



Sharing, Group-Buying, Social Supply, Offline and Online Dealers: how Users in a Sample from Six European Countries Procure New Psychoactive Substances (NPS)

Bernd Werse¹ • Annemieke Benschop² • Gerrit Kamphausen¹ • Marie-Claire van Hout³ • Susana Henriques⁴ • Joana Paula Silva⁴ • Katarzyna Dąbrowska⁵ • Łukasz Wieczorek⁵ • Michał Bujalski⁵ • Katalin Felvinczi⁶ • Dirk Korf²

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Abstract

Given the multiple ways of regulations and market situations for new psychoactive substances (NPS), it is of interest how NPS users procure their drugs in different countries as well as in different user groups. Data comes from a face-to-face and online survey conducted in six EU countries, covering three groups of current (12-month) adult NPS users: (1) socially marginalized, (2) users in night life, and (3) users in online communities. While the supply situation differed considerably between countries, friends were the most prevalent source for buying, followed by online shops and private dealers. Marginalized users were more likely to buy from dealers, while online respondents showed the highest rates for buying online. While buying NPS from online or offline shops was relatively prevalent, we also found high rates for social supply and buying from dealers. A considerable part of this market may be classified as “social online supply,” with private suppliers procuring their drugs online. The market features among marginalized users resemble more those of illicit drug markets than those for other NPS users.

Keywords New psychoactive substances · Drug procurement · Drug dealing · Social supply · Marginalized drug users · Night life drug users · Drug policy

In recent years, the global drug market more and more has become characterized by the introduction and spread of a rapidly growing number of so-called “new psychoactive substances” (NPS). By the end of 2016, over 600 different NPS had been observed by the European Monitoring Centre on Drugs and Drug Addiction (EMCDDA 2017). The rise of the NPS market has typically been framed as an entrepreneurial strategy to circumvent law enforcement. For example, in Europe, NPS are defined as “synthetic or naturally occurring

✉ Bernd Werse
werse@em.uni-frankfurt.de

substances that are not controlled under international law or produced with the intention of mimicking the effects of controlled drugs” (EMCDDA 2014, 27), which may also include pharmaceutical medicines (EMCDDA and Europol 2013). In other words, NPS are understood as substances that have psychoactive effects similar to illicit drugs but are not criminalized in international drug conventions.

The use of NPS has been subject to sociological and criminological research since it started getting broader attention around 2008/2009 (Hillebrand et al. 2010; Measham et al. 2010; 2011; Carhart-Harris et al. 2011; Van Hout and Bingham 2012; Barratt et al. 2013). Since the early days of NPS use, scholars have stressed the significance of the Internet in communicating information about NPS, as well as the Internet being an important distribution channel for NPS (EMCDDA 2009; Winstock and Ramsey 2010; Werse and Morgenstern 2012; Stephenson and Richardson 2014; EMCDDA and Europol 2016; Martinez et al. 2016). However, little is known about the actual modes of procurement at user level. Therefore, the primary aim of this paper is to explore how and where users obtain NPS.

While acknowledging the emerging role of the Internet in many kinds of transactions all over the world, it can be argued that there should also be other ways how users acquire NPS, probably ways that are similar to how users procure *illicit drugs*. There is a growing body of research on that issue, thwarting common images of “drug dealers” as greedy, exclusively profit-oriented criminals (for an overview, see, Coomber 2006; Werse and Bernard 2016). Some studies have highlighted the significance of “free use” through sharing drugs and/or gift-giving. The majority of novices and occasional users get their drugs without payment, mostly from friends or acquaintances (Hamilton 2005; Werse 2008), and a substantial proportion of regular users rarely or never pays for their drug use (Werse and Bernard 2016). “Social supply” is another form of drug distribution among users. Initially described in the scholarly literature in the early 1990s (Murphy et al. 1990; Dorn et al. 1992), the phenomenon got its denomination during the early 2000s (Hough et al. 2003; Coomber and Turnbull 2007; Coomber et al. 2016). This mode of procuring drugs is commonly defined as “the non-commercial (or non-profit-making) distribution (...) to non-strangers” (Police Foundation 2000, 36). However, the lines between drug use without paying for it, social supply, “minimally commercial supply,” (Coomber and Moyle 2014) and “dealing proper,” i.e., making substantial profits (Potter 2009), are blurred. Biographically oriented studies have shown that regular drug users may switch from one type of distribution and/or acquisition to another, sometimes even within short periods of time (Jacinto et al. 2008; Werse and Müller 2016). Thus, an essential finding in the field of illicit drugs is the notion that “drug users” and “drug dealers” are far from being distinct categories. The highly social character of low-level drug distribution can be regarded as a more or less successful attempt to circumvent limitations of the prohibition regime, since many users may always “help out” friends with (either paid or unpaid) drugs if they can.

