

# UNIVERSITY OF TWENTE.

Student: Leo Dillhage

Student number: S2798255

l.dillhage@student.utwente.nl

## **Bachelor Thesis:** **High-risk games and safety measures in the German Bundesliga:** **How do Stadium attendants perceive their safety?**

University of Twente, Enschede

Bachelor Programme: Management, society and technology

Academic Year: 2022/2023

Bachelor circle: Citizen's preparedness to use violence

First supervisor: Dr. Guus Meershoek

Date of Submission: 28<sup>th</sup> of June, 2023

Second supervisor: Dr. Ola El-Taliawi

Word Count: 11.893

## **Preface**

This thesis is written for the bi-national Bachelor of Science (BSc) Degree in the study program of Management, Society and Technology / Public Governance across Borders, at the UTwente, in Enschede / Westfälische Wilhelms-Universität, in Münster.

At first, I would want to thank my professors at UTwente Dr. A.J.J. Guus Meershoek and Dr. Ola El-Taliawi. I really appreciate their guidance and their feedback throughout the process of writing this research project. Additionally, I would like to thank professor Martin Rosema for previous preparation in the statistical analysis part of this bachelor thesis.

A great “Thank you” do I want to direct, not only to FC Gelsenkirchen Schalke 04 e.V. for enabling the cooperation in conducting the survey in front of the Veltins-Arena, but also to all the respondents who participated in the survey of this study! For their time and their thoughts on this subject.

Finally, I would like to thank my parents, friends and fellow students and all the people who supported me in the research and writing process of this bachelor thesis. This project really fulfilled me with joy and I am more than happy to now present the results!

## **TABLE OF CONTENTS:**

<b>ABSTRACT</b>	<b>1</b>
<b>1. INTRODUCTION</b>	<b>2</b>
<b>2. THEORETICAL FRAMEWORK</b>	<b>4</b>
<b>2.1. INTRODUCTION</b>	<b>4</b>
<b>2.2 OBJECTIVE AND SUBJECTIVE PERCEPTION OF SAFETY</b>	<b>5</b>
<b>2.3 SAFETY MEASUREMENTS IN HIGH-RISK GAMES</b>	<b>6</b>
<b>2.4 IMPACT OF POLICE PRESENCE ON SUBJECTIVE PERCEPTION OF SAFETY</b>	<b>8</b>
<b>2.5 IMPACT OF A STRICT SEPARATION BETWEEN FAN BASES ON OBJECTIVE SAFETY</b>	<b>9</b>
<b>2.6 IMPACT OF A BAN OF ALCOHOLIC BEVERAGES ON OBJECTIVE SAFETY</b>	<b>10</b>
<b>2.7 HABITS AND EXPERIENCES ON SAFETY PERCEPTION</b>	<b>11</b>
<b>2.8 CONCEPTUAL MODEL</b>	<b>12</b>
<b>3. METHODOLOGICAL DESIGN</b>	<b>13</b>
<b>3.1 SURVEY QUESTIONNAIRE</b>	<b>13</b>
<b>3.2 SURVEY CONDUCTION AND SAMPLE POPULATION</b>	<b>14</b>
<b>3.3 METHODS OF STATISTICAL ANALYSIS</b>	<b>15</b>
<b>3.4 CRITERIA OF QUALITY IN QUANTITATIVE RESEARCH</b>	<b>18</b>

<b><u>4. DATA ANALYSIS AND RESULTS</u></b>	<b><u>20</u></b>
<b>4.1 DEMOGRAPHIC PROFILE OF THE SAMPLE POPULATION</b>	<b>20</b>
<b>4.2 CORRELATION BETWEEN DEMOGRAPHICS AND PERCEPTION OF SAFETY</b>	<b>22</b>
<b>4.3 ANALYSIS OF SAFETY MEASUREMENTS IN HIGH-RISK GAMES ON SUBJECTIVE PERCEPTION OF SAFETY</b>	<b>25</b>
<b>4.3.1 COMPARATIVE ANALYSIS RED-LIGHT GAME AND GREEN-LIGHT GAME</b>	<b>26</b>
<b>4.3.2 ANALYSIS OF SAFETY MEASUREMENT: INCREASED POLICE PRESENCE</b>	<b>28</b>
<b>4.3.3 ANALYSIS OF SAFETY MEASUREMENT: STRICT SEPARATION OF FAN-BASES</b>	<b>32</b>
<b>4.3.4 ANALYSIS OF SAFETY MEASUREMENT: BAN OF ALCOHOLIC BEVERAGES</b>	<b>34</b>
<b><u>5. CONCLUSION</u></b>	<b><u>37</u></b>
<b><u>6. DISCUSSION</u></b>	<b><u>39</u></b>
<b><u>7. LITERATURE LIST</u></b>	<b><u>41</u></b>
<b><u>8. TABLE OF FIGURES</u></b>	<b><u>48</u></b>
<b><u>9. APPENDICES</u></b>	<b><u>50</u></b>
<b><u>10. AFFIDAVIT</u></b>	<b><u>58</u></b>

## Abstract

Matchups in the German Bundesliga, categorized as high-risk (Red-light) games, represent the most hazardous circumstances for the clash between two clubs. The classification of these games indicates a highly increased potential of violent breakouts and physical altercations between fan-bases and the police. The following research project was therefore formed around the research question: *“To what extent do the safety measurements, taken under the callout of a high-risk game in the German Bundesliga, influence the stadium attendant’s subjective perception of safety?”*. The study followed a quantitative methodological design, based on a statistical analysis of survey data. The conduction of the survey was carried out in cooperation with FC Gelsenkirchen Schalke 04 e.V., which permitted to provide the questionnaire at its stadium, the Veltins-Arena. The survey was carried out prior to the high-risk game against Eintracht Frankfurt e.V. on the 33rd matchday of the 2022/2023 Bundesliga season, in order to investigate the stadium attendants' perception of safety. This setting was used exemplary for the investigation of such games called out as “high-risk”. Not only did this research project focus on examining the general safety perception of stadium attendants in high-risk games. But further, was the impact of the following safety measurements: “Increased police presence”, “Separation of fan-bases” and “Ban of alcoholic beverages” on the subjectively perceived safety of stadium visitors analyzed. These security measures are frequently implemented to ensure an orderly procedure of these matchups. The statistical analysis of the collected survey data could finally only find a minimal difference in how safe stadium attendants feel, in a high-risk game on the one hand and a game without any increased risk-potential (Green-light game) on the other hand. Whereas the conclusionary findings on the extent to which the three investigated safety measures are perceived as safety-increasing are significantly contrasting. Stadium attendants perceive an increased police presence and the separation of fan-bases as essential instruments to ensure their safety in high-risk games, but restricting alcoholic beverages in and surrounding the stadium encounters a strong rejection as a measurement to enhance security.

## 1. Introduction

Football is an immensely growing sport not only in terms of spectators and fans but with recent developments of high commercialization of the sport, its importance as an economic sector will expand even further in the near future (Ronald & Jean-Pierre, 2019). The crowds that regularly gather in and around football stadiums are known for creating fascinating atmospheres enhancing the attractiveness of these sports events. But gathering in such large groups does also come with the potential for public disorder (Stott, C. et al., 2008). Numerous events of violence and arrests in the German Bundesliga season of 2021/2022 (LZPD NRW, 2022) demonstrated the importance of analyzing these through empirical studies and creating and adapting modern policing strategies, ensuring a safe ground for modern football. The “Deutscher Fußball Bund (DFB)” developed a strategy of categorizing games in the German Bundesliga into three different ranks of potential risk. Games categorized as “with increased risk” or so-called “high-risk games” will feature the objective of this study. These games require extensive safety measures because they are carried out under “sufficient probability that a particularly hazardous situation will occur” (Bremische Bürgerschaft, 2021). Next to a significant increase of police forces on the matchday of a high-risk game, extensive safety measures such as a strict separation of home and guest fans or a restriction of alcoholic beverages in and surrounding the stadium are regularly implemented. As more and more games are declared as “high-risk games” (LZPD NRW, 2022) in the Bundesliga, the following safety operations result in massively increased costs. The aim of this study is to investigate the impact of the implemented safety measurements in high-risk games, on the safety perception of stadium attendants. Is their implementation an effective instrument to enhance the security and with that the feeling of safety of the people affected? Are the resulting costs for these safety operations justified through this perspective? The process of this research project will reveal valuable insights into this highly controversial topic, following the research question:

***“To what extent do the measurements, taken under the callout of a high-risk game in the German Bundesliga, influence the stadium attendant’s subjective perception of safety? “***

Football hooliganism represents a research field closely connected to this project. It is well-researched in terms of its influence on safety in stadiums and in the area surrounding them (Stott et al., 2008). Furthermore, is there a broad range of research conducted on how modern policing could deal with these acts of violence in a sports context (Tsoukala, 2016; Pearson & Stott, 2022).

The research gap in this context, which will be targeted within this bachelor thesis, aims to address the subjective perception of individuals, experiencing the safety measures in and surrounding stadiums. This aspect plays a crucial role in devising solutions for modern safety operations in sport events, while covering the interests of stadium attendants. The preliminary researched literature gives insights into how individuals subjectively perceive their surroundings (Sørensen & Mosslemi, 2009) and their experience of social disorder and threats in public (Innes, 2014). Moreover, it specifies this perception in presence of the police (Doyle & Frogner & Andershed, 2016). Additionally, does the literature elaborate on the categorization of games in the German Bundesliga (Bremer Bürgerschaft, 2021) and what measures of safety and police operations do follow the callout of a high-risk game (LZPD, 2022). To assess the influence of safety measures on stadium attendants' subjective perception of safety, three specific measures were chosen: "Increased police presence," "Separation of fan-bases," and a "Ban on alcoholic beverages." These measures are commonly employed in high-risk games to ensure safety within and around the stadium under potentially hazardous circumstances. Each measure was selected based on a theoretical foundation that forms the basis of the subsequent quantitative research.

The data collection for this study was conducted through an online survey distributed to stadium visitors attending the high-risk game between FC Gelsenkirchen Schalke 04 e.V. and Eintracht Frankfurt e.V. during the 2022/2023 Bundesliga season. The survey was accessible to fans through QR codes provided at the stadium entrance of the Veltins Arena. The data collected in this setting served as an exemplary basis for drawing conclusions regarding the safety perception of stadium attendants in high-risk Bundesliga matches. Exact numbers of police deployment in connection with this high-risk match have not been published, but the away block was isolated by police forces in advance of the game, to prevent possible contact between fans.

In the following process of the quantitative research approach, the data gathered in the survey setting was statistically analyzed using various tools. Next to descriptive statistics representing characteristics of the sample population, correlation analyses and paired sample T-tests were computed. These served as the basis to firstly examine the general safety perception in high-risk games and secondly, to investigate the impact of the selected safety measurements on the subjective perception of safety of stadium attendants. These analyses resulted in significant outcomes of the assigned research scope, finally enabling the researcher to formulate answers to the research question and the corresponding hypotheses.

## 2. Theoretical framework

### 2.1. Introduction

The theoretical background of this study is structured in four parts, which are important as a basis for the analysis and the conducted survey research. The first step of the theoretical framework will elaborate on the categorization of Bundesliga games and in which specific cases it comes to the callout of a high-risk game. Further, will it define the circumstances and measures in and surrounding the stadium, after the callout of a high-risk game. In a second step, the subjective perception of safety will be theoretically backed. The theory will define the contrast between subjective safety perception to objective safety and what parameters do influence the subjectively perceived safety of individuals. Further, does this theoretical background elaborate on the three measurements taken in a high-risk game, which are specifically investigated in this research project. At first, the impact of an increased presence of police forces on the individual perception of safety is examined. This will enable the researcher to relate the theoretical background given for the individual perception of safety in a situation with increased risk and the presence of the police, to the specific investigated situation on a Bundesliga matchday under safety measurements and a high-risk environment. Secondly, is the impact of a strict separation of fanbases on the stadium attendant's objective safety elucidated. The separation of guests and home fans accounts for the inside as well as the surroundings of the stadium. Due to missing research on this measurements impact on subjective safety of stadium attendants, will this theoretical basis possibly be further developed after concluding this study. The third selected measurement in a high-risk game is represented by the ban of alcoholic beverages in the stadium. The theoretical framework gives insights into the proportion of acts of violence committed under the influence of alcohol in the overall criminal statistics of Germany and further elucidates the impact of a ban of alcoholic beverages on the safety inside the stadiums of the German Bundesliga. On the basis of this gradually constructed theoretical framework, did the researcher create a conceptual model, containing three stages that finally form the subjective perception of stadium attendants. This model will be used throughout the process of data collection and analysis and can be assessed to formulate final findings.

The theoretical underpinning of this study is divided into seven integral sections, which serve as a fundamental basis for the analysis and survey research conducted. The initial phase of



this theoretical foundation will provide support for the subjective perception of safety. The theory will establish the distinction between subjective safety perception and objective safety and identify the factors that influence individuals' subjective perception of safety. In the subsequent phase, the theoretical framework will expound upon the categorization of Bundesliga games and identify the specific circumstances under which a high-risk game is proclaimed. Furthermore, it will define the situational factors and measures implemented within and around the stadium subsequent to the designation of a high-risk game. Additionally, this theoretical background will elucidate upon three specific measurements undertaken in high-risk games, which are the focal point of investigation in this research project.

Firstly, the study examines the impact of an augmented presence of police forces on the individual perception of safety. This analysis will enable the researcher to establish a connection between the theoretical framework presented for individual safety perception in a situation characterized by heightened risk and the presence of law enforcement personnel in the specific context of a Bundesliga matchday, subject to safety measures and a high-risk game environment.

Secondly, the study investigates the consequences of a strict segregation of fan bases on the objective safety of stadium attendees. This segregation encompasses both the internal stadium environment and its immediate surroundings. Due to a lack of existing research on the impact of this measurement on the subjective safety of stadium attendees, this theoretical foundation may undergo further development subsequent to the completion of this research project.

The third selected measurement in high-risk games involves the prohibition of alcoholic beverages in the stadium. The theoretical framework provides insights into the proportion of acts of violence committed under the influence of alcohol in Germany's overall criminal statistics and further elucidates the impact of an alcoholic beverage ban on safety within German Bundesliga stadiums. Based on this gradually constructed theoretical framework, the researcher has developed a conceptual model consisting of the investigated measurements and their influence on the subjective perception of stadium attendees. This model will be utilized throughout the data collection and analysis process and will aid in formulating the final findings.

## 2.2 Objective and subjective perception of safety

The perception of an individual's safety can be distinguished into two categories: objective perception and subjective perception. Objective safety, also known as statistical safety, refers to

the actual number of recorded accidents or injuries (Sørensen & Mosslemi, 2009). The literature indicates that there is often a pronounced discrepancy between subjective perceptions and objective hazards to safety. The German crime statistics (BMI 2019) have indicated a decline for various offense types for years, but this is by no means reflected in population surveys regarding individual safety perception (Hummelsheim-Doss et. Al., 2017). In the context of stadium attendants, objective safety would encompass instances of violence occurring between rival fans or between fans and the police within and around the stadium. On the other hand, subjective safety perception is based on individual experiences, emotions, and feelings, which can vary among individuals. Elements such as fear, anxiety, trust, and the sense of control are among the factors that influence how individuals subjectively perceive safety (Wildavsky & Dake, 1990). Factors like demographics, current environment, prior experiences of victimization, media coverage of crime, confidence in the justice system, and perceptions of society as a whole can also influence feelings of fear and safety (Andreescu, 2010; Hinkle & Weisburd, 2008). This subjective sense of safety is shaped by an individual's emotional and cognitive reactions to their surroundings (Sørensen & Mosslemi, 2009). In a stadium environment, for example, factors such as a strong police presence, the presence of rival fans with a high readiness to use violence or clear separation of fan bases and police escorts to the stadium can influence the subjectively perceived safety. Numerous factors finally contribute to the subjectively perceived safety of an individual within and around the stadium environment.

