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## Profiling cannabis consumption motivation and situations as casual leisure

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# PROFILING CANNABIS CONSUMPTION MOTIVATION AND SITUATIONS AS CASUAL LEISURE

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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 (Ciarrano 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

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### *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 ( $\alpha$ ) 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 (%)	$\alpha$
<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*
	Generational cohorts				
	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*
	Education groups				
	Low	Middle	High		
Sociable conversation	3.46	3.40	3.02		2.88*
	Occupation groups				
	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.*

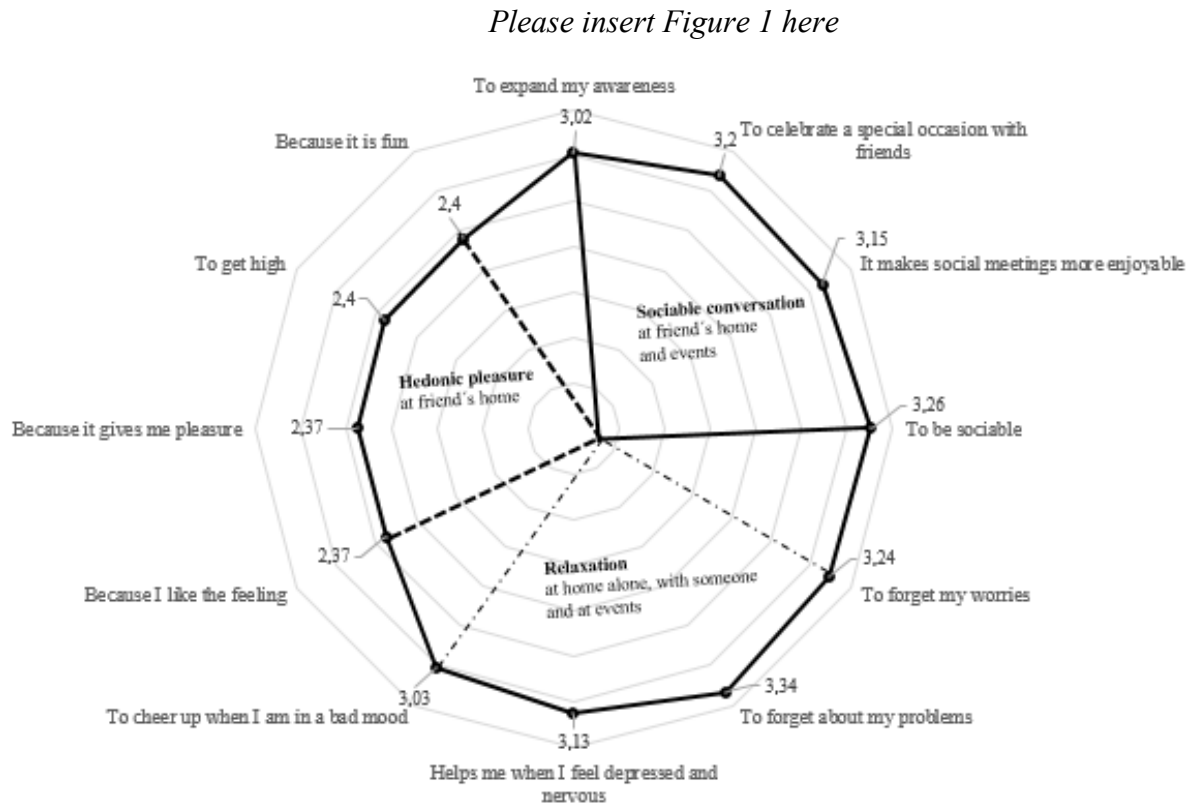
**Table 4.** Cannabis consumption motives and consumption situations

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.



**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 penchants 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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**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.

