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Profiling Cannabis Consumption Motivation and Situations as Casual Leisure

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Abstract:

It is a common practice in many cultures to use cannabis as a casual leisure activity, particularly for socialization and entertainment in North America and Europe. This study examines the daily use of cannabis and its connection to entertainment and socialization. The research surveyed young adults in Germany utilizing an online survey and evaluated the Marijuana Motives Measure, which focuses on four motivation factors for using cannabis and how they relate to different situations. The survey included ten comprehensive consumption locations and situations, representing the first study to explore the underlying motivation for cannabis use in adults' daily lives and its relation to individual characteristics and consumption situations. The primary reason for using cannabis is for hedonic pleasure, relaxation, and enhancing social experiences. Male respondents tend to be more motivated by conformity, while millennials and more educated cannabis users prioritize hedonic pleasure, relaxation, and sociable conversation.

Keywords: cannabis consumption; motivation; situations; casual leisure; Marijuana Motives Measure

Introduction

Global cannabis sales are expected to exceed US\$61 billion worldwide by 2026 (Mason, 2022).

Cannabis use as a recreational activity has become commonplace in many cultures, often integrated with entertainment and socialization. There has been a rise in the number of individuals who consume drugs on a regular basis (Bingöl, 2021). As a result, research has emerged on the normalization of cannabis in North America and Europe (Belhassen et al., 2007; Korf, 2002). Although cannabis is still prohibited in many places, the widespread acceptance and normalization of drugs among the general public indicate that it has become a means of escaping the difficulties of modern life, such as boredom and stress (Bingöl, 2021).

Germany has made significant progress toward legalizing cannabis as a solution to the increasing number of drug-related offenses in the country since 2011. By the end of 2023, the government plans to legalize marijuana for individuals over 18. This legalization aims to provide better safety measures for adults who consume cannabis, regulate the drug's potency, reduce drug-related offenses, and eliminate the need for illegal sales on the black market (Logan, 2023). This proposed policy aims to address the current shortcomings in cannabis regulations, encourage responsible consumption, and combat the rise in drug-related crimes (Witting, 2023).

The legalization of marijuana presents a lucrative opportunity for substantial financial gains. In Germany, it is predicted that the cannabis industry will generate almost €1 billion in turnover by 2023. Moreover, sales are expected to grow annually at a rate of 17% between 2023 and 2027, leading to a market volume of approximately €1.9 billion by 2027. Out of this total, recreational cannabis is projected to contribute €1.3 billion (Statista, 2023). Predictions suggest that approximately 4 million people in Germany will consume legal cannabis (Witting, 2023).

Germany is becoming the fastest-growing cannabis market in Europe, thanks to its large population and significant purchasing power (Statista, 2023).

Motivation models assessing substance use suggest that substance use behaviors are motivated by different reasons (Osborne & Fogel, 2008; Sharp et al., 2011). Understanding these motives is crucial because it provides key information about the context and circumstances of behavior, such as the timing and location of substance use, its usage and frequencies, and possible consequences associated with the behaviors (Cooper, 1994). Furthermore, understanding one's motivation to consume cannabis is important as it might affect (or predict) another substance usage like alcohol (O'Hara et al., 2016; Simons et al., 2005). Moreover, one's experiences of drug use in daily life are strongly linked to one's pursuit of drugs during tourism activities (Belhassen et al., 2007; Bingöl, 2021; Pinheiro Dias Pereira & de Paula, 2016).

Literature Review

Casual leisure

Casual leisure is 'an immediate, intrinsically rewarding, relatively short-lived pleasurable activity requiring little or no special training to enjoy it (Stebbins, 1997. p. 18).' As often considered the counterpart of serious leisure, casual leisure is considered an independent leisure activity and an essential construct in tourism and leisure literature for the following reasons (Stebbins, 1997). First, there are more casual leisure participants or devotees than serious leisure participants daily. Second, individuals who take part in leisure activities of a more serious nature still appreciate their involvement in casual leisure activities, which are characterized by a carefree attitude that differs greatly from their more focused approach. This observation aligns with the assertion (Rojek, 1997) that postmodern leisure is predominantly casual. In summary, casual leisure is a

distinct and noteworthy form of leisure that merits a thorough and precise definition, given its distinct characteristics (Stebbins, 1997). Therefore, the importance of casual leisure should be recognized not to miss the scholarly discovery to unearth the unique leisure properties as the primary source of 'serendipity in modern life, the quintessential form of informal experimentation, accidental discovery, and a spontaneous invention' (Stebbins, 1997. p. 23).

The typology of casual leisure includes six different types: *play*, *relaxation*, *passive entertainment*, *active entertainment*, *sociable conversation*, and *sensory stimulation* (Stebbins, 1997). Later, a new concept of casual volunteering was added to this typology. It is defined as a 'pleasurable aerobic activity' requiring intentional effort to increase respiration and heart rate (Stebbins, 2004).

