENE



EPS NPS PROJECT

The Project **EPS/NPS - Enhancing Police Skills on Novel Psychoactive Substances** is coordinated by RiSSC and developed in cooperation with University of Hertfordshire Higher Education Institution (UH) (UK), University of Szczecin (US) (PL), Eotvos University (ELTE) (HU) and INTERPOL (associate partner), with the financial support of the EU Commission - Targeted call on cross border law enforcement cooperation in the field of drug trafficking - DG Justice/DG Migrations and Home Affairs (JUST/2013/ISEC/DRUGS/AG/6429). The Advisory Board is composed by experts from Arma dei Carabinieri, EUROPOL, INTERPOL, Swiss Federal Police, UNODC and US Drug Enforcement Administration. The overall objective of the Project is to contribute at enhancing a knowledge-based joint EU approach to effectively addressing the rapid spread of NPS, by promoting in particular the generation of data/knowledge, information-sharing, and cooperation.

Project duration: 2015-2017

Project manager: Valentina Scioneri

www.npsproject.eu



Published by:

RiSSC – Research Centre on Security and Crime
Via Casoni 2, 36040 Torri di Quartesolo (VI) - Italy
info@rissc.it - www.rissc.it

This publication is available online at: www.npsproject.eu

Eötvös Loránd University, Faculty of Education and Psychology, Institute of Psychology (www.ppk.elte.hu; www.elte.hu) is one of the main institutions of Hungarian psychological education and research. With a growing reputation for research and innovation, Eötvös Loránd University (the longest continuously serving university of Hungary), provides its diverse student population with high quality education and research, building upon the best European traditions.

Department of Clinical Psychology and Addictions responsible for the present research project focuses primarily on addiction research and prevention activities. The mission of the Department is to map the causes and motives of addictions and thereby to support the development of the most effective methods of prevention and treatment to reduce harm related to addictive disorders both at the individual and social level. Besides epidemiological and etiological research, we focus on studying attitudes toward addicted people as well as on analyzing the effectiveness of preventive and treatment interventions.

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Project funded by the
Drug Prevention and Information
Programme of the European Union

This publication has been produced with the financial support of the Drug Prevention and Information Programme of the European Union. The contents of this publication are the sole responsibility of the authors, and can in no way be taken to reflect the views of the European Commission.

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INTRODUCTION

INTRODUCTION

The Netnography of using and purchasing Novel Psychoactive Substances (NPS) study's aim was to design and execute a qualitative study to reveal the objectives and circumstances of using and purchasing NPS in three groups: (1) psychonauts, (2) body builders, sportsmen, and (3) cognitive enhancers. The study explores the interconnection between novel psychoactive substances, online developments, and drug trends.

There is a general agreement that online drug scene changed the drug discourse and we need new theoretical and methodological frameworks to investigate drug use patterns. The online scene by itself enhanced the change on the drug market. Novel psychoactive substances (NPS) have a new forum where they can be discussed and purchased. Although the drug scene is historically connected to the online scene and psychonauts were among the first users of web based forums to exchange ideas and experiences, it was not until the appearance of the broadband internet and later the smartphones that resulted in a crucial change on online drug scene. We are witnessing a change in the drugs ("What does it mean 'ecstasy' today? The chemical components? The effects? The physio-biological or the socially constructed meaning of effects?). This leads many of the researchers to a paradigm shift to "qualitative epidemiology". And by the changing nature of the psychoactive substances and the shift of scenes from offline to online we also witness a paradigm shift on the methodology: we need to use the info-communicational (network analysis, big data) methods to gain real answers to today's questions.

The study discusses drug use in the consumerism theoretical framework: "In this model of drug use, drugs are thought of as commodities: products which are consumed to induce desired states of consciousness. Conceptualising drug use in this way shows drug users to be conforming to the norms of a market-driven culture rather than pursuing a deviant or aberrant activity (Duff, 2003a; Mugford, 1991; Olsen, 2009; Parker, 1999; van Ree, 2002)." (Barratt 2011: 32)

The consumerism model as theoretical framework explains the chosen methodology: netnography was designed to study the social web of cultures and communities online. Originally netnography was developed for marketing research by Kozinets (2010). Netnography as a broadly conceived method contains several types of classical anthropology/ethnography methods transferred (adapted) to online scenes. During the so far accomplished data collection we used structured passive observation and online interviews. We report on our media monitoring activities as well to fulfil the requirements of a well-designed online study on publicly available online contents.