## References

- Adams, R. E., Santo, J. B., & Bukowski, W. M. (2011). The presence of a best friend buffers the effects of negative experiences. *Developmental Psychology*, 47(6), 1786–1791. <https://doi.org/10.1037/a0025401>
- American Psychological Association (2022). More than a quarter of U.S. adults say they're so stressed they can't function (2022 Nov 10). <https://www.apa.org/news/press/releases/2022/10/multiple-stressors-no-function>
- American Psychiatric Association (2018). Americans say they are more anxious; baby boomers report greatest increase in anxiety (2022 Nov 10). <https://www.psychiatry.org/newsroom/news-releases/americans-say-they-are-more-anxious-than-a-year-ago-baby-boomers-report-greatest-increase-in-anxiety>
- Ashford, J. R., & Sowden, R. R. (1970). Multivariate probit analysis. *Biometrics*, 26(3), 535. <https://doi.org/10.2307/2529107>
- Beck, K. H., Caldeira, K. M., Vincent, K. B., O'Grady, K. E., Wish, E. D., & Arria, A. M. (2009). The social context of cannabis use: Relationship to cannabis use disorders and depressive symptoms among college students. *Addictive Behaviors*, 34(9), 764–768. <https://doi.org/10.1016/j.addbeh.2009.05.001>
- Belhassen, Y., Santos, C. A., & Uriely, N. (2007). Cannabis usage in tourism: A sociological perspective. *Leisure Studies*, 26(3), 303–319. <https://doi.org/10.1080/02614360600834958>
- Bingöl, S. (2021). From escape to seeking: Understanding drug tourists. *Journal of Tourism and Cultural Change*, 20(4), 583–599. <https://doi.org/10.1080/14766825.2021.1960853>
- Bravo, A. J., Sotelo, M., Pilatti, A., Mezquita, L., & Read, J. P. (2019). Depressive symptoms, ruminative thinking, marijuana use motives, and marijuana outcomes: A multiple mediation model among college students in five countries. *Drug and Alcohol Dependence*, 204, 107558. <https://doi.org/10.1016/j.drugalcdep.2019.107558>
- Buckner, J. D., Ecker, A. H., & Vinci, C. (2013). Cannabis use vulnerability among socially anxious users: Cannabis craving during a social interaction. *Psychology of Addictive Behaviors*, 27(1), 236–242. <https://doi.org/10.1037/a0029763>
- Buckner, J. D., Heimberg, R. G., Matthews, R. A., & Silgado, J. (2012). Marijuana-related problems and social anxiety: The role of marijuana behaviors in social situations. *Psychology of Addictive Behaviors*, 26(1), 151–156. <https://doi.org/10.1037/a0025822>

- Buckner, J. D., Zvolensky, M. J., Farris, S. G., & Hogan, J. (2014). Social anxiety and coping motives for cannabis use: The impact of experiential avoidance. *Psychology of Addictive Behaviors*, 28(2), 568–574. <https://doi.org/10.1037/a0034545>
- Chabrol, H., Ducongé, E., Roura, C., & Carey, K. B. (2005). Relations between cannabis use and dependence, motives for cannabis use and anxious, depressive and borderline symptomatology. *Addictive Behaviors*, 30(4), 829–840. <https://doi.org/10.1016/j.addbeh.2004.08.027>
- Chib, S., & Greenberg, E. (1998). Analysis of multivariate probit models. *Biometrika*, 85(2), 347–361. <https://doi.org/10.1093/biomet/85.2.347>
- Christiansen, M., Vik, P. W., & Jarchow, A. (2002). College student heavy drinking in social contexts versus alone. *Addictive Behaviors*, 27(3), 393–404. [https://doi.org/10.1016/s0306-4603\(01\)00180-0](https://doi.org/10.1016/s0306-4603(01)00180-0)
- Ciairano, S., Settanni, M., van Schuur, W., & Miceli, R. (2010). Adolescent substance use, resources and vulnerabilities: A cross-national and longitudinal study. *SUCHT*, 52(4), 253–260. <https://doi.org/10.1024/2006.04.05>
- Cooper, M. L. (1994). Motivations for alcohol use among adolescents: Development and validation of a four-factor model. *Psychological Assessment*, 6(2), 117–128. <https://doi.org/10.1037/1040-3590.6.2.117>
- Cooper, M. L., Frone, M. R., Russell, M., & Mudar, P. (1995). Drinking to regulate positive and negative emotions: A motivational model of alcohol use. *Journal of Personality and Social Psychology*, 69(5), 990–1005. <https://doi.org/10.1037/0022-3514.69.5.990>
- Dekker, N., Linszen, D. H., & De Haan, L. (2009). Reasons for cannabis use and effects of cannabis use as reported by patients with psychotic disorders. *Psychopathology*, 42(6), 350–360. <https://doi.org/10.1159/000236906>.
- Duff, C. & Erickson, P.G. (2014). Cannabis, risk and normalization: evidence from a Canadian study of socially integrated, adult cannabis users. *Health, Risk & Society*, 16(3), 210-226. <https://doi.org/10.1080/13698575.2014.911823>
- Eagly, A. H. (1983). Gender and social influence: A Social Psychological Analysis. *American Psychologist*, 38(9), 971–981. <https://doi.org/10.1037/0003-066x.38.9.971>
- Foster, D. W., Allan, N. P., Zvolensky, M. J., & Schmidt, N. B. (2015). The influence of cannabis motives on alcohol, cannabis, and tobacco use among treatment-seeking cigarette smokers. *Drug and Alcohol Dependence*, 146, 81–88. <https://doi.org/10.1016/j.drugalcdep.2014.11.013>