First, *play* is usually children's activity or a 'childlike' lightness of adult behavior (Kelly, 1990). Second, *relaxation* is defined as a 'release from mental or physical tension; especially by recreation or rest'. Thirdly, the participants desire to engage in leisure activities such as passive entertainment, including watching TV programs and listening to audio or video recordings, which require minimal analysis or concentration. Alternatively, *active entertainment* typically demands considerable expertise, proficiency, or familiarity. It is often more accurately referred to as a pastime or a recreational pursuit.

Fifth, *sociable conversation* involves gossiping or idle chatting with friends or family. The delight of sociable conversation comes from its playful nature, valued for its inherent qualities (Simmel, 1949). By participating in sociable conversation, individuals can maximize their enjoyment of joy, relief, and liveliness. It is a democratic activity in which the participant depends on the enjoyment of others involved in the exchange. Sociable conversation is a non-instrumental interaction between individuals, and it loses its essence when someone introduces

purely personal interests or goals. Conversely, it thrives when all participants exhibit affability, warmth, charm, and proper social conduct (Stebbins, 1996; 1997).

Sixth, *sensory stimulation* involves hedonic activities through sex, eating, drinking, or sightseeing. Human beings find arousal in a wide range of things and activities. These include indulging in creature comforts, appreciating beauty, satisfying curiosity, experiencing exhilarating movements, and even seeking out the excitement of deviant behaviors. People enjoy their creature comforts by engaging in sex, eating, drinking, touching, seeing, smelling, hearing, and experiencing sensations of coolness or warmth. Another example of this type of casual leisure is using drugs to achieve pleasurable alterations in mood and perception, such as inducing vertigo, hallucinations, or mood elevation (Stebbins, 1996; 1997).

Casual leisure shares at least one central characteristic: *hedonism*. All casual leisure participants are drawn to casual leisure activities because they produce significant pleasure and enjoyment, describing the 'hedonic reward of self-gratification' (Stebbins, 1997, p. 21). In that sense, the use of cannabis is considered a tolerable deviant casual leisure, along with heavy drinking and gambling (Stebbins, 1996). Ultimately, deviant casual leisure finds its foundation in pursuing sensory stimulation, particularly the gratification of simple pleasures. While most individuals in society may not partake in such activities, they generally tolerate these pleasures (Stebbins 1996; 1997). It is evident that only a small fraction of individuals completely abstain from casual leisure, while most actively seek opportunities to engage in it. Taking regular breaks, seeking escapism, and rejuvenating oneself periodically is essential for performing one's numerous life responsibilities more effectively (Stebbins, 1997).

It is a consensus that most casual leisure activities belong to more than one category, as people pursue them for multiple benefits. For example, cannabis consumption can be considered

a relaxation through mental tension, primarily through recreation or rest, sociable conversation, and sensory stimulation as a hedonic activity and active and passive entertainment.

Cannabis consumption and leisure behavior

Numerous studies have explored the role of cannabis consumption as a recreational and leisure activity among adolescents and adults (Liebregts et al., 2015). Cannabis is often consumed during leisure time (Schaub et al., 2010) for recreational reasons (Shukla, 2005) to enhance leisure activities and cope with the demands of modern society (Osborne & Fogel, 2008). Lau et al. (2015) further revealed that cannabis consumption is typically 'reserved for leisure time' (p. 716), often employed to augment other activities and foster creativity. Additionally, Dekker et al. (2009) indicated that participants in their study consumed cannabis to enhance positive emotions and social experiences (Gould et al., 2018). Therefore, most cannabis users consume it during leisure activities, usually categorized as casual leisure types (Moffat et al., 2009).

Various research studies have examined different aspects of cannabis consumption as a recreational activity (Belhassen et al., 2007) and its connection to other leisure choices (Sharp et al., 2011). For instance, individuals who frequently used cannabis over a long period of time did so to relax and enhance their enjoyment of music or television (Hathaway, 2004). Young Canadians who consumed cannabis tended to explore nature, reflect on existential topics, engaged in physical activities, and transformed outdoor tasks into enjoyable endeavors (Moffat et al., 2009). French adolescents, particularly those around the age of 18, associated regular cannabis use with activities such as attending concerts and sound systems or spending evenings with friends without adult supervision (Peretti-Watel & Lorente, 2004). Furthermore, Lau et al. (2015) reported that cannabis consumption was widely accepted within the artist community,

often viewed as casually as drinking water. As introduced in the previous section, cannabis users may be driven by different motives and situations when they engage in the cannabis consumption.

Research exploring cannabis consumption concerning other similar leisure behaviors (Belhassen et al., 2007) also indicated that increased cannabis use among adolescents is often linked to a partying lifestyle (Ciairano et al., 2010). Changes in cannabis consumption were associated with the social situation in which individuals spent their leisure time with others (Schaub et al., 2010), offered a diverse and multifaceted recreational experience, and enhanced or integrated leisure activities (Gould et al., 2018; Liebrechts et al., 2015). Therefore, it appears that cannabis consumption can be propelled by more than a single motive.