### 2.3 Safety measurements in high-risk games

The German football federation, known as the "Deutscher Fußball Bund (DFB)," provides guidelines to the hosting club in collaboration with state-level police organizations and the visiting club for determining the risk assessment and categorization of games in the German Bundesliga. Although not legally defined, this categorization is determined by the hosting football club according to § 32 of the "Guidelines for Improving Security at Federal Matches" issued by the DFB, as well as the assessment of the state-level police based on their own guidelines (Polizei NRW, nd. B.). The risk assessment results in a categorization using traffic light colors. A "green" match indicates a low likelihood of violence, possibly limited to spontaneous conflicts among small groups of fans. A "yellow" or "risk" game implies the possibility of violence and riots based on past incidents and fan behavior between the two clubs. Lastly, a "red" categorization represents

a high-risk game, where acts of violence and clashes between fans and the police are highly anticipated (Bremer Bürgerschaft, 2021).

According to the Bremer Bürgerschaft (2021), the state-level police assess the situation by considering various factors such as the number of home and visiting fans, the respective categorization of fans (categories A, B, C), the arrival method of visiting fans, and the knowledge of their behavior. The classification and determination of the necessary police deployment are based on the analysis and evaluation of relevant factors, interactions, and potential consequences of police actions, in alignment with specified strategies and guidelines.

The categorization of football fans in the risk assessment distinguishes between three categories: Category A consists of "peaceful" fans, Category B includes "violent" fans and Category C comprises "violence-seeking" fans. These categories were established based on the criteria outlined in the final report of the working group "Sport and Security" dated 23.07.1991 (LZPD, 2022). The hosting club and state-level police utilize these categories to determine the safety measures required for high-risk games. These measures may include an increased police presence, reinforced security services within the stadium, strict segregation of supporters, the implementation of "buffer blocks" to separate endangered spectator areas, police escort for visiting fans, monitoring of arrivals, bus escorts by officers familiar with the scene, bus shuttles, pre-event security around the stadium, limitations on ticket sales for standing areas, and the prohibition of alcoholic beverages (DFB, 2018).

Specifically, this research focuses on three significant safety measures implemented after declaring a high-risk game. These measures include the heightened presence of police forces, strict separation between rival fan bases through "buffer blocks" and police escorts, and the ban on alcoholic beverages during the matchday. The effect of these measures on the subjective perception of safety among stadium attendees is examined. Although specific data on the increase in police forces cannot be disclosed for strategic reasons, averages based on representative seasons prior to the COVID-19 pandemic (2017/2018 and 2018/2019) indicate approximately 200 police officers deployed for green matches, 300-400 for yellow matches, and just under 1,000 for red matches (Bürgerschaft Bremen, 2021).

H1: *The callout of a high-risk game (wording/terminology based) decreases the perception of safety of stadium attendants*

## 2.4 Impact of police presence on subjective perception of safety

The implementation of stringent safety measures following the declaration of a high-risk game in the German Bundesliga includes a significant augmentation of police forces. The German Football Federation (DFB), the host club, and the relevant federal state anticipate that this increased police deployment will lead to the effective separation of rival fan bases and a peaceful match day. However, the presence of police officers as security personnel elicits mixed responses. On one hand, individuals associate the presence of officers with trouble or potential danger, but on the other hand, their presence in public spaces provides reassurance and enhances the perception of safety in the area. Paradoxically, the visibility of security measures and police patrols raises questions about the perceived threat level in the patrolled area, which may have unintended consequences (Brands et al., 2015; Gau et al., 2014). Additionally, football stadiums employ additional security guards to support the police in ensuring a safe environment during match days. This fragmentation of policing responsibilities beyond traditional law enforcement agencies has been acknowledged by Loader (2000). Many researchers argue in favor of the presence of police officers, suggesting that visible uniforms can serve as symbols of societal control (Bahn, 1974). As noted by C. Hale (1996), the visibility of uniformed officers represents the prediction and control of crime, restoration of order in society, and subsequently reduces fear of crime and enhances feelings of safety. These arguments align with the rational choice and routine activity theories, which posit that increased societal control reduces the likelihood of crime by raising the risk of detection through the presence of capable guardians (Braga & Weisburd, 2010). However, some studies unexpectedly indicate that individuals perceive the situation as less safe when police officers are present in areas with an elevated risk potential. This may be attributed to the notion that increased police presence leads people to believe the area is dangerous and that a crime has occurred there (Hinkle & Weisburd, 2008). In a study on the perception of safety in the presence of police, Doyle, Frogner, and Andershed (2016) found that individuals felt safer in the presence of police forces in areas perceived as unsafe, such as a park at nighttime.

H2: *The high presence of police forces, under the circumstances of a high-risk game, increases the subjective perception of safety of stadium attendants*

## 2.5 Impact of a strict separation between fan bases on objective safety

The segregation of fan groups has proven to be an effective strategy for preventing conflicts and acts of violence among football fans in the German Bundesliga (Polizeidirektion Hannover, 2008). In high-risk games, where the potential for violence is heightened, ensuring the safety of all attendees in the stadium involves the physical separation of rival fan streams. The focus is not on whether fans should be separated but rather on how this separation can be achieved (Polizeidirektion Hannover, 2008). Thomas Abrokat, the chairman of Fußballclub Hansa Rostock e.V., currently competing in the second Bundesliga, emphasizes the importance of separating fan streams in an interview, stating that the club invests in a shuttle service to directly transport away fans to the stadium, considering it a worthwhile investment (Schwinkendorf, 2013). The "Guidelines for improvement in safety in national games" (Deutscher Fußball Bund, 2018) mandate that football clubs in the professional leagues of Germany (Bundesliga, 2. Bundesliga, and 3. Liga) ensure as much distance as possible between the sections allocated to visiting-team fans and home-team fans in the stadium. Moreover, the separation between these fan groups within the spectator areas must be particularly secure, and the guest-team fan section should have its own entrance, ideally avoiding any crossing paths with home-team fans. These guidelines facilitate a strict segregation of fan streams during periods of increased risk and potential for violence, employing measures such as police escorts for guest-fans, the establishment of "buffer-blocks," or shuttle services. The study of crowd dynamics traces its roots back to early works on the psychology of masses, such as Gustave Le Bon's book "The Crowd" (1897). Le Bon highlights the concept of "contagion," wherein individuals lose their individuality and conform to the collective mind and identity when part of a larger entity, a crowd. The crowd's identity is characterized by heightened emotional states, diminished rational thinking, and a propensity for impulsivity and violence. Stott and Reicher (1998) examine the intergroup dynamics between different streams of football fans and their impact on crowd behavior. Their findings, based on observational research and expert interviews, demonstrate that crowd behavior is influenced by intergroup dynamics between rival fan groups. Conflicts tend to emerge and escalate rapidly when there is a perceived threat to the group's identity. They emphasize that the high potential for violence within football crowds and between rival fan groups is not simply a result of individual aggressiveness but rather a consequence of intergroup dynamics and crowd movements.

H3: *A strict separation in the spectator areas, between the two fan groups in a high-risk game, increases the stadium attendant's perception of safety*

## 2.6 Impact of a ban of alcoholic beverages on objective safety

Implementing a complete prohibition of alcoholic beverages within stadiums is frequently considered one of the most contentious measures taken to ensure safety during high-risk games among football fans in the Bundesliga. However, this ban is based on crime statistics in Germany. Research on youth violence and deviance indicates that being intoxicated is a strong predictor of violent behavior, along with having friends prone to violence and being male (Görge et al., 2013). Additionally, the proportion of alcohol-related offenders in the German registry of violent crime is significantly high. Out of the 144,339 cases resolved in 2012, 46,302 (32.1%) were committed under the influence of alcohol. In 2011, the corresponding figure was 31.8% (BMI, 2013). These findings in overall crime statistics arise from the fact that alcohol can lead to detachment, impaired judgment, heightened arousal with disinhibition, increased impulsivity and aggression, as well as a deceptive sense of enhanced performance (Schwind & Hans-Dieter, 2001). A study by Rossow and Bye (2013) demonstrates that acts of interpersonal violence often involve both offenders who are under the influence of alcohol and alcohol-intoxicated victims. Furthermore, the likelihood of interpersonal violence is even higher in locations with a generally high alcohol consumption, as football stadiums are notorious for excessive alcohol consumption (Rossow & Bye, 2013). Eberhard Gienger, the spokesperson of the CDU/CSU working group on sports and volunteering, suggests that prohibiting alcohol could be a viable approach, as alcohol frequently plays a role in riots or the misuse of pyrotechnics, as seen during the Covid-19 pandemic when alcohol was banned in Bundesliga stadiums from 2020 to 2021 (Augsburger-Allgemeine, 2020). However, it is important to note that alcohol is not the sole predictor of violent acts, and various other factors influence the likelihood, frequency, and severity of such acts. Therefore, there is no simple correlation between alcohol consumption and the likelihood of being a victim or perpetrator of violence (Teece & Williams, 2000).

H4: *A ban of alcoholic beverages, under the circumstances of a high-risk game, increases the subjective perception of safety of stadium attendants*

## 2.7 Habits and experiences on safety perception

The last section of this theoretical background addresses one of the demographic variables that was involved in the questionnaire of the survey. In order to investigate the influence of the frequency of people's stadium attendance on their perception of safety in high-risk games, a theoretical foundation is presented in this context. The impact of experience, habits and rituals on the safety perception of individuals can be traced far back to the book "The Constitution of Society" written by Anthony Giddens (1984). He contends that habits and rituals are essential for upholding social order and ensuring people's ontological security. Habits are automatic, repeating behaviors that people engage in, whereas rituals are more formal, symbolic behaviors that have cultural significance. Giddens (1984) further argues that individuals desire ontological safety, or a sense of certainty and stability in their social environment, at the most fundamental level. Rituals and habits create a sense of continuity and routine, which supports people's ontological security.

Furthermore, does the habituated action theory as established by Kasperon et. Al. (1989) as well as by Weyman and Kelly (1999) argue that individuals who engaged in a high-risk behavior or environment several times without experiencing any negative consequence finally become more and more desensitized. Following, that individuals perceive themselves as increasingly safe in a high-risk environment when establishing habits and experiences.

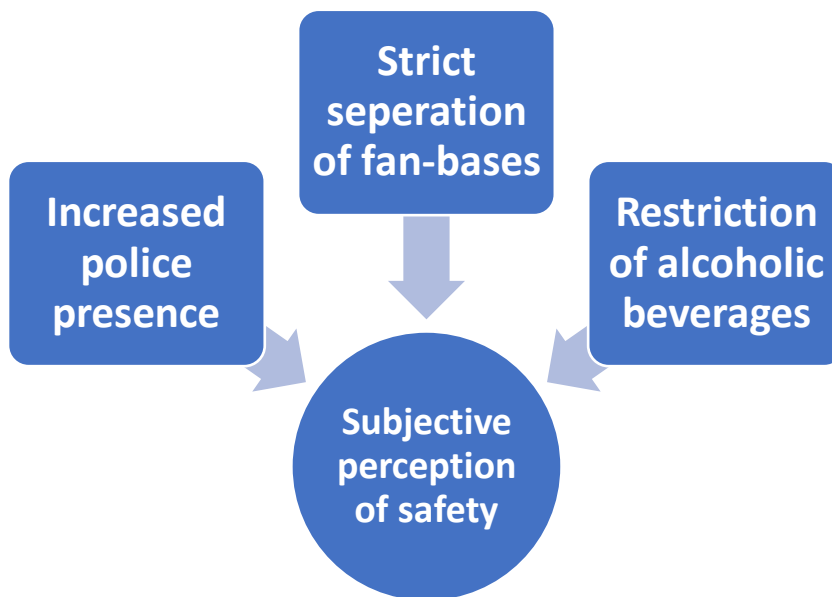
In context of the attendance in football stadiums, would these habits be represented by frequent stadium visits and repeating structures and sequences for individuals in this specific environment. The safety perception could insofar be higher for individuals, who embraced such repeating habits when attending the stadium. Giving them experience in this environment and strengthening their ability of correctly assessing situations of increased risk.

H5: *"Individuals attending the stadium more regularly, have a higher perception of safety in high-risk games"*

## 2.8 Conceptual model

Besides studying the impact of the callout of a high-risk game on the subjectively perceived safety of stadium attendants, this research project further examines the impact of three specific safety measures in this context. Concerning the influences of these measurements on the perceived safety of individuals and the definition and extensive elaboration on the examined environment, a conceptual model was created. This model captures and specifies the influential factors on perceived safety in and surrounding the stadium, examined in this research project. Namely the increased presence of police forces, the strict separation of home and guest fans and the ban of alcoholic beverages. These factors then separately have an influence on the degree of perceived safety, in a measurable strength and effectiveness. The model clearly visualizes the procedure of the following analysis, which on this basis investigated the impact of each measurement on the stadium attendant's perception of safety.

**Figure 1: Safety measurements in high-risk games on perceived safety of stadium attendants**



*Source: Self-created graphic, content by Deutscher Fußball Bund, 2018*



## 3. Methodological design

### 3.1 Survey questionnaire

Since this study investigated the effectiveness of measurements taken under high-risk game conditions and their impact on the subjective perception of safety of stadium attendants, a questionnaire was developed strongly aligned with those measurements given in “Guidelines for improving safety in federal games” (DFB, 2018) as well as in the “ZIS-Annual Report” (LZPD NRW, 2022). The questionnaire was then designed to initially examine the general perception of safety at high-risk games and to analyze the effectiveness of the following measures taken at so-called "red games" to not only positively influence the objective safety but by that the stadium attendant's perception of safety. The survey asked for demographic data of the participants after they had given their informed consent and agreed to the data security regulations. The demographic data consisted of age, gender, the distinction between a ticket for a seat or stand ticket and the frequency of visits to the stadium. This was followed by a not mandatory but optional information block, explaining the risk categorization of Bundesliga matches and the possible measures to be taken in the event of high-risk matches. The respondents were able to access this information block at their own choice in order to clarify any remaining uncertainties about the exact term of a "high-risk match" and its consequences in terms of the implementation of safety measures. The main part of the survey then comprised a set consisting of 10 questions. This block started with assessing the perception of safety during a so-called “low-risk game” (green game) followed by the perceived safety after the announcement of a “high-risk game” (red game). In the further course of this block, questions were asked about the effectiveness of measures during high-risk games on stadium visitors' perception of safety. The measures questioned consisted of increased police presence, increased presence of the stadium security service, strict fan separation (through "buffer blocks" and an escort of away fans to the stadium") and a ban on alcoholic beverages. Finally, there was a comment section, in which the participants could ask questions about the survey or make further comments about their feelings in the environment of the game.

The chosen research design followed a quantitative approach. The survey questionnaire was provided to a representative sample of 170 respondents. The stadium attendants participating in this survey had access to the questionnaire via a QR-Code, which was provided in the surroundings of the stadium. The questions featured in the questionnaire will be created using the

program Qualtrics and will strive to follow the formulated research question while considering the conceptual model and trying to verify the hypotheses.

The response options to the questionnaire are consistently given in a five-point Likert scale, representing an ordinal psychometric measurement, which can be used to measure attitudes, beliefs and opinions (Likert, 1932). The answer options will range from strongly agree, agree and neutral to disagree and strongly disagree. This scaling approach did not force participants to adopt a binary stance or provide a definitive yes or no response; but rather enabled them to express a degree of agreement (La Marca, 2011). Further, did the respondents have the answer option of neutral or undecided perception. The design of an online survey is the preferred methodology to gather the data under the formulated research question since the questionnaire provided to respondents enabled the researcher to obtain information from large samples of a population and it could further collect demographic data from the respondents respectively (McIntyre, 1999, p. 74). The demographic data is not only limited to gender and age but also includes personal characteristics of frequency of stadium attendances and the difference in the ticket held by the respondent, of either being a seat or a stand ticket. These two additional questions on personal characteristics helped to further differentiate between fans regularly attending the stadium and being used to conditions of a high-risk game and attendees new to this situation.

