

## D2.4. EU Citizens' Survey



Deliverable	D2.4
Deliverable Lead	KU Leuven
Related work package	WP2
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Dissemination level	Public
Due submission date	30.04.2021
Actual submission	30.04.2021
Project number	833672
Instrument	RIA
Start date of project	01.05.2019
Duration	42 months
Version log	V1.1

## Versions

Vers.	Date	Author	Description
V0.1	10/02/2021	Emma Jaspaert (KUL), Anna Degraen (KUL), & Geert Vervaeke (KUL)	First Draft
V0.2	18/03/2021	Emma Jaspaert (KUL)	Revisions and additions
V0.3	12/04/2021	Emma Jaspaert (KUL)	Version presented at meeting for feedback
V0.4	18/04/2021	Emma Jaspaert (KUL)	Revisions based on peer-review
V0.5	23/04/2021	Emma Jaspaert (KUL)	Final version
V1.0	30/04/2021	Gerhard Helletzgruber (USE), Valerie Schlagenhafen (USE)	Submission
V1.1	27/10/2021	Emma Jaspaert (KUL)	Additional reference in Executive Summary based on review feedback

## List of Acronyms and Abbreviations

Acronym / Abbreviation	
VR	Virtual Reality
DMA-SR	Decision-making and acting under stress and in high-risk situations
WP	Work package
HF	Human factors

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## Executive Summary

SHOTPROS aims at better understanding the decision-making and acting processes of police officers in stressful and high-risk situations (DMA-SR) and to advance in the training of DMA-SR by taking advantage of all the benefits of Virtual Reality (VR). As the vision of the project is to aid in the improvement of police performance and capabilities in all types of stressful situations that they can encounter in their work as first responders, the European citizens should be viewed as the ultimate stakeholders. Namely, we want to further support police officers in their capabilities of effectively fighting crime and terrorism, and as such also contributing to and strengthening the perceptions of citizens that the EU is a region of freedom, justice and security. Therefore, this deliverable focused on the perspective of the European citizens on issues such as feelings of safety and security, perceptions about police and police performance and DMA, stress experienced by police officers and situations that citizens consider to be particularly stressful for officers, and their ideas about training and the possible added value of VR for police training. As such, the aim of this deliverable was to explore this societal perspective and to gather insights to include this societal perspective maximally in the further course of the SHOTPROS project and beyond.

To acquire knowledge about this societal perspective, two online surveys have been administered to a total of 1390 European citizens (640 participants in the first survey and 750 participants in the second survey). In this deliverable, nine research questions were posed, that strongly guided our research and data collection.

#	Questions central to D2.4
1	What are the perceptions of EU citizens concerning their safety and security and how does the police contribute to these perceptions?
2	How satisfied are EU citizens in the police, how much legitimacy to they attribute to the police, and what are possible influencing factors?
3	How do EU citizens assess the quality of their own experiences with the police and what might be possible influencing factors in this assessment?
4	What are the experiences of EU citizens with police use of force?
5	What is the impact of current societal trends (e.g., COVID-19, police misconduct in the media) on EU citizens perception of the police?
6	How do EU citizens assess decision-making and acting choices of officers in specific police-citizens encounters in terms of legitimacy, appropriateness, proportionality and danger posed to the officer and citizen, and what are possible influencing factors (e.g., perspective on the situation, choice of DMA)?

7	To what degree do EU citizens think police officers encounter high stress in their daily work and what possible situations do they consider to be most stressful for police officers?
8	What are the opinions of EU citizens concerning the way police officers (should) deal with feelings of stress?
9	What are the opinions of EU citizens concerning the utility of police training in general and police training in VR specifically for training good police officers?

In this deliverable, main findings from the two surveys and general conclusions are presented. A more in-depth analysis of the results and the formulation of more concrete recommendations for training in VR and exploitable VR conclusions for training in the virtual world will be presented in **D7.6. SHOTPROS Final Guidelines for VR Training (M41)**.

## 1 Introduction

The main aim of SHOTPROS is to understand better the decision-making and acting of police officers in stressful situations (DMA-SR), and to advance in the training of DMA-SR in police officers in order to improve their performance and capabilities in stressful situations as first responders. One of the objectives of the SHOTPROS project (and of the European Commission) is also to further strengthen the perceptions of citizens that the EU is a region of freedom, justice and security, by developing training tools that will improve police performance. To achieve this objective, it is also important to take into account the societal perspective on policing, safety and security, police DMA and police stressors, and the perceived potential of DMA-SR training.

Therefore, the present deliverable D2.4 presents the result of the exploration of the perceptions of EU citizens. Table 1 presents the questions that guided the work performed in this deliverable.

*Table 1: Research questions guiding D2.4*

#	Questions central to D2.4
1	What are the perceptions of EU citizens concerning their safety and security and how does the police contribute to these perceptions?
2	How satisfied are EU citizens in the police, how much legitimacy to they attribute to the police, and what are possible influencing factors?
3	How do EU citizens assess the quality of their own experiences with the police and what might be possible influencing factors in this assessment?
4	What are the experiences of EU citizens with police use of force?



5	What is the impact of current societal trends (e.g., COVID-19, police misconduct in the media) on EU citizens perception of the police?
6	How do EU citizens assess decision-making and acting choices of officers in specific police-citizens encounters in terms of legitimacy, appropriateness, proportionality and danger posed to the officer and citizen, and what are possible influencing factors (e.g., perspective on the situation, choice of DMA)?
7	To what degree do EU citizens think police officers encounter high stress in their daily work and what possible situations do they consider to be most stressful for police officers?
8	What are the opinions of EU citizens concerning the way police officers (should) deal with feelings of stress?
9	What are the opinions of EU citizens concerning the utility of police training in general and police training in VR specifically for training good police officers?

As **gender** is also an important aspect in the SHOTPROS project, this deliverable will also specifically look at possible gender differences or issues in EU citizens' perceptions of and experiences with the police. In all of the elements listed above, possible gender differences will be explicitly examined and reported on.

Findings reported in D2.4 will embody the societal perspective that will further be implemented in the SHOTPROS project in three main ways:

#### WP3

- Further shape the conceptual human factors model of DMA-SR (**D3.2**)
- Provide relevant insights for the corresponding human factors based DMA-SR curriculum (**D3.3**)

#### WP4-5

- Serve as additional source for the technical requirements for VR training (**D4.6**)
- Provide relevant input for the VR training scenarios (**WP5**)

#### WP8

- Offer insights for the further optimal dissemination and communication of SHOTPROS activities and results to the EU citizens
- Provide useful insights and recommendations for relevant policy-making activities to further strengthen the perception of citizens that the EU is a region of freedom, justice and security

SHOTPROS puts high emphasis on the inclusion of the needs, wishes, requirements and opinions of its end users in all stages of the project. While it is evident that the police, and more specifically police officers who take on first responder duties and police trainers, are the main end users of this project, the European citizens might probably be the most important stakeholders to this project as it is for them, and for their safety, that we want to improve police DMA-SR. This deliverable focuses on giving a voice to these European citizens and to also incorporate their views, opinions, and needs in the further developments within SHOTPROS.

The purpose of this deliverable is to inform the reader about the main findings and how we can implement this knowledge into the further course of the SHOTPROS project. It does not aim to provide the full statistical and scientific process. Therefore, only the significant findings will be reported. Furthermore, main findings from the two surveys and general conclusions are presented in this deliverable. A more in-depth analysis of the results to formulate more concrete recommendations and exploitable conclusions can be found in *D7.6. SHOTPROS Final Guidelines for VR Training*.

## 2 Method used to explore the societal perspective

In order to reach the EU citizens and collect their perceptions, opinions and attitudes towards police, two online surveys were distributed. In what follows, the methodology used in both these surveys will be further described.

### 2.1 Survey 1: EU citizens' perceptions of police and assessment of police DMA

The first survey focused on EU citizens' perceptions of police and their assessment of police DMA in specific police-citizen encounters.

#### 2.1.1 Objectives of the survey

This survey focuses on the first six questions that guide the research on the societal perspective in this deliverable. More specifically, the following questions will be answered based on study 1 (see Table 2).

*Table 2: Research questions for study 1*

#	Research questions for study 1: EU citizens' perceptions of police and police DMA
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1	What are the perceptions of EU citizens concerning their safety and security and how does the police contribute to these perceptions?
2	How satisfied are EU citizens in the police, how much legitimacy to they attribute to the police, and what are possible influencing factors?
3	How do EU citizens assess the quality of their own experiences with the police and what might be possible influencing factors in this assessment?
4	What are the experiences of EU citizens with police use of force?
5	What is the impact of current societal trends (e.g., COVID-19, police misconduct in the media) on EU citizens perception of the police?
6	How do EU citizens assess decision-making and acting choices of officers in specific police-citizens encounters in terms of legitimacy, appropriateness, proportionality and danger posed to the officer and citizen, and what are possible influencing factors (e.g., perspective on the situation, choice of DMA)?

### 2.1.2 Survey procedure

The online survey was developed in Qualtrics (for the full survey: see Appendix 1, p. 71). It was available in four different languages: English, Dutch, French, and German. The survey took approximately 15 to 20 minutes to complete.

A convenience sample was used: all SHOTPROS partners were asked to distribute the anonymous link within their professional and personal networks. The survey was also promoted on the SHOTPROS webpage. Several social media channels were used to further distribute the survey across the EU: personal Facebook profiles, several public Facebook pages, different Twitter channels, and a number of LinkedIn pages.

The survey was active for approximately 2 months, from mid-January until mid-March 2021. Prior to approaching participants, the study was approved by the Social and Societal Ethics Committee of KU Leuven (Nr. G-2019 08 1712). At the start of the survey, participants were informed about the goal of the survey (also within the broader framework of the SHOTPROS project) and their rights in terms of data protection. Before starting the actual survey, participants were asked to provide an informed consent concerning their participation and the further processing of their data.

### 2.1.3 Participants

A total of 640 respondents filled out (part) of the survey. Not all 640 participants completed the survey until the end. Participants who only filled out the socio-demographic questions were removed, but all participants who completed at least some of the questions about their opinions on and experiences with the police were included in the analyses. Hence, samples

sizes can differ depending on the variables included in the statistical analyses. Table 3 presents the most important socio-demographic characteristics of the sample<sup>1</sup>.

*Table 3: Socio-demographic characteristics of survey 1*

Sample socio-demographics	n (%)	M (SD)
<b>Gender</b> (n = 634)		
Male	264 (41.4%)	
Female	370 (57.8%)	
<b>Age</b> (n = 638)		M = 34.9; SD = 15.0
<b>Highest degree of education</b> (n = 635)		
Elementary or high school	205 (32.3%)	
Professional or academic bachelor	245 (38.6%)	
Master or PhD	185 (29.1%)	
<b>Religion</b> (n = 626) <sup>2</sup>		
No religion (atheist, agnostic)	326 (52.1%)	
Any religion	300 (47.9%)	
<b>Professional situation</b> (n = 626)		
(Self-)employed	338 (52.8%)	
Student	221 (34.5%)	
Unemployed, homemaker, retired	67 (10.5%)	
<b>Financial situation</b> (n = 640) <sup>3</sup>		M = 4.58; SD = .96
Difficult	21 (3.3%)	
Normal	246 (38.4%)	
Easy	373 (58.3%)	
<b>Political preference</b> (n = 640) <sup>4</sup>		M = .06; SD = 1.35
Left-winged	117 (18.3%)	
Center	404 (63.1%)	
Right-winged	119 (18.6%)	

<sup>1</sup> Socio-demographic characteristics for which data was collected, but weren't included in the data analyses, are 'country of residence' (there was too little differentiation on this variable, as 73.6% lived in Belgium, and there is no valid argument to compare Belgian respondents to a group of respondents from various countries across the world), 'ethnicity' (there was too little differentiation on this variable, as 91.1% of the respondents were Caucasian), 'relationship status' and 'having children' (in the end it was concluded that these variables were not sufficiently relevant).

<sup>2</sup> Originally, this variable distinguished between the different types of religions, but due to low variability in the variable, the variable was recoded into 'religious'/'not religious'.

<sup>3</sup> Mean score on the Likert scale is given for financial situation, as well as the categories computed from this scale. Likert scale ranging from 1 (very difficult financial situation) to 5 (very easy financial situation). Scale score was used for the data analyses.

<sup>4</sup> Mean score on the Likert scale is given for political preference, as well as the categories computed from this scale. Likert scale ranging from - 3 (far left-winged) to 3 (far right-winged). Scale score was used for the data analyses.

## 2.1.4 Questions and instruments used in the survey

### 2.1.4.1 *Socio-demographic variables*

A range of questions concerning socio-demographic characteristics were included in the survey in order to explore whether opinions and experiences of EU citizens differ depending on their socio-demographic characteristics.

The following characteristics were included in the survey: gender<sup>5</sup>, age, country of residence, race/ethnicity<sup>6</sup>, relationship status and having children<sup>7</sup>, professional status, highest level of education, religion, financial situation, and political preference.

### 2.1.4.2 *Attitudes towards Police Legitimacy*

To measure citizens' beliefs regarding police legitimacy, the Attitudes Towards Police Legitimacy Scale (APLS; Reynolds, Estrada-Reynolds, & Nunez, 2018) was used. This is a 34 item scale that measure police legitimacy, or the approval in the authority of police because of who they are and how they act (Reynolds et al., 2018). Responses are scored on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Examples of items for this scale are "Police officers usually make fair decisions when enforcing laws" and "Police officers take their duty to protect and serve seriously". The reliability of the APLS for all the data<sup>8</sup> in the present study was  $\alpha = .97$ , indicating excellent internal consistency.

### 2.1.4.3 *Neighborhood crime conditions*

Two items were used, one on personal safety ("Overall, how safe do you feel being alone outside in your neighborhood?") and one of perceived crime ("How serious a problem is crime in your neighborhood?") to measure the neighborhood crime conditions, as proposed by Weitzer & Tuch, 2005). Both items were scored on a 5-point Likert scale, respectively ranging from 1 (very unsafe) to 5 (very safe) and from 1 (not a problem at all) to 5 (very serious).

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<sup>5</sup> Besides male and female, non-binary/third gender was also included as a category. 3 respondents identified as non-binary, but needed to be labelled as missing due to lack of N in that category. The option 'I prefer not to answer' was also included in this question.

<sup>6</sup> However, due to lack of variability in this variable, it was omitted from further analyses.

<sup>7</sup> These variables were later omitted from further analyses, because initial analysis showed that these variables were seemingly irrelevant for the concepts studied.