Cannabis consumption motivation by consumption situations

As a leisure activity, many studies on cannabis use motivation have been conducted with college students or those in emerging adulthood. US college students primarily use cannabis to cope with stressful events (O'Hara et al., 2016). Previous studies also found that college students' main motives for alcohol drinking and cannabis use are social reasons (Beck et al., 2009; Christiansen et al., 2002; Lee et al., 2007). Lee et al. (2007) identified marijuana motives from the user's perspective among recent high school graduates. Many people report using it for various reasons, such as enjoyment, conformity, experimentation, social enhancement, boredom, and relaxation. Those who use it for experimental purposes tend to report less frequency and fewer problems. However, heavier users who seek enjoyment, habit, activity enhancement, and altered perceptions tend to have more problems (Lee et al., 2007). According to O'Hara et al. (2016), college students in the US tend to turn to drinking and using cannabis as a way to handle

stressful situations. Similarly, previous research by Beck et al. (2009), Christiansen et al. (2002), and Lee et al. (2007) found that social reasons were the primary motivators for college students when it came to drinking and using cannabis.

The Marijuana Motives Measure (MMM) is one of the most widely used research instruments to evaluate cannabis usage motives in the literature (O'Hara et al., 2016; Simons, 2005). The MMM, consisting of a five-factor questionnaire, has been tested empirically with exploratory (Chabrol et al., 2005; Simons et al., 1998) and confirmatory factor analyses (Zvolensky, 2007). Few studies have examined the relationship between marijuana motives and related outcomes (Bravo et al., 2019). Cross-sectional studies with the MMM (Pinheiro Dias Pereira & de Paula, 2016) have reported that enhancement motives are associated with cannabis use (Foster et al., 2015; Simons et al., 2016) and with cannabis-related problems through cannabis use (Simons et al., 2005). Coping motives have been linked to cannabis use, cannabis-related issues (Buckner et al., 2014; Foster et al., 2015; Simons et al., 2016), and cannabis dependence (Moitra, 2015). Previous studies have linked expansion motives with higher cannabis use and dependence among females with borderline symptomatology (Chabrol et al., 2005) and with cannabis-related issues in current cannabis users (Buckner et al., 2014). Meanwhile, social and conformity motives have shown a negative correlation with cannabis frequency (Buckner et al., 2013; Buckner et al., 2014), but only conformity motives have been positively associated with cannabis-related problems (Buckner et al., 2012; Foster et al., 2016).

The current literature has shown that individuals with enhancement motives are likely to engage in heavy alcohol use and binge drinking. This trend has been observed in previous research on alcohol (Cooper, 1994; McCabe, 2002) and marijuana (Simons et al., 2005). Coping motives, on the other hand, have been found to be the best predictor of drug-related problems,

even when controlling for drug use (Mezquita et al., 2015; 2018). This suggests that coping motives may be a risk factor for developing marijuana use disorders. Logically, those who report conformity motives tend to smoke marijuana less frequently and in smaller quantities. Taking a few puffs may be sufficient for these individuals to fit in with their desired group. Getting too stoned may hinder their desire to avoid feeling left out (Kuntsche et al., 2010).

Cannabis motivation by socio-demographic characteristics

Previous research has found significant differences between cannabis consumption motives and use across genders (Cooper, 1994; Newcomb et al., 1988). Among the US college students, women reported coping as a motive for marijuana use more frequently than men. On the other hand, men exhibited significantly higher scores than women in terms of enhancement motives, smoking frequency, smoking quantity, the amount of marijuana consumed during the most intense smoking period, and issues related to cannabis use (Bravo et al., 2019). However, it is still inconclusive whether there are strong associations between gender and use or use-related problems in the current literature (Cooper, 1994; Cooper et al., 1995; Newcomb et al., 1988). Due to each research study's different contexts and sample uniqueness (Simons et al., 1998), a diverse sample needs to be explored using its unique features and situations. Moreover, most previous studies have examined mainly student populations, limiting their knowledge to a certain extent.

Purpose of the study

This study explores why people consume cannabis and how it relates to leisure activities. It uses the normalization theory framework and focuses on the time period before recreational cannabis was legalized in Germany. The study does not differentiate between medicinal and recreational

users or categorize individuals based on use, misuse, abuse, or addiction. Instead, the main objective is to comprehend the reasons behind respondents' consumption patterns within the framework of their leisure pursuits.

The study draws on related fields of psychology (Simons et al., 1998; 2005) that have explored the motivations behind marijuana use. This study focuses on investigating consumers' leisure motivations by assessing their social demographics and consumption situations. The study suggests that exploring the reasons for cannabis consumption, the resulting leisure behaviors and the differences between social demographic groups of consumers based on their motivations are all valuable areas for exploration and warrant quantitative investigation. Three research questions guide the study.