### 3.2 Survey conduction and sample population

The analysis of this bachelor thesis is based on a survey with stadium visitors of the Veltins-Arena in Gelsenkirchen. This survey was conducted in cooperation with FC Gelsenkirchen Schalke 04 e.V.. The questionnaire was circulated in front of the stadium entrances of the West Gate 1 and Gate 2 ([Figure 12](#)). The date on which the survey was conducted was the 20th of May, 2023. Following, that the time frame was cross-sectional. On this match day, the high-risk match with the visiting club Eintracht Frankfurt e.V. took place. Due to a historically high potential for violence in encounters between the two clubs, as well as the precarious table-standing of FC Schalke 04, this match was classified as a red match, subsequently a match in which "based on general experience or current knowledge, there is a sufficient probability that a special dangerous situation will occur" (DFB, 2018). Due to the strict fan segregation that was enforced at this match, only supporters of the FC Schalke 04 club were able to enter the West Entrance. Thus, the sample population is formed exclusively by Schalke supporters. However, these were not subjected to any

further conditions of participation, only the complete ability to act independently and responsibly after reaching the age of 16 (Art. 6 para. 1 lit. a DSGVO) was required. Stadium visitors could access the survey by scanning QR codes. On the one hand, posters were hung directly at the turnstiles in front of the entrance to the stadium and on the other hand, flyers were circulated by 4 helping fellow students, which contained information about the survey as well as the QR code. Thus, participants of the survey had no external influence from the researcher or his helping fellow students, while responding to the questionnaire. Besides the fact that this gathering of data comes with high generalizability, this survey method features high reliability of inquiry. Because the respondents are all confronted with the exact identical questions, without leaving any room for interpretation of the formulations chosen by an interviewer, for example (DeCarlo, 2018). This missing direct contact of the researcher with the participants provides minimal interviewer and respondent measurement errors (Salant & Dillmann, 1994, p35).

Due to the access to the online survey provided with a QR-Code, the researcher could further limit biases that can arise with direct contact to the respondents, as in an interview design. Three of these possible biases are the social desirability bias, which can influence the responses of participants towards social norms and acceptance by others. The confirmation bias results from the Interviewer asking questions pointing towards the conformation of their hypotheses. And lastly, the interpretation bias, which could occur due to the interviewer interpreting the answers of respondents differently based on their perception (Bergelson & Tracy & Takacs, 2022). The proportions between the participants of the survey who received a flyer via the posters and those who received a flyer via direct personal contact are both close to 50 percent. The time period in which the survey was conducted was just under four hours, which represents the period before the match kicked off at 3:30 pm.

### 3.3 Methods of statistical analysis

The following section provides a comprehensive overview of the quantitative approach, highlighting the overall statistical analysis design, the procedures and the specific statistical tools utilized to answer the research question. The data set derived from the survey responses was processed and analyzed using the statistical computing program R. The first section of the statistical analysis part of this bachelor thesis research consists of reviewing the sample population's demographic profile with the help of descriptive statistics. These are presented to

summarize the data collected and identify characteristics of the sample population. In the later process of this research project, were descriptive statistics including means, standard deviations, variances and Cronbach alpha values used to present the findings of statistical analysis based on the conducted survey. They offer an initial overview of the central tendency, dispersion, and internal consistency of the survey measures in addition to a summary of the data collected (Agresti & Finlay, 2009). The selected measures are conventional measures frequently used in descriptive statistics (Holcomb, 1998) to summarize and to convey information about specific characteristics of the sample population. The mean, which indicates the average value of the responses for a certain survey item, is a commonly employed indicator of central tendency. It gives important context for the typical responses in the sample. The variability or spread of the replies around the mean is measured in terms of dispersion using the standard deviation. It gives an estimate as to how significantly individual replies deviate from the mean (Agresti & Finlay, 2009; Holcomb, 1998). Variance, which is determined as the square of the standard deviation, provides additional information about the distribution of responses besides the standard deviation by giving a measure of the average squared deviation from the mean (Vogt & Johnson, 2011; Agresti & Finlay, 2009). The internal consistency metric Cronbach's alpha was calculated to evaluate the validity of the survey's method of measurement. It assesses the extent to which the scale or construct consistently measures the same underlying concept through its items. Higher values suggest a more reliable and internal consistency of the scale. Cronbach's alpha covers a range from 0 to 1 (Taber, 2018; Collins, 2007).

Moreover, was a correlation analysis conducted, to test the strength and direction of the relationship between the examined variables. These variables are firstly represented by the demographical variables such as age, gender and the frequency of stadium visits and their relationship with the dependent variable of safety perception of individuals in high-risk games. On the basis of the outcome of the correlation coefficient R, the researcher will finally be able to formulate arguments on the relationship between the investigated demographical variables and the dependent variable. The purpose of this step of the statistical analysis was to determine if there existed any statistically significant relationships between the demographic factors and stadium attendees' perceptions of safety. This analysis section was capable to assess whether these demographic parameters were connected to people's individual perceptions of safety during high-risk games by performing a correlation study (Senthilnathan & Samithamby, 2019). To determine

the strength and direction of the relationship between two variables, the correlation coefficient, more precisely Pearson's correlation coefficient R was computed. This coefficient covers a range of -1 to +1, with values near -1 indicating a strong negative correlation, close +1 values indicating a strong positive correlation, and a value of 0 representing no linear relationship (Hemphill, 2003).

In addition, were the demographical variables separately analyzed in their intergroups, by calculating the means and standard deviations of these groups. Subsequently was the variable "Age" differentiated into three age groups of "Group young (16-30)", "Group Middle Age (31-45)" and "Group Old (46-71)". The variable of "Gender" was subdivided into "Male" and "Female". The gender category of "non-binary" could unfortunately not be taken into account in this part of the analysis due to its non-representative sample size of only one respondent. Lastly, was the variable of frequency of stadium visits subdivided into five groups with gradually decreasing frequency. Namely "Always (14-17)", "Regularly (11-13)", "Half of the games (8-10)", "Sometimes (5-7)" and "Rarely (1-4)". This differentiated observation of means and standard deviations of groups within the demographical variables enabled the researcher to further analyze the impact on the stadium attendant's subjective perception of safety in high-risk games. The interpretation of the correlation coefficients R between the demographics and the variable of safety perception in high-risk games and the means and standard deviations of the analyzed inter-variable groups should form the fundamental basis to better understand the following analysis section of the safety measurements investigated in this project and their effect on stadium attendants' safety perception.

Finally, were the absolute numbers and percentages of the answer options within the Likert-scaling, for the perception of safety under the circumstances of a green-light game and a red-light game, as well as with the safety measurements active and inactive calculated and presented (Table 3). Subsequently followed by the main part of the statistical analysis in this research project. At first, the subjective safety perception in a "green-light game" and in a "red-light game" were compared. The impact of the safety measures: "Increased police presence", "Strict separation between fan-bases" and the "Ban of alcoholic beverages" on the stadium attendants' subjective perception of safety, was then examined by comparing the analysis results of the safety perception with the measurement present and the measurement absent during a high-risk game matchday. The values used for this comparative analysis were the variable means, standard deviations, variances and the alpha-value of internal consistency. To substantiate these

significant differences between the groups of “Measurement active” and “Measurement inactive” for the respective safety measure, between group, or so-called paired sample T-Tests were conducted. The corresponding T-value as well as the degrees of freedom and the P-value served as the necessary values to interpret and corroborate the difference in outcomes of stadium attendants’ subjective perception of safety with and without the investigated safety measurements present in a high-risk game. The parametric statistical test called the paired sample t-test is frequently applied when data are paired or matched, as when each participant is assessed under two different conditions. This scenario is represented in this research project, in the investigation of the safety measurements present or absent during a high-risk game. By taking into consideration the dependence between the paired data, the test provides mean comparisons, strengthening the statistical validity of the research. Due to the nature of the research design, which involved assessing the same individuals under two different circumstances, the paired sample t-test was chosen for the purpose of this study. When comparing the mean difference between the paired observations to the predicted difference under the null hypothesis of no difference, the paired sample t-test calculates the t-statistic (Kim, 2015). The test assumes the independence of the paired observations and the normal distribution of the differences between the pairs. A significant difference between the means of the two measurements is shown if the estimated t-value exceeds the critical value at the selected level of significance (Anderson, 1958). The T-value determined in the T-statistics represents the ratio of the variance within the groups to the difference between their mean values. The corresponding p-value demonstrates the probability that the observed difference was obtained only by coincidence. Lastly, do the degrees of freedom represent the number of values in the sample, which are free to vary. The inferential statistics of the T-tests finally tested the formulated hypotheses, by rejecting the related null hypothesis.

### 3.4 Criteria of quality in quantitative research

The permitted alcohol consumption within the stadium and its surrounding areas is a notable aspect that should be acknowledged, as it is a common occurrence in German Bundesliga stadiums. However, it is important to recognize that for this particular game, alcohol consumption could have been prohibited. It is worth mentioning that the influence of alcohol consumption can potentially impact the sanity and mental state of the respondents and, consequently, may have implications for the validity of the final results. Nevertheless, the survey results can be considered

representative of the environment within the German Bundesliga. The circumstances during the match day and the conditions of survey participants align with the common experience in the Bundesliga (Kurzawa, 2013). The survey was conducted with objectivity in mind, as the distribution of flyers, containing QR codes, by fellow students aimed solely to direct individuals to the survey, without providing any additional information or exerting any external influence on the participants' independent responses. Furthermore, the validity of the survey results aligns with the predetermined expectations, effectively capturing the effectiveness of security measures in enhancing the subjective perception of safety among stadium visitors. The survey results are finally deemed reliable in assessing the impact of security measures on the perceived level of security experienced by stadium attendees.

## 4. Data Analysis and results

### 4.1 Demographic profile of the sample population

The statistical analysis section of this bachelor thesis commences by examining the demographic structure of the respondents who took part in the survey. Investigating their subjective perception of safety in the environment of the high-risk game between FC Gelsenkirchen Schalke 04 e.V. and Eintracht Frankfurt e.V., held at the Veltins-Arena. The sample population, with an N of 170, has a wide range in age from the youngest respondent being 16 and the oldest respondent being 71 years old. However, the overall population skewed towards a younger age group, as indicated by the relatively low mean of age, which is approximately 30 years (Table 1). Upon categorizing the sample population into three age groups, it became apparent that a significant portion of the stadium attendants participating in the survey fell within the younger age group of 16 to 30 years (Table 1). This may be attributed to the fact that Entrance West Gate 1 and Gate 2 at the Veltins-Arena serve as direct access points from the public transportation network, limiting the survey's reach among possibly older stadium attendants, arriving by car.

Reviewing the gender structure of the sample population, it is evident that the percentage of male stadium attendants is far larger than the percentage of female stadium attendants (Table 1). This outcome was already anticipated before the start of this research project, as two extensive surveys on German stadium attendants, held by researchers from the Westphalian-Wilhelms University in Münster, demonstrated similar results (Ziesmann et. Al., 2017; Dierschke, 2019). The N of the survey conducted by Ziesmann et Al. (2017) was 2622, with 77,1% being male (N=2021), 24,4% being female (N=561) and 1,5% of respondents who had given no response (N=40). Similarly, showed the gender structure among the valid responses, in the study conducted by Dierschke (2019), an even greater share of male respondents. Among the 6287 valid respondents to the questionnaire, 88,8% (N=5584) were male and only 8% identified as female (N=703). The gender distribution observed in the sample population of this research project closely aligns with the aforementioned studies. Among the 170 respondents in this study, 71.53% (125) were male, 25.88% (44) were female, and one respondent identified as non-binary (0.59%). The higher proportion of male respondents In this survey impacts the outcomes related to safety perception among stadium attendants. Nevertheless, since it is known that a greater number of



males attend football matches in stadiums in general (Ziesmann et al., 2017; Dierschke 2019), this sample population can be considered representative.

<b>Table 1</b>			
Demographic profile of respondents.			
Variable:	Item:	Number:	Percentage (%):
<b>Age (Mean: 29,63):</b>	16 - 30 years old	121	71,18
Median: 25,5	31 - 45 years old	22	12,94
Mode: 18	46 - 71 years old	27	15,88
Min. 16 / Max: 71			
<b>Gender:</b>	Male	125	73,53
	Female	44	25,88
	Non-binary	1	0,59
	No answer	0	0
<b>Ticket:</b>	Seat	80	52,94
	Stand	90	47,06
<b>Frequency of stadium visits</b>	1: Always (14-17)	46	27,05
Mean: 2,96	2: Often (11-13)	28	16,47
	3: Half of the games (8-10)	24	14,12
	4: Sometimes (5-7)	30	17,65
	5: Rarely (1-4)	42	24,71

In addition to capturing the age and gender of the stadium attendants who participated in the survey, the demographical block of the questionnaire included two additional inquiries. Firstly, respondents were asked whether their ticket corresponded to a seat or a standing area, and secondly, they were asked about the frequency of their stadium attendance at the Veltins-Arena throughout the current 2022/2023 Bundesliga season. Since the game against Eintracht Frankfurt e.V. marked the final home game of the season, the response options for the frequency of stadium visits ranged from 1 to 17. To provide respondents with a range of choices for their stadium visits rather than requiring an exact count, the number of visits was grouped into five frequency

categories (Table 1). Initially, the sample population revealed that 90 respondents held standing tickets, while 80 had tickets for the stadium`s seat area. The mean frequency of the stadium visits variable, placed at 2.96, suggests that, on average, survey participants attend the stadium in approximately half of the games. The distribution of respondents across the categories of "Often" (16%), "Half of the games" (14%), and "Sometimes" (18%) was relatively even, whereas a larger proportion of respondents indicated attending the stadium "Always" (27%) or "Rarely" (25%). This discrepancy may be attributed to the fact that the extreme categories encompassed a range of four games, while the other categories were limited to only three games. This adjustment was necessary as the Likert scaling intended to be applied to the frequency of stadium visits variable as well, providing further context for the later observed patterns.

#### 4.2 Correlation between demographics and perception of safety

In the subsequent phase of the statistical analysis, possible correlations between the demographical variables of age, gender, the frequency of stadium visits and the subjective perception of safety in high-risk games were tested. Additionally, the correlation between gender and individual safety perception during low-risk games was examined to enable a comparison of safety perceptions between genders under different environmental circumstances. Alongside the correlation coefficient (R), which indicates the strength and direction of the relationship between the variables, the means and standard deviations were computed for various groups within the demographic structure (Table 2). It is important to note that when presenting the results, the mean values for subjective perception of safety range from 1 (absolutely safe) over 2 (safe), 3 (neutral), 4 (unsafe), to finally 5 (totally unsafe).

<b>Table 2</b>				
Demographics and impact on subjective perception of safety.				
<b>Correlation:</b>	<b>Correlation Coefficient R</b>	<b>Variable</b>	<b>Mean</b>	<b>SD</b>
<b>Correlation Age / Perception of safety in high-risk games</b>	0,14	Group young (16-30)	1,81	1,01
		GroupMiddleAge (31-45)	2,55	0,74
		GroupOld (46-71)	3,25	1,01

<b>Correlation Sex / Perception of safety in red-light games</b>	0,21	Male	1,72	1,04
		Female	2,23	1,01
<b>Correlation Sex / Perception of safety in green-light games</b>	0,06	Male	1,28	0,84
		Female	1,41	0,73
<b>Correlation Frequency of stadium visits / Perception of safety in high-risk games</b>	0,27	Always (14-17)	1,52	0,98
		Regularly (11-13)	1,68	0,82
		Hallf of the games (8-10)	1,70	0,81
		Sometimes (5-7)	2,13	1,25
		Rarely (1-4)	2,21	1,12

Beginning with the findings from the correlation analysis, the relationship between age and subjective perception of safety in high-risk games was explored. The correlation coefficient (R) with a value of 0.14 indicated a small positive relationship. Interpretation of this result demonstrates that with a growing age, people feel decreasingly less safe in the environment of a stadium, under the circumstances of a high-risk game (Hemphill, 2003). To delve deeper into this observation, the age groups established in Table 1 were utilized. The mean perception of safety in high-risk games among individuals between the age of 16 and 30 years holds a value of 1,81. This represents an outcome of an average perception of safety close to “safe” (2). In comparison to this, the age group ranging from 46 to 71 years holds a mean safety perception in high-risk games of 3,25, which is significantly higher than the value of the youngest age group (Table 2). The interpretational comparison between the mean value of these two age groups reveals that stadium attendants above the age of 46 years, on average, still feel safe in high-risk games, but not to the same extent as younger people up to the age of 30 years do.