METHODS AND RESEARCH QUESTIONS

According to the Project description “EPS/NPS focuses on the increasing popularity, presence and use of NPS in Europe, which are posing serious challenges in terms of health/life of individuals using them and public health, as well as criminal risks.” There are particular objectives which are related to “scientific identification and assessment of existing /emerging NPS and their online/offline supply chains on the basis of a multidisciplinary approach.” (Project description and implementation, p. 2.) The main responsibility of Eötvös Loránd University is to participate in collecting data among the members of the three target groups:

1. Psychonauts
2. Sportsmen, body builders
3. Cognitive enhancers

We also provide information on our **automatized media monitoring** activities during which the appearance of NPS related contents are collected and analysed with a special monitoring tool provided by a well experienced media monitoring company (Neticle Technologies.)

The research was designed to merge the relevant theories and methodologies from the online and the drug research field. The research design is based on a triangulation approach, using qualitative and quantitative measures combined with automated computer-assisted analysis.

1. AUTOMATIZED ONLINE MEDIA MONITORING OF NPS ON THE HUNGARIAN WEB

ELTE in cooperation with the Neticle Technologies¹ planned an automatized online media monitoring on NPS.

Researchers collected 36 keywords of NPS (e.g. synthetic marijuana, herbals, crystal, MDPV, cathinone) and approx. 1200 synonyms.

The Neticle system gives nearly real-time analysis of the Hungarian web, and finds the hits mentioning pre-set keywords within 30-60 mins on the Hungarian web and main social media sites. It can handle not only keywords (like simple search engines e.g. Google Trends) but the synonyms of an NPS and with a special algorithm (which contains the verbs and adjectives of drug usage) it is able to select those online public contents that are about the drug itself and not the homonym (e.g. the short name of penthedrone crystal is crystal which has several other meanings).

Neticle does automatic sentiment analysis on the content found. The system automatically recognizes the positive and negative meaning of the phrases in texts. Every hit is given a score, a so-called polarity index that represents the value of the positive or negative opinion about the given keyword. The basis of the scoring is one of the most precise sentiment analysis algorithm created by Neticle for Hungarian language. It works with 75%-80% precision. With polarity index users can easily quote the gathered and summarized opponent or supporting mentions which gives much more information about the theme than just counting positive and negative texts. As a result, we are able to characterize the Hungarian web about NPS in a given time period, we can detect the threads, describe the “narrative mechanisms” (Agar & Reisinger, 2004, p. 262) explaining temporal patterns in descriptions of drugs by publicly available contents.

Research questions related to the online media monitoring.

- How the drug discourse is represented in the online media and social media contents?
- Which substances are discussed more often or more detailed?
- What kind of communication channels (e.g.official documents, commercial media, social media) and content types (e.g. articles, forum discussions) are used more regularly?
- What are the emerging topics reflecting the general opinion about NPS in general and specific substances?
- What are the gatekeeper sites and forums that are worth approaching in our netnography study?

¹ <https://neticle.hu>

2. NETNOGRAPHY STUDY

Preparation phase:

Collection of specific keywords offline

The vocabulary of the NPS used by the target groups were collected by using several (offline and online) ethnographic methods: observation in fitness centres, using access-based sample, informal chats and structured data collection online.

The keywords and synonyms might not cover the specific substance names or slang words of two target groups, that traditionally neither connected to the online drug scene, nor the drug treatment or harm reduction services, although they are assumed to be consumers of NPS and purchase the substance online: the sportsmen/ body builders and the cognitive enhancers. Literature review is not available on the Hungarian vocabulary of the used NPS by these target groups. The international names of PES (performance enhancer substances) and CE (cognitive enhancement) are accessible, those are collected and reflected in the online media monitoring system.

Online Communities and Netnography

Participation in online drug communities influences knowledge of, associations with, and understanding of drugs. The primary goal of such communities is not merely to learn but also to solve problems, to develop new thoughts, and to advance communal knowledge. These needs are met by members contributing to the joint project, which is to form an information base about drug use built upon their experiences made freely available for others to study. Viewing learning as a process whereby knowledge is created through the transformation of experience (Kolb, 2014), online discourse is a relevant case, whereas inquiry typically emerges from discourse (Bereiter, 2005)—that is, the social realities that people enter into and use in conducting their everyday

activities and interactions (Miller & Fox, 2004).

