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Vytvorenie na adjektívach založenej metódy na meranie prototypov konzumentov alkoholu medzi vysokoškolákmi

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VÝCHODISKÁ: *Predchádzajúce výskumy preukázali vplyv prototypov na konzumáciu alkoholu, avšak zväčša boli zamerané na všeobecné prototypy konzumentov alkoholu. V tejto súvislosti dokonca chýbajú metodiky, nakoľko autori využívajú rôzne zoznamy adjektív pri popise prototypov konzumentov alkoholu.* **CIELE:** *(1) preskúmať, ktorými adjektívami vysokoškoláci popisujú prototypy (abstinenta, sociálneho a ťažkého konzumenta alkoholu) a vytvoriť metodiku merajúcu tieto prototypy; (2) načrtnúť faktorovú štruktúru vytvorenej metodiky.* **METÓDY:** *Prezentované sú dve štúdie. Štúdia 1 – Dáta boli zozbierané od 184 slovenských vysokoškolákov (54,9% žien; M_{vek}=21,3; SD=1,77). Respondenti odpovedali na 3 otvorené otázky zisťujúce adjektíva, ktorými vysokoškoláci popisujú prototypy konzumentov (abstinenta, sociálneho a ťažkého konzumenta). Na analýzu dát bola využitá kvalitatívna a frekvenčná analýza. Štúdia 2 – Dáta boli zozbierané od 422 slovenských vysokoškolákov (55,9% mužov; M_{vek}=21,06; SD=0,10). Respondenti hodnotili 27 adjektív na 7-bodovej škále vo vzťahu k trom prototypom konzumentov alkoholu. Na analýzu dát bola využitá faktorová analýza.* **VÝSLEDKY:** *Vytvorená bola metodika merajúca prototypy konzumentov alkoholu (abstinenta, sociálneho a ťažkého konzumenta), ktorá pozostávala z inštrukcie, 27 adjektív pre každý prototyp, ktoré boli hodnotené na 7-bodovej škále. Faktorovou analýzou boli vyextrahované 3 faktory pre každý prototyp: extraverzia, neuroticizmus, svedomitosť.* **ZÁVERY:** *Prínosom je vytvorenie metodiky merajúcej prototypy konzumentov alkoholu s troma vyextrahovanými faktormi, ktoré môžu byť použité v ďalších štúdiách a analýzach napr. v SEM pre komplexné vysvetlenie konzumácie alkoholu vysokoškolákov. Potrebné je preskúmať prototypy konzumentov alkoholu v širšom kontexte s ďalším využitím v programoch prevencie s cieľom zmeny hodnotenia odlišných prototypov konzumentov alkoholu, ktorý môže byť mediátorom efektívnosti programov prevencie.*

KĽÚČOVÉ SLOVÁ: PROTOTYPY KONZUMENTOV ALKOHOLU – SLOVENSKÍ VYSOKOŠKOLÁCI – METODIKA

The Development of an Adjective-based Method for Measuring Drinker Prototypes among University Students

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BACKGROUND: Previous research has shown that drinker prototypes influence alcohol use, although it has mostly addressed this problem on a general level. A comprehensive method for measuring drinker prototypes that consists of lists of adjectives describing each prototype is very much needed. **AIMS:** (1) to explore which adjectives university students use to describe drinker prototypes (abstainer, social drinker, and heavy drinker) and to create a method measuring drinker prototypes; (2) to establish the factor structure of this drinker prototype method. **MEASUREMENTS AND PARTICIPANTS:** Two studies are presented. *Study 1* – the data was collected from 184 Slovak university students (54.9% females; M_{age}=21.3; SD=1.77). The respondents answered three open questions regarding the adjectives which they would use to describe different drinker prototypes (abstainer, social drinker, and heavy drinker). Qualitative and frequency analyses were used for data analysis. *Study 2* – the data was collected from 422 Slovak university students (55.9% males; M_{age}=21.06; SD=.10). The respondents evaluated 27 adjectives on a 7-point scale in relation to three drinker prototypes. Principal axis factoring was used for the data analysis. **RESULTS:** A method measuring drinker prototypes (abstainer, social drinker, and heavy drinker) was created. It consisted of instructions followed by a list of 27 adjectives for each drinker prototype, which were evaluated on a 7-point scale. Principal axis factoring extracted three factors representing the drinker prototypes: extraversion, neuroticism, and conscientiousness. **CONCLUSIONS:** A method measuring drinker prototypes has been developed and it was found that it consists of three factors which can be used for further analysis, e.g. SEM for a comprehensive analysis of university students' alcohol use. It is important that drinker prototypes are explored in future research within a wider context. The findings thus obtained could then be used and further studied directly in prevention programmes which focus on changing perceptions of drinker prototypes. In such a case, drinker prototypes should be addressed with regard to their mediating role in the effectiveness of such prevention programmes.