While older people exhibit a lower sense of safety in the stadium and its surroundings at high-risk games, female stadium attendants show a similar outcome of safety perception in comparison to male stadium attendants. The correlation coefficient (R) between the variables of

gender and subjective perception of safety in high-risk games holds a value of 0,21. This small positive correlation indicates that women feel slightly less safe in the stadium than men do. This was further researched by grouping male and female stadium attendants in separated groups and then compare the means of their subjective safety perception in red-light games (Hemphill, 2003). While the mean value for men was 1,72, the group of women had an average value of 2,23. This demonstrates that women still do feel safe in a game called out as a high-risk game, but less safe than male stadium attendants do. Further was the same investigation done between men and women under the circumstances of a game with low risk (green-light game).

The correlation coefficient (R) between gender and subjective perception of safety in green-light games was 0.06, suggesting no significant relationship (Hemphill, 2003). The means of male and female respondents further supported this finding, as male stadium attendants had a mean of 1.28 (close to "absolutely safe") and female stadium attendants had a mean of 1.41. These results indicate no significant difference in safety perception between men and women in green-light games, which is justified by the overall perception of nearly "absolute safety" in such games (Table 3).

Finally, was the correlation between the last variable of the demographic section, the frequency of stadium visits and the subjective perception of safety in high-risk games calculated. The correlation coefficient (R) indicated a value of 0,27. Demonstrating a small positive correlation, which reveals that people attending the stadium "rarely" have a lower perception of safety in high-risk games, compared to people "always" attending the stadium (Hemphill, 2003) (Table 3). To further strengthen this finding, separate means for the five different frequency groups of stadium visits were calculated (Table 2). A closer examination of the means across these frequency groups reveals a gradual decrease in the feeling of safety in high-risk games, starting from "always" attending (mean = 1.52; SD=0,98), then attending "half of the games" (mean = 1.70; SD=0,81), and finally attending "rarely" (mean = 2.21; SD=1,12). This first section of the analysis could in conclusion verify the hypothesis: "*Individuals attending the stadium more regularly, have a higher perception of safety in high-risk games*". However, it is important to emphasize that even respondents who attend the stadium "rarely" still averagely reported feeling safe, and the mean values were far from a sense of unsafety.

### 4.3 Analysis of safety measurements in high-risk games on subjective perception of safety

This section of the data analyses focused on the collected survey data, to investigate on the formulated hypothesis. In the first step of the following paragraph, the safety perception of stadium attendants under the circumstances of a high-risk match (red-light game) as well as under the circumstances of a match without any increase in risk potential (green-light game) were analyzed. Subsequently, the safety perception of stadium visitors in the presence and absence of the security measures "Increased police presence", "Strict fan separation" and "Ban on alcoholic beverages" at high-risk matches was analyzed (Table 4). The statistical analysis' findings demonstrate a significant impact of the examined safety measures on stadium attendants' subjective perception of safety in high-risk games.

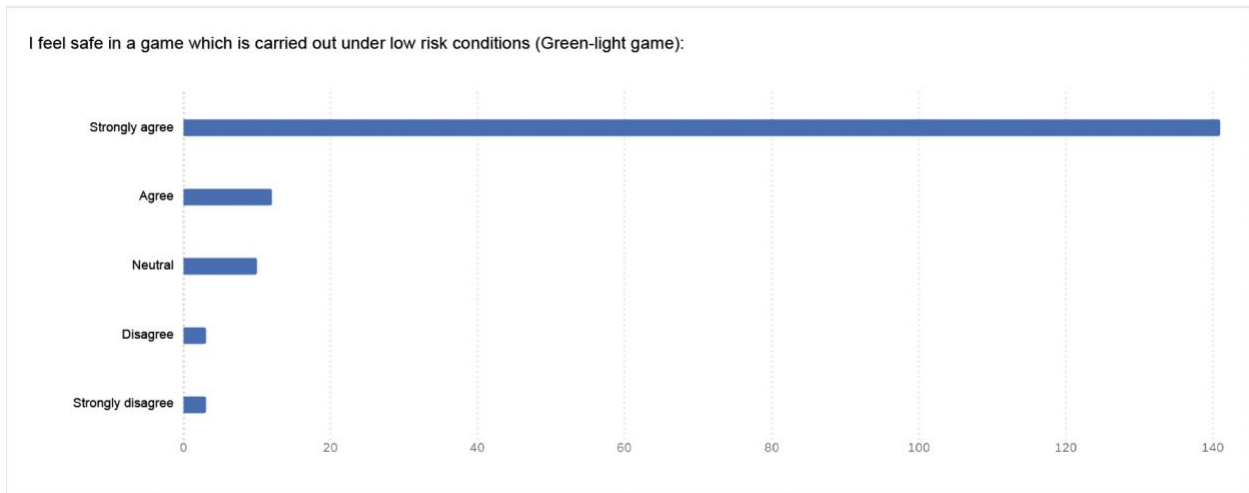
<b>Table 3</b>					
Survey results: Subjective safety perception of stadium attendants “I feel safe under the following circumstances [...]“					
<b>Variables:</b>	<b>Strongly Agree (1)</b>	<b>Agree (2)</b>	<b>Neutral (3)</b>	<b>Disagree (4)</b>	<b>Strongly Disagree (5)</b>
Green-light game	83,4% (141)	7,1% (12)	5,9% (10)	1,7% (3)	1,7% (3)
Red-light game	47,6% (81)	31,8% (54)	11,8% (20)	5,3% (9)	3,5% (6)
<b>Measurements active at high-risk game:</b>					
Police presence	38,8% (66)	27,1% (46)	11,8% (20)	13,5% (23)	14,7% (25)
Seperation of fan-bases	45% (76)	27,8% (47)	14,8% (25)	5,3% (9)	7,1% (12)
Ban of alcohol	8,9% (15)	10,1% (17)	14,8% (25)	10,7% (18)	55,6% (94)

<b>Measurements inactive at high-risk game:</b>					
Police presence negative	31,2% (53)	11,8% (20)	17,1% (29)	31,2% (53)	19,4% (33)
Seperation of fan-bases negative	18,3% (31)	11,2% (19)	12,4% (21)	16% (27)	41,4% (70)
Ban of alcohol negative	45,8% (76)	20,5% (34)	21,1% (35)	4,8% (8)	7,8% (13)

4.3.1 Comparative analysis red-light game and green-light game

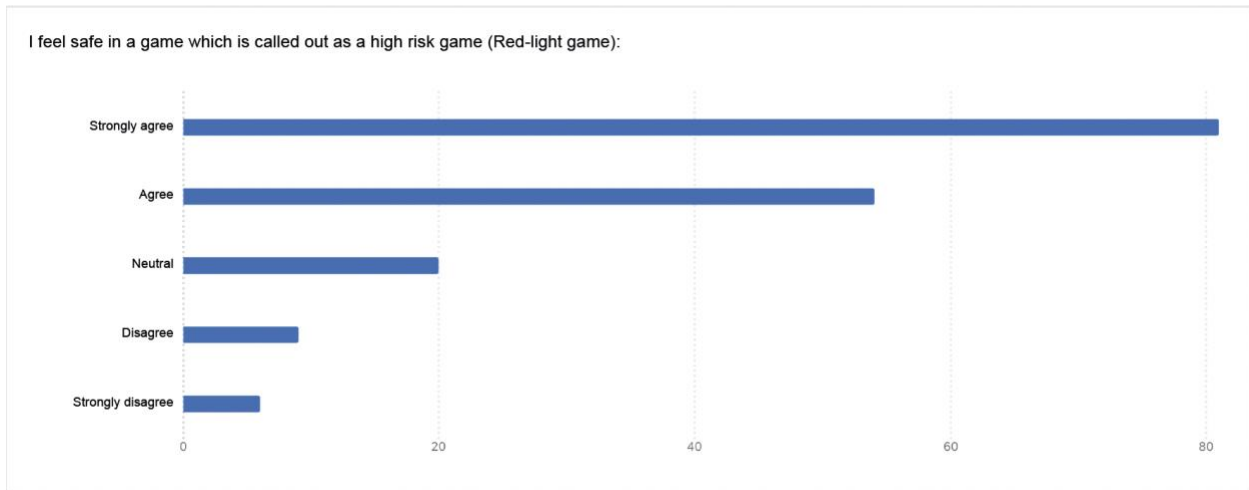
In the initial phase of this section did the researcher conduct a comparative analysis of the safety perception of stadium attendants in either a red-light game or a green-light game. The formulated hypothesis expected: *“The callout of a high-risk game (wording/terminology based) decreases the perception of safety of stadium attendants”*. This hypothesis was subjected to statistically testing and the results of this analysis will now be presented in the following. With a fist look at the absolute numbers in responses of the survey, a great majority could agree with the statement to "strongly agree" to feeling safe in a green-light game. This majority of 141 out of 170 respondents is significantly higher than the respondents who “strongly agreed” to feel safe under the conditions of a high-risk game, which only 81 out of 170 respondents voted for (Table 3). Nevertheless, did 54 participants of the survey still “agree” to feel safe in the environment of a high-risk game, but this decrease in their safety perception is noteworthy and subject of the investigation hereafter.

**Figure 2:**



*Source: Graphic, self-created content*

**Figure 3:**



*Source: Graphic, self-created content*

The mean values of the safety perception in both green-light games (mean=1.31; SD=0.81) and red-light games (mean=1.85; SD=1.05) (Table 4) provide additional evidence supporting the decreased safety perception among stadium attendants in high-risk circumstances. Although the difference is minimal, it is further supported by the T-value obtained from the conducted T-test analysis, which yielded a value of -3.78 with a corresponding P-value of < 0.0001872 (Table 5). These findings indicate a statistically significant difference in safety perception between green-light and red-light games. The negative sign of the T-value signifies that the mean safety perception

in red-light games is significantly lower than in green-light games. The magnitude of the T-value (3.78) suggests a small but meaningful difference between the two groups. Additionally, the extremely low p-value ( $< 0.0001872$ ) provides strong evidence against the null hypothesis, further supporting the presence of a significant difference in safety perception between the two game types (Table 5) (Kim, 2015).

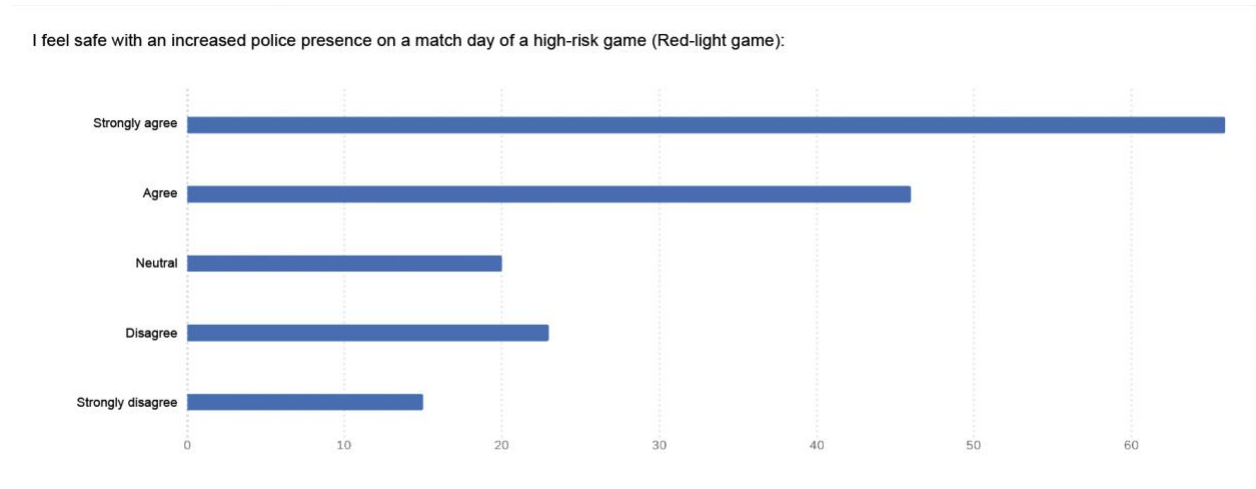
In conclusion, it can be inferred that stadium attendants generally feel slightly less safe in high-risk games, characterized by increased risks and potential for physical violence, compared to games categorized as "green-light" games with a low likelihood of violence, possibly limited to spontaneous conflicts among small groups of fans (Bremer Bürgerschaft, 2021). The observed decrease in subjective safety perception among stadium visitors is minimal, which may be attributed to the effective implementation of the analyzed increased security measures discussed subsequently.

#### **4.3.2 Analysis of safety measurement: Increased police presence**

According to the theoretical framework, the reinforcement of police forces in hazardous environments has both positive and negative effects on individuals' perceptions of safety (Brands et al., 2015; Gau et al., 2014). If an increased police presence results in positive impressions of individuals through a feeling of societal control (Braga & Weisburd, 2010) or rather creates the feeling of an area of increased danger (Hinkle & Weisburd, 2008), was examined and tested under the circumstances of a high-risk game in the German Bundesliga. The statistical analysis of the acquired survey data proves that an increased police presence does positively influence the stadium attendants' subjective perception of safety. The respective variable mean for the safety measurement present during a high-risk game (mean=2,65; SD=1,33) is significantly lower than with the safety measurement absent (mean=2,85; SD=1,53) (Table 4). This indicates that people do agree that they feel safer with increased police presence under the circumstances of a red-light game than without, but the extent of the increase of safety perception is not as large as expected. The paired sample T-test underpinned these findings with a corresponding T-value of -3,78 and a P-value of  $< 0.0001872$  (Table 5) (Kim, 2015). These values further mark, that there is a significant difference between the means of the two groups and the variance which exists within them. But, with a rather limited extent.

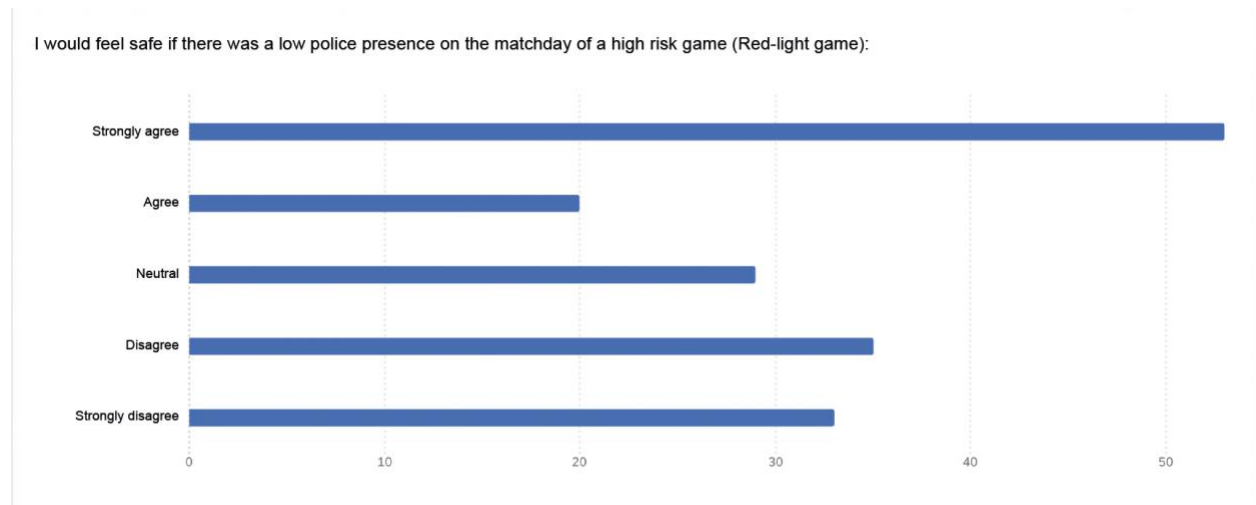


**Figure 4:**



Source: Graphic, self-created content

**Figure 5:**



Source: Graphic, self-created content

The distribution of the survey responses also illustrates the increased perception of safety among stadium spectators at high-risk matches, when the police presence is increased. Thus, of 170 survey participants, a total of 112 agree or strongly agree that they feel safe under the circumstances of a high-risk match due to the increased police presence. Conversely, only 73 respondents would say the same if the police presence at a red-light game was low (Table 3). The formulated hypothesis: „The high presence of police forces, under the circumstances of a high-risk game, increases the subjective perception of safety of stadium attendant’s“ can therefore be confirmed in the final

analysis. However, it is important to note that the extent to which the augmentation of police forces effectively enhances the perception of safety among stadium attendants is somewhat limited. Accordingly, the theoretical framework can be referred to again, since the statistical analysis of this study found only a slight increase in the perception of safety among stadium spectators at high-risk matches for the tested safety measure. It is therefore possible that in this context, participants in the survey also perceive the police more as an indicator of a situation and an environment with increased risk and less as an instance that ensures law and order. Even further, as the capable guardian, which can prevent a possible outbreak of criminal acts and physical violence (Hale, 1996; Braga & Weisburd, 2010).