Online communities may be viewed as a medium for cultural transactions.

To get a better understanding related to the research questions (see below) we use netnography (Kozinets 2010) to describe international websites by online observation and by conducting online interviews with Hungarian gatekeepers found via online media monitoring and interviewing participants in international online drug communities. Netnography follows six overlapping steps: (1) Research Planning, (2) Entrée, (3) Data Collection (4) Interpretation (5) Ensuring ethical standards (6) Research representation (Kozinets, 2010). The usual time needed for a whole netnography study including interaction with the online community members takes 6-36 month. For contacting participants, we needed an ethical permission which was gained in November, 2015.

Research questions of the netnographic data collection related to the three target groups are as follows

- What substances do they use?
- Where the substances are obtained from (route of purchase)?
- Are the users aware of what they are using?
- Do they know the effects of the substances they are using or what kind of effects are they expecting?
- Do they know anything about the origin of the substance?

Ethical permission:

Research Ethics Application Approval of **Qualitative Analysis of the Online Drug Scene – Netnography of using and purchasing Novel Psychoactive Substances (NPS)** by Eötvös Loránd University Faculty of Education and Psychology Research Ethics Committee with the Reference Number 2015/320.

Data collection and preliminary results

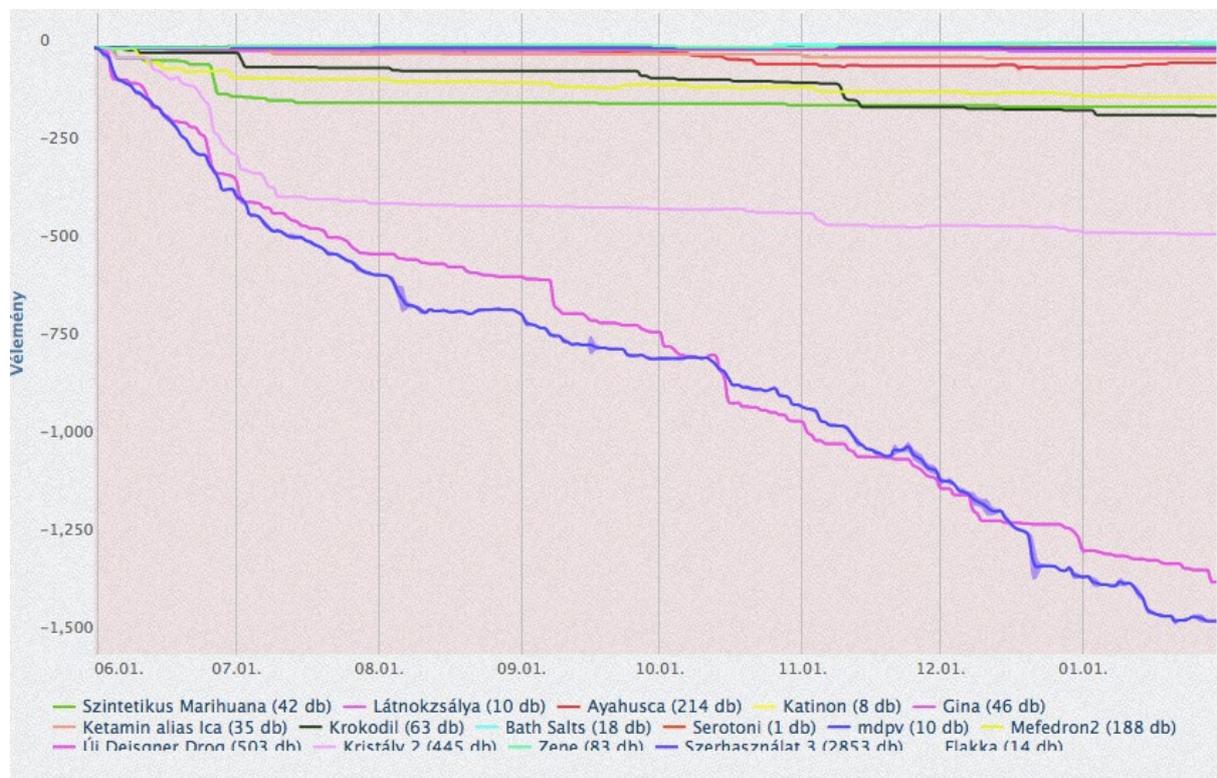
Table 1: Summary of the different data collection methods and our preliminary findings