It can be argued that conditions for distribution of NPS differ from those for illicit drugs, given that they are not internationally controlled. In some countries, there have been licit shops that were selling psychoactive substances at least since the 1980s, e.g., “smart shops” in the Netherlands and “head shops” in several other countries. However, “it was observed that every time a profitable market had emerged for a product, it would be prohibited” (TNI/IDPC 2012, 4). More recently, the NPS market has rapidly changed through the introduction of many new synthetic drugs of different substance classes. This change started in the UK with a shortage of MDMA and cocaine, while at the same time, high street shops were selling legal mephedrone products that were welcome as an alternative to the popular stimulants (Measham et al. 2011). In early 2010, this practice came to an end with an

amendment in the Misuse of Drugs Act that outlawed mephedrone (McElrath & O'Neill 2011). Around the same time, Ireland (Criminal Justice (Psychoactive Substances) Act 2010; Van Hout and Brennan 2011; Van Hout and Brennan 2012) and Poland (Kapka-Skrzypczak et al. 2011; Bujalski et al. 2017) banned most or all NPS, using new “blanket ban” legislation, or extending the schedules of controlled substances, which also lead to a closure of “offline” shops. Other countries, for example Germany or Austria, followed a different strategy by implementing a special NPS legislation that refuses to criminalize users (BMJV 2016; NPSG 2013). In conclusion, across countries there is no uniform legal regime with regard to the supply side of the NPS market.

When turning to the existing evidence about the demand side of the NPS market, a few studies have asked users about how they obtain NPS. It should be noted that the comparability of these studies is somewhat limited, as scholars have applied different categories to investigate obtainment (buying and/or getting for free), and studies refer to different populations, different types of NPS as well as different market conditions. An early student survey in Scotland (Dargan et al. 2010) found that almost half of the mephedrone users sourced this drug from a “dealer,” while 9% referred to a “friend or family member,” and 11% got this paradigmatic NPS from the Internet (more than one quarter gave no answer). In contrast, the EU-wide Eurobarometer survey (European Commission 2014) found that more than two thirds of 15–24-year-olds with NPS 12-month prevalence “was given or bought” NPS from a friend (vs. 27% drug dealer, 10% specialized shop, 3% Internet). Since these studies are based on representative samples, with predominantly experimental or occasional users, figures may be different for targeted samples of more regular users. For example, in a German survey directed to NPS-experienced persons (unpublished data from survey presented in Werse and Morgenstern 2015), the majority (71%) of past-30-days users of herbal blends with synthetic cannabinoids stated that they bought these drugs from the Internet (vs. 28% from friends and 15% from a shop; the latter being officially banned in Germany at that time¹). Conversely, in an Australian survey, among the past 12-month-NPS (mainly psychedelics) users (Sutherland et al. 2017), the majority (62%) nominated friends or acquaintances as the main source (vs. 17% dealers and 9%, respectively, shops or online vendors). The latter study also found a high proportion of users who supply these drugs among their own friends. In Australia, many of those who buy NPS from the Internet, not only use “surface web” shops, but also “dark net” cryptomarkets (Van Buskirk et al. 2016). A US sample of previous synthetic cannabinoid users (Gunderson et al. 2014) showed particularly high levels for obtaining these NPS from friends (76%), but also from convenience stores (57%) and gas stations (43%)—the latter being attributed to special features of the US NPS market. Obtaining NPS online was as low as 5%.² With regard to mephedrone, qualitative research showed that there were (UK) users who appreciated the opportunity to buy it online (Measham et al. 2010), while in Northern Ireland, most users refrained from buying online due to concerns of anonymity (McElrath and O'Neill 2011).

Summing up, the scarce existing scholarly literature indicates that similar to the illicit drug market, much NPS procurement takes place in the form of social supply, while some users also turn to shops if they are available in the respective country, and few users buy NPS from online shops. However, figures may differ strongly between countries. Using data of a comparative European survey among NPS users, this paper aims to gain more evidence about different

¹ Respondents could choose more than one answer.