<sup>8</sup> Concerning the reliability of the APLS in the different language: for the Dutch version ( $n = 489$ ),  $\alpha = .97$ , for the English version ( $n = 82$ ),  $\alpha = .98$ , for the German version ( $n = 63$ ),  $\alpha = .97$ . Only 6 respondents filled out the French version, so no reliability statistic was calculated.

#### 2.1.4.4 *Police effectiveness in crime control*

To measure the EU citizen's assessment of police effectiveness in fighting crime, one item was used (i.e., "How effective are the police in your neighborhood in fighting crime"), proposed by Weitzer & Tuch (2005). The item was scored on a 4-point Likert scale, ranging from 1 (very ineffective) to 4 (very effective).

A second question that is asked is "Overall, how satisfied are you with the police in your neighborhood". This question is rated on a 7-point Likert scale ranging from 1 (extremely unsatisfied) to 7 (extremely satisfied).

#### 2.1.4.5 *Perceived police misconduct*

Four items were used to measure perceived police misconduct in the respondent's neighborhood (Weitzer & Tuch, 2005). These four items represent four types of police misconduct: unwarranted police stops, verbal abuse, physical mistreatment and corruptions. An example of such an item: "How often do you think police officers stop people on the street of your neighborhood without good reason?". Cronbach's alpha across all data showed reasonable reliability of the scale:  $\alpha = .74$

#### 2.1.4.6 *Own experiences with police*

To explore respondents' own experience with police, a first question asked whether or not they ever have had direct contact with a police officer, for any reason whatsoever. Participants who responded 'no' on this question, did not fill out the subsequent questions dealing with own experience with police.

Next, participants were asked to remember the last contact they had with the police. Next, a set of questions were posed about this most recent contact.

### **Procedural justice**

To measure citizens' views about the perceived quality and fairness of the interpersonal treatment, the Procedural Justice Scale (Murphy, 2009) was used. This is a 5-item scale, with items such as "The police were approachable and friendly" or "The police were fair". The items were scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach's alpha for this scale across all data in the present study was .95.

### **Satisfaction with police**

One question asked citizens about how satisfied they were with their most recent contact with the police. The question was measured on a 5-point Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied).

## Type of contact

Studies show that it can be important to distinguish between voluntary and involuntary contact with the police when exploring views and opinions about citizens' own contacts with the police (Wheelock, Stroshine, & O'Hear, 2019). Therefore, participants were asked to indicate whether their most recent contact was 'voluntary (i.e. initiated by yourself)' or 'involuntary (i.e., initiated by the police)'. Based on their response on this question, the next questions listed some possible reasons for the police -citizen contact.

## Characteristics of police officers in most recent contact

In order to address the possible differences that were found in previous research concerning the possible influence of gender and ethnicity of the police officers in feelings of satisfaction of citizens, a set of questions was included to collect some information about the police officers present in the respondents' most recent contact with police. These questions were related to (a) the number of officers present, (b) the gender of the officer(s), and (c) the ethnicity of the officer(s) (e.g., different or the same as the ethnicity of the respondent).

### *2.1.4.7 Police use of force*

Participants were asked whether they ever found themselves in a situation in their lives where a police officer has used force against them. If they answered 'yes' to this question, they were given a list of possible forceful actions of the police and were asked to indicate which of these they had experienced (e.g., "threaten to arrest you", "actually kick or hit you"). If they had not previously experienced the use of force by police officers, they were asked if they personally know somebody who had been in such a situation.

Police's use of force is often seen as something negative, as inappropriate responses in certain situations. However, many times, police's use of force is justified and warranted given the situation. A question was thus added to examine the degree to which the respondents' themselves felt that the actions of the police against them were justified given the situation. The question was answered on a 5-point Likert scale ranging from completely 1 (completely unjustified) to 5 (completely justified).

### *2.1.4.8 Impact of current societal situation on perceptions of police*

The position of police within society has recently been challenged, in particular by the COVID-19 pandemic and by the highly mediatized cases of (alleged) police misconduct (mainly against Black citizens in the US). To also take into account the possibility that these recent events might have (temporarily) biased perceptions of and opinions about the police, we also asked respondents whether or not the recent COVID-19 crisis and the reported incident of (alleged)

police misconduct have affected their perception of police in their country, and if yes, in which direction. Additionally, a question was included to ask respondents how often they think police officers in their country use racial or ethnic profiling.

#### *2.1.4.9 Assessment of police DMA in specific police-citizen situations*

An important aspect of this study, and of the SHOTPROS project, is its focus on police DMA. Whereas the focus in SHOTPROS is on developing tools (in VR) to help train and further improve police DMA, the focus in this study is on the way that citizens perceive and evaluate the appropriateness of police DMA in specific police-citizen encounters, in terms of:

- The perceived legality of the DMA of police
- The perceived proportionality of the DMA of police in the specific situation
- The estimation of the level of danger for the police officer in the situation
- The estimation of the level of danger for the citizen in the situation

To study this, different short videoclips were presented to the respondents where specific police-citizen situations were re-enacted by police trainers from Campus Vesta, one of the partners in the SHOTPROS project.

Prior to shooting the videos with the police trainers, two meetings took place where we decided on two situations that occur regularly and for which we had the means at the facilities of Campus Vesta to re-enact them. The decision was made to use:

- A vehicle stop where the driver refuses to get out of the car
- A knife assault where a man suddenly takes out a knife and runs towards the police officer

A main difference between both situations is that the 'knife assault' presents an imminent threat to the physical integrity of the police officer(s), whereas the 'car control' shows defiant behavior of the driver, but not physically aggressive or assaulting the police officer.

Within these two scenarios, three different videos were shot, each time depicting a different DMA of the police officer. Thus, the initial situation remains the same, but the police officer responds to it differently. The aim is to assess which of the three DMA options is preferred by the respondents and why.

In vignette research, a methodology commonly used in criminological research (Jaspaert, 2020), a limitation can be that it is quite transparent for the participants to understand which is the 'good' behavior and which is the 'bad' behavior, because people tend to use quite stereotypical examples that lack the nuance which is often present in real-life situations.



Therefore, the decision was made to select only ‘legal’ DMA options that are all allowed, but not all equally optimal given the situation.

Thus, for each of the two situations, three different DMA scenarios were selected:

- For the car control:
  - a) The officer grabs the driver’s arm and pulls him out of the car
  - b) The officer grabs the driver and forcefully pushes him to the ground
  - c) The officer points his gun at the driver and orders him to step out of the car
- For the knife assault:
  - a) The officer wrestles the man to take away the knife
  - b) The officer runs backwards and uses his pepper spray on the man
  - c) The officer runs backwards and takes out his weapon and points it at the man

According to the police protocols, procedures, and training practices, the **most optimal approach** for both situations would be **option c**, where the police officers takes out his gun. The three police trainers of Campus Vesta gave as most important argument that the other DMA choices pose too much danger for the police officer. For example, in the car control: when the police officers reaches inside the car to grab the driver (scenarios a and b), he comes too close to the ‘suspect’ and exposes himself to danger (e.g., the driver might have a weapon in his hand or on the passenger’s seat). Similarly, for the knife assault: wrestling the man could easily result in the officer being stabbed. For scenario b, the problem is that the time to take out and use a pepper spray takes longer than to take out and point/use a gun (because you also have to take of the cap of the pepper spray). Since the attack started already at close range, the officer probably wouldn’t have sufficient time to defend himself with the pepper spray. Therefore, in both cases, scenario c is the procedure that is being training in the police academy.

Next, an additional condition was included, namely the viewpoint or perspective from which the respondents would observe the police-citizen encounter. It is hypothesized that citizens might evaluate police DMA behaviors as more appropriate and proportional and understand better the choices made by the police when they experience the action in ‘first-person view’ compared to when they experience the situation as an observer or bystander. Therefore, all six videoclips were shot in two perspectives:

- A bodycam perspective, from a bodycam pinned on the chest of the police officer
- An observer perspective, filmed with cameras set up around the location

The left image below (Figure 1) shows what happens in situation 2: knife control. As mentioned earlier, the events taking place (in this case, the man taking out a knife and

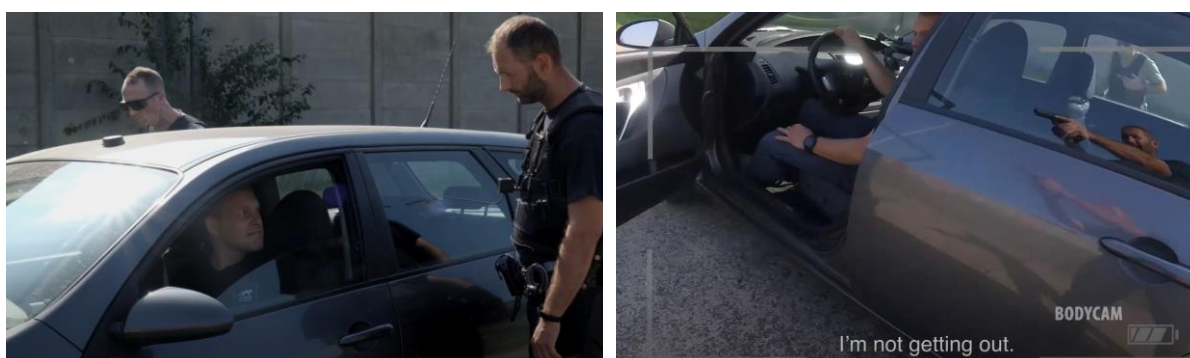
charging at the officer) has been made constant across the three video variations. The only difference is then the DMA response of the police officer. The image on the right shows for example the DMA ‘fight/wrestle with the suspect’ in Variation 1. The left image is taken from a bodycam-clip, the right image from an observer-clip.

Figure 1: Still images from videoclips 'knife assault'



Figure 2 shows similar still images from the other situation, the ‘car control’, the left one from an observer perspective, the right one from a bodycam perspective (taken from Variation 3, ‘draw gun’).

Figure 2: Still images from videoclips 'car control'



In the end, a total of 12 videoclips were recorded, edited, and provided with subtitles in English, Dutch, French, and German. Figure 3 shows an overview of all the videoclips. Not all situations and conditions were presented to each survey participant. Participants were randomly assigned (by Qualtrics) to one of both conditions (A or B): either they saw all six videoclips from an observer perspective, or all six videoclips from a bodycam perspective. This allows for comparison between both groups in terms of their assessment of the same situations, but from a different viewpoint.

Figure 3: Overview of all videoclips and conditions

		View point	
		Observer	Bodycam
<b>Situation 1: car control</b>	<b>Variation 1</b>	Push to ground	Push to ground
	<b>Variation 2</b>	Pull out of car	Pull out of car
	<b>Variation 3</b>	Point gun	Point gun
<b>Situation 2: knife assault</b>	<b>Variation 1</b>	Fight	Fight
	<b>Variation 2</b>	Pepper spray	Pepper spray
	<b>Variation 3</b>	Gun	Gun

### 2.1.5 Data analysis

All data analyses were performed in SPSS, version 27. To examine associations between variables, bivariate correlations were used. The main part of the analyses consisted of making comparisons between groups (e.g., socio-demographic variables). For these analyses, independent-samples t-test, one-way ANOVA's and multivariate analysis of variance tests were performed. Specifically for the examination of the videoclips and possible differences depending on the viewing condition and socio-demographic characteristics of the participants, and possible interactions between variables, mixed between-within subjects analysis of variance tests were used, as well as hierarchical linear regression models.

## 2.2 Survey 2: Perceptions of EU citizens concerning stress and training in police

The second survey focused on the opinions of EU citizens concerning the experience of stress by police officers, the importance of training and the added value of VR for police training.

### 2.2.1 Objectives of the survey

This survey focuses on the last three research questions for this deliverable on the societal perspective on police decision-making and acting in high-stress and high-risk situations (DMA-SR). Whereas the first study focused more on the DMA-part, this survey takes a closer look at the SR-aspect of police work and on citizens' opinions about the experience of stress in police

officers and the possibility of training, and training in VR more specifically, to improve police performance. Table 4 presents the three main research questions guiding study 2.

*Table 4: Research questions for study 2*

#	Research questions study 2: perceptions of citizens on police stress and training
7	To what degree do EU citizens think police officers encounter high stress in their daily work and what possible situations do they consider to be most stressful for police officers?
8	What are the opinions of EU citizens concerning the way police officers (should) deal with feelings of stress?
9	What are the opinions of EU citizens concerning the utility of police training in general and police training in VR specifically for training good police officers?

### 2.2.2 Survey procedure

The online survey was again developed in Qualtrics (for the full survey: see Appendix 2, p. 94). The population targeted were the citizens in five countries represented in the SHOTPROS consortium: Belgium, the Netherlands, Germany, Austria and Romania. Therefore, the survey was made available in four different language: English (since this is the working language within the SHOTPROS consortium), Dutch, German and Romanian. The survey took approximately 10 minutes to complete.

The consortium reached out to Bilendi, a market research agency, who provided support in distributing the survey within their participant databases in these five countries. The survey was active for approximately two weeks in April 2021. This study was also approved by the Social and Societal Ethics Committee of KU Leuven (Nr. G-2019 08 1712). The same informed consent procedure was used as in the first survey (see section 2.1.2).

### 2.2.3 Participants

A total of 750 respondents completed the full survey, around 150 respondents per participating country (Austria: 151, Belgium: 153, Germany: 150, the Netherlands: 145, Romania: 151). Table 5 presents the socio-demographic characteristics of the sample.

*Table 5: Socio-demographic characteristics of study 2*

Sample socio-demographics	n (%)	M (SD)
<b>Gender</b> (n = 748)		
Male	357 (47.7%)	
Female	391 (52.3%)	
<b>Age</b> (n = 750)		M = 44.4; SD = 15.5

<b>Highest degree of education (n = 748)</b>		
Elementary or high school	298 (39.8%)	
Professional or academic bachelor	318 (42.5%)	
Master or PhD	132 (17.6%)	
<b>Ethnicity (n = 724)<sup>9</sup></b>		
Caucasian	659 (87.9%)	
Other ethnicity	65 (8.7%)	
<b>Professional situation (n = 742)</b>		
(Self-)employed	485 (65.4%)	
Not employed (student, unemployed)	135 (18.2%)	
Retired/pensioner	122 (16.4%)	
<b>Political preference (n = 750)<sup>10</sup></b>		<i>M = .17; SD = 1.27</i>
Left-winged	78 (10.4%)	
Center	577 (76.9%)	
Right	95 (12.7%)	

## 2.2.4 Questions and instruments used in the survey

### 2.2.4.1 Socio-demographic characteristics

A range of questions concerning socio-demographic characteristics were included in the survey in order to explore whether opinions and experiences of EU citizens differ depending on their socio-demographic characteristics.