TYPE OF DATA	NUMBER OF DATA	ANALYSIS
Media monitoring between June 2015 and January 2016	<ul style="list-style-type: none"> • Cover page: 66 • Article: 733 • Blogs: 62 • Comments: 62 • Forums: 149 • Facebook posts: 434 • Google+ posts: 69 • Tumblr posts: 106 • Twitter posts: 81 	<ul style="list-style-type: none"> • WOI: Web Opinion Index about NPS • Map of occurring contents and content types (article/comment/forum etc), types of channel (Facebook, Twitter, Forums etc.) • Map of drug use themes and graph of contents
Offline interactions	<ul style="list-style-type: none"> • Passive observation • Informal chats 	Collecting keywords
Online observation of online communities	<ul style="list-style-type: none"> • Online communities (daath.hu, LandDer Traume.nl, flashback.se, freak.no): 4 • Discussion threads: 115 (relevant 56) • Entries: 1524 	Thematic analysis of contents related to research questions
Online interviews	8 interviews	Thematic analysis of contents related to research questions

RESULTS

SYSTEMATIC ONLINE MEDIA MONITORING

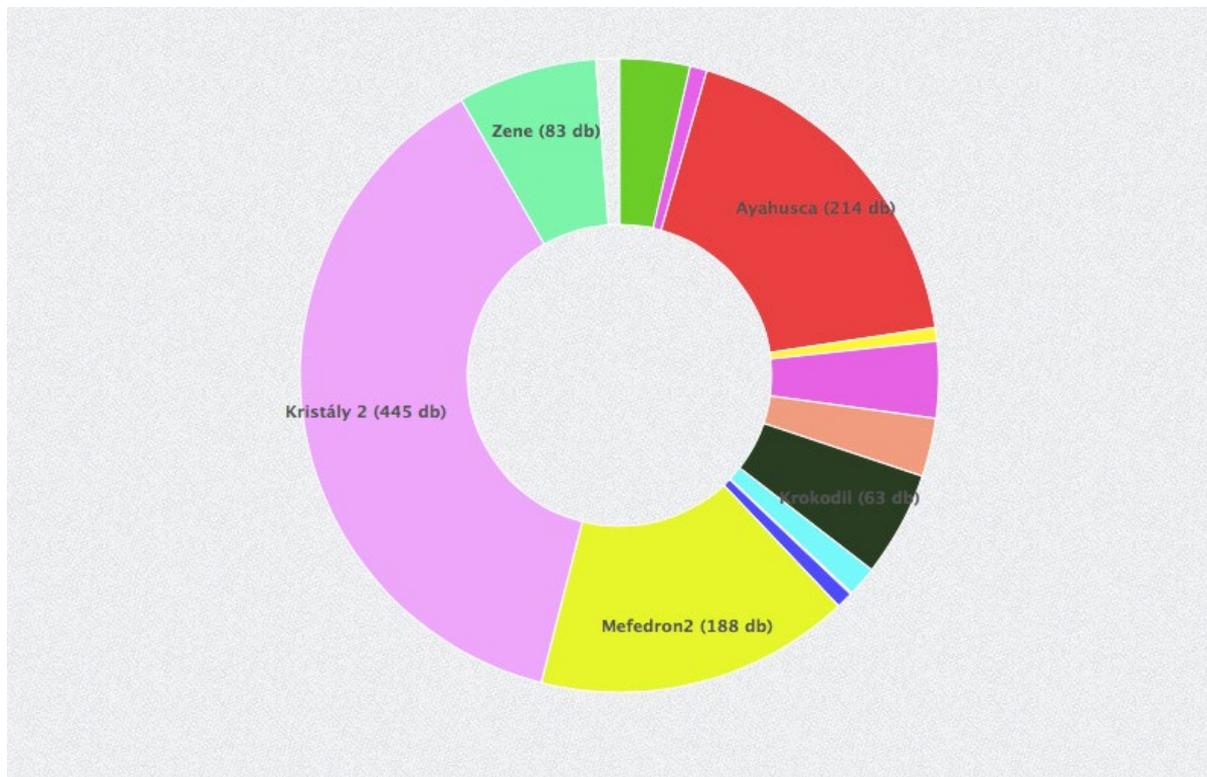
Figure 1: WOI: Web Opinion Index about New Psychoactive Substances.