Foster, K. T., Li, N., McClure, E. A., Sonne, S. C., & Gray, K. M. (2016). Gender differences in internalizing symptoms and suicide risk among men and women seeking treatment for cannabis use disorder from late adolescence to middle adulthood. *Journal of Substance Abuse Treatment*, 66, 16–22. <https://doi.org/10.1016/j.jsat.2016.01.012>

Gould, J., Donnelly, R., & Innacchione, B. (2018). Turning over a new leaf in Colorado: An exploration of legalized recreational marijuana preferences, leisure interests, and leisure motivations in a sample of young adults. *World Leisure Journal*, 61(2), 113–130. <https://doi.org/10.1080/16078055.2018.1521866>

Hathaway, A. D. (2004). Cannabis careers reconsidered: Transitions and trajectories of committed long-term users. *Contemporary Drug Problems*, 31(3), 401–423. <https://doi.org/10.1177/009145090403100302>

Kang, S. K., O’Leary, J., & Miller, J. (2016). From forbidden fruit to the goose that lays golden eggs. *SAGE Open*, 6(4), 215824401667921. <https://doi.org/10.1177/2158244016679213>

Kelly, J. R. (1990). *Leisure* (2nd ed., Ser. Englewood Cliffs). Prentice-Hall.

Korf, D. J. (2002). Dutch coffee shops and trends in cannabis use. *Addictive Behaviors*, 27(6), 851–866. [https://doi.org/10.1016/s0306-4603\(02\)00291-5](https://doi.org/10.1016/s0306-4603(02)00291-5)

Kuntsche, E., Knibbe, R., Gmel, G., & Engels, R. (2005). Why do young people drink? A review of drinking motives. *Clinical Psychology Review*, 25(7), 841–861. <https://doi.org/10.1016/j.cpr.2005.06.002>

Lamberg, T., Virtanen, P., Vahtera, J., Luukkaala, T., & Koskenvuo, M. (2009). Unemployment, depressiveness and disability retirement: A follow-up study of the Finnish Hessup population sample. *Social Psychiatry and Psychiatric Epidemiology*, 45(2), 259–264. <https://doi.org/10.1007/s00127-009-0063-z>

Lau, N., Sales, P., Averill, S., Murphy, F., Sato, S.O., & Murphy, S. (2015). Responsible and controlled use: Older cannabis users and harm reduction. *International Journal of Drug Policy*, 26(8), 709–718. <https://doi.org/10.1016/j.drugpo.2015.03.008>

Lee, C. M., Neighbors, C., & Woods, B. A. (2007). Marijuana motives: Young adults’ reasons for using marijuana. *Addictive Behaviors*, 32(7), 1384–1394. <https://doi.org/10.1016/j.addbeh.2006.09.010>

Liebrechts, N., van der Pol, P., van Laar, M., de Graaf, R., van den Brink, W., & Korf, D. J. (2015). The role of leisure and delinquency in frequent cannabis use and dependence trajectories among young adults. *International Journal of Drug Policy*, 26(2), 143–152. <https://doi.org/10.1016/j.drugpo.2014.07.014>