² Respondents could choose more than one answer.

modes of sourcing NPS, and differences between countries as well as between groups of users. The leading research questions are as follows: (1) To which extent do different groups of users get NPS for free? Which factors contribute to use for free vs. buying? (2) How prevalent is group-buying among different types of users? (3) Where do users buy NPS, and how are different sources distributed?

Methods

This study was undertaken within the remit of a transnational and interdisciplinary EU-funded research project (NPS-t; Benschop et al. 2017) undertaken in six EU countries: Germany, Hungary, Ireland, the Netherlands, Poland, and Portugal (see, Korf et al. 2018; Van Hout et al. 2018 for a detailed description of the study methods). The core research method was a survey among NPS users (translated into all relevant languages) that included questions about user demographic characteristics, prevalence, patterns of use of illicit drugs, and different types of NPS, motives for use, reported health and social problems associated with use of NPS, and modes of NPS procurement. Information was gathered on the use of five categories of NPS, modeled after the main psychoactive effects: synthetic cannabinoids or “herbal blends”; stimulants/empathogens/nootropics, including branded stimulants; psychedelics; dissociatives; other (e.g., benzodiazepines or opioids). Two of these categories, synthetic cannabinoids and stimulants/empathogens/nootropics, were merged from answers about these drugs as pure substance and/or branded mixtures.

Fieldwork occurred in 2016. Eligibility criteria for the survey were (1) recent NPS use (at least once in the past 12 months); (2) resident of the participating countries; and (3) 18 years or older. A targeted sampling methodology was chosen to reach NPS users in each of the three groups in the six participating countries:

1. Socially marginalized users (mostly recruited face-to-face in the street, at or through user organizations and care facilities, and mostly questioned by interviewer-administered questionnaires).
2. Users in night life (mostly recruited face-to-face on-site at clubs, raves and festivals, and through snowball sampling; either self-completed or interviewer-administered questionnaires).
3. Users in online communities (recruited by actively promoting the survey on internet fora and other online resources. Users in online communities were only given access to the online questionnaire).

For further details regarding the recruitment of respondents, see Korf et al. 2018.

The online questionnaire was set up with LimeSurvey®. It was available from June to October, 2016. Data from interviewer-administered questionnaires (on paper) were entered into the online survey module after the interview. By doing this, we got a single SPSS data file including all respondents after the survey was closed.

The data was screened/cross-checked for errors and analyzed using SPSS V.24. Analysis was conducted using anonymized data and involved descriptive statistics, including frequencies and percentages. Statistical tests included chi-square tests to assess differences in categorical data as well as ANOVA for mean comparison tests. In all statistical analyses, a two-sided significance level of 5% was used.

In order to get an overview on the NPS market situation in the respective country, researchers in the NPS-t project were asked to answer some specific questions on that issue (in addition to the information given in the country reports). The results of this inquiry are noted in the next section.

NPS Market Situation in the Six Participating Countries

To provide an impression about the NPS market situation in the participating countries, it has to be noted that the legal situation differs heavily.

While, to date, the Netherlands has outlawed only few NPS, in Poland, Hungary, and Ireland, a “blanket ban” policy was implemented after NPS use had become a significant problem. In Portugal, a large yet not complete number of NPS have been added to the narcotics law, and in Germany, the latter also took place during several years, followed by a specific generic NPS law in end-2016 that banned the most important substance groups of synthetic cannabinoids and phenethylamines (e.g., cathinones).

Table 1 shows an overview on the most important features of the NPS market in the six participating countries. These include whether “offline” (or “brick-and-mortar”) shops are selling NPS or whether such shops existed in the past, whether there are (surface web) online shops in the respective language that seem to target citizens of the country, and whether there is information about illicit dealers who sell NPS products in public or elsewhere.