The following characteristics were included in the survey: gender<sup>11</sup>, age, country of residence, race/ethnicity, professional status, highest level of education and political preference.

### 2.2.4.2 Opinions about the prevalence and impact of stress in police officers

#### Estimation of prevalence and impact of stress in police officers

<sup>9</sup> Originally, this variable distinguished between different ethnicities, but due to low variability in the categories other than 'Caucasian', the variable was recoded into 'Caucasian'/'Other ethnicity'. The group size for 'other ethnicity' is also relatively small, so results pertaining to ethnic background should be interpreted cautiously.

<sup>10</sup> Mean score on the Likert scale is given for political preference, as well as the categories computed from this scale. Likert scale ranging from – 3 (far left-winged) to 3 (far right-winged). Scale score was used for the data analyses.

<sup>11</sup> Besides male and female, non-binary/third gender was also included as a category. 2 respondents identified as non-binary, but needed to be labelled as missing due to lack of N in that category.

To explore the perceptions of citizens about police officers' experiences of stress and the impact stress has on their performance, two single questions were asked: "How often do you think police officers experience high stress in their daily work in the field?", scored on a 5-point Likert scale ranging from 1 (never) to 5 (very often), and "In general, do you think high stress has a positive or negative impact on police officers' performance on duty?", of a 5-point Likert scale ranging from 1 (extremely negative) to 5 (extremely positive).

### **Estimation of stressfulness of specific first responder situations**

Next, a set of 25 situations were described that police officers can encounter in their daily operational work in the field. To come to these 25 situations, the literature concerning police stress was examined. In this research domain, the focus mainly lies on overall job stress in police officers (e.g., Abdollahi, 2002; Risdon, Johnson & Colbert, 2007). As such, many of the studies dealt mainly with organizational stressors (e.g., work load, promotion processes, work-life balance). As this deliverable specifically aims to explore opinions of citizens on elements that can cause stress in police officers and that can be manipulated/implemented in a VR training program, we aimed to extract all the situations/events that could be considered as 'operational stressors' (McCreary & Thompson, 2006). Here, again, a selection was made that distinguished operational stressors in their desk work from operational stressors during interventions in the field. This resulted in a list of 63 different descriptions of situations that were already described or used in previous studies (with police officers). This list was further scrutinized in order to combine descriptions of relatively similar situations into one description, thus further reducing the set of situations to 25.

Respondents did not all fill out the 25 situations but were given a random selection of 13 situations to evaluate on their level of stressfulness for police officers. The random selection was performed by Qualtrics and it ensured the even presentation of all items to participants. Participants were asked to indicate on a scale from 0 to 10 how stressful they thought the situation would be for a police officer. Examples of these items are: "Being verbally or physically attacked by a civilian" or "Attending to a serious road traffic accident with multiple injuries and possible fatalities".

One might ask the question why we did not use the same list of stressors that was presented to police officers in the survey supporting the Risk Assessment Tool (see D4.7). There were multiple reasons why we chose to present a different set of stressful situations:

- 1) The RAT survey presented a very extensive list of over a 100 specific stressors, as the objective of the RAT survey was to weigh all these different stress cues to assess their stress inducing capabilities in (VR) training scenarios. The focus of the current survey is



very different and much broader. In this survey, the aim is to (a) explore the opinions and perceptions of EU citizens concerning the frequency, intensity, and impact of stress situations for police officers; (b) understand their attitudes towards police and stress (resilience); and (c) to collect opinions about the usefulness of police training and the potential benefits of VR in police training.

- 2) Presenting such a long list of stressors would have resulted in a very high survey duration, and as such, would have made the recruitment of participants too difficult. Furthermore, the RAT-survey only focused on these stressors, whereas the current deliverable also focuses on other elements.
- 3) The stressors presented in the RAT survey were very specific (e.g., different sounds, smells, civilian behavior). It would be too difficult for citizens who have no experience with such situations to picture the stress that would be induced by each of these specific stress cues. Therefore, we decided to focus more on stressful events rather than on very specific, singular stress cues.

### **Opinions of citizens concerning police officers' stress resilience and treatment of police by civilians**

A set of 13 statements were developed to explore the opinions of citizens on how police officers should (be able to) deal with stress, what might be the impact of such stress, and how citizens should behave towards police officers. All statements were presented in the survey and participants were asked to indicate to what degree they agreed or disagreed with them, on a 5-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). Examples of such statements are "Police officers should be able to keep their head cool in every situation", "Police officers under stress make more mistakes" and "Police officers should be trained in stress management".

It was chosen to also include a few statements specifically related to the treatment of police officers by civilians, as this came out as a particularly important societal stress factor during the workshops in WP2 (see D2.2) and because it can also be manipulated during VR training as a contextual factor.

### **Differences between groups of police officers in terms of stress experience**

To explore whether citizens believe that some groups of police officers might experience more stress than other groups (e.g. male versus female officers), six group dichotomies were presented to the participants. They were asked to indicate each time whether one of both group experience more stress, or whether both groups experience similar stress. The

elements on which the groups were distinguished, were gender, age, years of experience, patrolling type, having a family (partner and/or children), and ethnicity.

### **Future increase or decrease of high-risk situations**

Finally, a single question was also used to explore the opinion of the citizens about whether the number of high-risk situations that police officers are confronted with will increase or decrease in the future or not.

#### *2.2.4.3 Perceptions on training and training in VR specifically*

### **Sufficient training time**

In the survey, respondents were informed about the training duration of the basic police training program in their country and about the yearly hours of training ‘on-the-job’ police officers receive in their country. They were then asked whether they felt this was enough time and opportunity to be well trained and able to deal with stressful and/or high-risk situations in the field. Both questions were answered on a 5-point Likert scale, ranging from – 2 (far too little time) to 2 (far too much time).

### **Knowledge and opinions about Virtual Reality**

A question was asked about participants’ familiarity with VR. Afterwards, three questions were asked about their opinion of Virtual Reality in general (“VR can be of added value in our lives” and “There are many interesting or relevant possibilities in VR”), and for police training specifically (“VR can be of added value in training programs for police officers”).

### **VR value for specific types of police training**

Additionally, respondents<sup>12</sup> were given a list of different types of police training objectives and were asked for which types of training they felt that VR could be of added value. The first two concerned more general training goals (i.e., for basic training and for additional training on the job), the latter six dealt with specific training goals (e.g., training for unusual situations, stress exposure training). They were asked if they thought VR could be of added value for these training types and could respond with “not at all”, “a little” or “a lot”.

### **Overall perception of the potential of VR scenario-based training**

In the final question, respondents were asked if they thought that training different scenarios in VR simulations can improve the preparedness of police officers to deal with stressful high-

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<sup>12</sup> The participants who indicated on the previous question that they saw absolutely no added value in using VR for police training did not fill out these questions.



risk situations in their country. They rated this question on a 5-point Likert scale, ranging from 1 (definitely not) to 5 (definitely yes).

### 2.2.5 Data analysis

All data analyses were performed in SPSS, version 27. To examine associations between variables, bivariate correlations were used. For comparisons between groups (e.g., socio-demographic variables), independent-samples t-test and one-way ANOVA's were performed. Possible influences of socio-demographic characteristics on opinions and perceptions was studied via multiple linear regression analysis. An exploratory Principal Components Analysis was also conducted to examine possible subcomponents in the 13 statements.

## 3 Findings survey 1: EU citizens perceptions of police and police DMA

### 3.1 Intercorrelations between main variables

The mean and standard deviations for all the main variables are presented in Table 6, as well as the correlations or associations between these variables. Variables included are attitudes towards police legitimacy, feelings of safety in own neighborhood, perception of crime as a problem in one's neighborhood, perceptions of police effectiveness in one's neighborhood, perceptions of police misconduct, perceptions of procedural justice in the most recent contact of the participant, satisfaction with most recent contact of the participant, and overall satisfaction with the local police in the participant's neighborhood.

*Table 6: Intercorrelation matrix for the main variables in study 1*

	<i>M; SD</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>1</b> APLS	4.96; 1.00							
<b>2</b> Feeling of safety	3.35; .63	.10*						
<b>3</b> Perception of crime	1.91; .62	-.02	-.33**					
<b>4</b> Effectiveness of police	2.90; .58	.40**	.23**	-.27**				
<b>5</b> Police misconduct	1.66; .51	-.63**	-.19**	.16**	-.34**			
<b>6</b> PJ last contact	4.02; 1.03	.64**	.11*	-.08	.33**	-.50**		
<b>7</b> Satisfaction last contact	3.86; 1.23	.59**	.10*	-.07	.30**	-.47**	.83**	
<b>8</b> Satisfaction local police	5.72; 1.38	.67**	.20**	-.18**	.50**	-.54**	.59**	.54**

\* $p < .05$ , \*\* $p < .001$ ; Note: APLS = Attitude towards police legitimacy (scale), PJ = Procedural Justice

The strongest and most interesting associations between the main variables in the study are:

- There is a large positive association between perceptions of police legitimacy and satisfaction with the local neighborhood police
- A positive personal experience with the police (i.e., procedural justice and satisfaction of last contact) is associated with positive perceptions of police legitimacy and satisfaction with the local police and lower perceptions of police misconduct
- Participants who think that the police in their neighborhood shows a lot of misconduct tend to attribute lower legitimacy to police and are less satisfied with their local police
- Although the associations are significant, the fact that participants feel safe in their neighborhood have only a small positive impact on perceptions of legitimacy or satisfaction in police

Significant differences based on socio-demographic characteristics were found for the following variables:

- Attitudes towards police legitimacy<sup>13</sup>:
  - The better the financial situation, the higher the perceived police legitimacy
  - Participants who are politically more right-wing oriented, perceive higher police legitimacy
  - Participants with a lower education levels (elementary or high school) perceive higher police legitimacy than participants with higher education levels (bachelor, masters, PhD's).
  - The older the participant, the higher his/her perceived police legitimacy
- Feelings of personal safety<sup>14</sup>:
  - Women generally feel less safe in their neighborhood than men
  - Participants who are highly educated (master or PhD) feel more safe in their neighborhood
- Perception of crime as a problem in their neighborhood<sup>15</sup>:
  - Participants who struggle more financial, tend to perceive crime as more of a problem in their neighborhood

<sup>13</sup> Based on a multiple linear regression analysis including all socio-demographic characteristics as independent variables. The model as a whole was significant:  $F(9, 595) = 9.13, p < .001, R^2 = .12$ . Financial situation ( $beta = .12, p = .002$ ), political orientation ( $beta = .13, p = .001$ ), age ( $beta = .13, p = .02$ ) and education (dummy coded; Elementary or high school,  $beta = .18, p < .001$ ) were significant.

<sup>14</sup> Based on a multiple linear regression analysis including all socio-demographic characteristics as independent variables. The model as a whole was significant:  $F(9, 586) = 7.60, p < .001, R^2 = .10$ . Gender ( $beta = -.21, p < .001$ ) and education (dummy coded; Elementary or high school,  $beta = -.21, p < .001$ ; Bachelor,  $beta = -.11, p = .04$ ) were significant.

<sup>15</sup> Based on a multiple linear regression analysis including all socio-demographic characteristics as independent variables. The model as a whole was significant:  $F(9, 586) = 2.79, p = .003, R^2 = .04$ . Financial situation ( $beta = -.13, p = .003$ ) was significant.

- Perceived police misconduct<sup>16</sup>:
  - Women attribute more misconduct to police than men
  - The poorer one's financial situation, the higher their perceived police misconduct
  - Participants who are politically more right-wing oriented, perceive lower levels of police misconduct
  - The older the participant, the less police misconduct they perceive
- General satisfaction with local police in neighborhood<sup>17</sup>:
  - The easier a respondent's financial situation, the more (s)he is satisfied with the local police in his/her neighborhood
- There was no significant unique influence of specific socio-demographic characteristics on perceived police effectiveness, and feeling treated procedurally just and satisfied with the most recent police contact.

## 3.2 Opinions of most recent contact with police

### 3.2.1 Perception of procedural justice and satisfaction with most recent contact

As mentioned in section 3.1, participants on average felt treated procedurally just and were satisfied with their most recent contact with the police. Based on the multiple linear regressions, including only all socio-demographic variables, there seems to be no influence of a specific socio-demographic characteristic on levels of reported procedural justice and satisfaction with the most recent contact. However, when adding the variable 'who initiated the most recent contact with the police' was added to the regression analysis, this proves to be the only significant predictor<sup>18</sup>.

<sup>16</sup> Based on a multiple linear regression analysis including all socio-demographic characteristics as independent variables. The model as a whole was significant:  $F(9, 579) = 8.23, p < .001$ , R square = .11. Gender ( $beta = .14, p = .001$ ), financial situation ( $beta = -.10, p = .02$ ), political preference ( $beta = -.17, p < .001$ ) and age ( $beta = -.20, p < .001$ ) were significant.

<sup>17</sup> Based on a multiple linear regression analysis including all socio-demographic characteristics as independent variables. The model as a whole was significant:  $F(9, 564) = 2.52, p = .008$ , R square = .04. Financial situation ( $beta = .09, p = .04$ ) was significant.

<sup>18</sup> Based on a multiple linear regression analysis including all socio-demographic characteristics and 'initiator contact' as independent variables. The models as a whole were significant: for procedural justice,  $F(10, 486) = 3.84, p < .001$ , R square = .07, for satisfaction with most recent contact,  $F(10, 486) = 3.32, p < .001$ , R square = .06. Only 'initiator contact' made a significant unique contribution to the prediction of the independent variables (respectively  $beta = -.16, p < .001$  and  $beta = -.15, p = .001$ ).