The system automatically recognizes the positive and negative meaning of the phrases in texts. Every hit is given a score, so-called polarity index that represents the value of the positive or negative opinion (vertical axis on Figure 1) about the given keyword. The more content is available of a given keyword the more polarity index is added, the more opinion of the web is reflected in the chart. This is the “stock exchange” of the web opinion. The chart shows that cumulative value of web opinion of selected substances is decreasing. According to media studies, this trend is called the “diffusion of bad news” phenomena on social media sites; one bad opinion or a “moral panic” article can spark a great degree of negative sentiments in the network.

Further questions are, why do we find peak and low points in the opinion, what kind of offline events correlate with the online trends, and whether seizures or police data of NPS are reflected in the data.

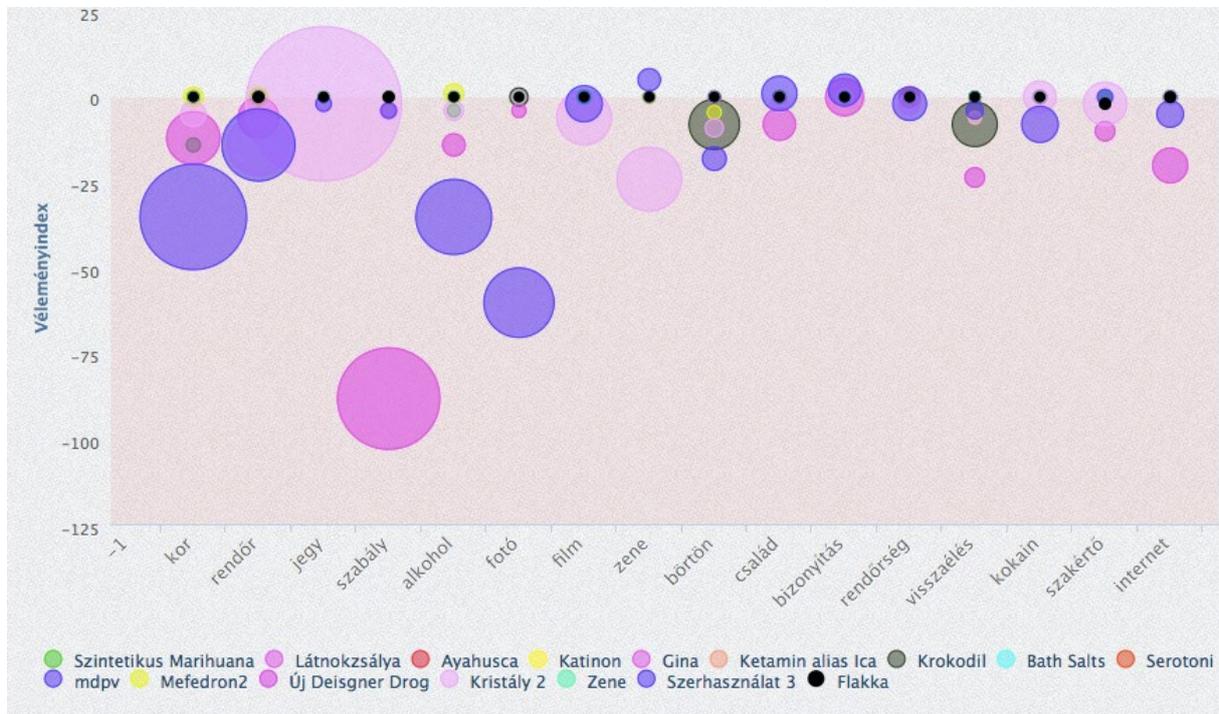
Figure 2: NPS – number of hits (appearance) of different NPS in online media



The chart shows which substances are mostly discussed and shared on the online media. The first three most popular substances are: crystal, ayahuasca and mephedrone.

Neticle system codes the contents with content labels based on the general vocabulary, but the researcher can also add or clear content labels. The hits must be surveilled frequently in order to gain relevant topic labels.