In *Germany*, “head shops” were selling “herbal blends” until around 2011, when law enforcement started to apply medicines law to the (open) sale of NPS products. However, some shops might still sell such products (but not other kinds of NPS) under the counter. There is a significant range of German-language NPS online shops, also mostly focused on synthetic cannabis products. Dealers selling NPS in public have only been noted in some urban marginalized users’ settings in Bavaria, particularly in the city of Munich, and there is some evidence that such dealers also operate in a few urban night life settings. In *Hungary*,

Table 1 NPS market features in the participating countries

Country	“Offline” shops available?	“Offline” shops in the past?	Online shops directed to citizens of country?	Dealers selling NPS?
Germany	No, not officially	Yes, herbal blends, until 2011	Yes, several ones	Rarely
Hungary	No	Yes, for a short time (before 2012)	Not anymore since 2015	Not in public, but within networks of users
Ireland	No	Yes, shops and hatches, until 2010	No (Irish might use English language shops)	Some in large cities
Netherlands	In some “smart shops,” under the counter	Not substantially different from current situation	Yes, various shops, mainly stimulants	Probably not
Poland	Yes, hiding as “sex shops” or similar	Yes, large number, until 2010	Yes, several ones (although not allowed)	Yes: dealers, delivery services, taxi drivers...
Portugal	No	Yes, until 2013	No, not anymore	No evidence

there has been a range of “smart shops” which sold different NPS products in the cities, along with shops in rural areas, but without any signs that synthetic cannabinoids (“herbal”) and cathinones were sold there. From April 2012 onwards, generic NPS legislation has slowly been extended to virtually all NPS, and all of these shops as well as Hungarian language online shops have been closed down. NPS use in Hungary is mostly community-based with a large enough clientele of people who know each other, so there are no public dealers operating due to the high risk of illegality (see also, Kaló et al. 2017). In *Ireland*, an extensive network of “head shops” and hatches outside nightclubs selling NPS has been closed down after the ban on almost all NPS in 2010 (Van Hout and Brennan 2011, 2012). Due to its small population and the fact that English is one of the official languages, there never have been NPS online shops specifically directed to Irish users. There is anecdotal evidence that in urban marginalized drug users’ settings in major Irish cities such as Dublin and Cork, dealers sell NPS in public.

In the *Netherlands*, since many years there has been a network of “smart shops” selling psychedelic mushrooms and plant drugs. The policy of the Union of smart shops is not to sell NPS, but there are indications that some shops sell NPS (mainly stimulants) under the counter. Stimulants are also at the core of NPS offered by Dutch-language online shops. Before 4-fluormethamphetamine (4-FA) was banned—in May 2017; thus, after the user survey in the NPS-t project was conducted—online shops strongly focused on 4-FA, but switched to other substances ever since. At the time of the user survey, 4-FA was also the focus of delivery services in the illicit drug market. According to the Polish research team, *Poland* still has the most extensive NPS market among all participating countries. After the closure of around 1400 “smart shops” in 2010, the offline trade gradually moved to clandestine shops, called “sex shops,” “hot-spots,” “e-liquid shops,” or similar. Access is often limited to trusted customers. These clandestine shops sell all kinds of NPS. Also, there is still a range of Polish language NPS online shops. NPS are also sold by some “traditional” drug dealers, and there is evidence that delivery services exist, involving taxi drivers as couriers. In *Portugal*, all smart shops that sold various kinds of NPS were closed down in 2013. There was only one (Dutch) online resource offering NPS to Portuguese customers, which stopped selling these drugs in 2013, so that if Portuguese want to buy online, they have to turn to use foreign websites or cryptomarkets (Vale Pires et al. 2016; Henriques et al. 2018).

Survey Results

After data cleaning was completed, the final sample of the survey consisted of 3023 recent NPS users (having used any NPS in the last 12 months). See Korf et al. 2018 for information on recruitment strategies and the data cleaning process.

Respondent Profile

As shown in Table 2, the number of respondents in the three user groups differed substantially between countries, which was partially due to the fact that in some countries, NPS use is rare in some user groups, and partially due to the lack of online resources directed to domestic NPS users, and/or to limitations in gaining access to night life settings (see, Korf et al. 2018). This imbalance has to be taken into account when looking at the further results.