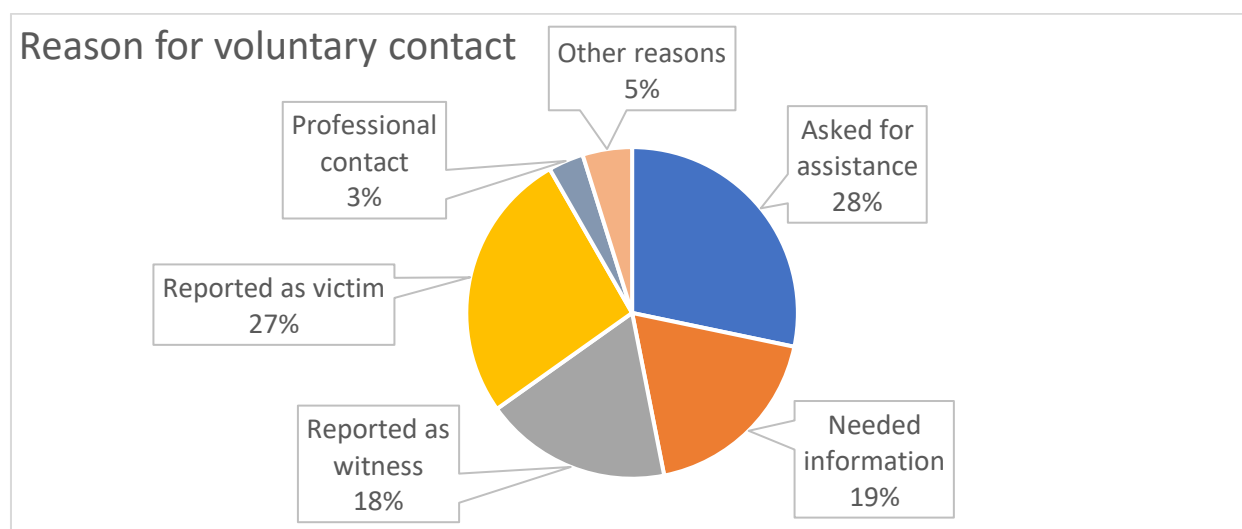
Thus, respondents who **voluntarily initiated** their most recent contact with the police, felt **more fairly treated** and were **more satisfied** with this contact than respondents whose most recent contact was involuntary.

### 3.2.2 Experiences during most recent contact with police

#### 3.2.2.1 Reason for most recent contact with police

A total of 541 respondents (86.8%) has indicated to have had direct contact with a police officer already. Concerning their most recent contact, 291 respondents (**55%**) state that the contact has been **voluntary** (initiated by the respondents themselves), 238 (**45%**) had an **involuntary** contact with the police (initiated by the police). No gender differences were found in whether or not the contact with the police was (in)voluntary.

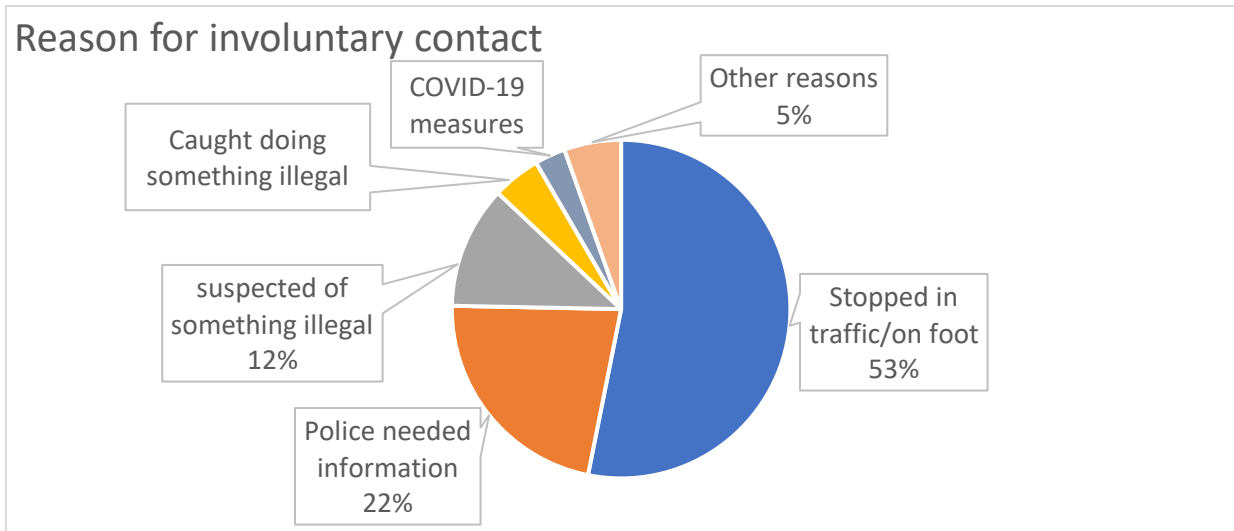
Figure 4: Reason for voluntary contact with the police



The reasons most often mentioned for voluntary contact with the police (see Figure 4) were ‘asking them for information or a document’ (e.g., proof of residence) and ‘reporting a crime of misdemeanor as victim’ (e.g., car theft).

There is a clear main reason for reported involuntary contact (see Figure 5): more than half of the participants indicated that they were stopped in traffic or while on foot (e.g., getting a fine).

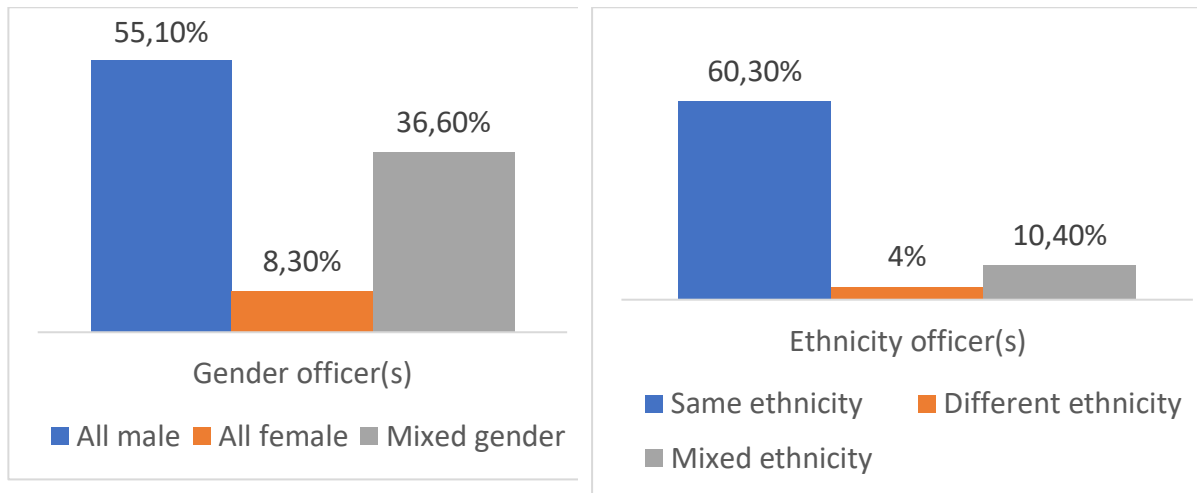
Figure 5: Reason for involuntary contact with the police



3.2.2.2 Characteristics of police officers in most recent contact

In all recent contact, 33.1% of the contacts involved only **one police officer** (n = 175). In 63.9% of cases, the contact involved **two or more police officers** (n = 338). 3% (n = 16) does not remember how many officers were present.

Figure 6: Gender and ethnicity of the officer(s) in most recent contact



In 55.1% of these contacts the police officer(s) was/were **(all) male** (n = 271). Only in 8.3%, the police officer(s) was/were **(all) female** (n = 41). In 36.6% of cases, respondents reported officers being present from both genders (n = 180). 21 respondents did not remember the gender of the police officer(s).

Concerning the **ethnicity** of the police officers, most of the respondents (n = 386, 60.3%) reported that (all) police officer(s) was/were of the same ethnicity as they were. In 18 cases (4%) all officers present had an ethnic background different from the respondent, and in 47

cases (10.4%) officers with different races were present. 62 people did not remember the ethnicity of the officer(s).

Subjective feelings of procedural justice or satisfaction did not differ depending on the number of police officers present in the most recent contact. The gender of the officers did also not show significant differences in procedural justice or satisfaction.

However, the **ethnic background** of the officer(s) did seem to have a small effect of feelings of procedural justice and satisfaction<sup>19</sup>: participants whose last contact has been with a team of police officers of whom some, but not all had a different race than that of the respondent, reported higher procedural justice and higher satisfaction than respondents who all had the same ethnicity as the respondent. It should however be noted that the group 'all of different ethnicity' was very small (n = 18), and as such these findings should be looked at cautiously.

### 3.3 Experiences with use of force by the police

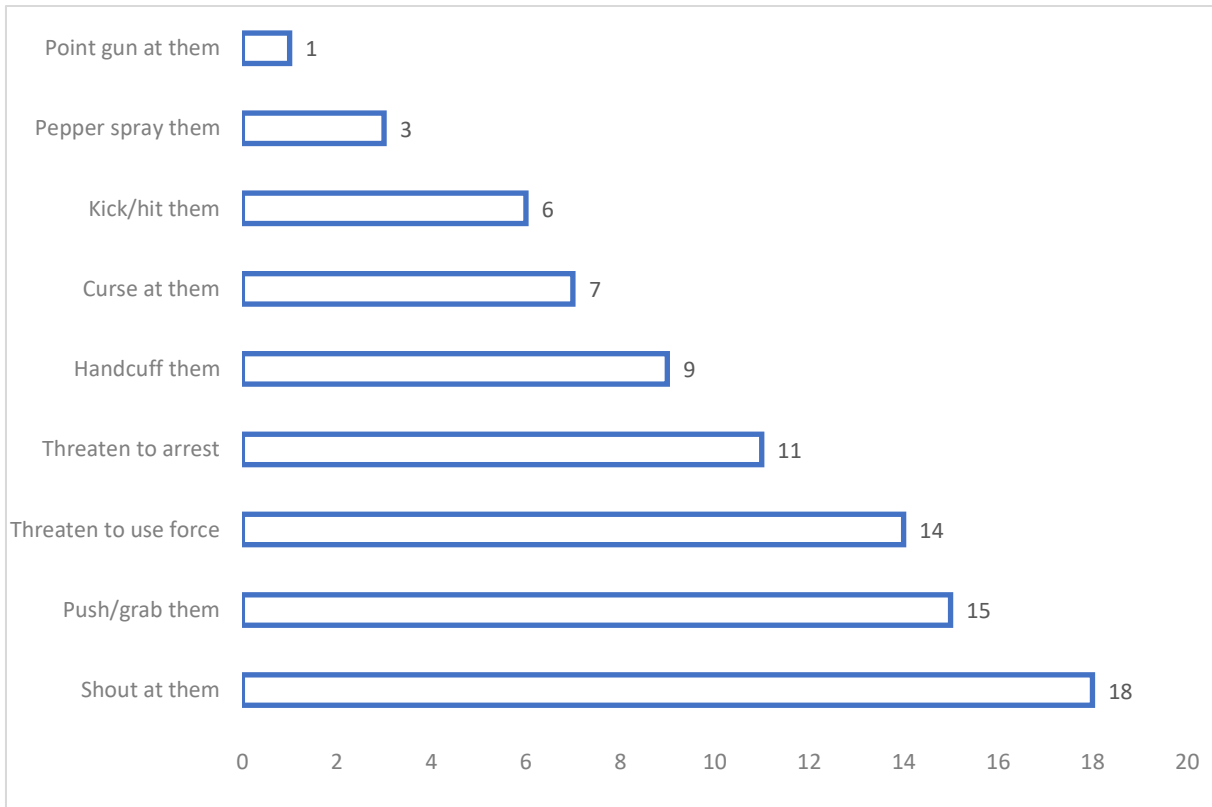
A total of 38 (7.2%) out of 529 respondents indicated that they have been in a situation in their lives where a police officer **has used force against them**. The types of force these respondents (n = 38) reported most frequently are depicted in Figure 7.

When asked whether or not they felt this use of force was justified, 22 of them (61,1%) felt it was somewhat (n = 4) or completely (n = 18) **unjustified**, whereas 9 (25%) thought the use of force was somewhat (n = 5) or completely (n = 4) justified. 5 respondents (13.9%) indicated that the actions of the police were neither justified nor unjustified.

Of those who hadn't experienced use of force by the police themselves (n = 490), 131 (26.7%) reported that they personally know someone who has been in a situation where use of force has been used against them.

*Figure 7: Overview of types of force of police officers experienced by participants*

<sup>19</sup> A one-way ANOVA showed a significant difference in feelings of procedural justice and satisfaction depending on the race of the officer(s), respectively  $F(2, 39) = 14.89, p < .001$  and  $F(2, 38) = 8.80, p = .001$ . However, the actual difference in mean scores between the groups is quite small (respective eta-squared = .03 and .02). Post-hoc tests for procedural justice and satisfaction show a differences between 'mixed ethnic group' (respectively  $M = 3.56, SD = .67$  and  $M = 4.40, SD = .93$ ) on the one hand and 'all same ethnicity' (respectively  $M = 3.95, SD = 1.06$  and  $M = 3.78, SD = 1.26$ ) and 'all different ethnicity' (respectively  $M = 3.92, SD = 1.18$  and  $M = 3.67, SD = 1.28$ ) on the other.



There is a significant gender difference in the experience with use of force by the police<sup>20</sup>, with men reporting to have been in such a situation more often than women.

### 3.4 Influence of current societal climate

The recent **COVID-19 crisis affected** the **perception** of police in the country for 183 respondents (**30,1%**). Thus, approximately 70% claim that the crisis did not affect their perception. No gender difference was found concerning whether the COVID-19 crisis has affected perceptions of police or not. For those whose perceptions have changed, 99 (**54,1%**) indicated that their perception of police became somewhat (n = 73) or much **more negative**. 84 respondents (45,9%) indicated a somewhat more positive (n = 67) or much more positive (n = 17) change in their perception.

The highly **mediatized cases of (alleged) police misconduct** and subsequent protests have **affected the perceptions** of 240 respondents (**39.7%**). For 60%, these cases did not affect their perception. A small but significant difference was found between men and women, with

<sup>20</sup> Independent samples t-test shows that men have been in such a situation more often than women ( $\chi^2(1, n = 523) = 5.55, p = .018, \phi = -.11$ ), but this difference has a small effect size.

women reporting that these cases have influenced their perception of police more often than men<sup>21</sup>. However, the effect size indicates that the magnitude of this difference is very small. Of those 240 respondents, 216 (90%) indicated that their perceptions became somewhat (n = 158) or much **more** (n = 58) **negative**. Only 10% felt that these cases made their perceptions somewhat more (n = 19) or much more (n = 5) positive. No gender differences were found in the direction of the changes in perception for both the COVID-19 crisis and the mediatized cases of (alleged) police misconduct.

All respondents were also asked the more general question whether they thought police officers in their country **use racial or ethnic profiling** in their daily work. 127 (21%) indicated that police never uses ethnic profiling, 334 (55.2%) think they use it **sometimes**, 20.3% think they use it often, and 21 (3.5%) feel that they use ethnic profiling all the time. Women appear to estimate higher frequency of ethnic profiling by police officers than men<sup>22</sup>.