RQ1: What are the underlying motivational factors for cannabis use related to casual leisure?

RQ2: How are motivation factors of cannabis consumption associated with users' socio-demographic characteristics?

RQ3: How are motivation factors of cannabis consumption associated with consumption situations?

This is the first study to examine the differences in motivations among social demographic groups besides gender and age. It is also the first to investigate the motives in different consumption situations. Many cannabis use motivation studies have been conducted with college students or emerging adults (Moitra et al., 2015; O'Hara et al., 2016; Simons et al., 2016). The current study goes beyond that sample group.

Materials and Measures

Online survey questionnaires were distributed to an online panel provided by Trend Research using a random sampling method. Following the study's main purpose, the target population presented adult wine drinkers in Germany. A total of 523 respondents completed the interviews from whom 215 were qualified to participate in the study, and this study only included respondents over 18 years old who had used medicinal or recreational cannabis at least once in the last twelve months. The 24-item questionnaire assessed the cannabis consumption motives, including four consumption motivation factors (Cooper, 1994; Simons et al., 1998). A new item, "I consume cannabis because I believe it is healthy for me," was added to reflect the context of the study. Every item was measured using the anchor option ranging from 1 (I totally agree) to 5 (I don't agree).

Ten consumption situations were evaluated from 'alone' to 'with others' and locations where respondents usually consume cannabis using a 5-point anchor option, ranging from 1 (always) to 5 (never). Furthermore, the consumption frequency was assessed with a 6-point ordinal scale from several times per week to never (Table 1) (Cooper, 1994). A series of socio-demographic questions, including gender, generational cohorts, education, and occupation, were asked.

A factor analysis with a varimax rotation was performed to reduce the number of variables and detect the relationship structure of the motivation construct. One-way ANOVA examined the differences among generation, education, and occupation groups in ordinal variables.

To investigate the relationship between motivations and situations, the ten possible situations were grouped into the following four occasions: 'alone at home,' 'at home with someone,' 'at friends' home,' and 'going outside'. Also, the 6-point categorical scale to measure the frequency of use was converted into a binary measure that equals one if cannabis was used in

a given situation at least several times a year (from once or several times a week to about once a week) and zero if it was used once a year or less.

A multivariate probit model (Chib & Greenberg, 1998) was employed to estimate the likelihood of using cannabis in a given situation, assuming that consuming cannabis (at least several times a year) may be mutually correlated.

The appropriate model for this analysis is multivariate probit (Ashford & Sowden, 1970; Chib & Greenberg, 1998), which is defined as follows:

$$y_{ij}^* = x_i \beta_j + e_{ij}$$
$$y_{ij} = 1(y_{ij}^* > 0)$$

where the subscript $i=(1, \dots, N)$ denotes individual cannabis users and $j=(1, \dots, M)$ indexes situations, x_i is the K -vector of covariates, and e_{ij} are assumed to be independent identically distributed across i but correlated across j for any i , with multivariate normal distribution. In this study, the covariates include motivations since the purpose is to examine whether motivations to use cannabis are associated with the probability of using cannabis in certain situations. The log-likelihood function is $\sum_{i=1, j=1}^{N, M} \log \log Pr(x_i \beta_j)$. Since there is no closed solution for this sum for $J > 1$, the choice probabilities are simulated by the GHK algorithm.

Results

Sample description

As presented in Table 1, there were more male respondents (62.3%) than female counterparts. The respondents represent young adults aged between 20 and 58, with a sample mean of 34.2 years. About 40% of the respondents were up to 30 years old, 35% were between 30 and 40, and

9% were older than 50. Most respondents obtained at least vocational or secondary education (91.6%) and were employed (81.4%).

Nearly half of the respondents (40%) indicated that they used cannabis several times per month; there were about 22% who used cannabis several times a week and another 18% who used cannabis several times per month. Three-quarters of the respondents (75%) used cannabis more than once a year, which defines the reference category in the binary variable (equal to one). Most preferred cannabis consumption situations were with friends (82.8%) or while visiting friends at home (80.0%), followed by while going out at parties (68.4%) and alone at home (67.9%).

Please insert Table 1 here.