Table 2 Sample countries

Sample	Marginalized	Night life	Online	<i>Total</i>
Germany	23	98	542	<i>663</i>
Hungary	101	15	156	<i>272</i>
Ireland	48	3	11	<i>62</i>
The Netherlands	1	189	1000	<i>1190</i>
Poland	86	172	338	<i>596</i>
Portugal	7	170	63	<i>240</i>
<i>Total</i>	<i>266</i>	<i>647</i>	<i>2110</i>	<i>3023</i>

The italic row and column should simply emphasize that these are the total numbers

While there is little variation in terms of gender (total: 68.3% male), the user groups differed substantially with regard to several other sociodemographic characteristics. Marginalized users (average age: 33.5 years) were older than night life (25.7) and online users (23.6). The marginalized group was much more likely to live in homeless accommodation (32.3%) or “other” living arrangements (12.3%; mostly “sleeping rough”) than the other two groups, among which these categories sum up to less than 1%, respectively. Three quarters (75.7%) of the marginalized NPS users were unemployed, compared to 10.8% (night life) and 8.1% (online). Online users were most likely to be a student (43.7%; vs. marginalized: 3.1%; night life: 28.6%; all differences in this section: $p < .001$). For a detailed overview on sociodemographic features, see Van Hout et al. 2018; Korf et al. 2018.

Substance Use

All user groups reported high rates of use in the last-year for various illicit drugs, particularly cannabis (total: 83.4%), ecstasy/MDMA (69.7%), amphetamine (58.2%), and cocaine (38.5%). For all substances, there were significant differences between groups, most pronounced for heroin (marginalized: 39.9%, night life: 4.3%, online: 7.8%), crack cocaine (17.8% vs. 5.0% and 2.2%), and un-prescribed “downer” medicines/sedatives (50.6% vs. 15.1% and 19.9%). Not surprisingly, marginalized users also showed much higher rates of intravenous use in the previous 12 months (63.9% vs. 1.9% and 2–6%; all differences in this section: $p < .001$; see, Benschop et al. 2017).

Table 3 shows remarkable differences in the last to 12-month prevalence rates of different NPS categories between user groups, with marginalized users being much more likely to have used synthetic cannabis products and somewhat more likely to have used NPS (branded and/or pure) stimulants. Conversely, night life and online users alike reported much higher rates for

Table 3 Use of NPS categories in the last 12 months

Sample	Herbal blends a/o pure synthetic cannabinoids		Branded a/o pure stimulants		Psychedelics		Dissociatives		Other NPS	
	<i>p</i>		<i>p</i>		<i>p</i>		<i>p</i>		<i>p</i>	
Marginalized	61.3%	.000	76.7%	.000	14.7%	.000	13.9%	.867	6%	.000
Night life	31.7%		57.3%		48.5%		14.4%		8.2%	
Online	29.9%		72.8%		41.7%		13.6%		26.3%	

psychedelics use, while there were no significant differences with regard to dissociatives. The use of “other” NPS was most prevalent among the online users.

Differences between groups were even more pronounced for frequent use. For example, more than half of marginalized users with cannabinoid last-month prevalence used on a daily basis (54%), compared to 10.7% (night life) and 25.4% (online). Daily stimulant use among the last-month marginalized users was as high as 41.6%, while very few respondents from the other groups report daily use (1.3 and 2.3%).

NPS Procurement

While vast majorities in each user group reported having purchased NPS in the last 12 months, there were also notable proportions for other modes of procurement (Table 4). Three out of ten respondents got NPS for free, close to one quarter participated in a group-buy, a little less respondents obtained NPS from a friend who bought it with the respondent’s money, and less than one in ten respondents got NPS in exchange for something. Marginalized users were somewhat more likely to have bought NPS. Conversely, night life users were least likely to buy NPS, and, with almost half of respondents, showed the highest rates for getting NPS for