KEY WORDS: DRINKER PROTOTYPES – SLOVAK UNIVERSITY STUDENTS – METHOD

● 1 INTRODUCTION

Alcohol use reaches its highest prevalence among university students (e.g. Stone, Becker, Huber, & Catalano, 2012; Menagi, Harrell, & June, 2008), many of whom engage in a specific pattern of alcohol use, i.e. binge drinking (or hazardous drinking), defined as the consumption of five or more drinks per occasion (four or more for women) (Dowdall & Wechsler, 2002; Foster, Bass, & Bruce, 2011). A university environment seems to be associated with relatively high alcohol use (Slutske, Hunt-Carter, Nabors-Oberg, Sher, Bucholz, Madden et al., 2004) as a result of the "university lifestyle", which offers many opportunities for drinking on various occasions such as celebrations or parties (e.g. Stone et al., 2012; Menagi, Harrell, & June, 2008; Bass, Bruce & Lee, 2013; Vaughan, Corbin, & Fromme, 2009). About 66% of university students in Slovakia are engaged in binge drinking (Šebeňa, Mikolajczyk, & Orosová, 2009). Slovakia, according to the WHO, belongs among those European countries where alcohol use is above average (Škrabalková, 2013) and where young people (e.g. university students) are most at risk (Pétiová & Bieliková, 2002), with many negative consequences (e.g. Corbin, Iwamoto, & Fromme, 2011; Ham & Hope, 2003). As a result, it is necessary that future research examines different factors behind university students' alcohol use, as well as exploring possible associations between these factors and their effects on alcohol use in a broader context. The psychosocial factors pertaining to alcohol use among university students include demographic variables, personality, drinking history, alcohol expectancies, drinking motives, stress and coping, activity involvement, and peer and family influence (Ham & Hope, 2003). Stone et al. (2012) distinguish risk and protective factors and add other factors such as social norms, the availability of alcohol, family relations and management, attitudes, and religious involvement. Previous studies have mainly focused on some of the factors, such as consequences (e.g. Read, Wardell, & Bachrach, 2013; Lewis & Neigboors, 2006), social norms (e.g. Pischke, Zeeb, van Hal, Vriesacker, McAlaney, Bewick et al., 2012; Lewis, 2008), expectancies (e.g. Fearnow-Kenny, Wyrick, Hansen, Dyreg, & Beau, 2001; de Ridder & de Witt, 2006; Hull & Slone, 2004), personality traits (e.g. Ham & Hope, 2003; Sanderson, 2012; Dolejš, 2010), and motives (e.g. Mallett, Bachrach, & Turrisi, 2009; Yarnell, Brown, Pasch, Perry, & Komro, 2013). Although drinker prototypes are among the factors relating to alcohol use (e.g. MacArthur in Stone et al., 2012; Teunissen, Spijkerman, Larsen, Kremer, Kuntsche, Gibbons et al., 2012), fewer studies have focused on this concept relative to other alcohol use factors. In a literature search conducted using the "Web of Science" database and the key term "drinker prototype", only 36 studies published after 2000 were identified (e.g. van Lettow, de Vries, Burdorf, Boon, &

van Empelen, 2015; Teunissen, Spijkerman, Cohen, Prinstein, Engels, & Scholte, 2014; van Lettow, Vermunt, de Vries, Burdorf, & van Empelen, 2013b; Teunissen et al., 2012; Litt & Stock, 2011; Lane, Gibbons, O'Hara, & Gerrard, 2011; Spijkerman, Larsen, Gbbons, & Engels, 2010). However, none of these studies used a comprehensive set of adjectives which could be used for measuring drinker prototypes. Therefore, it is important to develop such a measure and it is one of the objectives of our research study.

Drinker prototypes influence university students' alcohol use but this happens in association with, and in the context of, other factors. For example, studies point out that normative beliefs are the key element in the formation of drinker prototypes (Teunissen et al., 2014) and that descriptive normative beliefs have a significant indirect influence on alcohol use through more favourable prototypes of alcohol users (Litt & Stock, 2011). These associations are based on social comparison processes. Other studies show that drinker prototypes affect willingness to engage in drinking behaviour according to the prototype willingness model (Gerrard, Gibbons, Houlihan, Stock, & Pomery, 2008). Therefore it is necessary to explore drinker prototypes in the context of various factors relating to alcohol use. However, in the first step it is necessary to construct a method for measuring drinker prototypes. This can be achieved by using sophisticated analyses of adjectives which have already been used in different studies, as well as by adding those used among Slovak university students, and identifying the underlying factorial structure.

It can be assumed that a prototype represents an objective category since it is defined by possessing most of the features of its given category and only a few of these features can overlap with other categories (Zimmermann & Sieverding, 2010). People have prototypes of person-in-situation categories, which contain knowledge of the typical behaviour of typical people in particular settings (Zimmermann & Sieverding, 2010). In relation to alcohol use, drinker prototypes are defined as the social constructs of these drinkers (Teunissen et al., 2012). Many authors understand drinker prototypes exclusively as very general stereotypes (typical drinker) or as extreme cases (e.g. Gibbons, Gerrard, & Lane, 2003; Gerrard, Gibbons, Reis-Bergan, Trudeau, Vande Lune, & Buunk, 2002). Only a few studies have also used the concept of a binge drinker prototype (Todd & Mullan, 2011; Norman, Armitage, & Quigley, 2007): a binge drinker is a person who engages in binge drinking. There are also some authors who distinguish between specific drinker prototypes. Some authors distinguish five drinker prototypes: abstainer, moderate drinker, heavy drinker, tipsy, and drunk prototypes (van Lettow, de Vries, Burdorf, Conner, & van Empelen, 2014; van Lettow et al., 2013b). The majority of the studies, however, distin-