Table 1. Socio-demographic characteristics and consumption behaviour

| | N=215 (%) |
|---|-----------|
| <i>Gender</i> | |
| Female | 37.7 |
| Male | 62.3 |
| <i>Generational cohorts</i> | |
| Generation Z (born between 1995-2022) | 26.6 |
| Millennials (1980-1994) | 53.7 |
| Generation X (1965-1979) | 19.6 |
| <i>Education</i> | |
| Low (primary or lower secondary) | 8.4 |
| Medium (vocational or upper secondary) | 56.3 |
| High (higher education) | 35.3 |
| <i>Occupation</i> | |
| Employed | 81.4 |
| Unemployed | 7.4 |
| Student | 8.4 |
| Retired/disable | 2.8 |
| <i>Cannabis consumption frequencies</i> | |
| Once or several times per week | 21.9 |
| Several times per month | 17.7 |
| Several times per year | 34.9 |
| Approximately once per year | 11.2 |
| Less than once per year | 14.4 |
| <i>Cannabis situations</i> | |
| Alone at home | 67.9 |
| With friends at home | 82.8 |

| | |
|--|------|
| With family at home | 44.2 |
| At parties/celebrations/holidays at home | 66.5 |
| While visiting friends at home | 80.0 |
| When going out at parties/celebrations | 68.4 |
| When going out in cafés or restaurants | 39.0 |
| When going out in pubs or bars | 50.2 |
| At informal outdoor events (BBQ, picnic, etc.) | 55.3 |
| At online meetings (via Zoom, Teams, etc.) | 29.8 |

Cannabis consumption motives (Research Question 1)

Table 2 presents the results of the factor analysis on cannabis consumption motivations. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (0.94) and the significant value level of Bartlett's sphericity test revealed a good fit of the motivation factor structure, generating a four-factor solution: social expansion, coping creativity, conformity, and enhancement. All factor-loading scores were higher than 0.5, indicating a good correlation between the items and the factor group to which they belong. High factor loadings and high internal consistency (α) levels, ranging from 0.86 to 0.94, warranted the construction of four composite measures. The four factors accounted for 71.22 % of the total variance explained.

Furthermore, a factor analysis without social expansion items was conducted to ensure that a four-factor solution is appropriate without social expansion factor. This also generated a four-factor solution similar to the first analysis. Thus, it is concluded that the difference in factor structure between this and earlier study (Stebbins, 1997) may not be attributable to the additional items included in this study. Instead, the following considerations might explain the discrepancies: (1) different sample compositions and (2) high correlations between social and expansion and coping and expansion in the previous studies (Stebbins, 1997; Moitra, 2015). Collectively, the most frequent reason to consume cannabis is an enhancement ($\bar{x} = 2.48$), followed by coping creativity ($\bar{x} = 3.15$), social expansion ($\bar{x} = 3.27$), and conformity ($\bar{x} = 3.99$). Following Stebbins' typology of casual leisure (Stebbins, 1997), the factor of social

expansion with its structure reflects 'sociable conversation,' the factor of coping and enhancing creativity referring to the mental tension corresponds to 'relaxation,' and the factor of enhancement with the corresponding items is related to 'hedonism.'

Please insert Table 2 here.

Table 2. Factor analysis results based on cannabis consumption motives

| Cannabis consumption motives* (n=215) | Mean | Factor loadings | Variance Explained (%) | α |
|---|------|-----------------|------------------------|----------|
| <i>Social expansion/sociable conversation</i> | | | 49.49 | .93 |
| It helps me enjoy a party | 3.40 | 0.73 | | |
| To be sociable | 3.26 | 0.70 | | |
| It makes social meetings more enjoyable | 3.15 | 0.73 | | |
| It improves parties and celebrations | 3.27 | 0.78 | | |
| To celebrate a special occasion with friends | 3.20 | 0.73 | | |
| It boosts my self-confidence | 3.67 | 0.53 | | |
| To expand my awareness | 3.02 | 0.55 | | |
| To be more open to new experiences | 3.23 | 0.60 | | |
| <i>Coping creativity/relaxation</i> | | | 11.55 | .92 |
| It is healthy for me | 2.91 | 0.51 | | |
| To forget my worries | 3.24 | 0.76 | | |
| Helps me when I feel depressed and nervous | 3.13 | 0.78 | | |
| To cheer up when I am in a bad mood | 3.03 | 0.63 | | |
| To forget about my problems | 3.34 | 0.76 | | |
| Because it helps me be more creative and original | 3.13 | 0.55 | | |
| To understand things differently | 3.31 | 0.59 | | |
| <i>Conformity</i> | | | 5.93 | .94 |
| My friends' pressure to consume cannabis | 3.98 | 0.83 | | |
| Others won't kid me about not consuming cannabis | 4.08 | 0.85 | | |
| To fit in with a group | 3.89 | 0.81 | | |
| To be liked | 4.01 | 0.82 | | |
| <i>Enhancement/hedonic pleasure</i> | | | 4.27 | .86 |
| Because I like the feeling | 2.37 | 0.79 | | |
| Because it is exciting | 2.87 | 0.57 | | |
| To get high | 2.40 | 0.85 | | |
| Because it gives me pleasure | 2.37 | 0.75 | | |
| Because it is fun | 2.40 | 0.79 | | |
| Total variance | | | 71.22 | |

All factor loadings are significant $p < .001$.