Table 4 Procurement of NPS (last 12 months) by user group

Sample	Marginalized <i>n</i> = 266	Night life <i>n</i> = 647	Online <i>n</i> = 2110	<i>Total</i> <i>n</i> = 3023	<i>p</i>
Obtaining NPS					
Purchased/bought	88.7%	70.9%	77.0%	76.7%	.000
Got it for free	35.0%	48.8%	23.2%	29.7%	.000
In exchange for something	19.5%	12.4%	6.2%	8.7%	.000
Friend purchased it with my money	15.0%	24.9%	20.5%	21.0%	.003
Group-buy	22.2%	30.4%	20.7%	22.9%	.000
Other	10.1%	0.8%	1.4%	1.2%	.471
Purchasing NPS					
At a shop	21.8%	12.4%	9.3%	11.1%	.000
On the Internet	12.0%	20.7%	35.3%	30.1%	.000
From a private dealer	51.5%	32.1%	16.9%	23.2%	.000
From a club dealer	3.8%	9.1%	4.0%	5.1%	.000
From a street dealer	33.5%	8.7%	7.1%	9.7%	.000
From a friend	15.8%	36.9%	34.7%	33.5%	.000
Other	0%	0.3%	0.5%	0.4%	.565
n/a (did not purchase)	11.3%	29.1%	23.0%	23.3%	.000
Purchasing NPS on the Internet					
Dedicated shop for NPS	9.8%	14.4%	30.4%	25.2%	.000
Internet forum	2.3%	5.1%	3.4%	3.6%	.054
Social media	1.5%	2.2%	0.9%	1.2%	.035
Darknet marketplace	1.1%	3.2%	6.8%	5.5%	.000
Darknet vendor without marketplace	1.1%	1.5%	2.2%	2%	.319
Other	0%	1.1%	0.8%	0.8%	.245
n/a (did not purchase on the Internet)	88.0%	79.3%	64.7%	69.9%	.000
Getting NPS for free					
Got is as a gift	15.0%	16.2%	10.5%	12.1%	.000
Someone shared with me	29.3%	41.9%	18.3%	24.3%	.000
Other	0.8%	0.2%	0.4%	0.4%	.387
n/a (did not get for free)	65.0%	51.2%	76.8%	70.3%	.000

The italic row and column should simply emphasize that these are the total numbers

free. Night life users were also most likely to have obtained NPS in a group-buy or from a friend who had purchased NPS with their money.

Overall, the most frequently used mode of purchase was buying from friends. This was the case for one third of the total sample, closely followed by buying on the Internet. Nearly one in four respondents bought from private dealers, and around one in ten, respectively, purchased NPS at a shop or from street dealers. Very few bought NPS from club dealers (Table 4).

Marginalized users were much more likely to buy from street dealers, private dealers, or shops than the other two groups. Night life respondents were more likely to buy from private dealers and club dealers than online respondents, while the latter showed the highest rates for buying from the Internet (which was lowest among the marginalized group). Buying from friends was much more prevalent among both online and night life respondents than in the marginalized group (Table 4).

Users who purchased NPS in shops (one in ten of total sample) and on the Internet (three in ten) were asked where exactly they bought them. With regard to purchasing at a shop, smart shops were most frequently reported (6.1% of total sample), followed by head shops³ (2.0%), while none of the other categories (sex shop, kiosk, casino) reached 1% of the total sample. Because of low counts, no statistical comparisons between groups could be computed (figures not presented in Table 4). On the Internet, dedicated online shops for NPS were by far the most prevalent type of source, and were reported by one quarter of the total sample. Much less respondents reported having bought from dark net marketplaces, internet forums, or dark net vendor shops (Table 4). Online users were much more likely to purchase NPS from dedicated shops, and marginalized users were least likely to buy NPS at a darknet market place.

Three out of ten respondents reported getting NPS for free. Sharing NPS was reported twice as often as getting it as a gift. Sharing drugs was most frequently reported by night life users, and least by online users, while marginalized users took an intermediate position.

Exchanging NPS for something was not a common way to procure these substances. In the total sample, it was reported by less than one out of ten respondents, but more often by marginalized users than night life users, and particularly online users (Table 4). Overall, exchanging NPS for other (traditional) drugs scored highest (5.2% of total sample), followed by other NPS and common goods (both 2.8%). Work/service and sex were reported by around 1% (figures not presented in Table 4 due to low counts).

Modes of purchasing NPS revealed striking differences between countries (Table 5). Findings should be understood within the context of differences in market conditions across the participating countries, and differences in numbers of types of NPS users represented in the country samples. Nonetheless, they provide an insight into the cross-national variation in purchasing practices at user level. German respondents showed by far the highest rate for buying NPS on the Internet, Hungarian users were most likely to buy from private dealers, street dealing was most common in Ireland and Hungary, and Dutch users most often purchased from friends. In Poland, purchasing NPS on the Internet and from private dealers were the most common sources, and in Portugal, these were private dealers and friends.

³ While “smart shop”—a term that at the time of the survey was almost exclusive to the Netherlands among all participating countries—usually refers to shops that focus on legal psychoactive substances, “head shops” are focused on drug paraphernalia.