Nevertheless, if the situation escalates after the final whistle of the high-risk game and it comes to a breakout of physical violence, the presence of police forces is certainly demanded! Exactly this situation occurred after the match between Schalke and Frankfurt, which served as the exemplary high-risk match environment for the survey conduction. Several supporters of Eintracht Frankfurt e.V. climbed over the fences of the guest block in the Veltins-Arena and physically attacked Schalke fans on the adjacent stadium blocks, without intervention of police forces. Some fans of FC Gelsenkirchen Schalke 04 e.V. who were affected by this outbreak of violence and the subsequent police operation, reacted shocked and terrified. Some respondents sharply criticized the taken actions of the police in the comment section of the survey, after the game had ended. A further breakdown of this situation and why the trust in the police may be violated in the context of high-risk games is proceeded in the concluding discussion part of this research project. The assessment of this situation goes beyond the scope of the statistical analysis part and will therefore be continued in the discussion section.

<b>Table 4</b>				
Analysis: Subjective safety perception of stadium attendants “I feel safe under the following circumstances [...]“				
<b>Variables:</b>	<b>Mean</b>	<b>SD</b>	<b>Variance</b>	<b>Internal Consistency alpha</b>
Green-light game	1,31	0,81	0,66	0,84
Red-light game	1,85	1,05	1,1	0,81

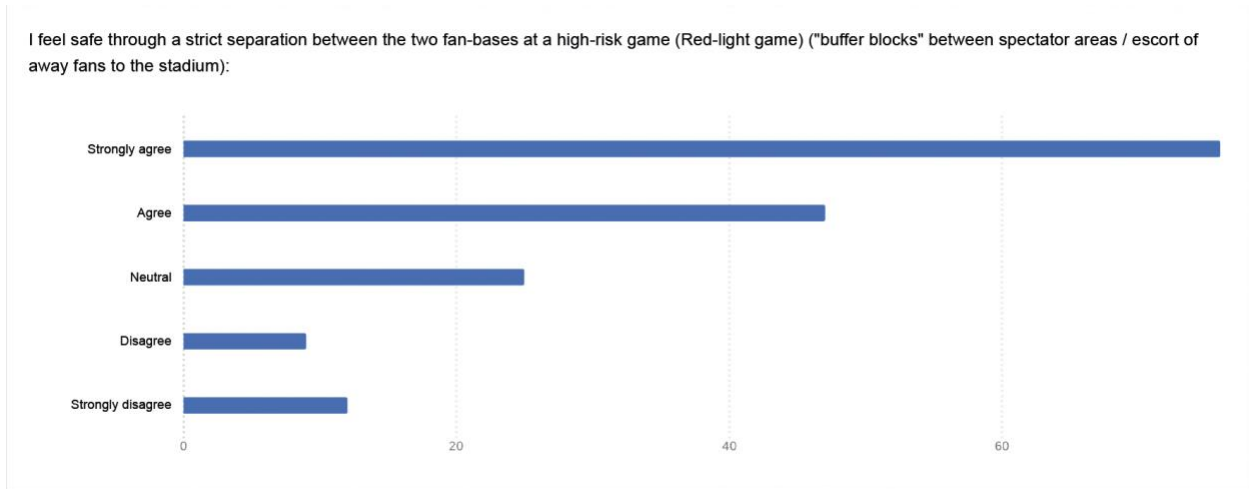
<b>Measurements active at high-risk game:</b>				
Police presence	2,65	1,33	1,78	0,74
Seperation of fan-bases	2,01	1,21	1,46	0,75
Ban of alcohol	3,94	1,38	1,91	0,76
<b>Measurements inactive at high-risk game:</b>				
Police presence negative	2,85	1,53	2,34	0,86
Seperation of fan-bases negative	3,51	1,56	2,43	0,79
Ban of alcohol negative	2,08	1,25	1,56	0,66

<i>Table 5</i>			
Inferential statistics on effectiveness of measurements in high-risk games			
		T-Test	
Variables:	T-value	Degrees of freedom	P-value (<0,05)
Red-light game / Green-light game	5,29	317,18	< 2.324e-07
Police presence / Police presence negative	-3,78	331,92	< 0.0001872
Fan segregation / Fan segregation negative	-9,81	314,4	< 2.2e-16
Alcohol ban/ Alcohol ban negative	12,88	330,83	< 2.2e-16

#### 4.3.3 Analysis of safety measurement: Strict separation of fan-bases

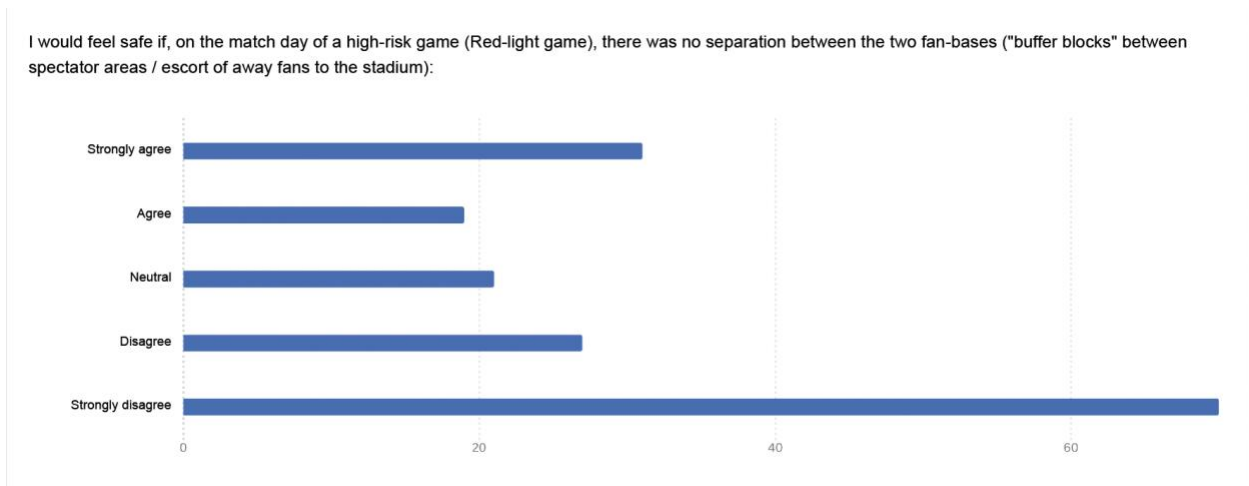
To test the third hypothesis of this research project, namely: *“A strict separation between the two fan-bases in a high-risk game, increases the stadium attendant’s perception of safety”* the researcher again calculated the variable means and the corresponding standard deviations of both the present measurement of a “strict separation of fan-bases” during a red-light game as well as for the environment of a high-risk game without this specific safety measurement present. According to the theoretical framework, is the separation between fan-bases during games with an increased potential of physical violence an effective measurement to provide those forms of conflicts. The Polizeidirektion Hannover (2008), supports this argument and doesn’t even question the necessity of this safety measurement in high-risk environments, but rather debates on how an effective separation can be achieved.

**Figure 6:**



Source: Graphic, self-created content

**Figure 7:**



Source: Graphic, self-created content

This standpoint towards separating the fan-bases during high-risk matches in the German Bundesliga is also advocated by the sample population of this research project. The variable means of “I feel safe through the separation between fan-bases during high-risk matches” (mean=2,01; SD=1,21) in contrast to “I would feel safe if there wouldn’t be a separation of fan-bases during a high-risk game” (mean=3,51; SD=1,56) indicates a strong support for this safety measurement (Table 4). With taking into account that the mean value of 2,01 indicates that stadium attendants would “agree” that they feel safe through a fan-separation, the absence of this measurement leads

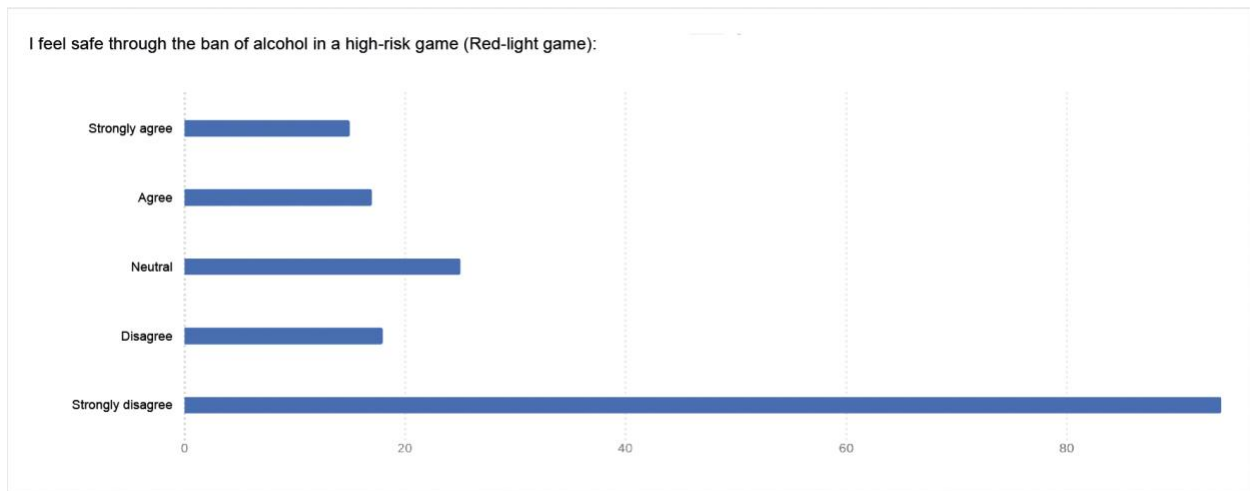
to an average answer response close to “disagree” (mean=3,51), when the respondents were asked if they perceive as safe. The significant difference between the means of both measurements is supported by the conducted T-Test (Anderson, 1958), which demonstrates a T-Value of -9,81 with a corresponding P-Value of  $< 2.2e-16$  (Table 5). These values further underpin that the mean of the “Fan-segregation active” variable is significantly lower than the variable mean of “Fan-segregation negative”. Indicating a stronger perception of safety of stadium visitors in presence of this safety measure.

#### 4.3.4 Analysis of safety measurement: Ban of alcoholic beverages

Contrary to the share of violence acts under alcoholic influence in the German criminal statistics (BMI, 2019) and the evaluation of expert Eberhard Gienger (Augsburger-Allgemeine, 2020), did responses of stadium attendants clearly drew the picture that the safety measurement of a “Ban of alcoholic beverages” does not contribute to their perception of safety.

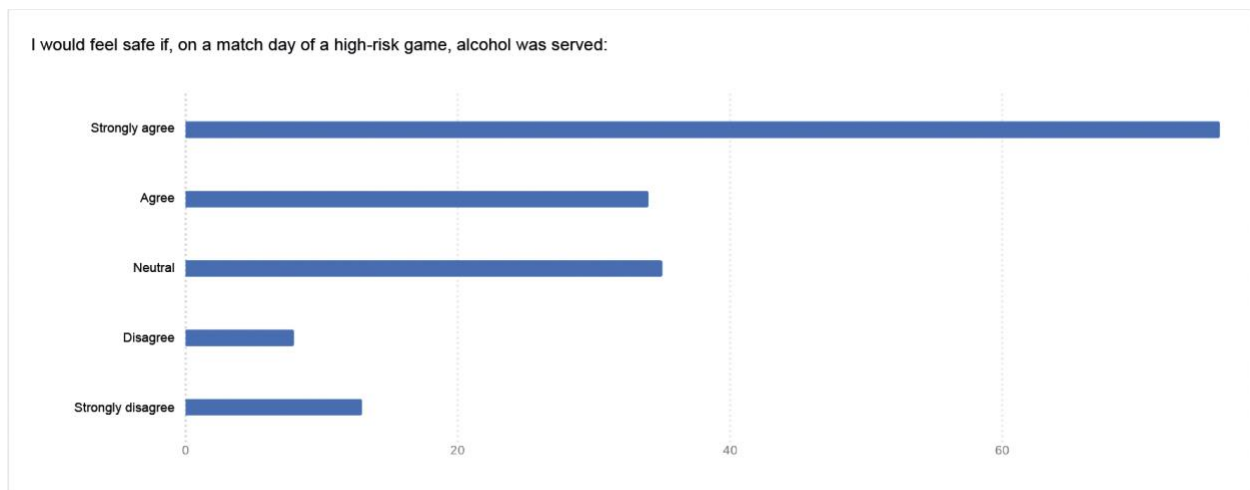
The variable mean of 3,94 (SD=1,38) (Table 4) indicates that people “don’t agree” that a ban of alcoholic beverages makes them feel safe under the circumstances of a high-risk game. The ban on alcohol appears to be facing widespread rejection among stadium visitors. The willingness to abstain from the consumption of alcoholic beverages, in order to achieve a possible reduction in potential of aggression and readiness to use violence, does not prevail among the broad majority of stadium attendants. Besides the clear results of the data analysis did survey respondents underline this refusal of a ban on alcohol by making use of the surveys comment section: “No alcohol is complete nonsense” and “The question makes no sense on the subject of alcohol. Alcohol must be provided!”

**Figure 8:**



Source: Graphic, self-created content

**Figure 9:**



Source: Graphic, self-created content

In conclusion, would stadium attendants advocate the allowance of alcoholic beverages in terms of their perception of safety in high-risk games. This argument is supported by the variable mean of 2,08 (SD=1,25) (Table 4) indicating that respondents of the survey “agree” that they would feel safe in high-risk games if the consumption of alcoholic beverages would be allowed in and surrounding the stadium. The ban of alcohol in football stadiums of the German Bundesliga represents the by far most disputed and criticized safety measurement among the three analyzed in this research project. Contrary to the acceptance towards an increased police presence and the

separation of fan-bases, does the majority of stadium attendants reject the ban of alcoholic beverages. With evidence of the performed T-test (T-value: 12,88, P-value:  $< 2.2e-16$ ) the two tested questions differ in their means across the sample population. The variable mean of the inversely formulated question, with the absence of the safety measurement of a “Ban on alcoholic beverages” after the callout of a high-risk game, obtains a higher value for the perception of safety among stadium visitors. The formulated hypothesis: “*A ban of alcoholic beverages, under the circumstances of a high-risk game, increases the subjective perception of safety of stadium attendants*” cannot be verified, as it was already expected in advance to this study. In return, this has to result in the argument that a ban on alcohol does not contribute to a positive safety perception of stadium visitors at high-risk games.



## 5. Conclusion

This bachelor thesis was able to discover significant findings on stadium attendants' safety perception during high-risk games in the German Bundesliga. Through the implementation of an exemplary survey study on the red-light matchday between FC Gelsenkirchen Schalke 04 e.V. and Eintracht Frankfurt e.V., the analysis results are based on a representative sample population. Starting with the fundament of this research project, the author created a theoretical and defining framework upon which the hypotheses were formulated. This framework indicated a strong necessity of the investigated safety measurements implementations under high-risk conditions. The Quantitative approach of this study has paved the way for analyzing the impact of these measures on the stadium attendant's perception of safety and the extent to which each measurement was advocated. The initial results of the statistical analysis have revealed that the growing age of people has a negative impact on the perception of safety in high-risk games. Furthermore, did women state that they generally feel more unsafe in the examined circumstances than men. Finally, did the regularity of stadium attendance also represent an influencing factor on the safety perception of high-risk game attendees. The more often an individual visits the stadium, the safer he or she feels on a matchday on which a possible rivalry between the two clubs or a large share of violence-ready fans increases the potential danger.

In the further process did the statistical analysis' outcomes conclude that compared to low-risk or "green-light" games, stadium visitors appear to perceive themselves as less safe when attending high-risk Bundesliga matches. However, the impact on the investigated perception of safety, under increased risk conditions, was less severe than expected. Stadium visitors expressed that they still have the tendency to feel safe at high-risk matches. This result supports the successful organization and management of these special match days in the past and the effective implementation of regulatory security measures.