*Why do you consume cannabis? 1 = "I totally agree" 5 = "I don't agree at all"

Cannabis consumption motives and social-demographic profile (Research Question 2)

Table 3 reports differences in cannabis consumption motivation based on respondents' socio-demographic characteristics. Conformity was the only significant motive ($p = .03$) between male and female respondents, while males were more motivated by conformity ($\bar{x} = 3.89$). Millennials were more motivated to use cannabis by all motivation factors except relaxation than generations X and Z ($p = .001$).

The respondents with high education ($\bar{x} = 3.02$) were more likely to consume cannabis for sociable conversation than the other groups ($p = .05$). Moreover, unemployed and retired/disabled respondents consumed cannabis more for relaxation to cope with creativity than employed and student respondents ($p = .000$).

Please insert Table 3 here.

Table 3. Cannabis consumption motives and individuals' characteristics

| Motives (n=215) | | | | | F |
|-----------------------|-----------------------------|-------------|--------------|-----------------|---------|
| | Males | Females | | | |
| Conformity | 3.89 | 4.16 | | | 4.56* |
| | <i>Generational cohorts</i> | | | | |
| | Generation Z | Millennials | Generation X | | |
| Sociable conversation | 3.35 | 3.10 | 3.62 | | 3.45* |
| Relaxation | 3.29 | 2.96 | 3.53 | | 4.89** |
| Conformity | 4.10 | 3.79 | 4.38 | | 3.66* |
| | <i>Education groups</i> | | | | |
| | Low | Middle | High | | |
| Sociable conversation | 3.46 | 3.40 | 3.02 | | 2.88* |
| | <i>Occupation groups</i> | | | | |
| | Employed | Unemployed | Student | Retired/Disable | |
| Relaxation | 3.09 | 2.72 | 4.24 | 2.98 | 7.50*** |

Notes: * $p < .05$; ** $p < .01$; *** $p < .001$; Motivations measured by a 5-point scale ranging from 1 (I totally agree) to 5 (I don't agree at all); Only significant results are presented.

Cannabis consumption motives and consumption situations (Research Question 3)

The association between motivations and situations to consume cannabis was explored by a multivariate probit model (Table 4). The assumption on mutually correlated error terms among the motivation-outcome variables was supported by significant and large correlations, ranging from .45 to .85. Coefficients for all situations were statistically different from zero with $\chi^2=166.5$ ($p=.000$). The estimates indicate that cannabis users with sociable conversation motive were also more likely to consume cannabis when being outside (0.576) or at friends' homes (0.387). The users seeking relaxation appear to use cannabis alone at home (0.828) or with someone else at home (0.520). To conform with others, cannabis is likely used outside (0.302) or with someone at home (0.204), neither alone nor at a friend's home. Consuming cannabis at a friend's home was also associated with hedonic pleasure (0.248).

Please insert Table 4 here.

Table 4. Cannabis consumption motives and consumption situations

| Motives (n=215) | At home alone | At home with someone | At friends' homes | Outside home or at events |
|-----------------------|----------------------|----------------------|----------------------|---------------------------|
| Intercept | -1.958*** (-5.25) | -2.138*** (-5.49) | -2.815*** (-6.28) | -2.757*** (-6.34) |
| Sociable conversation | -0.399** (-2.58) | 0.050 (0.34) | 0.387** (2.49) | 0.576*** (3.51) |
| Relaxation | 0.828*** (5.45) | 0.520*** (3.71) | 0.221 (1.51) | 0.262* (1.79) |
| Conformity | 0.087 (0.81) | 0.204* (1.69) | 0.145 (1.3) | 0.302** (2.54) |
| Hedonic pleasure | 0.157 (1.31) | 0.144 (1.2) | 0.248* (1.94) | -0.007 (-0.05) |

Model statistics: LL=-345.05, Wald $\chi^2=136.57$, draws=100 when calculating the simulated likelihood. Correlations between the error terms: rho21=0.634 (se=0.0903), rho31=0.450 (s.e.=0.10360), rho32=0.849 (s.e.=0.0588), rho41=0.613 (s.e.=0.0939), rho42=0.804 (s.e.=0.0686), rho43=0.799 (s.e.=0.0662). Likelihood ratio test of rho21=rho31=rho41=rho32=rho42=rho43=0 ($\chi^2(6)=166.487$, Prob=0.0000). Test all coefficients equal to 0 for Coping ($\chi^2=33.79$, $p=0.0000$), Social Expansion ($\chi^2=29.06$, $p=0.0000$), Conformity ($\chi^2=6.78$, $p=0.1479$), Mood Enhancement ($\chi^2=6.56$, $p=0.1611$).

* $p<.05$; ** $p<.01$; *** $p<.001$

Figure 1 also presents the relationship between cannabis consumption motives and consumption situations. Only the motivational factors related to casual leisure activities, such as sociable conversation, relaxation, and hedonic pleasure, and the situations with which they were significantly correlated. Only the labeled areas indicate the relationship between leisure activities and situations of cannabis consumption.