Table 5 Purchase of NPS by country

	DE <i>n</i> = 663	HU <i>n</i> = 272	IR <i>n</i> = 62	NL <i>n</i> = 1190	PL <i>n</i> = 596	PT <i>n</i> = 240	<i>p</i>
Purchasing NPS							
At a shop	6.0%	4.8%	24.2%	8.4%	24.2%	9.6%	.000
On the Internet	61.4%	16.5%	12.9%	16.9%	37.4%	11.3%	.000
From a private dealer	16.4%	47.1%	29.0%	12.4%	36.1%	35.0%	.000
From a club dealer	2.9%	7.0%	0.0%	3.8%	8.1%	9.2%	.000
From a street dealer	3.8%	21.3%	43.5%	9.1%	7.0%	14.2%	.000
From a friend	18.7%	14.3%	17.7%	51.3%	25.2%	32.9%	.000
Other	0.3%	0.0%	0.0%	0.3%	1.0%	0.0%	.148
n/a (did not purchase)	23.2%	25.0%	12.9%	22.0%	23.3%	30.4%	.034

Discussion

The data presented here comes from a transnational and interdisciplinary research project undertaken by researchers from six EU countries: Germany, Hungary, Ireland, the Netherlands, Poland, and Portugal. Limitations of the data center on the varied composition of country samples: in most of the participating countries, there was at least one of the three groups with few or very few participants. As a result, the marginalized group is dominated by Hungarian, Polish, and to a certain degree Irish respondents, and the online group by Dutch, German, and Polish respondents. Barely any night life users came from Ireland or Hungary. Thus, it should be kept in mind that user group comparisons are actually group comparisons from certain countries. On the other hand, country comparisons are heavily biased by the varying group composition. Other limitations with regard to recruitment include different efforts to find users in certain groups and different levels of availability of online resources promoting the survey in different countries (see also, Korf et al. 2018).

However, the fact that NPS users from certain groups were hard to find in some countries can be regarded as a first result of the study, which mostly fits with the assessment of national experts (Benschop et al. 2017). For instance, the use of NPS among marginalized users does not seem to be prevalent at all in the Netherlands, while in Germany (Müller et al. 2017) and Portugal (Henriques and Silva 2017; Henriques et al. 2018), it is limited to small geographical areas, and, on the other hand, it was most likely in Ireland and Hungary. These findings might indicate that particularly compulsive NPS use may be more likely where illicit drugs are hard to obtain. On the other hand, both countries have a repressive approach in NPS legislation, so it might be that, in some way, this contributed to a shift in NPS use to marginalized populations.

Levels of use of particular types of NPS varied significantly between the three groups of users in our study, with marginalized respondents showing much higher rates of frequent use of NPS stimulants and cannabinoids than night life and online users. While marginalized users are generally more likely to show frequent patterns of use than recreational drug users of different types, it is remarkable that in our survey these two NPS classes were by far most often reported by marginalized users, while for example synthetic opioids were generally mentioned very rarely.

Nearly one third of respondents reported getting NPS for free in the prior 12 months, either as a gift or (more frequently) by sharing. Studies among users of illicit drugs (Hamilton 2005; Caulkins and Pacula 2006; Coomber and Turnbull 2007; Werse and Bernard 2016) reported somewhat higher proportions for these kinds of “free use.” This might point to a more social character of the use and particularly the distribution of illicit drugs at user level when compared

to NPS. This hypothesis is in line with our finding that “only” around one third of the participants reported purchasing NPS from a friend, while this mode of procurement usually applies to around two thirds or even more in samples of occasional or regular recreational users of illicit drugs (Coomber and Turnbull 2007; Werse 2008; Mravčík et al. 2009; Werse and Bernard 2016).

Although we did not investigate the “original” source of the NPS, the significant numbers of users who participated in a “group-buy” and/or let a friend buy it might indicate that online vendors play a significant role in this complex: concerns of anonymity or the fact that larger amounts of NPS are usually much cheaper per unit than small amounts might lead to considerable numbers of users who “source out” online buying. Particularly for occasional users, this mode of “social online supply” might also simply be more convenient. We would encourage to further explore the (indirect) role of online sales in social supply in future research.

Compared to other surveys on the issue (European Commission 2014; Gunderson et al. 2014; Burns et al. 2014; Sutherland et al. 2017), we found relatively high rates of NPS users buying directly from online suppliers, with almost one third of respondents. Although it is not surprising that this applies more to the online users in our survey, there are sizeable proportions of respondents in the two other groups who purchase NPS on the Internet as well, including 12% of marginalized users. With more than 60%, the proportion of online buyers in the German sample was much higher than in any other country in our study. To some degree, the high importance of online buying among German users (see also, Werse and Morgenstern 2015) can be traced back to the presence of a substantial number of German-language online shops, resulting in competitive retail prices. Whether this sufficiently explains the dominance of nonbrokered online buying among German respondents, is a challenging question for further research. In any case, it appears that the relatively high online availability of NPS in Germany has not lead to high prevalence rates among young people—on the contrary, reported rates are relatively low (European Commission 2014), except for some regions with low availability of illicit drugs and rather repressive approaches in drug policy (Müller et al. 2017).