The study additionally examined at the extent to which three safety measures, frequently implemented in high-risk games, impacted the respondent's perception of safety. In accordance with the data, a greater police presence and the strict separation of fan-bases during high-risk matches had a positive effect on the feeling of safety among stadium visitors. These precautions contribute to creating a more secure and comforting environment inside and in the surroundings of the stadium. The necessity of a strict separation between two fan bases during a high-risk match was considered to be significantly more important than an increased presence of police officers.

The results of this study indicate that stadium attendants would feel a decrease in their safety perception if these safety measures weren't given under high-risk circumstances. The effective separation between two fan factions during the staging of a Bundesliga match and an increased police presence often go hand in hand under the conditions of a high-risk match. This occurs because a more critical security environment requires more police personnel to ensure that there is as little direct physical contact as possible between the two groups of supporters. Especially in this context, the avoidance of potential contact between rival fans of categories B and C must be taken into account.

In contrast to the advocacy of stadium attendants towards an increased police presence and a fan-base separation as measurements to increase their safety, a possible ban of alcoholic beverages experienced a strong rejection. In fact, visitors of high-risk games in the German Bundesliga expressed that they would rather agree to feeling safe with alcohol being provided in and surrounding the stadium, than with alcohol being banned. This demonstrates a clear rejection of this safety measurement among Bundesliga fans. A ban of alcoholic beverages finally does not enhance the high-risk game attendant's perception of safety.

Finally, can this research project conclude with attempting to provide a concise answer to the research question: *“To what extent do the measurements taken under the callout of a high-risk game in the German Bundesliga influence the stadium attendant's subjective perception of safety?”*. A collective influence cannot concisely be displayed to a numerical extent, since the perception of safety generally measured among stadium attendants involves many more influential factors than just the three safety measurements investigated. Nevertheless, was the researcher able to formulate answers on the research question insofar that it the distinct effect of each measurement on stadium attendants' safety perception, was examined separately. The final results demonstrate the necessity to which stadium attendant's see an increased police presence and a strict separation of fan-bases as crucial measurements positively influencing their safety perception in high-risk games of the German Bundesliga. The necessity of a strict separation between fan-bases, however, indicates far greater importance to them than an increased police presence! In contrast, does a ban of alcoholic beverages experience a strict rejection from the side of the stadium attendants, since they do not see this safety measure as positively contributing to their individual safety perception.

## 6. Discussion

In order to be capable of organizing games in the German Bundesliga under the safest possible conditions, a variety of different factors have to be taken into account and weighed up against each other. The stadium visitors' perception of safety plays a very important role, of course, but it must also be weighed against the facts and figures of objective safety. Not only must the most effective means of securing the people in the stadium be included in this pool of the final matchday organization, but also the respectable budget and the respective capacities of the Bundesliga clubs and the police at the level of the federal states.

The process of the survey conduction of this research project demonstrated the necessity of an effective implementation of enhanced safety measures in the environment of increased risk and potential of violence yet again. Contrary to the planned survey period before the kickoff of the game, stadium visitors were still able to participate after the final whistle of the game due to the posters that were still displayed, as well as surveys that were not completed. The results of these participants are relevant in that there were violent conflicts between supporters of both clubs after the end of the game in the surroundings of the away section of the stadium. "According to the police, Eintracht Frankfurt fans climbed over the barriers of the guest section and attacked Schalke supporters in the neighboring blocks. There were brawls and chasing scenes (Tagesschau.de, 2023) ([Figure 10](#)). During the game, there was already verbal hostility between both fan bases. The organized fan scene of Eintracht Frankfurt e.V. showed a choreo ([Figure 11](#)) during the game with the use of pyrotechnics and a banner disputed by the police director Peter Both, who was present on site. Thus, the latter criticized the visiting supporters as following: "Whoever rolls out a banner with the inscription 'European Cup winner of rioting 2023!' shows what a brainchild he is. Guests that no one needs". As a result of the clashes around the guest section, four people were injured (Tagesschau.de, 2023). Not only these injured persons, but many directly involved stadium visitors in the surrounding blocks were strongly unsettled and partly shared their concerns in the comment section of the survey after the final whistle of the match. As participants wrote, "I was really terrified!", "I wonder why against Frankfurt the police did not show presence after the final whistle and only came far too late [...] the Frankfurt fans came closer and closer, but we were not allowed to leave our stadium section", another demanded: "More police presence around the guests block!". These responses in the feedback section of the survey

demonstrate the importance of a sophisticated security concept when staging a high-risk match. The bottom line is, of course, to prevent such situations and to protect stadium visitors at all costs. Concluding with a question, which could be targeted in further research the author of this project would like to ask:

*Are stadium visitors able to rationally and independently assess the security measures in high-risk matches, or should fans' perceived safety needs play a subordinate role in the organization of these particularly hazardous games?*

## 7. Literature List

- Agresti, A., & Finlay, B. (2009). Descriptive statistics. In A. Agresti & B. Finlay (Eds.), *Statistical methods for the social sciences* (pp. 31–72). Upper Saddle River, NJ: Pearson Prentice Hall.
- Anderson, T. W. (1958). *Introduction to multivariate statistical analysis*.
- Andreescu, V. (2010). Victimization and fear of crime in Romania and Hungary: a comparative analysis. *Revista Romana De Sociologie*, 21(3/4), 163–183.
- Augsburger-Allgemeine. (2020, August 5). DFL-Konzept: CDU-Sportexperte: Alkoholverbot in Fußballstadien sollte Dauerlösung sein. *Augsburger Allgemeine*. <https://www.augsburger-allgemeine.de/sport/DFL-Konzept-CDU-Sportexperte-Alkoholverbot-in-Fussballstadien-sollte-Dauerloesung-sein-id57871491.html> [09.06.2023].
- Bahn, C. (1974). The reassurance factor in police patrol. *Criminology*, 12(3), 338–345
- Braga, A.A., & Weisburd, D.L. (2010). *Policing problem places*. Oxford University Press. development. New York: Routledge.
- Bergelson, I., Tracy, C. & Takacs, E. (2022). Best Practices for Reducing Bias in the Interview Process. *Curr Urol Rep* 23, 319–325. <https://doi-org.ezproxy2.utwente.nl/10.1007/s11934-022-01116-7>. [16.05.2023].
- Bremische Bürgerschaft. (24.08.2021). Mehrkosten durch (Hoch)risikospiele in der 2. Bundesliga für den SV Werder Bremen in der kommenden Fußball-Saison. [https://www.bremische-buergerschaft.de/drs\\_abo/2021-08-25\\_Drs-20-1079\\_8bd6a.pdf](https://www.bremische-buergerschaft.de/drs_abo/2021-08-25_Drs-20-1079_8bd6a.pdf). [03.04.2023]

Bundesministerium des Innern (2013). Polizeiliche Kriminalstatistik 2012 - IMK-Bericht. Berlin: Bundesministerium des Innern.

Bundesministerium des Innern, für Bau und Heimat [BMI] (2019). Polizeiliche Kriminalstatistik 2018: Ausgewählte Zahlen im Überblick. Berlin. Verfügbar unter [https://www.bka.de/DE/AktuelleInformationen/StatistikenLagebilder/PolizeilicheKriminalstatistik/PKS2018/pks2018\\_node.html](https://www.bka.de/DE/AktuelleInformationen/StatistikenLagebilder/PolizeilicheKriminalstatistik/PKS2018/pks2018_node.html) [09.06.2023].

Collins, L.M. (2007). Research Design and Methods. Editor(s): James E. Birren. Encyclopedia of Gerontology (Second Edition). ISBN 9780123708700. (pp. 433-442). <https://doi.org/10.1016/B0-12-370870-2/00162-1>. <https://www.sciencedirect.com/science/article/pii/B0123708702001621>. [09.06.2023].

DeCarlo, M. (2018, August 7). *11.2 Strengths and weaknesses of survey research*. Pressbooks. <https://pressbooks.pub/scientificinquiryinsocialwork/chapter/11-2-strengths-and-weaknesses-of-survey-research/>. [04.06.2023].

Deutscher Fußball Bund (2018). Richtlinien zur Verbesserung der Sicherheit bei Bundesspielen. [https://www.dfb.de/fileadmin/\\_dfbdam/173992-Richtlinien\\_zur\\_Verbesserung\\_der\\_Sicherheit\\_bei\\_Bundesspielen\\_-\\_gültig\\_ab\\_01.\\_Juli\\_2018.pdf](https://www.dfb.de/fileadmin/_dfbdam/173992-Richtlinien_zur_Verbesserung_der_Sicherheit_bei_Bundesspielen_-_gültig_ab_01._Juli_2018.pdf). [04.06.2023]

Dierschke, Thomas et al. (2019). Fanforschung 2.0. Ergebnisse einer Onlinebefragung von Fußballfans. BEMA working papers Nr. 6. Münster.

Doyle, M., Frogner, L., Andershed, H., & Andershed, A. K. (2016). Feelings of safety in the presence of the police, security guards, and police volunteers. *European journal on criminal policy and research*, 22(1), 19-40.

- Goergen, T., Taefi, A., Kraus, B. & Wagner, D. (2013). Jugendkriminalität und Jugendgewalt. Empirische Befunde und Perspektiven für die Prävention. [http://www.youprev.eu/-pdf/YouPrev\\_NationalReport\\_DE.pdf](http://www.youprev.eu/-pdf/YouPrev_NationalReport_DE.pdf). [09.06.2023].
- Giddens, A. (1984). The constitution of society: Outline of the theory of structuration. University of California press. [https://books.google.de/books/about/The\\_Constitution\\_of\\_Society.html?id=x2bf4g9Z6ZwC&redir\\_esc=y](https://books.google.de/books/about/The_Constitution_of_Society.html?id=x2bf4g9Z6ZwC&redir_esc=y)
- Hale, C. (1996). Fear of crime: a review of the literature. *International Review of Victimology*, 4(2), 79–150
- Hemphill, J. F. (2003). Interpreting the magnitudes of correlation coefficients. *American Psychologist*, 58(1), 78–79. <https://doi.org/10.1037/0003-066X.58.1.78>
- Hinkle, J. C., & Weisburd, D. (2008). The irony of broken windows policing: a micro-place study of the relationship between disorder, focused police crackdowns and fear of crime. *Journal of Criminal Justice*, 36(6), 503–512. doi:10.1016/j.jcrimjus.2008.09.010
- Holcomb, Z. (1998). *Fundamentals of descriptive statistics*. Los Angeles, CA: Pyrczak Publishing.
- Hummelsheim-Doss et. Al. (2017). Der Deutsche Viktimisierungssurvey 2017: Opfererfahrungen, kriminalitätsbezogene Einstellungen sowie die Wahrnehmung von Unsicherheit und Kriminalität in Deutschland. Verfügbar unter

[https://pure.mpg.de/rest/items/item\\_3039765\\_8/component/file\\_3039766/content](https://pure.mpg.de/rest/items/item_3039765_8/component/file_3039766/content)

[09.06.2023].

Innes, M. (2014). *Signal crimes : social reactions to crime, disorder, and control* (First). Oxford University Press.

Kasperson, R., Renn, O., Slovic, P., Brown, H., Emel, J., Kasperson, J., & Ratick, S. (1988). The social amplification of risk: A conceptual framework. *Risk analysis*, 8 (2), 177-187.

Kim, T. (2015). T test as a parametric statistic. *Korean Journal of Anesthesiology*. 68. 540. 10.4097/kjae.2015.68.6.540.

Kurzawa, N. (2013). *Mit Alkohol im Blut - Der Fußballalltag?! [BA Thesis]*. Hochschule Mittweida.

LaMarca, N. (2011, December 5). *The Likert Scale: Advantages and Disadvantages*. *Field Research in Organizational Psychology*. <https://psyc450.wordpress.com/2011/12/05/the-likert-scale-advantages-and-disadvantages/>. [09.06.2023].

Landesamt für Zentrale Polizeiliche Dienste Nordrhein-Westfalen (LZPD NRW). (2022). (Hrsg.): *Jahresbericht Fußball Saison 2021/2022*. Zentrale Informationsstelle Sparteinsätze (ZIS), [https://polizei.nrw/sites/default/files/2022-09/220913-1%28ZIS-Jahresbericht%202021-2022%20Stand%2013.09.22%20final%29\\_1.pdf](https://polizei.nrw/sites/default/files/2022-09/220913-1%28ZIS-Jahresbericht%202021-2022%20Stand%2013.09.22%20final%29_1.pdf). [09.06.2023]

Le Bon, G. (1897) *The crowd*. 2d ed. London: T.F. Unwin.

Likert, R. (1932). A technique for the measurement of attitudes, *Archives of Psychology* 140.

McIntyre, L. J. (1999). *The practical skeptic: Core concepts in sociology*. Mountain View, CA: Mayfield Publishing.



Pearson, Geoff & Stott, Clifford. (2022). Policing a Football Match in the Early Twenty-First Century. 10.1007/978-3-031-16298-5\_4.

Polizei NRW (nd. B.). Stadionhandbuch: Anforderungen an Fußballstadien in baulicher, infrastruktureller, organisatorischer und betrieblicher Hinsicht. [https://polizei.nrw/sites/default/files/2018-06/NKSS\\_A3\\_DFL\\_DFB\\_Stadionhandbuch\\_20090119.pdf](https://polizei.nrw/sites/default/files/2018-06/NKSS_A3_DFL_DFB_Stadionhandbuch_20090119.pdf). [02.06.2023]

Polizeidirektion Hannover. 2008. Einsatz von Konfliktmanagern bei Fußballveranstaltungen. Erfahrungsbericht zu einem Projekt der Polizeidirektion Hannover und der Zentralen Polizeidirektion in der Bundesligasaison 2007 /2008. [Online] 11 2008. [http://www.kos-fanprojekte.de/fileadmin/user\\_upload/media/fanarbeit/pdf/200911-erfahrungsbericht.pdf](http://www.kos-fanprojekte.de/fileadmin/user_upload/media/fanarbeit/pdf/200911-erfahrungsbericht.pdf). [09.06.2023].

Ronald, B.S., & Jean-Pierre, D. (2019). The Role of Commercialisation of the European Football Business for the Emotional Bond between Fans and Clubs. *Advances in Management*, 12, 8.

Rossow, I. & Bye, E. K. (2013). The problem of alcohol-related violence: An epidemiological and public health perspective. In M. McMurrin (Hrsg.), *Alcohol-related violence: Prevention and treatment* (S. 3- 18). Chichester: Wiley-Blackwell.

Salant, P., & Dillman, D.A. (1994). *How to conduct your own survey*.

Schwind, Hans-Dieter: *Kriminologie – eine praxisorientierte Einführung mit Beispielen*, 11. Auflage, Heidelberg u.a., 2001.

- Schwinkendorf, A (2013). Fußball und Gewalt – Die Sicht von Zuschauern und Akteuren am Beispiel des F.C. Hansa Rostock. [https://thomasfeltes.de/images/Masterarbeit\\_Schwinkendorf.pdf](https://thomasfeltes.de/images/Masterarbeit_Schwinkendorf.pdf). [04.06.2023]
- Senthilnathan, Samithamby. (2019). Usefulness of Correlation Analysis. SSRN Electronic Journal. 10.2139/ssrn.3416918. [09.06.2023].
- Sørensen, M., & Mosslemi, M. (2009). Subjective and objective safety. The effect of road, 8(2).
- Stott, C. et al. (2008) TACKLING FOOTBALL HOOLIGANISM: A Quantitative Study of Public Order, Policing and Crowd Psychology. *Psychology, public policy, and law*. [Online] 14 (2), 115–141.
- Stott, C. & Reicher, S. (1998) HOW CONFLICT ESCALATES: THE INTER-GROUP DYNAMICS OF COLLECTIVE FOOTBALL CROWD ‘VIOLENCE’. *Sociology (Oxford)*. [Online] 32 (2), 353–377.
- Taber, K.S. (2018). The Use of Cronbach’s Alpha When Developing and Reporting Research Instruments in Science Education. *Res Sci Educ* 48, 1273–1296. <https://doi-org.ezproxy2.utwente.nl/10.1007/s11165-016-9602-2>. [09.06.2023].
- Tagesschau.de. (2023, May 22). Eintracht Frankfurt will Randalierer vom Schalke-Spiel ermitteln. <https://www.tagesschau.de/inland/regional/hessen/hr-schlaegerei-zwischen-fans-von-eintracht-frankfurt-und-schalke-eskaliert-102.html>. [04.06.2023].
- Taylor, W. D., & Snyder, L. A. (2017). The influence of risk perception on safety: A laboratory study. *Safety Science*, 95, 116–124. <https://doi.org/10.1016/j.ssci.2017.02.011>. [09.06.2023].