guish three drinker prototypes: abstainer, social (or moderate) drinker, and heavy drinker (Spijkerman et al., 2010; Teunissen et al., 2012; van Lettow, de Vries, Burdorf, Norman, & van Empelen, 2013a; Walton & Roberts, 2004). In this study we focus on the distinction between these three drinker prototypes, which are based on the level of intoxication, ranging from abstaining (abstainer prototype), to moderate or responsible drinking (social drinker), to heavy or excessive drinking (heavy drinking). The studies under review usually provided no clear definition of the drinker prototypes for the respondents (e.g. van Lettow et al., 2014) and it is very important to realise that individuals may differ significantly in their understanding of these drinker prototypes. Therefore, an explicit definition of each prototype is included in our measure. An abstainer is a person who never or almost never drinks alcohol. A social drinker is defined as a person who drinks three to five alcoholic drinks when accompanied by other people (to some extent, this also corresponds with the definition of binge drinking). A heavy drinker is a person who regularly drinks more than eight alcoholic drinks on one occasion (Spijkerman et al., 2010; Teunissen et al., 2014). As described above, different drinker prototypes may, together with other factors, influence behavioural decisions and subsequently one's own behaviour (Teunissen et al., 2012). But this might explain why university students drink alcohol at social events and generally find it a popular part of their social activities (Teunissen et al., 2012). Numerous studies have shown associations between positive (favourable) drinker prototypes and negative prototypes of abstainers and current alcohol use and intentions regarding future alcohol use among university students (Zimmermann & Sieverding, 2010; Teunissen et al., 2012). Additional studies in natural settings have shown that a positive perception of heavy drinkers can lead to alcohol use (Spijkerman et al., 2010). In general, studies have shown that the abstainer and social drinker prototypes are perceived as more favourable than the heavy drinker prototype (Spijkerman et al., 2010).

The two studies described below focus on different drinker prototypes. We assume that the typical pattern of alcohol use among university students (binge drinking) is not associated with different drinker prototypes in the same way (e.g. the stronger association with the social drinker prototype). Therefore, we used the most frequently applied differentiation of drinker prototypes – abstainer, social drinker, and heavy drinker – which are clearly defined and distinguish between different users of alcohol. These drinker prototypes will be explored in relation to alcohol use among Slovak university students in further research studies with the aim of applying them in prevention programmes focusing on the reduction of alcohol use among university students.

Thus, the aims of this contribution, consisting of two studies (qualitative and quantitative), were: (1) to explore the adjectives which are used to describe drinker prototypes by Slovak university students, as well as those which were derived from existing studies; (2) to construct a method for measuring these drinker prototypes (selecting appropriate adjectives, with the instructions and scale being adopted from previous studies), and (3) to establish its factor structure.

● 2 STUDY 1

● 2 / 1 Aims

The aims of the study were to explore which adjectives Slovak university students use to describe the three drinker prototypes (abstainer, social drinker, and heavy drinker) and to construct a method for measuring these drinker prototypes.

● 2 / 2 Method

Sample and procedure

The data was collected by means of an online questionnaire in 2013. 184 Slovak university students (54.9% females; M_{age} = 21.3; SD = 1.77) from three universities (35.3% PJ Safarik University in Košice, 15.8% the Technical University of Košice, and 48.9% Comenius University in Bratislava) participated in Study 1. Most of the participants were in the third year of their studies (year of studies: 1st [25.5%; n=47]; 2nd [16.3%; n=30]; 3rd [39.1%; n=72]; 4th [5.4%; n=10]; 5th [13.0%; n=24]; other [0.5%; n=1]).

The selection of the study sample was based on the snowball technique, which is one of the most frequent forms of sampling in qualitative studies (Hendl, 2008). We selected five university students at each university in different years of their studies. These students then recommended other respondents and forwarded the online questionnaire to their friends and classmates at their universities. We analysed the data from the university students simultaneously with the ongoing data collection. When it seemed that new adjectives would be generated by other respondents, the first university students (those who were chosen by us at the start) were contacted with the requirement to distribute the online questionnaire among other students. We stopped the data collection when we assumed that an increase in the number of respondents would not lead to new adjectives which could be added to the final list.

Critics of qualitative studies claim that their results are based only on the subjective conclusions of the researchers. We therefore used the principle of triangulation, which proposes that objectivity can be strengthened by using different sources of information (Hendl, 2008), and we com-

pared our findings with the previous studies (Zimmermann & Sieverding, 2010; Teunissen et al., 2012; Spijkerman, van den Eijden, Vitale, & Engels, 2004; van Lettow et al., 2014; van Lettow et al., 2013a) and added adjectives that were not mentioned by our research sample.

Measures

Socio-demographic data concerning gender, age, university, and year of study.

Similarly to the previous study, *drinker prototypes* were represented by abstainer, social drinker, and heavy drinker and were measured by three open questions (van Lettow et al., 2013b): *"Which adjectives do you think describe a typical abstainer / typical social drinker / typical heavy drinker the best?"* Prior to these questions, the respondents were given the following instructions about prototypes (taken from the previous studies (van Lettow et al., 2014; Teunissen et al., 2014; Todd & Mullan, 2011; Norman, Armitage, & Quigley, 2007)): *"The next part concerns how we imagine other people. For example, we have an image of a typical film star ("beautiful and wealthy") or of a typical grandmother ("kind and affectionate"), although not every film star and not every grandmother has these characteristics. But many of them do have some of these typical characteristics. Therefore, think about the characteristics of students at your university who drink and those who do not drink alcohol."* This part included the definitions of an abstainer *("someone who never or almost never drinks alcohol")*, social drinker *("someone who drinks three to five alcoholic drinks in the company of other people")*, and heavy drinker *("someone who regularly drinks more than eight alcoholic drinks on one occasion"),* which were also adapted from the studies by Spijkerman et al. (2010) and Teunissen et al. (2014). The respondents were asked to produce lists of different adjectives related to each drinker prototype.