Figure 3: NPS – Map of occurring contents

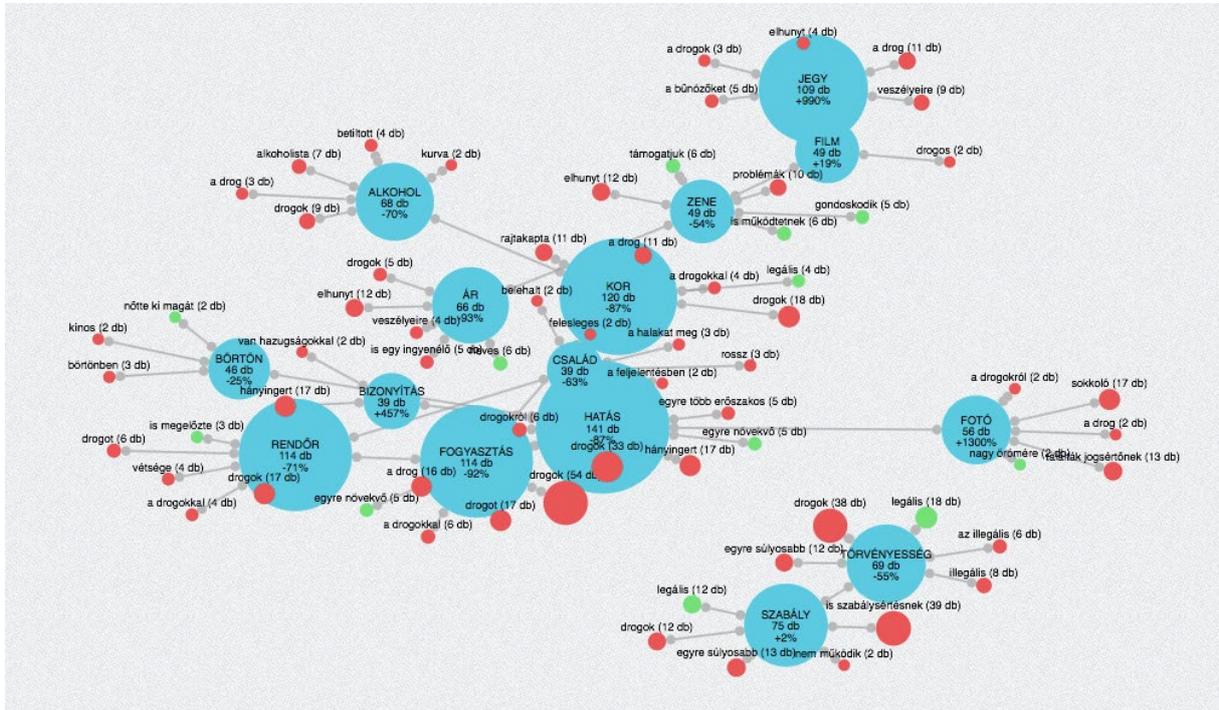


The figure shows the map of occurring online contents of NPS interrelated with the web opinion index between June 2015 and January 2016: the circle grows as the number of web content of each topic is increasing and the vertical position of the circle changes in relation with the web opinion index.

The topics of the emerging contents are in respective order: age, police, regulation, alcohol, photo, film, music, prison, family, proof, abuse, cocaine, expert, Internet.

The most frequently occurred topics are regulation and police and regulation is connected with the most negative sentiments in the network.

Figure 4: NPS – Graph of content



The graph of content shows the interrelations between the emerging contents. The bubble grows according to the quantity of mentioning of a content. The big blue bubble are police (that relates to prison and proof), consumption and effect (that relates to age, family and price), age also relates to alcohol. The two separate bubbles in the lower right corner contain the rules and the legitimacy content labels.

NETNOGRAPHY RELATED DATA COLLECTION

Table 2: Results of the netnography research including the online observations and online interviews.

	PSYCHONAUTS	SPORTSMEN, BODY BUILDERS	COGNITIVE ENHANCERS
What substances do they use?	cannabis, DMT, magic mushrooms, MDMA or ecstasy pills, 'Batman' (extasy with hallucinogenic effect), opiates, pharmaceuticals (Tilidin, Tramadol), Legal highs (Kratom. Passion Flower, Hops) Flakka, Spice, Acetylphenatyl, Kratom	Ostarine (MK2866) Trenbolone, Oxandrolone Clenbuterol, Fluoxymesteron (Halotestin), HCG: Steroid, HGH - Growth Hormone (Somatropin), Mesterolone (Proviron), Methandienone, Methenolone (Primobolan), Nandrolone, Tamoxifen, Winstrol	Ampakine farampator, capatgon Ritalin
Where the substances are obtained from (route of purchase)?	Offline – dealers they know, prescribed by doctors, or via friends Online - shiny-flakes.com, via Darknet: shops like "Evolution", "Silkroad", 'Silkroad 2' 'Agora', online indian pharmacy store	Offline - dealers http://www.anasci.org/ https://do4a.com/	Offline – prescribed by doctor or via friends Online shops (very expensive)
Are the users aware of what they are using?	Yes - (safety is highlighted e.g. pill alarm) In online shops purity is more likely because people, who already purchased them, comment on it Checking chemical components via specialized services e.g. at parties	Yes	Yes
Do they know the effects of the substance they are using or what kind of effects are they expecting	Yes Offline sources: school books (psychology), personal experiences Online sources: academic reviews, guidelines (Erowid, bluelight, drug forum), videos (youtube.com), chats (Land der Traume), social networks (Facebook, WhatsApp, Wikipedia, drugs wiki, image boards: 420chan, 4chan)	n.d.	n.d.
Do they know anything about the origin of the substance	Partly yes: historically + information on the web	Yes	n.d.