On the other hand, the multiple options for purchasing NPS in Poland (online shops as well as offline shops, delivery services and various types of dealers) go along with relatively high prevalence rates (Dąbrowska et al. 2017), and also a relatively high usage of all these options among NPS users—although, different from Germany, practically every possession of NPS substances is outlawed. In Hungary and Ireland, where the legal conditions regarding NPS are similar to Poland, but much less options for purchasing exist, more users have turned to the options known from the illicit drugs market. Finally, our finding that friends play the strongest role in purchasing NPS in the Netherlands, and to a lesser degree also in Portugal, might partly be explained by the fact that marginalized users from these countries were hardly present in the survey.

Generally, the three groups of users in our research differ significantly from each other in modes of purchasing NPS, with marginalized respondents being much more likely to buy from dealers and less likely to use friends or the Internet. This observation is probably not much of a surprise, as marginalized NPS users much more often use traditional “street drugs” (e.g., heroin, crack cocaine) that are commonly bought from dealers. However, it is notable that the range of sources used by marginalized users is still relatively wide. People who are characterized by spending a large part of the day with drug use, the search for money and drugs, do not seem to depend completely on sellers in their direct environment. This might be a special feature of the NPS market.

Overall, we found many similarities with how illicit drugs are purchased. One reason could be that NPS, although not criminalized in international drug conventions, have been banned more and more at national level. The fact that the majority of the NPS users researched here are also users of illicit drugs, as well as the blurred boundaries between the modes of supply (with a quite prominent role of dealers as a “typical” mode for buying illicit drugs) support the assessment of NPS as “not particularly special” (Potter and Chatwin 2017).

In fact, the types of NPS that certain groups use often do not differ much from illicit equivalents prevalent in such groups, with some exceptions. While the heavy use of stimulants has been a common feature among marginalized users before, e.g., in Central and Eastern European countries, the rise of synthetic cannabinoids in such user populations is a new phenomenon. In most of the countries researched here, this cannot be traced back to a particularly easy availability of these substances, but rather to the fact that if available, these substances can be used to get a cheap and intense intoxication, with often severe health consequences (Van Hout et al. 2018). This development of synthetic cannabinoids becoming a “drug of the poor” (see also, Blackman and Bradley 2017), sourced independently from their legal status, should be further researched in the future.

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Affiliations

Bernd Werse¹ • Annemieke Benschop² • Gerrit Kamphausen¹ • Marie-Claire van Hout³ • Susana Henriques⁴ • Joana Paula Silva⁴ • Katarzyna Dąbrowska⁵ • Łukasz Wieczorek⁵ • Michał Bujalski⁵ • Katalin Felvinczi⁶ • Dirk Korf²

Annemieke Benschop
w.j.benschop@uva.nl

Gerrit Kamphausen
kamphausen@em.uni-frankfurt.de

Marie-Claire van Hout
m.c.vanhout@lpmu.ac.uk

Susana Henriques
susana_alexandra_henriques@iscte-iul.pt

Joana Paula Silva
jpaulapbrsilva@gmail.com

Katarzyna Dąbrowska
dabrow@ipin.edu.pl

Łukasz Wieczorek
lwieczorek@ipin.edu.pl

Michał Bujalski
bujalski@ipin.edu.pl

Katalin Felvinczi
katalin.felvinczi@gmail.com

Dirk Korf
d.j.korf@uva.nl

¹ Centre for Drug Research, Goethe-Universität, Frankfurt, Germany

² Bongor Institute, University of Amsterdam, Amsterdam, Netherlands

³ Public Health Institute, Liverpool John Moores University, Liverpool, UK

⁴ Centre for Research and Studies in Sociology, University Institute of Lisbon, Lisbon, Portugal

⁵ Institute of Psychiatry and Neurology, Warsaw, Poland

⁶ Institute of Psychology, Eötvös Loránd University, Budapest, Hungary