- Teece, M. & Williams, P. G. (2000). Alcohol-related assault: time and place. Canberra: Australian Institute of Criminology.
- Tsoukala, A. et al. (2016) Legal Responses to Football Hooliganism in Europe. [Online]. The Hague: T.M.C. Asser Press.
- Vogt, W., & Johnson, B. (2011). Dictionary of statistics & methodology: A nontechnical guide for the social sciences (4th ed.). Thousand Oaks, CA: Sage.
- Weyman, A.K., & Kelly, C.J. (1999). Risk perception and risk communication: A review of literature. Sheffield, England: HSE Books.
- Wildavsky, A., & Dake, K. (1990). Theories of Risk Perception: Who Fears What and Why? *Daedalus*, 119(4), 41–60. <http://www.jstor.org/stable/20025337>. [12.06.2023].
- Ziesmann, T. et. Al. (2017). Daten aus der Kurve Ergebnisse einer Befragung von Stadionbesucher/innen. Forschungsgruppe BEMA. Uni-Muenster.de. Retrieved June 6, 2023, from [https://www.uni-muenster.de/imperia/md/content/soziologie/bema/berichte/working\\_paper\\_bema\\_2017\\_3.pdf](https://www.uni-muenster.de/imperia/md/content/soziologie/bema/berichte/working_paper_bema_2017_3.pdf). [09.06.2023].

## 8. Table of figures

**Figure 10:**



Source: tagesschau.de. (2023, May 22). Eintracht Frankfurt will Randalierer vom Schalke-Spiel ermitteln. *tagesschau.de*. <https://www.tagesschau.de/inland/regional/hessen/hr-schlaegerei-zwischen-fans-von-eintracht-frankfurt-und-schalke-eskaliert-102.html>

**Figure 11:**



Source: hessenschau.de. (2023). Eintracht Frankfurt will Randalierer vom Schalke-Spiel ermitteln. hessenschau.de. <https://www.hessenschau.de/sport/fussball/eintracht-frankfurt/eintracht-frankfurt-will-randalierer-vom-schalke-spiel-ermitteln-v4,eintracht-krawalle-schalke-100.html>

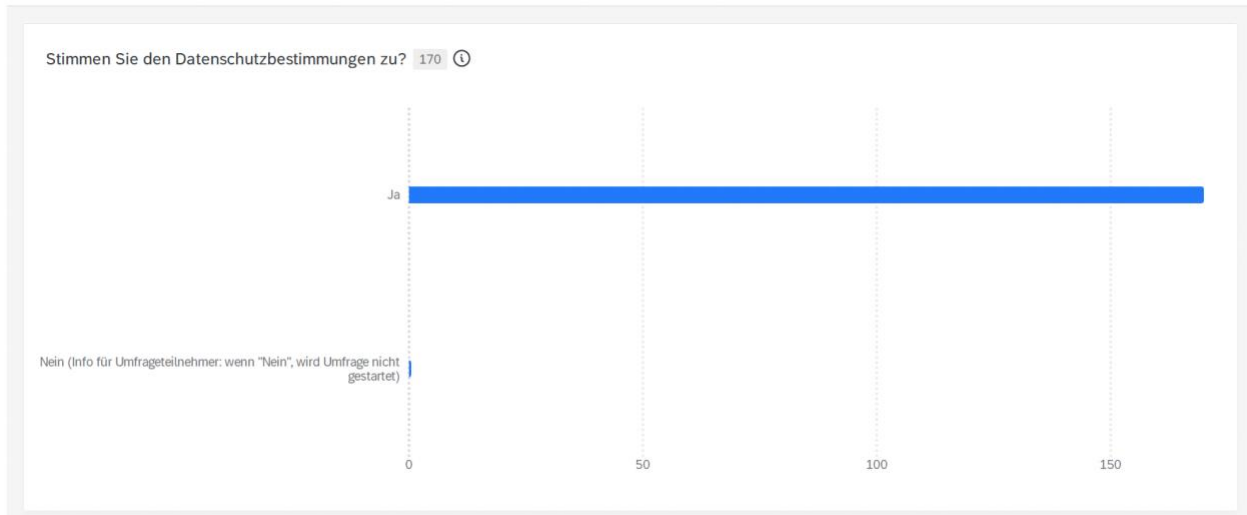
Figure 12:



Source: Stadionplan - FC Schalke 04 - VELTINS-Arena. (2022, March 1). VELTINS-Arena. <https://veltins-arena.de/service/stadionplan/>

## 9. Appendices

### Question: Informed consent:

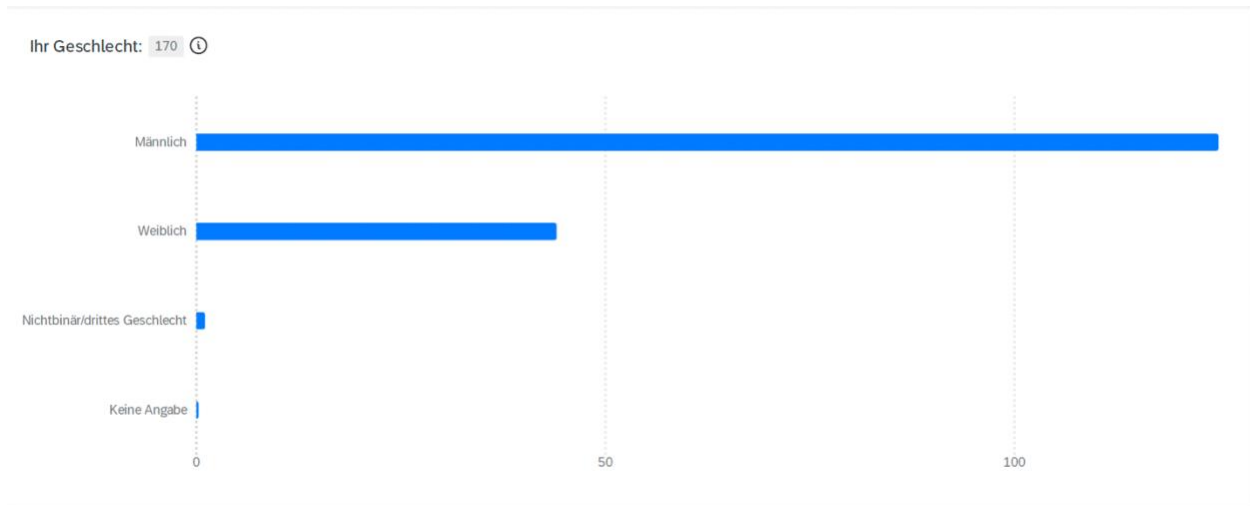


### Question: Age:

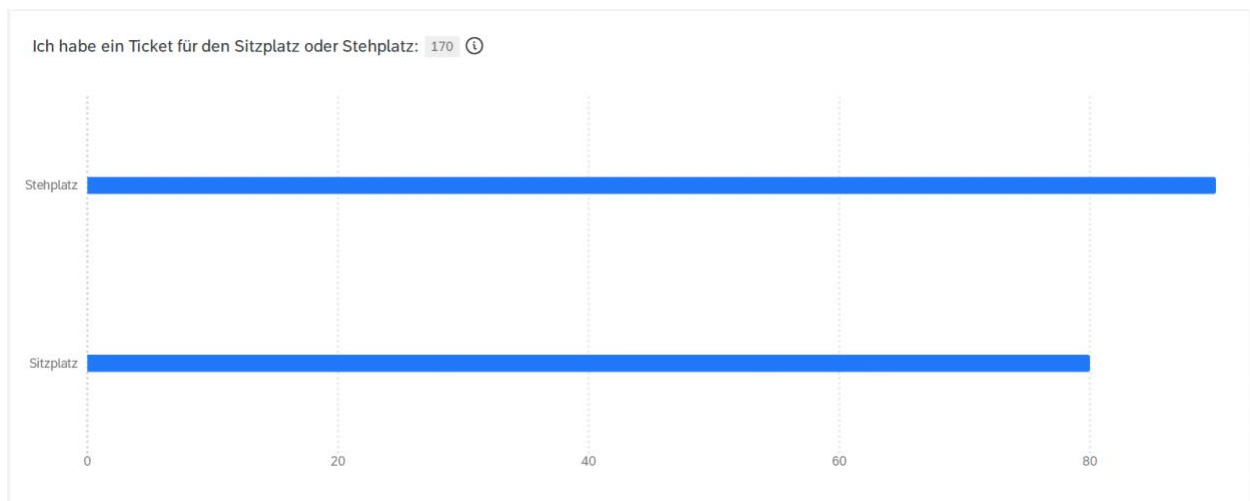
Ihr Alter: ⓘ

Ihr Alter:
31
19
31
32
30
60
60
58
20
19

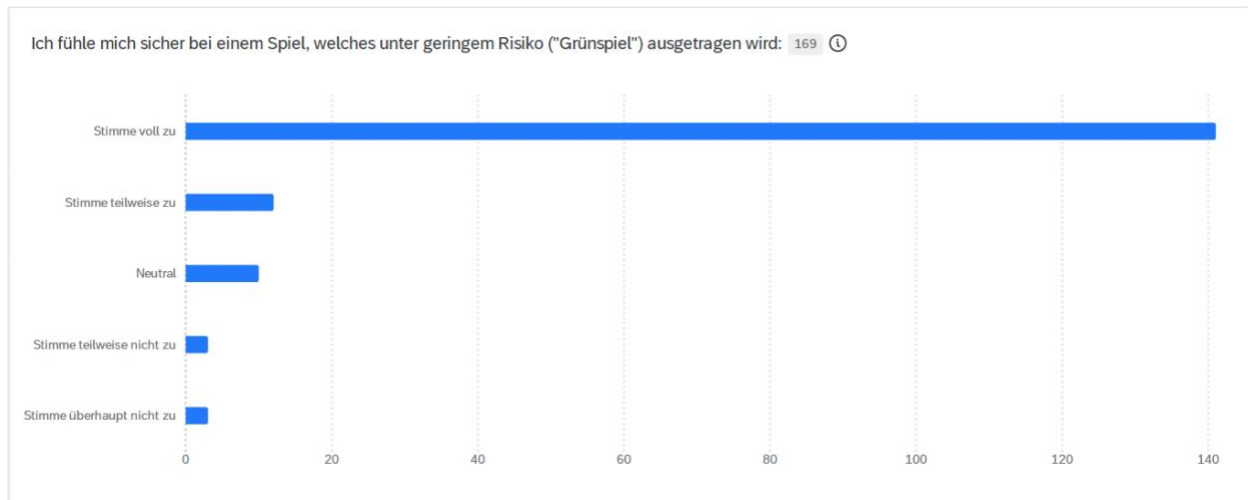
## Question: Gender:



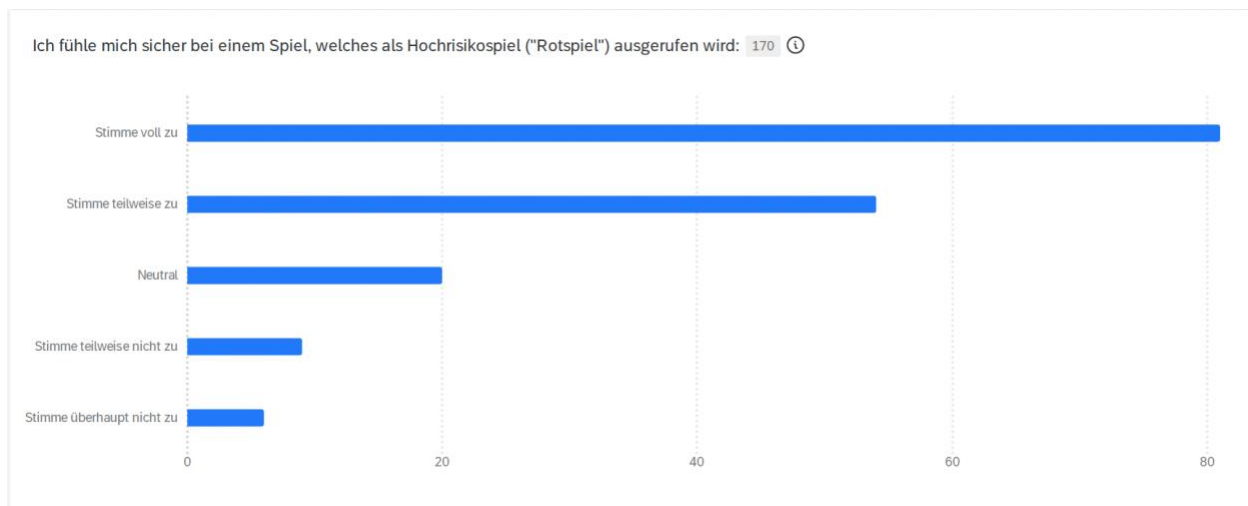
## Question: Ticket: Stand or seat:



## Question: Green-light game

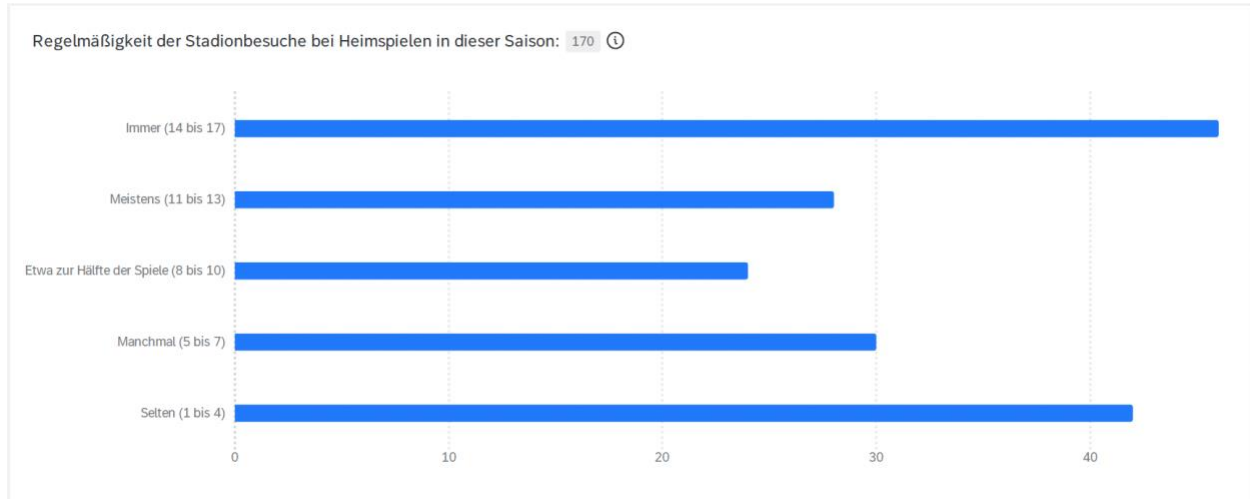


## Question: Red-light game

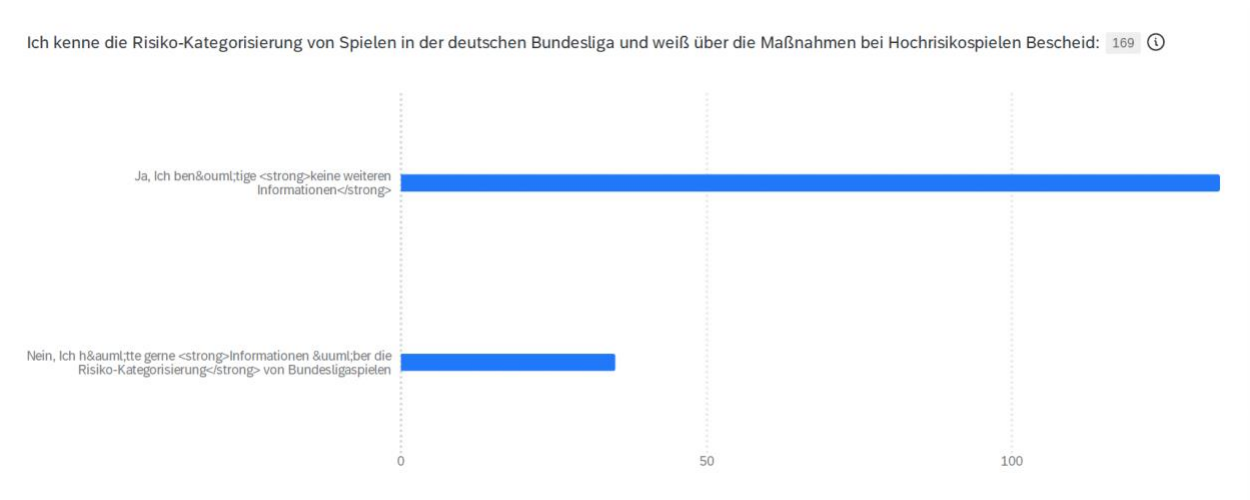




## Question: Frequency of stadium visits:



## Question: Informed about Game-Categorization in Bundesliga:



→ If answered with “No, I need further information”, this question was followed by this Info-Block:

## **Informationen über die Risiko-Kategorisierung von Bundesligaspielen:**

Die Risikobewertung von Bundesligaspielen erfolgt spezifisch für jedes Spiel durch die Zusammenarbeit zwischen dem austragenden Bundesliga-Verein, dem Gastverein, der verantwortlichen Landespolizei und dem Deutschen Fußball Bund (DFB) und führt schließlich zu einer Risiko-Kategorisierung in Ampelfarben.