### 3.5 Assessment of police DMA in specific situations

#### 3.5.1 Comparison of the scenarios within the situation of ‘car control’

##### 3.5.1.1 Legality of the DMA

Concerning the question whether respondents in general considered the actions in the different scenarios as a **‘legal’ action**, the table below shows the percentages of respondents who think the action is legal. Figure 8 shows that ‘pulling out of car’ was considered most often to be legal. ‘Pointing a gun’ was only deemed legal by less than 25% of respondents. Men reported the action ‘push to the ground’ more often as legal than women<sup>23</sup>. No gender differences were found for the other two scenarios.

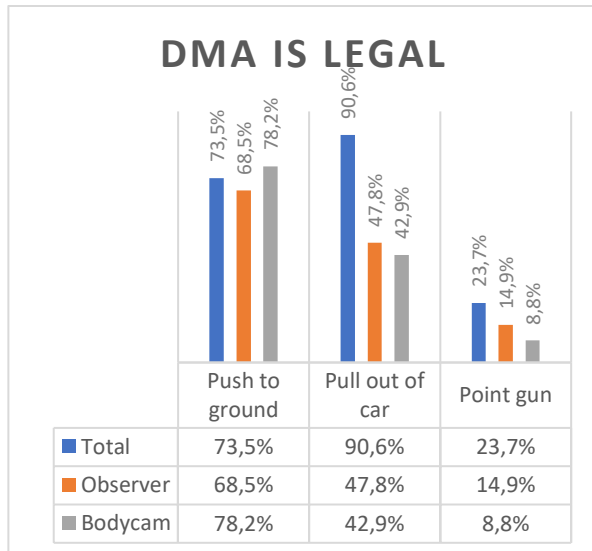
*Figure 8: Differences between DMAs in terms of legality (car control)*

<sup>21</sup> Chi-square:  $\chi^2(1, n = 599) = 4.17, p = .04, \phi = .09$

<sup>22</sup> Women (M = 2.16, SD = .74) reported significantly higher estimates of ethnic profiling frequency than men (M = 1.92, SD = .72),  $t(597) = -3.98, p < .001, \text{Cohen's } d = .24$  (small effect size).

<sup>23</sup> Chi-square:  $\chi^2(1, n = 564) = 7.70, p = .006, \phi = -.12$  (small effect size)





Car control	% legal	N
Push to ground	418 (73.3%)	570
Pull out of car	485 (90.7%)	535
Point gun	121 (23.7%)	510

To explore the degree to which respondents in the observer versus the bodycam condition differed in the way they qualified the conditions as **legal**, a chi-square was calculated. Findings (see also Figure 8) indicate that participants in the bodycam condition qualified all three scenarios (‘push to ground’, ‘pulling out of car’, and ‘pointing gun’) more often as legal than the respondents in the observer condition<sup>24</sup>.

### 3.5.1.2 Appropriateness of the DMA

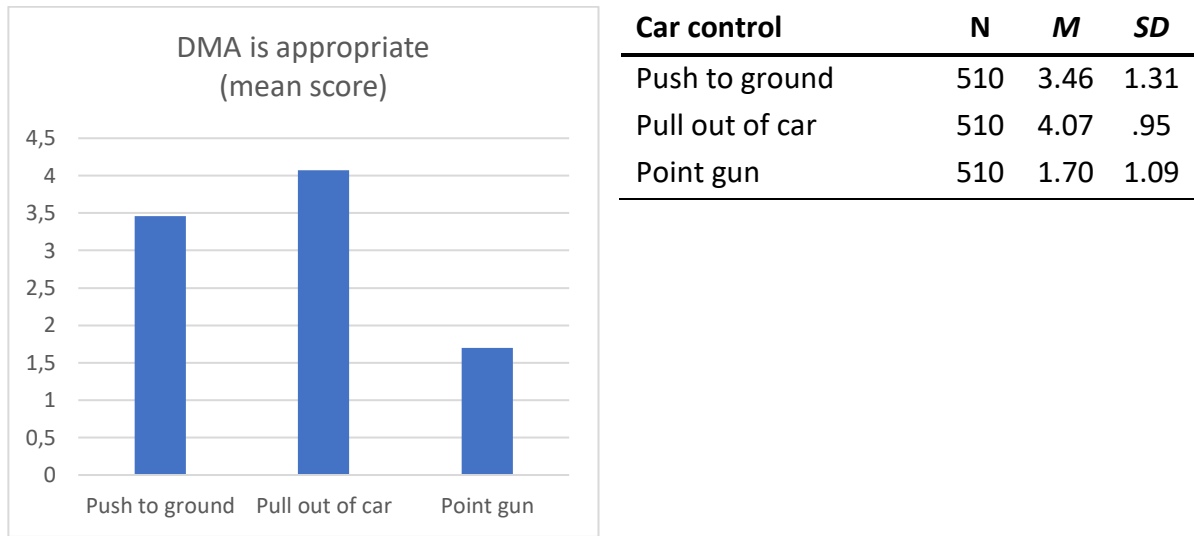
Concerning the estimation of **appropriateness** of the scenarios, a mixed between-within subjects analysis of variance was conducted.

There was no significant interaction between viewpoint condition and scenario condition.

There was a substantial main effect for the scenario conditions, Wilks’ Lambda = .23,  $p < .001$ . The partial eta squared is .77, which suggests a very large effect size. Pairwise comparison of the three conditions suggests significant differences between all conditions in terms of appropriateness, with ‘pulling out of car’ rated as most appropriate and ‘point gun at civilian’ as least appropriate.

<sup>24</sup> For the scenario ‘push to ground’,  $\chi^2 (1, n = 565) = 6.84, p = .009$ , Cramer’s V = .11 (small effect size). For the scenario ‘pull out of car’,  $\chi^2 (1, n = 534) = 11.05, p = .001$ , Cramer’s V = .14 (small effect size). For the scenario ‘pointing gun’,  $\chi^2 (1, n = 510) = 10.41, p = .001$ , Cramer’s V = .14 (small effect size).

Figure 9: Differences between DMAs in terms of appropriateness (car control)

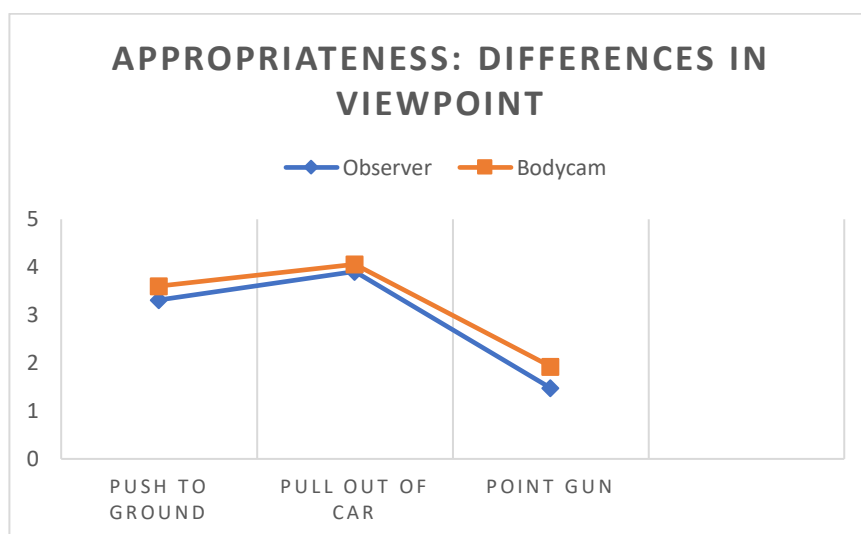


Men consider to find all the actions as more appropriate than women<sup>25</sup>. This is a small effect for ‘pulling out of car’ and a small-to-moderate effect for ‘pepper spray’ and ‘pointing gun’.

There was also a main effect for the viewpoint condition,  $F(1, 508) = 25.21, p < .001$ , indicating that there is a significant difference in the appropriateness scores between the ‘observer’ group and the ‘bodycam’ group, with the ‘bodycam’ group estimating higher appropriateness than the ‘observer’ group. The effect size of this difference is small-to-moderate (partial eta squared = .05).

<sup>25</sup> Independent samples t-test: Fight: men ( $M = 4.75, SD = .66$ ), women ( $M = 4.57, SD = .86$ ),  $t(496) = 2.61, p = .009, d = .23$ . Pepper spray: men ( $M = 4.52, SD = .84$ ), women ( $M = 4.13, SD = 1.01$ ),  $t(484) = 4.64, p < .001, d = .41$ . Gun: men ( $M = 4.28, SD = 1.08$ ), women ( $M = 3.77, SD = 1.12$ ),  $t(491) = 5.06, p < .001, d = .46$ .

Figure 10: Differences in viewpoint for appropriateness of DMAs (car control)



Scenario condition	Observer viewpoint			Bodycam viewpoint		
	n	M	SD	n	M	SD
Push to ground	255	3.32	1.32	255	3.61	1.28
Pull out of car	255	3.91	.98	255	4.06	.95
Point gun	255	1.48	.86	255	1.93	1.24

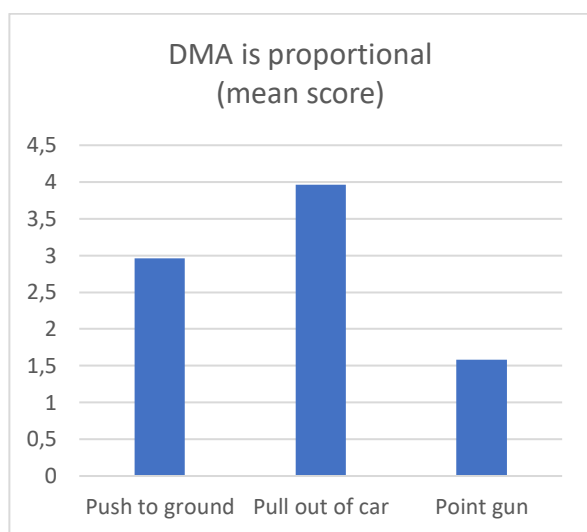
### 3.5.1.3 Proportionality of the DMA

Concerning the estimation of **proportionality** of the actions used in the scenarios, a mixed between-within subjects analysis of variance was conducted.

There was no significant interaction between viewpoint condition and scenario condition.

There was a substantial main effect for the scenario conditions, Wilks' Lambda = .24,  $p < .001$ . The partial eta squared is .76, which suggests a very large effect size. Comparison of the three conditions suggests significant differences between all conditions in terms of appropriateness, with 'pulling out of car' rated as most proportional and 'point gun' as least proportional to the actions of the civilian.

Figure 11: Differences between DMAs in terms of proportionality (car control)



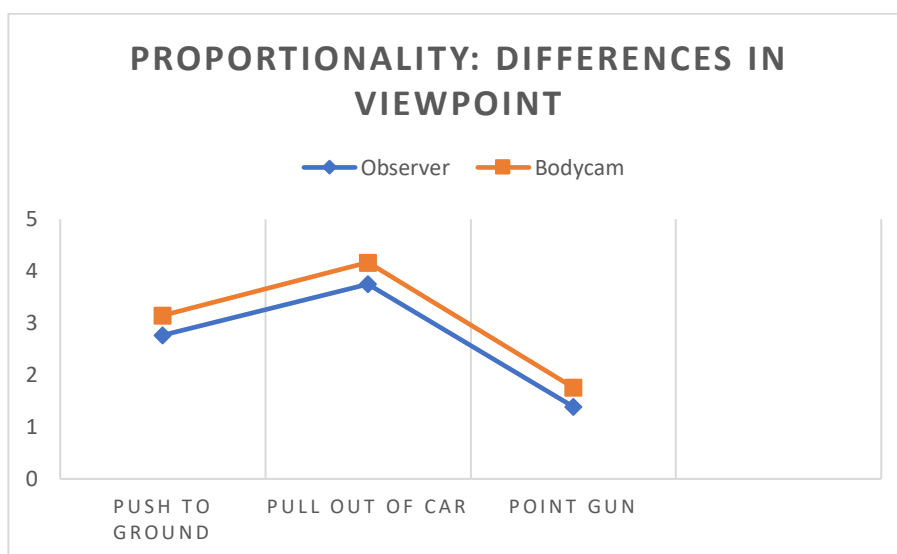
Car control	N	M	SD
Push to ground	510	2.96	1.37
Pull out of car	510	3.96	1.02
Point gun	510	1.58	.99

Men find the actions in all three scenarios more proportional to the situation than women<sup>26</sup>. These are all small effect sizes.

There was also a main effect for the viewpoint condition,  $F(1, 508) = 56.49, p < .001$ , indicating that there is a significant difference appropriateness scores between the ‘observer’ group and the ‘bodycam’ group, with the ‘bodycam’ group estimating higher appropriateness than the ‘observer’ group. The effect size of this difference is moderate (partial eta squared = .06).

<sup>26</sup> Independent samples t-test. Fight: men ( $M = 4.74, SD = .69$ ), women ( $M = 4.55, SD = .91$ ),  $t(497) = 2.68, p < .001, d = .23$ . Pepper spray: men ( $M = 4.47, SD = .87$ ), women ( $M = 4.14, SD = .95$ ),  $t(496) = 3.94, p < .001, d = .36$ . Point gun: men ( $M = 4.20, SD = 1.11$ ), women ( $M = 3.74, SD = 1.18$ ),  $t(491) = 4.42, p < .001, d = .40$ .