DISCUSSION

The aim of the study was to reveal the NPS usage and purchase patterns online.

It seems, that drug users (or consumers) and the mainstream media are on different tracks. While mainstream online and social media is concerned with drug policy matters (the legitimacy of NPS, punishment, comparison of NPS and alcohol or “old drugs”), the NPS users seem to be well-trained by each other and by the system of online drug information. The negative content trends revealed by the systematic online media monitoring (in the social media negative content is shared faster) pose the question if there is any interrelation between the rate of negative contents and the pressure to create and purchase new NPS. When bad news spread, we could not find any statistically meaningful influence of sentiments taking place at the social network level. However, when users interacted with each other, their sentiments changed significantly.

According to our netnography study the consumers find the relevant information in a short period of time, on specific websites, they help each other, educate themselves and others. Most of our data (the interviews and the observations) is covering psychonauts. Their substance use is not exclusive to NPSs, but they use different substances to gain a special state of mind or body. The goal and the experiences are interesting for them, not the substance itself. The main reason to use online sources is to read first-hand about the description of the drug, the chemical formula, and about the other people’s experiences, possible side effects, and the duration of the effect, and to find out how safe is to use certain drugs. They will read everything about it online, the chemical formula, ways of taking it, possible side effects, duration of the “trip”. They will ask friends as well. Most of the times they are aware of what they are using. The participants of the

online interviews and the forum gatekeepers on the observed websites are conscious users, who gain information systematically and prefer to purchase offline. Online stores are not regarded as safe options.

The result might presume that a) since non-problematic substance users find the relevant information online and purchase the substance offline, therefore online stores and especially darknet is preferably used by dealers; b) the difference between substance user groups are not based on the purpose (recreational vs. performance enhancement), but the level of knowledge about different substances and the consciousness of usage; c) by the analysis of social media content sentiments a powerful drug prevention tool could be designed by estimating the bad and good news influence on contents.

LIMITATIONS, DIFFICULTIES

- Ethical approval - received it in November - made it difficult to have online interviews in due time
- Body building and cognitive enhancement communities are closed, they need to be approached offline.
 - The difficulties of approaching online:
 - In Hungarian circles people mostly don't want to talk to the interviewer if he/she does not show in-depth knowledge of workout and bodybuilding.
 - In these closed communities you need to post pictures of yourself, and your progress.
 - Professional athletes keep their silence.
 - Females are in such a minority, that a female researcher might get a lot of attention.

PLANS

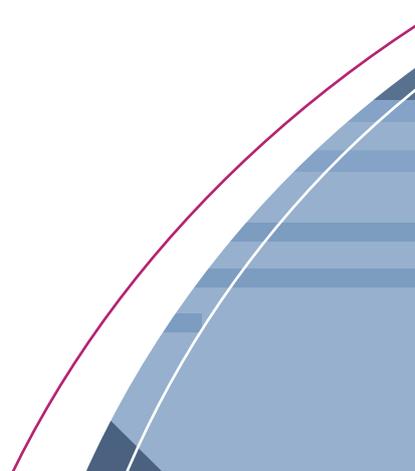
1 Writing detailed reports on selected substances based on the systematic online media monitoring

2 Revealing the interrelation between the nature of the spreading of social media and the need for new NPS

3 Identifying the gatekeepers of each target groups by the help of online media monitoring and netnography and manage to make interviews with them

4 Continue offline data collection at body building communities, organizing focus groups for possible CE-users

5 Analysing recently collected general population data to see if there is any social/societal pattern of NPS use and if there are any differences among social groups predominantly using classical illegal drugs or NPS



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