● 2 / 3 Procedures and statistical analysis

Regarding the objectives in Study 1, qualitative analysis was used to explore which adjectives were used to describe each drinker prototype – typical abstainer, social drinker, and heavy drinker – among Slovak university students. Frequency analysis was used for the extraction of the adjectives which were most frequently used to describe the drinker prototypes. These adjectives were then used in the method for measuring the drinker prototypes in the subsequent study. In this study, the adjectives were presented to four expert referees for evaluation as to whether the adjectives were positive, neutral, or negative. This was done in order to establish which adjectives were negative and needed to be reversed. The total score for each drinker prototype can thus be obtained and it can be further used for individual analysis. A higher score represents more positive perceptions of a given drinker prototype. When all the refer-

ees or at least the majority of them (three referees) concurred in their evaluations, the adjectives were categorised as positive, neutral, or negative. When the referees did not concur, the particular adjective was excluded. While the experts had the opportunity to label adjectives as neutral, they did so only for those adjectives which ended up being evaluated ambiguously where different experts did not concur and these adjectives had to be excluded. Thus, a group of neutral adjectives could not be constructed.

● 2 / 4 Results

Firstly, a detailed record of the answers to the open questions (*"Which adjectives do you think describe a typical abstainer / social drinker / heavy drinker the best?"*) for each drinker prototype was presented. Next, a frequency table for each drinker prototype was prepared. The most frequent answers are shown in *Table 1*.[1] Characteristics such as *"direct, inexperienced, headstrong, noisy,* and *helpful"* were mentioned by university students only once or twice and thus were not included in the table.

On the basis of the qualitative analysis and frequency analysis, a list of 21 adjectives was created. In comparison to previous studies, new adjectives were found in our research sample – *"rational, purposeful, intelligent, scrupulous"*. We hypothesised that these adjectives were associated with our sample of Slovak university students and that there would be some socio-cultural differences. Therefore we used the principle of triangulation, which was described above, and compared our results with the findings of other authors (e.g. Zimmermann & Sieverding, 2010; Teunissen et al., 2012; Spijkerman et al., 2004; van Lettow et al., 2014; van Lettow et al., 2013a) and additional adjectives which were not mentioned by our sample – *"smart, favourable, immature, careless, considerate, sociable, naive, confused"* – were added.

In the next phase, a list of 29 characteristics designated for evaluating the drinker prototypes (abstainer, social drinker, and heavy drinker) was created. These adjectives were evaluated by four expert referees regarding whether the adjectives were positive, neutral, or negative. The final list of adjectives included 18 positive characteristics and nine negative ones. Two adjectives which received ambiguous evaluation from the referees were excluded from the final list. The final list of 27 adjectives is shown in *Table 2* and constitutes part of the method (the list of evaluative adjectives) for measuring drinker prototypes. This method was further used and explored in Study 2.

1/   We also use the adjectives in the Slovak language, as these adjectives were found among Slovak university students in the Slovak language and it is important to translate them from the original language for use in different socio-cultural environments.

Table 1 / Tabulka 1

Frequency of adjectives for each drinker prototype

Frekvencia adjektív pre každý prototyp konzumenta alkoholu

ABSTAINER		SOCIAL DRINKER		HEAVY DRINKER	
adjective	number of mentions	adjective	number of mentions	adjective	number of mentions
boring [nudný]	12	witty [vtipný]	24	aggressive [agresívny]	13
rational [rozumný]	10	normal [normálny]	10	dependent [závislý]	12
purposeful [cieľavedomý]	10	happy [veselý]	7	unattractive [neatraktívny]	7
reliable [spoľahlivý]	9	communicative [komunikatívny]	6	unhappy [nešťastný]	6
health-conscious [dbajúci o zdravie]	9	friendly [priateľský]	5	unreliable [nespoľahlivý]	6
reclusive [utiahnutý]	9	aggressive [agresívny]	5	impulsive [impulzívny]	5
intelligent [inteligentný]	8	relaxed [uvoľnený]	4	irrational [nerozumný]	5
scrupulous [zásadový]	7	easily influenced [ovplyvniteľný]	4		
not easily influenced [neovplyvniteľný]	5	not self-confident [nesebavedomý]	4		
fearful [ustráchaný]	5				
friendly [priateľský]	4				

Table 2 / Tabulka 2

The final list of 27 adjectives of the method for measuring drinker prototypes

Konečný zoznam 27 adjektív metódy na meranie prototypov konzumentov alkoholu

ADJECTIVES		
1. rational [rozumný]	10. reclusive* [utiahnutý]	19. impulsive* [impulzívny]
2. purposeful [cieľavedomý]	11. fearful* [ustráchaný]	20. smart [šikovný]
3. reliable [spoľahlivý]	12. witty [vtipný]	21. popular [obľúbený]
4. health-conscious [dbajúci o zdravie]	13. happy [veselý]	22. immature* [nezrelý]
5. intelligent [inteligentný]	14. communicative [komunikatívny]	23. careless* [neopatrný]
6. scrupulous [zásadový]	15. aggressive* [agresívny]	24. considerate [ohľaduplný]
7. not easily influenced [neovplyvniteľný inými]	16. self-confident [sebavedomý]	25. sociable [spoločenský]
8. friendly [priateľský]	17. independent [nezávislý]	26. naďve* [naivný]
9. boring* [nudný]	18. attractive [atraktívny]	27. confused* [zmätený]

*adjectives with negative evaluation

● 3 STUDY 2

● 3 / 1 Aims

The aim of Study 2 was to explore the underlying factor structure of the drinker prototype (abstainer, social drinker, and heavy drinker) method.