Figure 12: Differences in viewpoints for proportionality of DMAs (car control)



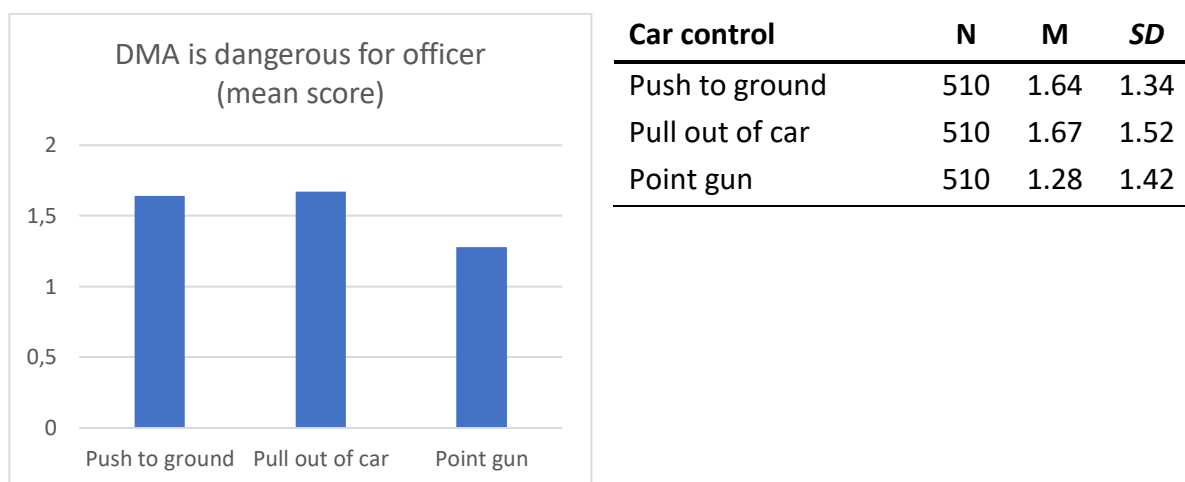
Scenario condition	Observer viewpoint			Bodycam viewpoint		
	n	M	SD	n	M	SD
Push to ground	255	2.77	1.33	255	3.15	1.39
Pulling out of car	255	3.75	1.06	255	4.17	.93
Point gun	255	1.39	.79	255	1.76	1.13

### 3.5.1.4 Estimation of danger of the DMA for the officers

Concerning the estimation of **danger for the police officer** in the scenarios, a mixed between-within subjects analysis of variance was conducted.

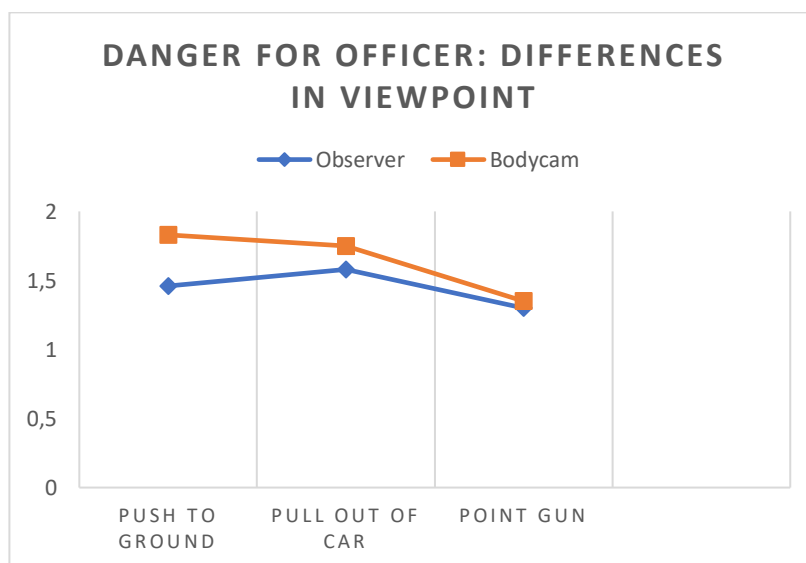
A significant interaction, albeit with a very small effect size (partial eta squared = .01) was found between scenario condition and viewpoint condition,  $F(2, 507) = .99, p = .044$ . Namely, the difference in estimation of danger for the police officer seemed to differ depending on the viewpoint of the scenario: respondents who viewed the bodycam scenarios rated the ‘push to ground’ as more dangerous for the officer than ‘pull out of car’, whereas the respondents who saw the observer viewpoint rated ‘pull out of car’ as more dangerous than ‘push to ground’. Further comparison of the three conditions suggests a significant difference between the condition ‘point gun at civilian’ being significantly less dangerous for the police officer than both the condition ‘pull out of car’ and ‘push to the ground’.

Figure 13: Differences between DMAs in terms of danger for the officer (car control)



Men estimate all the actions as more dangerous for the officer than women<sup>27</sup>. This is a moderate effect for ‘fight’ and a small effect for ‘pepper spray’ and ‘gun’.

Figure 14: Interaction effect between scenario and viewpoint in the estimation of danger for the officer (car control)



Scenario condition	Observer viewpoint			Bodycam viewpoint		
	n	M	SD	n	M	SD
Push to ground	255	1.46	1.28	255	1.83	1.38

<sup>27</sup> Independent samples t-test. Fight: men ( $M = 4.05, SD = 1.22$ ), women ( $M = 3.25, SD = 1.59$ ),  $t(496) = 6.35, p < .001, d = .55$ . Pepper spray: men ( $M = 3.55, SD = 1.44$ ), women ( $M = 2.97, SD = 1.60$ ),  $t(469) = 4.28, p < .001, d = .38$ . Point gun: men ( $M = 3.33, SD = 1.60$ ), women ( $M = 2.84, SD = 1.65$ ),  $t(491) = 3.26, p = .001, d = .30$ .

Pull out of car	255	1.58	1.51	255	1.75	1.53
Point gun	255	1.30	1.38	255	1.35	1.46

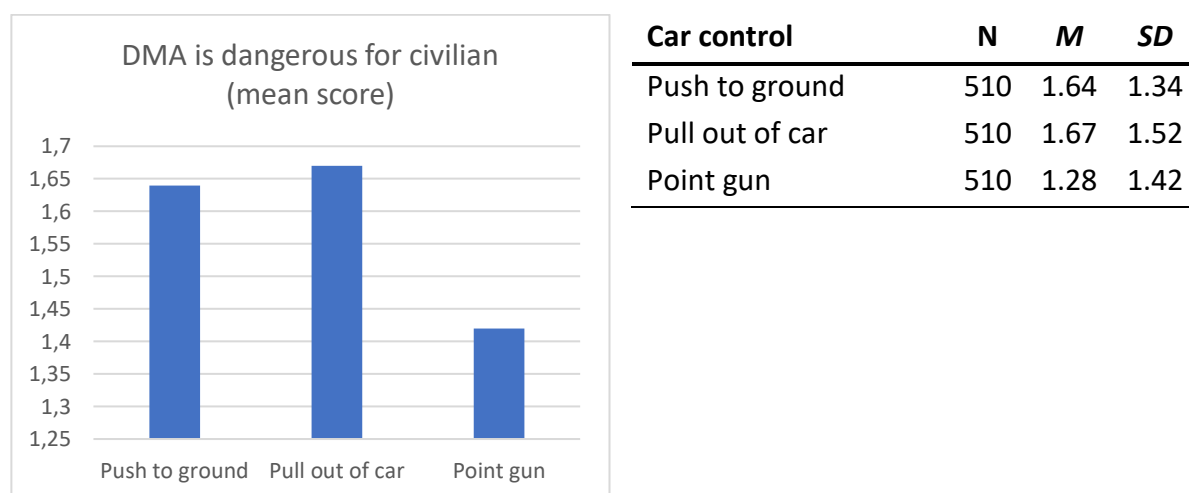
### 3.5.1.5 Estimation of danger of the DMA for the civilian

Concerning the estimation of **danger for the civilian** in the scenarios, a mixed between-within subjects analysis of variance was conducted.

A significant interaction, albeit with a small effect size (partial eta squared = .03) was found between scenario condition and viewpoint condition,  $F(2, 507) = .97, p < .001$ . Namely, respondents from both viewpoints rated the ‘pull out of car’ and ‘push to the ground’ condition very similarly, whereas the respondents who viewed from an observer perspective rated the ‘point gun’ perspective as much more dangerous for the civilian than the respondents with a bodycam viewpoint.

The main effect for the scenario conditions further suggests a significant difference between the condition ‘point gun at civilian’ being the most dangerous for the civilian and the ‘pull out of car’ the least dangerous.

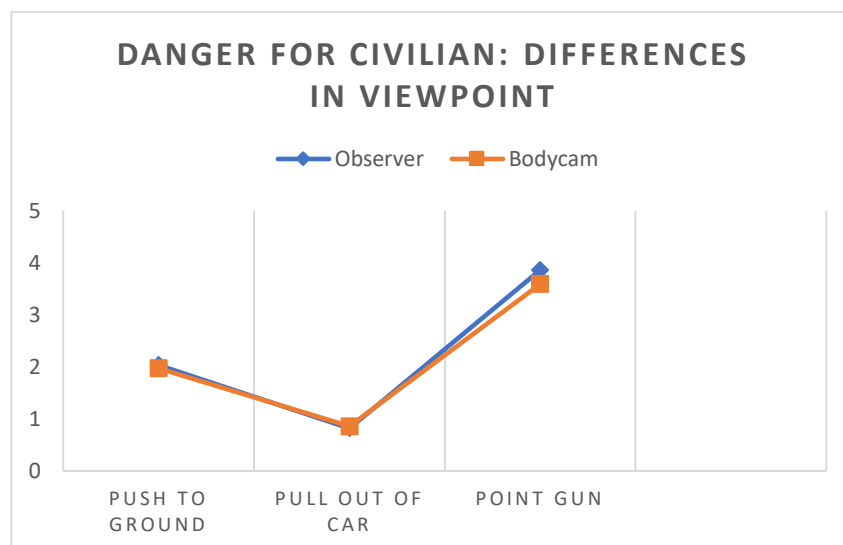
Figure 15: Differences between DMAs in terms of danger for the civilian (car control)



Women find the DMA ‘pepper spray’ as more dangerous for the civilian than men<sup>28</sup>. No gender differences were found for the other two scenarios.

<sup>28</sup> Independent samples t-tests revealed a gender difference in the estimation of the danger for the civilian in the scenario ‘pepper spray’,  $t(496) = -2.25, p = .03$  (Cohen’s  $d = -.20$ , small effect size), with women ( $M = 1.85, SD = 1.38$ ) finding this action more dangerous for the civilian than men ( $M = 1.57, SD = 1.29$ ).

Figure 16: Interaction effect between scenario and viewpoint in the estimation of danger for the civilian (car control)



Scenario condition	Observer viewpoint			Bodycam viewpoint		
	n	M	SD	n	M	SD
Push to ground	255	2.03	1.37	255	1.97	1.42
Pull out of car	255	.82	.95	255	.86	1.07
Point gun	255	3.86	1.30	255	3.59	1.55

### 3.5.2 Comparison of DMA scenarios within the situation ‘knife assault’

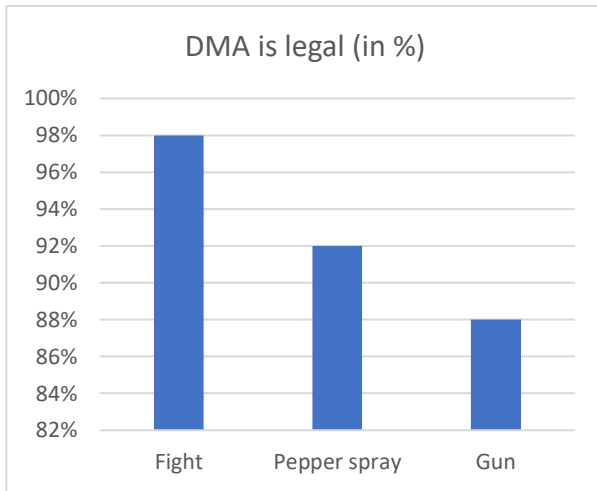
#### 3.5.2.1 Legality of the DMA

Concerning the question whether respondents considered the actions in the different scenarios as a **‘legal’ action**, the table below show the percentages of respondents who think the action is legal. Men consider the ‘pepper spray action’ and the ‘gun action’ to be legal more often than women<sup>29</sup>. No gender differences were found for the ‘fight action’.

Figure 17: Differences between DMAs in terms of legality (knife assault)

<sup>29</sup> Chi-square analysis reveal a small ( $\phi = -.16$ ) but significant gender difference in the estimation of the legality of the action in the scenario ‘pepper spray’,  $\chi^2(1, n = 498) = 11.48, p = .001$ , with women reporting this action significantly more often as not legal than men. Similarly, a significant difference was found for the action in the scenario ‘gun’,  $\chi^2(1, n = 493) = 6.31, p = .012, \phi = -.12$ , with women reporting this action significantly more often as not legal than men.





Knife assault	% legal	N
Fight	496 (98.0%)	506
Pepper spray	463 (92.0%)	503
Gun	438 (88.0%)	498

To explore the degree to which respondents indicated each of the conditions as **legal**, in the observer condition or the bodycam condition, a chi-square was calculated. No significant differences were found between the ‘observer’ or the ‘bodycam’ viewpoint for the three conditions, indicating that there were no differences in the estimation of legality depending on the viewpoint for these scenarios.

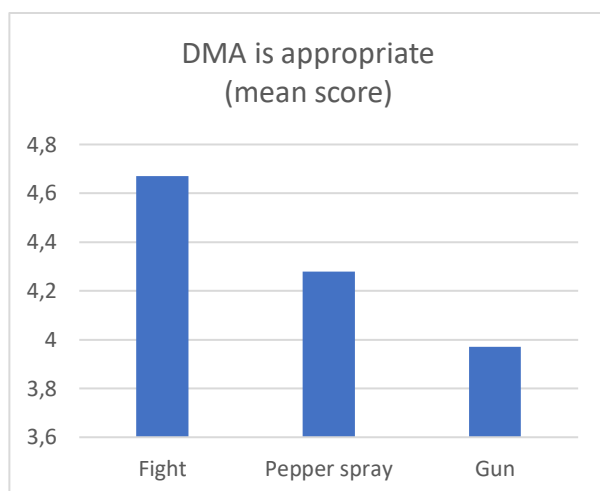
3.5.2.2 *Appropriateness of the DMA*

Concerning the estimation of **appropriateness** of the scenarios, a mixed between-within subjects analysis of variance was conducted.

There was no significant interaction between viewpoint condition and scenario condition.

There was a substantial main effect for the scenario conditions, Wilks’ Lambda = .78,  $p < .001$ . The partial eta squared is .21, which suggests a large effect size. Pairwise comparison of the three conditions suggests significant differences between all conditions in terms of appropriateness, with ‘fighting’ rated as most appropriate and ‘pointing a gun’ as least appropriate.

Figure 18: Differences between DMAs in terms of appropriateness (knife assault)



Knife assault	N	M	SD
Fight	498	4.67	.78
Pepper spray	498	4.28	.97
Gun	498	3.97	1.13

Men estimate all three actions as more appropriate than women (small effect for ‘pull out of car’ and small-to-moderate effects for ‘pepper spray’ and ‘point gun’)<sup>30</sup>.

There was no main effect for the viewpoint condition,  $F(1, 496) = 1.67, p = .20$ , indicating that there was no significant difference in scoring of the appropriateness between the ‘observer’ group and the ‘bodycam’ group.