Please insert Figure 1 here

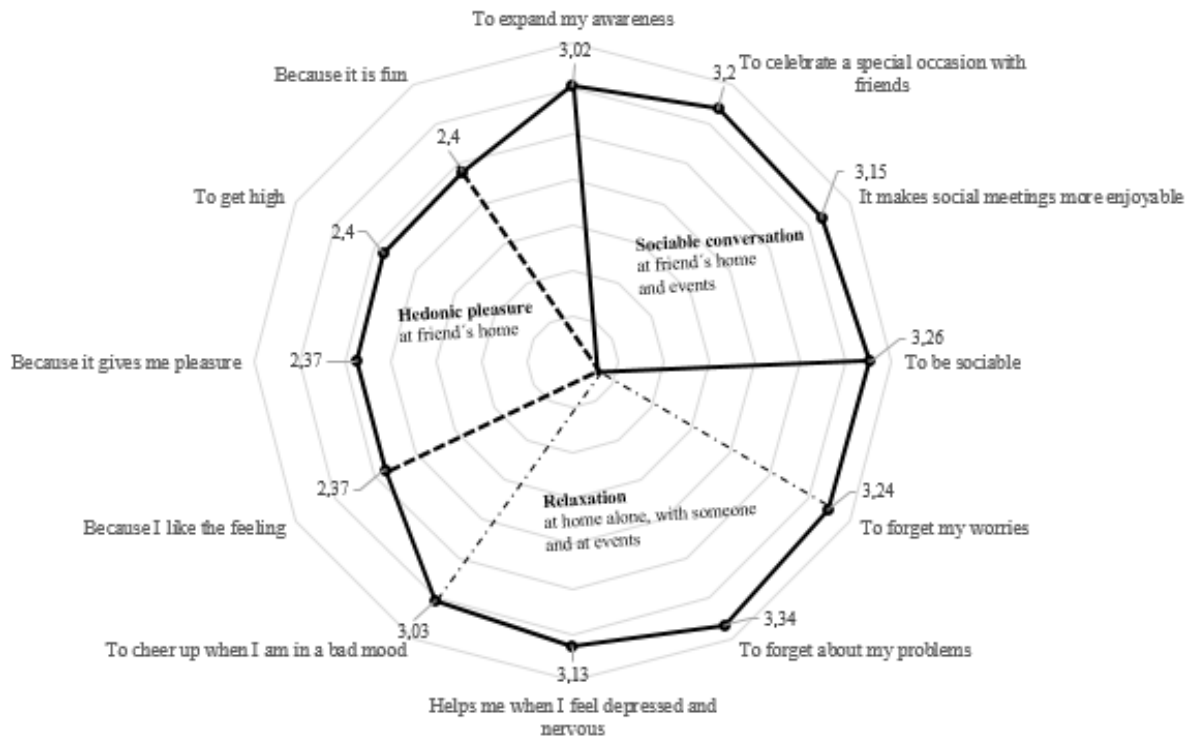


Fig. 1: Relationship between cannabis consumption as a leisure activity and consumption situations, Motivations measured by a 5-point scale ranging from 1 (I totally agree) to 5 (I don't agree at all).

Discussion

This study attempts to identify the underlying motivation for cannabis consumption in German adults ages 20 and 58. It also examines the relationship between those motivations and respondents' profiles and situations within which cannabis was used. The current study's findings support the previous research (Moitra et al., 2015; Stebbins, 1997) that the most popular

motivation to use cannabis was a positive effect of hedonic pleasure expected to be delivered by cannabis usage. It is followed by relaxation and enhancing creativity by relieving the negative effects of daily life. Furthermore, these results confirm the findings (Osborne & Fogel, 2008) that cannabis is often consumed as a leisure time activity to disengage from stress and stimulate creativity (Lau et al., 2015) and to enhance the positive effect and social experiences (Dekker et al., 2009). Attaining an enhanced positive effect through sociable conversation, relaxation, and hedonic experiences seems to be a recurring pattern of leisure behavior among cannabis consumers (Dekker et al., 2009; Gould et al., 2018). This might indicate the multi-dimensional nature of cannabis usage as an enhanced leisure experience to adapt to the demands of modern society (Osborne & Fogel, 2008). It appeared that the motivation to use cannabis for hedonic pleasure to enhance the fun and the feeling seems clear and supported by cannabis users in Germany.