● 3 / 2 Method

Sample and procedure

The data was collected using an online questionnaire from October to November 2014. 422 Slovak university students (55.9% males; M_{age}=21.06; SD=0.10) from two universities (50.9% PJ Safarik University in Kosice and 49.1% the Technical University of Kosice) participated in Study 2. On average, the participants were mostly in the first year of their studies (year of studies: 1st [47.74%; n=201]; 2nd [10.45%; n=44]; 3rd [8.31%; n=35]; 4th [7.84%; n=33]; 5th [23.52%; n=99]; other [2.14%; n=9]) and their average monthly income was EUR 133.23 (SD = 129.44).

The university teachers at the two universities were asked to participate in the data collection process. They were selected on the basis of availability, which was checked on the respective timetables of classrooms

equipped with computers at each university. The schedule is available on the official websites of the universities. After agreement with a particular university teacher (about 50% of the teachers who were contacted), the students were contacted during their lessons and asked to participate in the study. All the students who had their lessons in classrooms equipped with computers were asked to participate. The students were given an information sheet, including a description of the scope of the study and basic information about the study, and a copy of the questionnaire. The link for the online questionnaire was given to those students who granted informed consent. This questionnaire was subsequently filled in during this lesson. Student participation was voluntary and anonymous. They were also informed that they could terminate their participation at any point during the completion of the questionnaire. Each student agreed to participate in the study, but we found during the data analysis that some respondents did not fill in the whole questionnaire. These respondents were excluded from the data analysis (8.86%; n = 41; the total sample size was 463 university students).

Measures
Drinker prototypes (abstainer, social drinker, and heavy drinker) were measured by the method that was constructed, which consisted of (1) the instructions (mentioned in Study 1); (2) the question: "*Would you characterise an abstainer / social drinker / heavy drinker as…*" followed by 27 adjectives (which were selected according to the analysis in Study 1), and (3) definitions of an abstainer, social drinker, and heavy drinker (also mentioned in Study 1). The participants rated the adjectives for each drinker prototype on a 7-point scale from "*not at all*" to "*very*", similarly to the previous studies (Teunissen et al., 2012; Zimmermann & Sieverding, 2010; van Lettow et al., 2014). The negative adjectives were reversed (*boring, reclusive, fearful, aggressive, impulsive, immature, careless, naďve, confused*). The total score for each drinker prototype can be used for individual analysis, with a higher score representing more positive perceptions of a given drinker prototype (abstainer, social drinker, and heavy drinker). In this study, only individual items were used for the extraction of factors.

● 3 / 3 Procedures and statistical analysis
Regarding the objectives of Study 2, principal axis factoring with oblimin rotation was used to detect the factor structure of the drinker prototype (abstainer, social drinker, and heavy drinker) method. Prior to the principal axis factoring being performed, the suitability of the data was assessed. The examination of the correlation matrix revealed the presence of many coefficients of 0.3 and above (for all drinker prototypes). The Kaiser-Meyer-Oklin value was 0.97 for the abstainer, 0.97 for the social drinker, and 0.95

for the heavy drinker, exceeding the recommended value of 0.6. Bartlett's Test of Sphericity reached statistical significance for all the drinker prototypes (abstainer: χ^2=10698.75, df=351, p<.001; social drinker: χ^2=11391.02, df=351, p<.001; heavy drinker: χ^2=7549.60, df=351, p<.001), supporting the factorability of the correlation matrix. The criteria for the retention of the factors included eigenvalues of more than 1, a factor loading on each item not less than 0.4, and at least four items in a factor that had to be retained in the final scale.

In order for consideration to be given to their names, the final factors were presented to five expert referees. When the referees did not concur with regard to the particular label for a factor, it was discussed and the best alternative with which the majority of the referees agreed was used for the factors.

● 3 / 4 Results
The results are described for each drinker prototype separately.

(A) abstainer
Principal axis factoring with oblimin rotation revealed the presence of four factors with an eigenvalue exceeding 1, explaining 52.71%, 10.34%, 4.36%, and 3.43% of the variance respectively. The examination of the screeplot revealed two breaking points after the second and fifth factors. One factor had less than four items and these were not retained because of the previously mentioned criteria. These items could be added to another factor on the basis of the logical review of individual items. On this basis, the principal axis factoring was repeated with the specification regarding the number of factors (3). These three factors explained 52.62%, 10.04%, and 4.30% of the variance respectively. One item (8. Friendly) was moderately associated with two factors and was therefore excluded. The other items defined all the factors well. Table 3 shows which items belong to which factor. The factors were named as: 1. extraversion, consisting of 10 items; 2. neuroticism, consisting of nine items, and 3. conscientiousness, consisting of seven items. Thus, the method for measuring the abstainer drinker prototype consisted of 26 items divided into three factors – extraversion, neuroticism, and conscientiousness.