### 3.5.2.3 Proportionality of the DMA

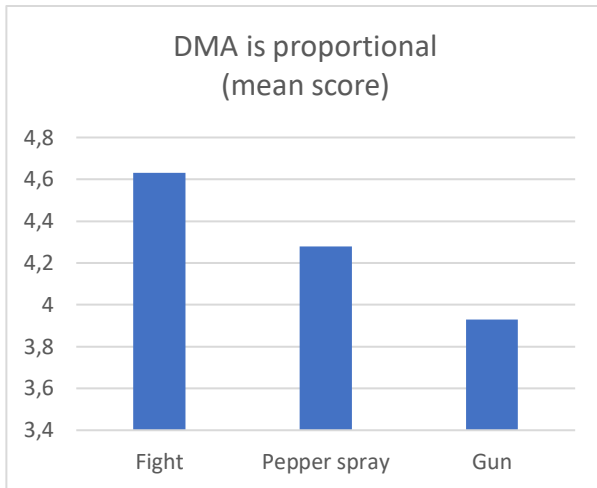
Concerning the estimation of **proportionality** of the scenarios, a mixed between-within subjects analysis of variance was conducted.

There was no significant interaction between viewpoint condition and scenario condition.

There was a substantial main effect for the scenario conditions, Wilks’ Lambda = .78,  $p < .001$ . The partial eta squared is .22, which suggests a large effect size. Pairwise comparison of the three conditions suggests significant differences between all conditions in terms of appropriateness, with ‘fighting’ rated as most proportionate to the actions of the civilian and ‘pointing a gun’ as least in proportion.

Figure 19: Differences between DMAs in terms of proportionality (knife assault)

<sup>30</sup> Independent samples t-test: Fight: men ( $M = 4.75, SD = .66$ ), women ( $M = 4.57, SD = .86$ ),  $t(496) = 2.61, p = .009, d = .23$ ; Pepper spray: men ( $M = 4.52, SD = .84$ ), women ( $M = 4.13, SD = 1.01$ ),  $t(484) = 4.64, p < .001, d = .41$ ; Point gun: men ( $M = 4.28, SD = 1.08$ ), women ( $M = 3.77, SD = 1.12$ ),  $t(491) = 5.06, p < .001, d = .46$ .



Knife assault	N	M	SD
Fight	498	4.63	.83
Pepper spray	498	4.28	.93
Gun	498	3.93	1.17

Men estimate all three actions as more proportional to the situation than women (small effect sizes)<sup>31</sup>.

There was no main effect for the viewpoint condition,  $F(1, 496) = .46, p = .50$ , indicating that there was no significant difference in scoring of the proportionality between the ‘observer’ group and the ‘bodycam’ group.

### 3.5.2.4 Estimation of danger of the DMA for the police officer

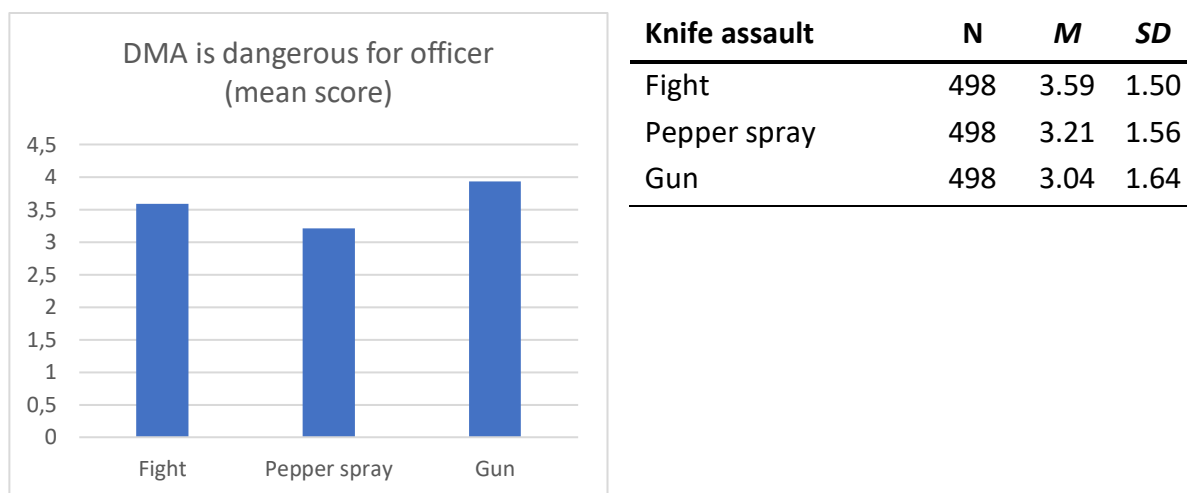
Concerning the estimation of **the danger for the police officer** of the scenarios, a mixed between-within subjects analysis of variance was conducted.

There was a significant interaction effect between viewpoint condition and scenario condition, Wilks’ Lambda = .98,  $p = .009$ , but the effect size is small (partial eta squared = .02). Whereas the estimation of danger was lower when having viewed the bodycam perspective compared to the observer perspective for the ‘pepper spray’ and ‘gun’ scenarios, it was higher than the observer perspective for the ‘fight’ scenario.

The main effect for the scenario conditions, Wilks’ Lambda = .88,  $p < .001$ , partial eta squared = .12 (moderate effect size), shows significant differences between all three groups, with ‘fighting’ being rated as most dangerous for the police officer and ‘gun’ as least dangerous.

Figure 20: Differences between DMAs in terms of danger for the police (knife assault)

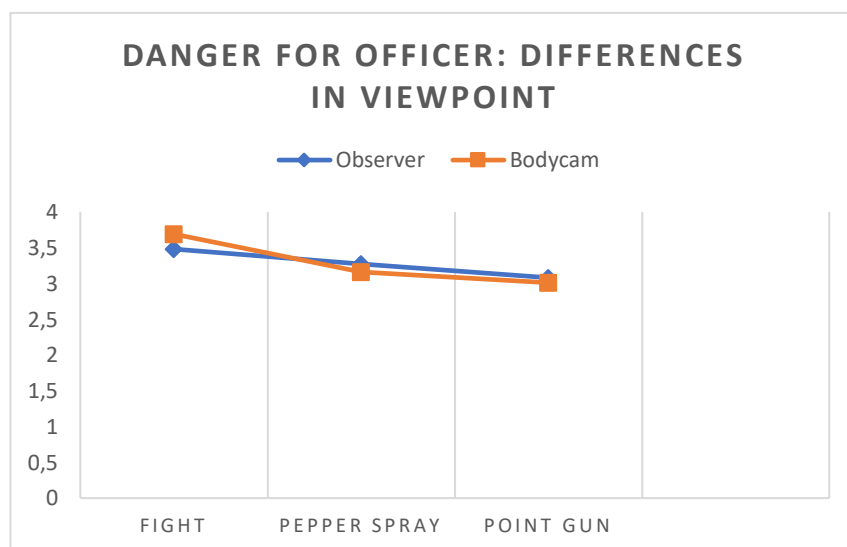
<sup>31</sup> Independent samples t-test: Fight: men ( $M = 4.74, SD = .69$ ), women ( $M = 4.55, SD = .91$ ),  $t(497) = 2.68, p < .001, d = .23$ ; Pepper spray: men ( $M = 4.47, SD = .87$ ), women ( $M = 4.14, SD = .95$ ),  $t(496) = 3.94, p < .001, d = .35$ ; Point gun: men ( $M = 4.20, SD = 1.11$ ), women ( $M = 3.74, SD = 1.18$ ),  $t(491) = 4.42, p < .001, d = .40$ .



Knife assault	N	M	SD
Fight	498	3.59	1.50
Pepper spray	498	3.21	1.56
Gun	498	3.04	1.64

Men estimate all the actions as more dangerous for the police officer than women (moderate effect for 'fight', small effects for 'pepper spray' and 'gun'<sup>32</sup>).

Figure 21: Interaction effect between scenario and viewpoint in the estimation of danger for the officer (knife assault)



Scenario condition	Observer viewpoint			Bodycam viewpoint		
	n	M	SD	n	M	SD
Fight	247	3.48	1.54	251	3.69	1.46

<sup>32</sup> Independent samples t-test: Fight: men ( $M = 4.05, SD = 1.22$ ), women ( $M = 3.25, SD = 1.59$ ),  $t(496) = 6.35, p < .001, d = .55$ ; Pepper spray: men ( $M = 3.55, SD = 1.44$ ), women ( $M = 2.97, SD = 1.60$ ),  $t(469) = 4.28, p < .001, d = .38$ ; Point gun: men ( $M = 3.33, SD = 1.60$ ), women ( $M = 2.84, SD = 1.65$ );  $t(491) = 3.26, p = .001, d = .30$ .

Pepper spray	247	3.27	1.58	251	3.16	1.54
Point gun	247	3.08	1.68	251	3.01	1.61

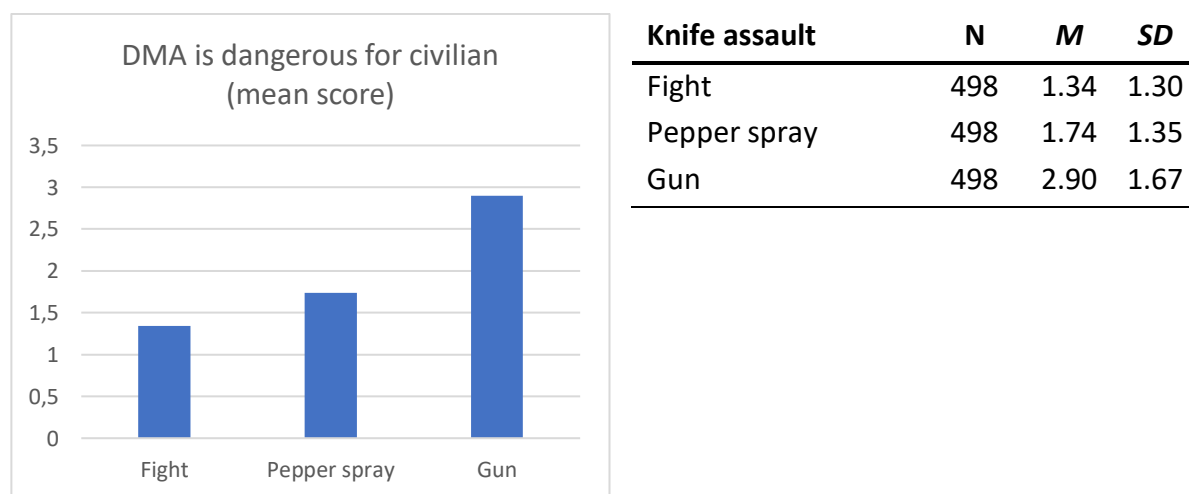
### 3.5.2.5 Estimation of danger of the DMA for the civilian

Concerning the estimation of **the danger for the civilian** of the scenarios, a mixed between-within subjects analysis of variance was conducted.

There was a significant interaction effect between viewpoint condition and scenario condition, Wilks' Lambda = .97,  $p < .001$ , but the effect size is small (partial eta squared = .03). Whereas the estimation of danger for the civilian was lower when having viewed the observer perspective compared to the bodycam perspective for the 'fight' and 'pepper spray' scenarios, it was higher than the bodycam perspective for the 'gun' scenario.

The main effect for the scenario conditions, Wilks' Lambda = .52,  $p < .001$ , partial eta squared = .48 (large effect size), shows significant differences between all three groups, with 'gun' being rated as most dangerous for the civilian and 'fight' as least dangerous.

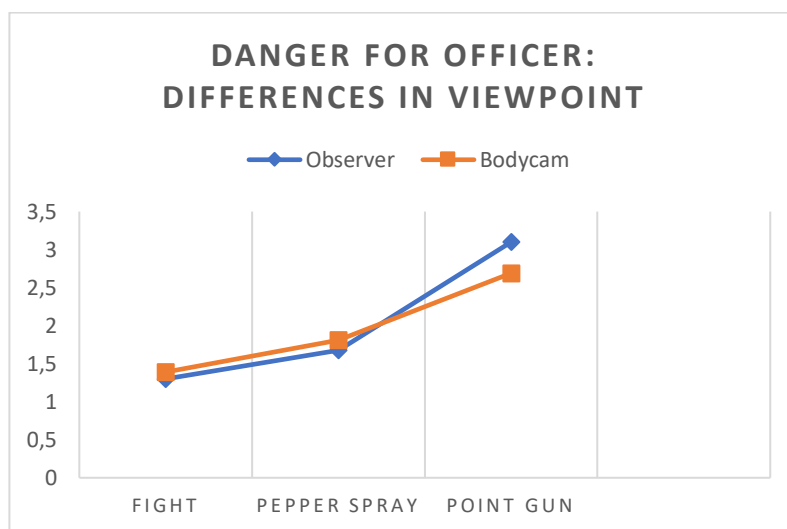
Figure 22: Differences between DMAs in terms of estimation of danger for civilian (knife assault)



Women find the 'pepper spray' action more dangerous for the civilian than men<sup>33</sup>. No gender differences were found for the other two scenarios.

<sup>33</sup> Independent samples t-tests: 'pepper spray',  $t(496) = -2.25, p = .03$  (Cohen's  $d = -.20$ , small effect size), women ( $M = 1.85, SD = 1.38$ ), men ( $M = 1.57, SD = 1.29$ )

Figure 23: Interaction effect between scenario and viewpoint in the estimation of danger for the civilian (knife assault)



Scenario condition	Observer viewpoint			Bodycam viewpoint		
	n	M	SD	n	M	SD
Fight	247	1.30	1.30	251	1.39	1.31
Pepper spray	247	1.68	1.32	251	1.81	1.38
Point gun	247	3.10	1.63	251	2.69	1.69

### 3.6 Exploration of possible predictors of DMA assessment

A set of linear regression analyses were conducted to explore, which of the evaluation elements (i.e. estimation of legality, proportionality, danger to officer and civilian) significantly and uniquely predicted the estimation of appropriateness of the DMA. It was chosen to use the element of appropriateness of the DMA as the dependent variable, as we can hypothesize that to conclude whether or not an action is appropriate, you would consider whether it is a legal action or not, whether the DMA is proportionate to the situation, and whether the danger it poses to officer and/or civilian is within reasonable margins. However, we do acknowledge that other elements could also serve a dependent variables, hence the exploratory nature of these analyses.

For all three DMA scenarios in the car control situation (push to ground<sup>34</sup>, pull out of car<sup>35</sup>, point gun<sup>36</sup>), the score on appropriateness is strongly and significantly predicted by the scores on legality, proportionality and danger to the civilian. The more the DMA is considered legal and proportional, and the less danger it poses to the civilian, the more appropriate participants consider the DMA to be. Remarkably, the danger to the officer is not taken into account when determining appropriateness.