Logan, O. (2023, April 12). *Cannabis to be legalized in Germany in 2023: What you need to know*. IamExpat. <https://www.iamexpat.de/expat-info/german-expat-news/cannabis-to-be-legalised-in-germany-in-2023-what-you-need-to-know>

Mason, J. (2022, August 15). *Experts reveal how the cannabis sector's popularity will affect alcohol sales*. The Drinks Business. <https://www.thedrinksbusiness.com/2022/08/experts-reveal-how-the-cannabis-sector-will-affect-alcohol-sales/#:~:text=With%20the%20US%20cannabis%20industry,if%20cannabis%20will%20usurp%20alcohol.>

McCabe, S. E. (2002). Gender differences in collegiate risk factors for heavy episodic drinking. *Journal of Studies on Alcohol*, 63(1), 49–56. <https://doi.org/10.15288/jsa.2002.63.49>

Mental Health Foundations (2018). Results of the mental health foundation's 2018 study (2022 Nov 10). <https://www.mentalhealth.org.uk/explore-mental-health/mental-health-statistics/stress-statistics>

Mezquita, L., Bravo, A. J., Ortet, G., Pilatti, A., Pearson, M. R., & Ibáñez, M. I. (2018). Cross-cultural examination of different personality pathways to alcohol use and misuse in emerging adulthood. *Drug and Alcohol Dependence*, 192, 193–200. <https://doi.org/10.1016/j.drugalcdep.2018.08.004>

Mezquita, L., Camacho, L., Ibáñez, M. I., Villa, H., Moya-Higueras, J., & Ortet, G. (2015). Five-factor model and alcohol outcomes: Mediating and moderating role of alcohol expectancies. *Personality and Individual Differences*, 74, 29–34. <https://doi.org/10.1016/j.paid.2014.10.002>

Mitchell, J., Mathews, H. F., & Yesavage, J. A. (1993). A multi-dimensional examination of depression among the elderly. *Research on Aging*, 15(2), 198–219. <https://doi.org/10.1177/0164027593152004>

Moffat, B. M., Johnson, J. L., & Shoveller, J. A. (2009). A gateway to nature: Teenagers' narratives on Smoking Marijuana Outdoors. *Journal of Environmental Psychology*, 29(1), 86–94. <https://doi.org/10.1016/j.jenvp.2008.05.007>

Moitra, E., Christopher, P. P., Anderson, B. J., & Stein, M. D. (2015). Coping-motivated marijuana use correlates with DSM-5 cannabis use disorder and psychological distress among emerging adults. *Psychology of Addictive Behaviors*, 29(3), 627–632. <https://doi.org/10.1037/adb0000083>

Newcomb, M. D., Chou, C., Bentler, P. M., & Huba, G. J. (1988). Cognitive motivations for drug use among adolescents: Longitudinal tests of gender differences and predictors of change in drug use. *Journal of Counseling Psychology*, 35(4), 426–438. <https://doi.org/10.1037/0022-0167.35.4.426>