(B) social drinker
Principal axis factoring with oblimin rotation revealed the presence of three factors with an eigenvalue exceeding 1, explaining 55.09%, 10.88%, and 4.28% of the variance respectively. The examination of the screeplot revealed a clear breaking point after the third factor. One item (8. Friendly) was moderately associated with two factors, so it was not included. The other items defined the factors well and formed a logical structure. Table 4 shows which items

Table 3 / Tabulka 3

Pattern and Structure Matrix of a 3-factor design for the drinker prototype measuring method – abstainer

Faktorová schéma a štruktúra 3 faktorového riešenia metódy merajúcej prototyp konzumenta alkoholu – abstinenta

Item	Pattern coefficients			Structure coefficients			Communalities
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3	
12. witty	**0.84**	.01	-.01	**.84**	.48	.61	.70
13. happy	**0.86**	.01	.01	**.87**	.50	.64	.76
14. communicative	**0.83**	.04	.04	**.87**	.52	.65	.76
16. self-confident	**0.80**	-.01	.09	**.86**	.49	.67	.75
17. independent	**0.78**	.01	.11	**.86**	.49	.68	.75
18. attractive	**0.84**	-.04	.05	**.85**	.46	.64	.73
20. smart	**0.76**	-.02	.17	**.87**	.48	.71	.77
21. popular	**0.91**	-.01	-.10	**.83**	.47	.56	.70
24. considerate	**0.60**	.14	.16	**.80**	.55	.65	.67
25. sociable	**0.79**	.12	-.05	**.81**	.55	.57	.67
9. boring	.01	**.71**	-.08	.35	**.69**	.19	.48
10. reclusive	.08	**.75**	-.20	.37	**.72**	.14	.54
11. fearful	.08	**.74**	-.16	.40	**.73**	.19	.55
15. aggressive	.06	**.61**	.23	.58	**.73**	.50	.59
19. impulsive	-.11	**.61**	.16	.36	**.61**	.31	.50
22. immature	.02	**.71**	.13	.52	**.77**	.41	.60
23. careless	.06	**.60**	.23	.57	**.72**	.50	.58
26. naïve	-.03	**.79**	.07	.48	**.80**	.35	.64
27. confused	.21	**.65**	.06	.62	**.79**	.45	.66
1. rational	.04	.08	**.69**	.59	.36	**.75**	.56
2. purposeful	.06	.03	**.79**	.65	.36	**.85**	.72
3. reliable	.05	.03	**.83**	.67	.37	**.88**	.77
4. health-conscious	.02	.04	**.88**	.69	.38	**.91**	.83
5. intelligent	-.01	.06	**.85**	.65	.37	**.87**	.75
6. scrupulous	.09	-.05	**.85**	.68	.32	**.90**	.81
7. not easily influenced	.15	-.05	**.76**	.67	.32	**.84**	.72

Note: major loadings for each item are in bold

Poznámka: Hlavné nabitia pre každú položku sú vyznačené tučným

belong to which factor. The factors were given the same names as for the abstainer prototype: (1) extraversion, consisting of 10 items; (2) neuroticism, consisting of nine items, and (3) conscientiousness, consisting of seven items. The method measuring the social drinker prototype also consisted of 26 items divided into three factors – extraversion, neuroticism, and conscientiousness.

(C) heavy drinker

Principal axis factoring with oblimin rotation revealed the presence of four factors with an eigenvalue exceeding 1, explaining 37.46%, 14.64%, 6.01%, and 2.83% of the variance respectively. The examination of the screeplot revealed a clear breaking point after the fourth factor. One factor

had fewer than four items so these were not retained because of the criteria mentioned above. These items should be added to another factor as a result of the further logical review of individual items. On this basis, the principal axis factoring was repeated with the specification of the number of factors (3). These three factors explained 37.35%, 14.53%, and 5.93% of the variance respectively. Two items (18. Attractive and 24. Considerate) were moderately associated with two factors, so they were excluded. The other items defined all the factors well. *Table 5* shows which items belong to which factor. The factors were given the same names as in the case of the abstainer and social drinker prototypes: (1) extraversion, consisting of nine items; (2) neuroticism, consisting of nine items, and (3) conscientiousness, consist-

Pattern and Structure Matrix of 3-factor design for the drinker prototype measuring method – social drinker

Faktorová schéma a štruktúra 3 faktorového riešenia metódy merajúcej prototyp konzumenta alkoholu – sociálneho konzumenta alkoholu

Item	Pattern coefficients			Structure coefficients			Communalities
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3	
12. witty	**.79**	-.01	.08	**.84**	.47	.67	.62
13. happy	**.85**	.05	.04	**.90**	.54	.70	.72
14. communicative	**.86**	-.01	.07	**.91**	.51	.71	.71
16. self-confident	**.80**	.02	.09	**.88**	.51	.70	.57
17. independent	**.78**	.06	.07	**.86**	.53	.68	.58
18. attractive	**.69**	.03	.19	**.85**	.49	.72	.56
20. smart	**.87**	.02	-.01	**.87**	.51	.65	.60
21. popular	**.87**	-.01	.01	**.87**	.48	.65	.66
24. considerate	**.69**	.15	.09	**.84**	.58	.67	.63
25. sociable	**.88**	.05	-.03	**.89**	.53	.65	.62
9. boring	-.18	**.68**	.26	.40	**.70**	.41	.54
10. reclusive	.01	**.71**	.11	.49	**.76**	.41	.62
11. fearful	-.02	**.76**	.04	.43	**.76**	.34	.66
15. aggressive	.19	**.74**	-.08	.54	**.81**	.37	.62
19. impulsive	-.11	**.76**	-.03	.29	**.69**	.21	.59
22. immature	.16	**.71**	-.03	.53	**.79**	.39	.50
23. careless	.18	**.73**	-.02	.60	**.82**	.42	.66
26. naïve	.15	**.75**	-.08	.51	**.80**	.35	.57
27. confused	.16	**.78**	-.05	.56	**.85**	.40	.60
1. rational	-.03	.08	**.75**	.58	.38	**.77**	.56
2. purposeful	.03	.01	**.83**	.66	.38	**.86**	.65
3. reliable	.06	-.01	**.82**	.67	.37	**.86**	.68
4. health-conscious	.02	.02	**.89**	.70	.41	**.91**	.64
5. intelligent	.06	-.04	**.87**	.69	.36	**.90**	.66
6. scrupulous	.05	-.01	**.81**	.65	.36	**.84**	.62
7. not easily influenced	.11	.03	**.71**	.67	.40	**.81**	.42

Note: major loadings for each item are in bold

Poznámka: Hlavné nabitia pre každú položku sú vyznačené tučným

ing of seven items. Thus, the method measuring the heavy drinker prototype consists of 25 items divided into three factors – extraversion, neuroticism, and conscientiousness.