Ein Spiel, das mit "Grün" gekennzeichnet ist, beschreibt eine geringe zu erwartende Gewaltbereitschaft, allenfalls spontane Auseinandersetzungen zwischen kleinen Gruppen von Fans.

Die Einstufung als "Gelb" oder "Risikospiel" impliziert, dass Gewalttaten und Ausschreitungen unter den allgemeinen Kenntnissen und Verhaltensweisen der Fans und den Gegebenheiten bei den vergangenen Spielen zwischen den beiden Vereinen möglich sind.

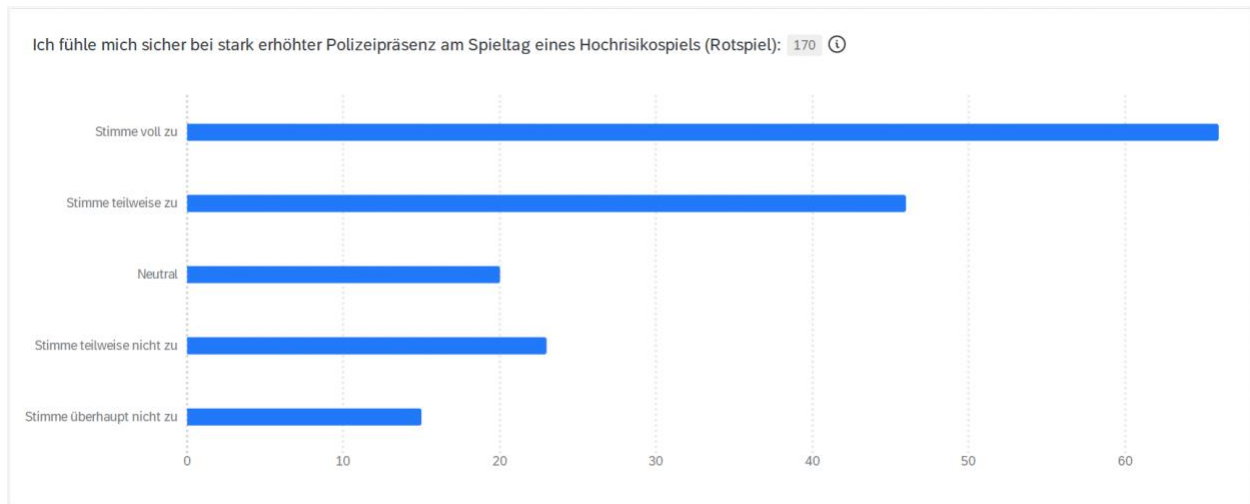
Die Farbe "**Rot**" schließlich steht für die Kategorie der **Hochrisikospiele** (Untersuchungsgegenstand dieser Umfrage), definiert als "Mit an Sicherheit grenzender Wahrscheinlichkeit sind Gewalttaten und Ausschreitungen zwischen Fans und mit der Polizei zu erwarten" (LZPD, 2022).

Auf jede der drei Risiko-Einstufungen folgen **entsprechende Maßnahmen zur Bewahrung der Sicherheit** am Spieltag.

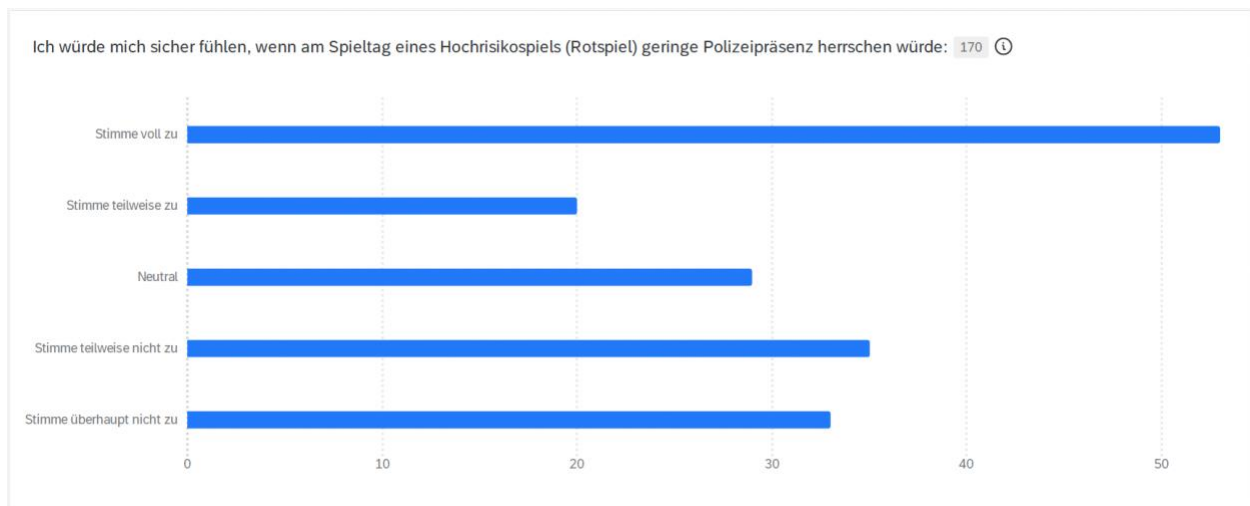
Zu möglichen verstärkten Sicherheitsmaßnahmen bei Hochrisikospiele (Rotspielen) gehören (§ 32: Richtlinien zur Verbesserung der Sicherheit bei Bundesligaspielen, DFB):

- Verstärkung der Polizeieinsatzkräfte
- Verstärkung des Sicherheitsdienstes
- Strikte Trennung der Fans in den Zuschauerbereichen
- Einrichtung und Freihaltung sogenannter "Pufferblöcke" (freie Blöcke zwischen gefährdeten Zuschauerbereichen)
- Verbot des Verkaufs und der öffentlichen Verteilung alkoholischer Getränke
- Einschränkungen beim Verkauf von Eintrittskarten für Stehplätze und Sitzplätze
- Anlaufkontrollen und Personalkontrollen
- Begleitung im Zug oder eine Erfassung der Busse bei der Ankunft durch szenekundige Beamte
- Einrichtung eines Bus-Shuttles
- polizeiliche Begleitung der Gästefans zum Gästeeingang des Stadions sowie ein Fanmarschverbot
- die Bewachung des Geländes rund um das Stadion zumindest in der Nacht vor der Veranstaltung
- Rechtzeitige Information der Zuschauer über den „Ausverkauf“ eines Spiels

## Question: Increased police presence: Active

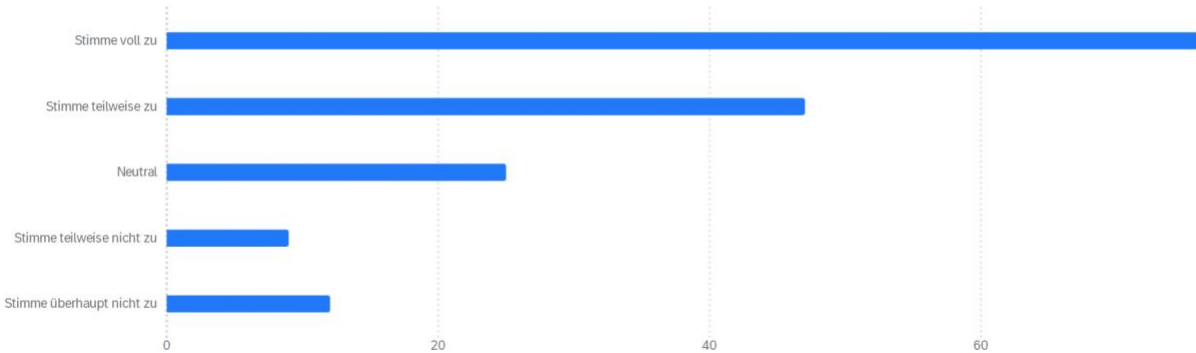


## Question: Increased police presence: Inactive



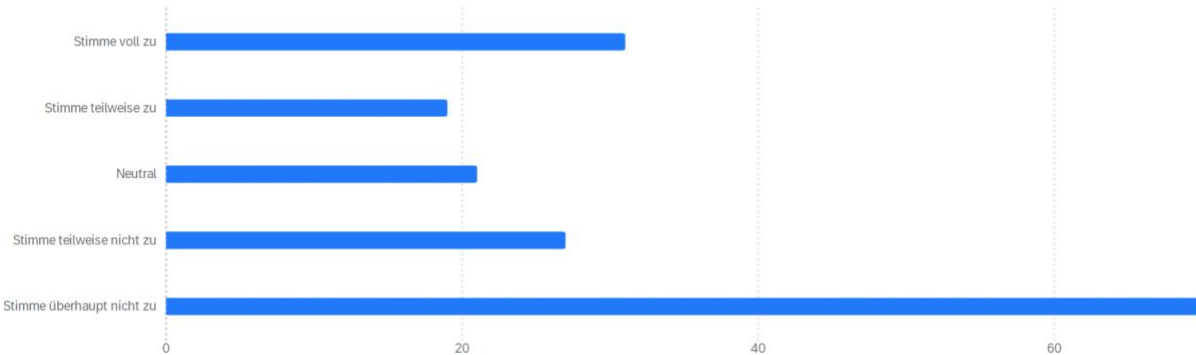
## Question: Separation of fan-bases: Active

Ich fühle mich sicher durch eine strikte Trennung beider Fanlager bei einem Hochrisikospiele (Rotspiel) ("Pufferblöcke" zwischen Zuschauerbereichen / Eskorte der Auswärtsfans zum Stadion): 169 ⓘ

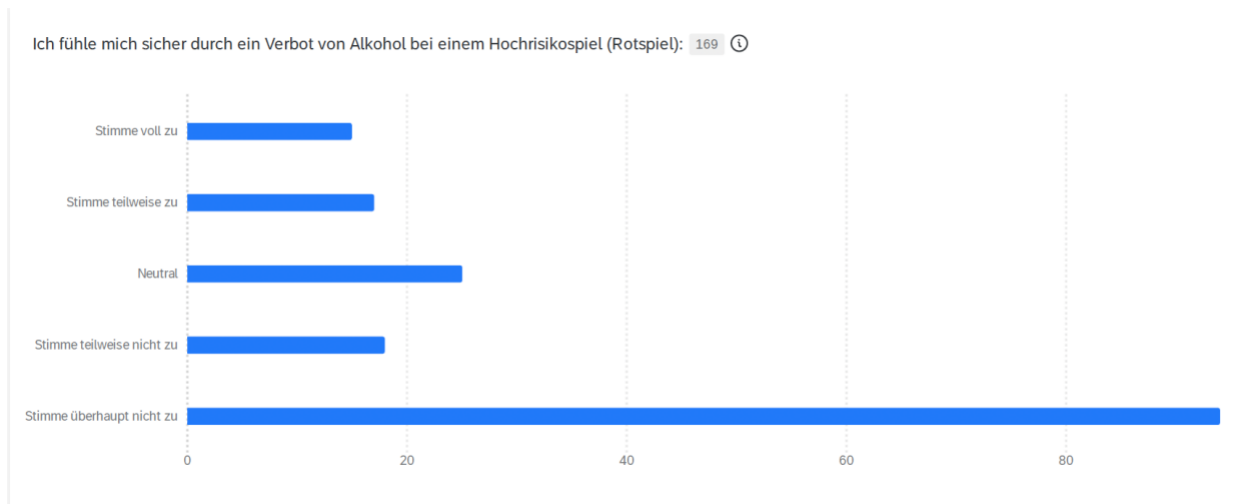


## Question: Separation of fan-bases: Inactive

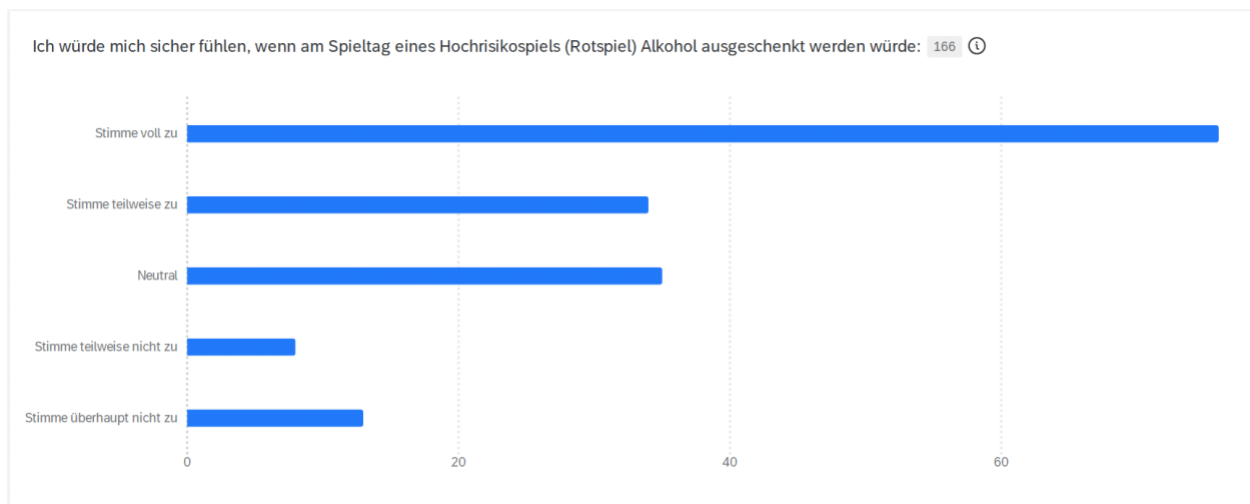
Ich würde mich sicher fühlen, wenn am Spieltag eines Hochrisikospiels (Rotspiel) keine Trennung beider Fanlager vorliegen würde ("Pufferblöcke" zwischen Zuschauerbereichen / Eskorte der Auswärtsfans zum Stadion): 168 ⓘ



## Question: Ban of alcoholic beverages: Active



## Question: Ban of alcoholic beverages: Inactive



## 10. Affidavit

I, Leo Dillhage, hereby certify that this bachelor thesis and all included work in research and data collection was independently carried out by myself. Apart from the support of 4 fellow students in the providing of flyers for the survey conduction, the whole progress of work was accomplished without external influence. All passages derived directly or analogously from published or unpublished sources have been identified as such. The thesis has not been submitted to any other examination office in the same or similar form, nor was it published.

A handwritten signature in black ink, appearing to read 'L. Dillhage', with a stylized flourish extending to the right.

Münster, 28th June of 2023