Given the entire range of cannabis consumption situations, whether with a friend at home or with companions at events, it can be concluded that there might be a significant association between consumption and social activities. Combining consumption situations with motivations is an essential component of the leisure experience. Consumers enjoy the relaxing, socializing, and pleasure-providing effects of cannabis with friends at home or at events for a multi-dimensional leisure experience. The findings of the current study also support the normalization processes that cannabis consumption is integrated with entertainment and socialization (Korf, 2002) related to the consumers' lifestyle (Belhassen et al., 2007; Dekker et al., 2009; Frank et al., 2013; Gould et al., 2018; Parker et al., 2002) and 'should be assessed in terms of lifestyle and leisure' (Duff & Erickson, 2014; Kang et al., 2016).

Notwithstanding, the study's finding that conformity appears to be a stronger motive among German males than females contrasts with other studies (Simons et al., 1998; Simons et al., 2000). Different levels of self-concern and other concerns of males and females can explain this discrepancy (Eagly, 1983). Since men generally act independently from the opinions of others and refuse to conform to the views of others (Eagly, 1983), using cannabis helps them maintain group harmony, find social agreement, and fit in with the group.

The study's findings suggest that people who consume cannabis often do so to experience self-gratification or hedonism. Along with this primary reward, there may be one or two additional rewards, such as feeling regenerated or the social aspect of engaging with others. Cannabis consumption is often used to take a break from daily obligations, providing a leisurely way to rejuvenate. The social aspect of consuming cannabis also adds to its appeal, allowing people to engage with others and enhance their shared experience. Cannabis consumption as a form of casual leisure should be recognized as a distinct and unique realm. The rewards that motivate cannabis consumption, such as regeneration, social attraction, and self-enrichment, further emphasize its significance and are worth exploring (Stebbins, 1997).

The importance of hedonic pleasure and relaxation for cannabis consumption among millennials replicates the other findings (American Psychological Association, 2018; Mental Health Foundations, 2018) that millennials experience the highest stress levels on average and suffer from the higher level of anxiety (American Psychiatric Association, 2018) compared to other generations. Similarly, the penchant for sociable conversation among more highly educated respondents might insinuate that they tend to use cannabis to boost their social interactions rather than to seek any specific cannabis effects. Furthermore, motives for expanding

experiential awareness and sociable conversation may entail drug-specific expectations such as perceptual and cognitive enhancement (Simons et al., 2000).

The study's findings on the significant relationship between the unemployed and disabled respondents and a strong motive for relaxation also deserve further investigation on what contributes to this distinction. This may be ascribed to their current lifestyle and psychological and mental health (Lamberg et al., 2009). As cannabis use has been identified as an affect-focusing coping mechanism (Simons et al., 2000), cannabis endorsed capacities to relieve the negative effect of depression syndromes in this population.

The present study provides new insights into the relationship between cannabis consumption motives and situations. Specifically, the study's findings conclude that the cannabis consumption purposes of sociable conversation and expansion of experiential awareness, conformity, and hedonic pleasure were strongly correlated with frequent use with companions at home, outside of the house, or at events. On the other hand, cannabis was consumed for relaxation motives more frequently than being alone or with someone at home. This result may be partly explained by the fact that people with a tendency towards depression withdraw from social participation while staying at home (Mitchell et al., 1993). Alternatively, the presence of friends during experiences boosts positive feelings, lowers cortisol levels, and improves a sense of self-worth and, therefore, the positivity of the experiences (Adams et al., 2011).

Conclusion

This study offers insight into why people use cannabis during casual leisure activities. The researchers used a reliable tool called MMM, developed by Cooper in 1994 and Simons et al. in 1998, to examine the underlying reasons for cannabis use. The study classified these motives

based on Stebbins' typology of casual leisure activities. Furthermore, an investigation explored differences in cannabis consumption motivations related to casual leisure across various social demographic groups and diverse consumption scenarios.

As the first study exploring the underlying dimension of cannabis consumption motivation in Germany and examining the differences in motivation based on socio-demographic characteristics and consumption situations, the findings of the study will be used as a benchmark for various stakeholders, including consumers, policymakers, and service providers for this growing population of cannabis consumption.

Recommendations for future research

Using the current finding as an anchor point, future research with larger samples of experienced cannabis users may help determine how consumption motivations are related to health outcomes. Given the significant regulatory change in legalization expected in Germany, future research should apply longitudinal surveillance to determine changes or stabilities in the consumption motives, behavior, and outcomes of cannabis consumption. Understanding attitudinal changes in benefit perception may forecast changes in behavior and other health outcomes and inform public health strategies for minimizing harm in the post-legalization era (Turna et al., 2022).

Ethics approval and consent to participate: The research study procedure was performed per the Declaration of Helsinki (World Medical Association Declaration of Helsinki, 2013). All participants gave written informed consent to participate in the study. The Internal Review Board of Geisenheim University approved the study protocol and written consent procedure.

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Conflicts of Interest: The authors declare they have no actual or perceived conflicts of interest to report.

Availability of data materials: All data generated or analyzed during this study are not publicly available to maintain the privacy of the individuals' identities. The dataset supporting the conclusions is available upon request to the corresponding author.

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