In summary, this study has established a factor structure of the drinker prototype methods (for an abstainer, social drinker, and heavy drinker). Each method measures a particular drinker prototype (abstainer, social drinker, and heavy drinker) and consists of three factors with 26, 26, and 25 items, respectively. These factors were the same across the individual prototypes, being (1) extraversion, (2) neuroticism, and (3) conscientiousness. The names of these factors are the result of the evaluation by five expert referees and are identical with three of the factors of the Big Five. The remaining factors of the Big Five were not found in our research (openness to experience and agreeableness). The factors were named on the basis of the comparison of individual adjectives in the factors from this study with the adjectives which have been assigned to factors of the Big Five by other authors (Vágnerová, 2010; Goldberg, 1990; McCrae & John, 1992). According to these authors, extraversion is defined by a preference for the outside world and being active in one's environment, having a need for stimulation and interpersonal relationships, and an inclination towards positive emotional experiences. A more detailed description includes friendliness, interest in other people, sociability, talkativeness, spontaneity, a tendency to seek company, finding joy in relationships, a tendency to dominant self-promotion, activity, energy, a predominance

Table 5 / Tabulka 5

Pattern and Structure Matrix of 3-factor design for the drinker prototype measuring method – heavy drinker

Faktorová schéma a štruktúra 3 faktorového riešenia metódy merajúcej prototyp konzumenta alkoholu – ťažkého konzumenta alkoholu

Item	Pattern coefficients			Structure coefficients			Communalities
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3	
8. friendly	**.58**	-.07	.29	**.71**	.12	.58	.57
12. witty	**.69**	-.04	.18	**.77**	.17	.53	.62
13. happy	**.83**	-.06	.06	**.84**	.16	.49	.72
14. communicative	**.88**	-.06	-.04	**.84**	.15	.41	.72
16. self-confident	**.71**	-.06	.10	**.75**	.13	.46	.57
17. independent	**.56**	.10	.22	**.70**	.28	.53	.54
20. smart	**.50**	.12	.30	**.69**	.29	.59	.56
21. popular	**.69**	.03	.18	**.79**	.23	.55	.65
25. sociable	**.75**	.02	.06	**.79**	.22	.46	.62
9. boring	.26	**.60**	-.17	.33	**.64**	.07	.46
10. reclusive	.35	**.56**	-.22	.38	**.61**	.05	.46
11. fearful	.38	**.61**	-.21	.42	**.67**	.09	.55
15. aggressive	-.11	**.79**	.10	.14	**.77**	.17	.61
19. impulsive	-.15	**.79**	-.05	.03	**.74**	-.01	.58
22. immature	.04	**.68**	.06	.25	**.70**	.20	.50
23. careless	-.15	**.79**	.17	.14	**.78**	.22	.63
26. naïve	-.11	**.75**	.15	.16	**.75**	.21	.57
27. confused	-.09	**.76**	.15	.18	**.76**	.23	.59
1. rational	.11	.06	**.66**	.47	.20	**.72**	.54
2. purposeful	.13	.01	**.70**	.50	.16	**.77**	.60
3. reliable	.02	.06	**.80**	.45	.19	**.82**	.68
4. health-conscious	.02	.07	**.78**	.44	.20	**.80**	.64
5. intelligent	.21	-.03	**.70**	.55	.13	**.78**	.64
6. scrupulous	.07	.02	**.74**	.47	.16	**.78**	.62
7. not easily influenced	.12	-.02	**.57**	.42	.10	**.63**	.41

Note: major loadings for each item are in bold

Poznámka: Hlavné nabitia pre každú položku sú vyznačené tučným

of positive emotional experiences, optimism, communicability, popularity, and a sense of well-being. These descriptions also corresponded with the extraversion factor found in our study (communicative, favourable, sociable, happy, witty, self-confident, and attractive). While adjectives such as independent, smart, and considerate are not indirect in the definition of this factor, they do not contradict this factor but logically complement it. The second factor, neuroticism, expresses the degree to which a person perceives the world around them as a source of danger or stressful experiences. It is associated with a tendency to experience negative emotional experiences (self-pity, anxiety, hostility, sadness, shame, guilt, anger, resentment, despair, hopelessness, and insecurity) immaturity (naivety,

superstitiousness, and a tendency to be childlike), and ineffective behavioural reactions with a tendency to impulsivity or passivity. This description goes hand in hand with the factor containing the adjectives reclusive, fearful, aggressive, impulsive, immature, and naive. Moreover, adjectives such as boring, careless, and confused are also part of this factor and logically complement it. The last factor, conscientiousness, is related to the level of sociability in the context of work and responsibilities. It includes a proactive tendency, a level of regulation and control (responsibility, being systematic, purposefulness, an ability to resist influences, carefulness, a tendency to respect authority, systems and values, and thoughtful responses), and being effective in finding solutions and managing tasks. This factor as

identified in this study corresponds with the description by adjectives such as purposeful, reliable, health-conscious, scrupulous, and not easily influenced. The adjectives rational and intelligent only complement this description. In summary, descriptions of three of the factors of the Big Five have been found to largely overlap with the adjectives describing the factors revealed in this study.