- Osborne, G. B., & Fogel, C. (2008). Understanding the motivations for recreational marijuana use among adult Canadians. *Substance Use & Misuse*, 43(3–4), 539–572. <https://doi.org/10.1080/10826080701884911>
- O'Hara, R. E., Armeli, S., & Tennen, H. (2016). Alcohol and cannabis use among college students: Substitutes or complements? *Addictive Behaviors*, 58, 1–6. <https://doi.org/10.1016/j.addbeh.2016.02.004>
- Parker, H., Williams, L., & Aldridge, J. (2002). The normalization of 'sensible' recreational drug use. *Sociology*, 36(4), 941–964. <https://doi.org/10.1177/003803850203600408>
- Peretti-Watel, P., & Lorente, F. O. (2004). Cannabis use, sport practice and other leisure activities at the end of adolescence. *Drug and Alcohol Dependence*, 73(3), 251–257. <https://doi.org/10.1016/j.drugalcdep.2003.10.016>
- Pinheiro Dias Pereira, T. F., & de Paula, L. B. (2016). Drug tourism: General overview, case studies and new perspectives in the Contemporary World. *European Journal of Tourism, Hospitality and Recreation*, 7(3), 188–202. <https://doi.org/10.1515/ejthr-2016-0021>
- Rojek, C. (1997). Leisure theory: Retrospect and prospect. *Loisir et Société / Society and Leisure*, 20(2), 383–400. <https://doi.org/10.1080/07053436.1997.10715549>
- Schaub, M., Gmel, G., Annaheim, B., Mueller, M., & Schwappach, D. (2010). Leisure time activities that predict initiation, progression and reduction of cannabis use: A prospective, population-based Panel survey. *Drug and Alcohol Review*, 29(4), 378–384. <https://doi.org/10.1111/j.1465-3362.2009.00156.x>
- Sharp, E. H., Coffman, D. L., Caldwell, L. L., Smith, E. A., Wegner, L., Vergnani, T., & Mathews, C. (2011). Predicting substance use behavior among South African adolescents: The role of leisure experiences across time. *International Journal of Behavioral Development*, 35(4), 343–351. <https://doi.org/10.1177/0165025411404494>
- Shukla, R. K. (2005). Using marijuana in adulthood. *Journal of Ethnicity in Substance Abuse*, 4(3–4), 153–181. [https://doi.org/10.1300/j233v04n03\\_07](https://doi.org/10.1300/j233v04n03_07)
- Simons, J. S., Gaher, R. M., Correia, C. J., Hansen, C. L., & Christopher, M. S. (2005). An affective-motivational model of marijuana and alcohol problems among college students. *Psychology of Addictive Behaviors*, 19(3), 326–334. <https://doi.org/10.1037/0893-164x.19.3.326>
- Simons, J. S., Correia, C. J., & Carey, K. B. (2000). A comparison of motives for marijuana and alcohol use among experienced users. *Addictive Behaviors*, 25(1), 153–160. [https://doi.org/10.1016/s0306-4603\(98\)00104-x](https://doi.org/10.1016/s0306-4603(98)00104-x)

Simons, J. S., Correia, C. J., Carey, K. B., & Borsari, B. E. (1998). Validating a five-factor marijuana motives measure: Relations with use, problems, and alcohol motives. *Journal of Counseling Psychology*, 45(3), 265–273. <https://doi.org/10.1037/0022-0167.45.3.265>

Simons, J. S., Joseph Clarke, C., Simons, R. M., & Spelman, P. J. (2016). Marijuana consequences in a motivational context: Goal congruence reduces likelihood of taking steps toward change. *Addictive Behaviors*, 52, 83–90. <https://doi.org/10.1016/j.addbeh.2015.08.010>

Statista (2023): *Cannabis, Germany*. <https://de.statista.com/outlook/hmo/cannabis/deutschland>

Stebbins, R. A. (1996). *Tolerable differences: Living with deviance*. McGraw-Hill Ryerson.

Stebbins, R. A. (1997). Casual Leisure: A conceptual statement. *Leisure Studies*, 16(1), 17–25. <https://doi.org/10.1080/026143697375485>

Stebbins, R. A. (2004). Pleasurable aerobic activity: A type of casual leisure with salubrious implications. *World Leisure Journal*, 46(4), 55–58. <https://doi.org/10.1080/04419057.2004.9674374>

Turna, J., Balodis, I., Van Ameringen, M., Busse, J. W., & MacKillop, J. (2022). Attitudes and beliefs toward cannabis before recreational legalization: A cross-sectional study of community adults in Ontario. *Cannabis and Cannabinoid Research*, 7(4), 526–536. <https://doi.org/10.1089/can.2019.0088>

Witting, V. (2023, April 14). *Germany's two-step plan to legalize cannabis – DW – 04/14/2023*. dw.com. <https://www.dw.com/en/germanys-two-step-plan-to-legalize-cannabis/a-65301438>

World Medical Association Declaration of Helsinki. (2013). *JAMA*, 310(20), 2191. <https://doi.org/10.1001/jama.2013.281053>

Zvolensky, M. J., Vujanovic, A. A., Bernstein, A., Bonn-Miller, M. O., Marshall, E. C., & Leyro, T. M. (2007). Marijuana use motives: A confirmatory test and evaluation among young adult marijuana users. *Addictive Behaviors*, 32(12), 3122–3130. <https://doi.org/10.1016/j.addbeh.2007.06.010>



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