● 4 DISCUSSION AND CONCLUSIONS

The aim of this contribution was to explore the adjectives which are attributable to the drinker prototypes (abstainer, social drinker, and heavy drinker) among Slovak university students and in the previous studies. On this basis, the goal was to construct a method for measuring these drinker prototypes and establish its factor structure. These objectives were addressed by the two present studies (qualitative and quantitative).

In Study 1, 21 adjectives were selected as a result of qualitative analyses of individual answers and the frequency of the individual answers of Slovak university students when they described at least one of the drinker prototypes. The importance of this qualitative analysis lies in the discovery of new adjectives which were not identified by the previous studies. Because of the limits of qualitative studies, our findings were compared with other studies and eight additional adjectives were added. The complete list contained 29 characteristics which were evaluated by four expert referees for the identification of negative adjectives. Two adjectives were not evaluated clearly and were therefore excluded from the list. Finally, the list of adjectives, which was part of the method that was prepared for measuring drinker prototypes, included 27 adjectives (18 positive and nine negative ones). The instructions were adopted from the previous study. This method was further used in Study 2. This step was important with a view to inconsistencies in the methods used for measuring drinker prototypes where the authors focused on drinker prototypes in general (e.g. Gibbons, Gerrard, & Lane, 2003; Todd & Mullan, 2011) or distinguished different numbers of drinker prototypes (e.g. van Lettow et al., 2014; Teunissen et al., 2012). We chose the most frequently used distinction of drinker prototypes. It is possible that focusing on other drinker prototypes (e.g. binge drinker) would produce different results and this could be the subject of future research. The second reason for this step was the existence of different lists of adjectives used for measuring drinker prototypes in the previous studies. Therefore we combined the qualitative analysis with the findings of the previous studies to prepare a comprehensive list of adjectives for more accurate measuring.

In Study 2, Slovak university students evaluated the 27 adjectives that had been extracted on a 7-point scale in relation to the three drinker prototypes (abstainer, social drinker, and heavy drinker). On the basis of this data, principal axis factoring with oblimin rotation was performed for each drinker prototype. The three factors – named (1) extraversion, (2) neuroticism, and (3) conscientiousness – were extracted for each drinker prototype. The abstainer and social drinker prototypes produced the same results. Both drinker prototypes consisted of three factors with the same number of items: 10, nine, and seven, respectively. The heavy drinker prototype consisted of three factors with nine, nine, and seven items, respectively. The extraction of the factors for individual drinker prototypes can be helpful for further studies and statistical analyses, which can focus on the associations between individual factors of drinker prototypes and alcohol use among university students, as well as in the context of other factors pertaining to alcohol use. In this case, the total score corresponds to the individual factors relating to different drinker prototypes and provides the possibility of more comprehensive and more sophisticated statistical analyses.

This study has developed a method which can be used in further research. Thus the instructions, question, and definitions of individual drinker prototypes which were used in Study 2, followed by the prepared list of 27 adjectives, can be used and participants can rate each drinker prototype on a 7-point scale ranging from "not at all" to "very" for each adjective. The negative adjectives should be reversed and the total score for each factor pertaining to a different drinker prototype can be used for statistical analyses.

While the most important findings of this study were described in the previous part, it is necessary to mention some limitations related to the results of the analyses. The data in Study 1 was collected online, which could have lowered the response rate, although several research studies point out that online data collection is comparable with the "paper-and-pencil" method (Dolnicar, Laesser, & Matus, 2009; van de Looij-Jansen & de Wilde, 2008). In Study 2, this limitation was addressed by the presence of the researchers during the completion of the questionnaire. On the other hand, the selection of the research sample in Study 2 was determined by the availability of the respondents and, therefore, further analysis of different research samples of university students is important. In both studies, the cross-sectional nature of the datasets is another limiting factor. The focus on the three drinker prototypes could also be a limitation. Future research should therefore consider other drinker prototypes or use a wider definition of drinker prototypes as it may be necessary to examine whether the results will not differ for other definitions of drinker prototypes or for other drinker prototypes.

In summary, the development of the method for measuring drinker prototypes is clearly a strong point of this study. This method, in comparison to other studies (e.g.

Gibbons, Gerrard, & Lane, 2003; Gerrard et al., 2002), is focused on distinguishing between individual drinker prototypes (abstainer, social drinker, and heavy drinker) rather than focusing on drinker prototypes at a general level. Another strong point of this study is the extraction of three factors for each drinker prototype, which can be used for further statistical analyses. Future research regarding drinker prototypes should explore the association between drinker prototypes and actual alcohol use among university students, as well as the association with other variables such as normative beliefs and attitudes. Another future task is to use drinker prototypes within prevention programmes. This should be focused on the process of how individuals evaluate different drinker prototypes and how it can be a mediator of the effectiveness of prevention programmes.

The role of the authors: Monika Brutovská proposed the study and the design of the study, conducted the statistical analysis of the data and the subsequent interpretation, and prepared the first version of the manuscript. Oľga Orosová supervised the statistical analysis and was involved in preparing the final manuscript. The authors approved the final form of the manuscript.

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