For the DMA scenarios in the knife assault situation (fight<sup>37</sup>, pepper spray<sup>38</sup>, gun<sup>39</sup>), appropriateness estimation is strongly and significantly predicted by the scores on legality and proportionality, but not by the estimations of danger to both officer and civilian.

## 4 Findings survey 2: Perceptions of EU citizens on police stress and training

### 4.1 Assessment of stress and stressful situations for police officers

#### 4.1.1 Opinions about high stress experienced by police officers

The first question was: **“How often do you think police officers experience high stress in their daily work in the field?”**. This was measured on a scale ranging from 1 (never) to 5 (very often). The average score was 3.87, indicating that **citizens on average think police officers experience stressful situations occasionally to often**.

*Figure 24: How often do police officers experience high stress*

<sup>34</sup>  $F(4, 565) = 323, p < .001, R \text{ square} = .70$ . Legality ( $\beta = .28, p < .001$ ), proportionality ( $\beta = .56, p < .001$ ), and danger to civilian ( $\beta = -.15, p < .001$ ) are significant; danger to the officer ( $\beta = .01, p = .81$ ) is not.

<sup>35</sup>  $F(4, 530) = 207, p < .001, R \text{ square} = .61$ . Legality ( $\beta = .20, p < .001$ ), proportionality ( $\beta = .62, p < .001$ ), danger to civilian ( $\beta = -.14, p < .001$ ) are significant. Danger to officer is not ( $\beta = .04, p = .23$ ).

<sup>36</sup>  $F(4, 505) = 289, p < .001, R \text{ square} = .70$ . Legality ( $\beta = .17, p < .001$ ), proportionality ( $\beta = .68, p < .001$ ), danger to civilian ( $\beta = -.13, p < .001$ ) are significant. Danger to officer is not ( $\beta = .04, p = .14$ ).

<sup>37</sup>  $F(4, 501) = 138.7, p < .001, R \text{ square} = .53$ . Legality ( $\beta = .16, p < .001$ ) and proportionality ( $\beta = .67, p < .001$ ) are significant. Danger to officer ( $\beta = -.03, p = .28$ ) and danger to civilian ( $\beta = -.05, p = .12$ ) are not.

<sup>38</sup>  $F(4, 298) = 316, p < .001, R \text{ square} = .72$ . Legality ( $\beta = .16, p < .001$ ) and proportionality ( $\beta = .77, p < .001$ ) are significant. Danger for officer ( $\beta = .03, p = .19$ ) and civilian ( $\beta = -.02, p = .34$ ) are not.

<sup>39</sup>  $F(4, 493) = 411, p < .001, R \text{ square} = .77$ . Legality ( $\beta = .11, p < .001$ ) and proportionality ( $\beta = .80, p < .001$ ) are significant. Danger to the officer ( $\beta = .01, p = .78$ ) and civilian ( $\beta = -.02, p = .34$ ) are not.



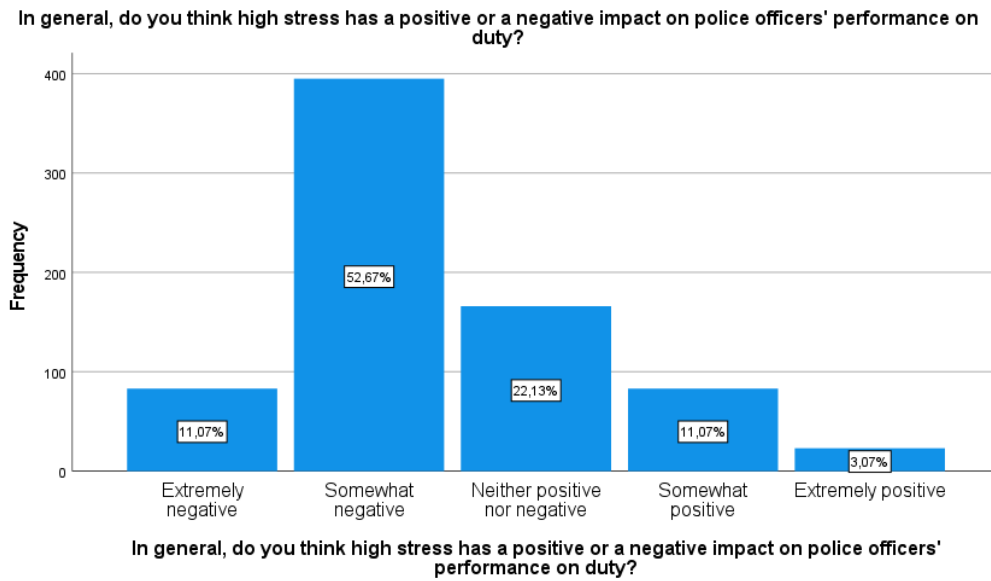
There were no significant differences in these scores depending on socio-demographic characteristics<sup>40</sup>.

The second question was: **“In general, do you think high stress has a positive or a negative impact on police officers’ performance on duty”**. This question was measured on a scale from -2 (extremely negative impact) to 2 (extremely positive impact). The average score given by the respondents was -.58, indicating that **on average citizens felt that high stress had a relatively negative impact on police officers’ performance**.

*Figure 25: Does stress have a positive or negative influence on police performance*

<sup>40</sup> Based on a multiple linear regression analysis including all socio-demographic characteristics as independent variables. The model as a whole was not significant:  $F(9, 712) = 1.70, p = .09$ .





Significant differences were found for three socio-demographic characteristics<sup>41</sup>:

- Caucasian participants think high stress has a more negative impact on the performance of police officers compared to participants with other ethnic backgrounds.
- Participants with a more right-wing political position think that stress has a more positive impact on performance compared to more left-winged participants.
- Younger people think that stress has a more positive impact on stress than older people.

#### 4.1.2 Rating of the stressfulness of situations encountered by police officers

Participants all rated 13 randomly chosen situations out of 25 possible situations that police officers could encounter as first responders on a scale from 0 (not at all stressful) to 10 (extremely stressful). Table 7 presents the mean scores for all these situations, as well as the standard deviation and the number of responses, from highest to lowest score. The first six situations are those in the highest percentile (75 percentile; score: 7.61), the lowest six are in the lowest percentile 25 percentile; score: 6.66).

<sup>41</sup> Based on a multiple linear regression analysis including all socio-demographic characteristics as independent variables. The model as a whole was significant:  $F(9, 712) = 7.88, p < .001, R^2 = .09$ . Ethnicity ( $\beta = .21, p < .001$ ), political preference ( $\beta = .12, p = .002$ ) and age ( $\beta = -.08, p = .02$ ) were significant.

Table 7: Mean scores for all subjective assessments of stressfulness of situations by citizens

Situation	Mean	SD	n
Situations requiring shooting or killing someone (b)	8.53	2.14	301
Being confronted with a dead child (a, b)	8.38	2.04	322
Facing a situation with a high risk of physical injury (e.g., being threatened with a weapon) (b)	8.34	1.88	300
Being exposed to abused or severely neglected children (a)	7.79	2.03	300
Being exposed to dead or mutilated bodies (b)	7.73	2.19	290
Being confronted with agitated or aggressive crowds (b, c)	7.68	2.01	322
Being alone and no back-up is available (b, c)	7.54	2.16	296
Being confronted with a large man-made disaster (b, c)	7.51	2.19	294
Situations requiring the use of force (b)	7.38	2.12	317
Attending a serious road traffic accident with multiple injuries and possible fatalities	7.37	2.14	293
Being confronted with severely wounded victims (b, c)	7.33	2.02	266
Responding to a crime in progress (b, c)	7.25	2.01	289
Administering first aid or CPR (a)	7.09	2.28	283
Having to make critical on-the-spot decisions	6.92	2.16	285
Being confronted with a sexual or domestic violence case (a, b)	6.90	2.07	285
Having insufficient manpower to adequately handle a job (a, b)	6.84	2.32	316
Facing an unpredictable situation (a, b)	6.78	2.15	286
Doing a pursuit on foot or by car	6.75	2.11	319
Being verbally or physically attacked by a civilian (b, c)	6.75	2.36	320
Encountering people infected with transmittable disease (e.g., COVID) (b, c)	6.56	2.46	323
Dealing with people under the influence of drugs or alcohol (a)	6.54	2.21	297
Dealing with complex or unclear rules and regulations (c)	6.30	2.11	281
Being confronted with an aggressive animal	6.26	2.24	28
Dealing with a colleague who makes critical mistakes on the job (b, c)	6.11	2.36	311
Dealing with gear malfunction (b)	5.92	2.32	315

Note: only significant differences for gender and ethnicity are presented<sup>42</sup>, and significant associations with age<sup>43</sup>. Other socio-demographic characteristics showed rather varying results and had very small effect sizes.

- a) Significant difference between men and women: women rate these situations as more stressful than men (Cohen's d effect sizes between -.33 and -.24).
- b) Significant difference between Caucasian respondents and respondents with other ethnic backgrounds: Caucasian respondents rate these situations as more stressful than respondents from other ethnic backgrounds (large Cohen's d effect sizes between .33 and .88).

<sup>42</sup> Based on independent samples t-tests.

<sup>43</sup> Based on bivariate correlations.

- c) *Significant correlations with age: older respondents rate these situations as more stressful than younger respondents ( $r$ 's between .13 and .30)*

During the SHOTPROS' requirements- and feedback workshops (WP2, see D2.1 and D2.2), different stressors have been identified and ranked by SHOTPROS LEAs and stressful for police officers. These items have been used for different analyses such as the Risk Assessment Tool survey (D4.7) or for the surveys of the research at hand, and will be used for other studies such as the Human Factors Studies (WP6) as a central list of stressors. The ranking of stressors and stressful situations by EU citizens (presented above) will be combined with the prioritized ranking done by SHOTPROS LEA's and then become a crucial part of the technical requirements for VR training (D4.6) and can be used as so-called stress cues or events in the development of training scenarios focusing on DMA-SR training.

## 4.2 Attitudes concerning how police officers should deal with stressful situations

### 4.2.1 Opinions about the police and the experience of stress

All respondents filled out 13 statements asking about opinions and perceptions of citizens concerning police and how they should deal with stress. A few statements that asked about opinions concerning violence against police by civilians were included. This was also mentioned in the requirements workshops in WP2 as a very important societal factors influencing the perception of stress and because this also represents implementable stress cues in VR training (see D4.6). Statements were presented in a random order.

Table 8 following presents the mean scores and standard deviation of all 13 statements. All statements were scored by all participants on a scale from 1 (disagree completely) to 5 (completely agree).

*Table 8: Mean scores of agreement for statements concerning police and stress*

#	Statement	Mean	SD
1	Police officers find themselves in stressful situations every day	3.58	1.03
2	Police officers are well trained to deal with high-stress situations	3.47	1.03
3	Police officers should not be influenced by stress	3.57	1.05
4	Police officers should be trained in stress management	4.40	.834
5	Police officers under stress will use disproportional force more quickly	3.59	.97
6	Police officers under stress make more mistakes	3.76	.92
7	Civilians who use verbal or physical force against police officers usually have good reasons to do so	2.29	1.14

8	Police officers should be respected at all times	4.05	.97
9	Police officers should be able to keep their head cool in every situation	4.13	.85
10	It should be illegal for bystanders to film a police officer	3.20	1.34
11	Civilians who try to hinder a police officer from doing his job, should be punished	4.17	.97
12	Police officers should be immune to stress	3.00	1.11
13	Police officers are able to make the most appropriate decisions and actions, even in high-risk situations	3.45	.98

A factor analysis was conducted to explore whether these statements could be further ‘condensed’ into a smaller set of factors<sup>44</sup>. It could be concluded that these statements could be reduced to four overarching factors (see Table 9)<sup>45</sup>.

*Table 9: Four components resulting from Principal Components Analysis (PCA) on the 13 statements*

#	Component	Description	Statements
1	Respect for police work	General opinion about police legitimacy and capabilities	1, 2, 10, 13
2	Police stress coping	Opinion on how well police officers should be able to cope with high-stress	3, 4, 9, 12
3	Tolerance for negative behavior towards police	Opinion about treatment of police by civilians	7, 8, 11 <sup>46</sup>
4	Impact of stress on police	Opinion on how high-stress impacts police DMA	5, 6

<sup>44</sup> The 13 statements were subjected to principal components analysis (PCA). Prior to performing the PCA, the suitability of data for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Meyer-Olkin value was .75, exceeding the recommended value of .6 and Bartlett’s Test of Sphericity reached statistical significance ( $p < .001$ ), supporting the factorability of the correlation matrix. It should be noted that this factor analysis was mainly conducted for exploratory reasons and to allow for an easier way to assess possible influences of socio-demographic factors.

<sup>45</sup> PCA (Direct Oblimin rotation) revealed the presence of four components eigenvalues exceeding 1, explaining 22.9%, 20.2%, 11%, and 7.8% of the variance respectively. An inspection of the screeplot confirmed a clear break after the fourth component. The four-component solution explained a total of 61.86% of the variance. All four components showed a number of strong loadings and most variables loaded substantially on one component. Two variables (statements 4 and 8) loaded similarly strong on two components, but were categorized in the component that was considered the best fit in terms of the theme of the component. The correlations between the four factors were non-existent to weak, ranging from -.03 to -.23.

<sup>46</sup> Statements 8 and 11 were reverse-coded.

The mean of all statements belonging to each new scale was then computed (score ranging between 1 and 5). Table 10 presents the mean and standard deviation for each scale.

*Table 10: Means and standard deviations for the four scales*

Scale	Mean	SD
Respect for police work	3.43	.76
Police stress coping	3.77	.70
Tolerance for negative behavior towards police	2.02	.80
Impact of stress on police DMA	3.67	.83

These scores show that, on average:

- Respondents have a relatively high respect for police work
- Respondents feel that police should be relatively ‘immune’ for stress in their daily work
- Respondents seem to not completely tolerate negative behavior of civilians towards police, but they are also not fully against it
- Respondents think that police officers’ DMA is quite negatively influenced by stress (quick use of force, mistakes)

Analysis of the influence of sociodemographic variables on the scores on these scales show:

- For **‘respect for police work’**<sup>47</sup>:
  - Women report higher respect for the work of the police than men
  - The more a person moves to the political right wing, the more (s)he tends to respect the work of the police
  - Respondents from Romania report lower respect for the work of the police than respondents from the other countries (Belgium, the Netherlands, Germany and Austria)
- For **‘police stress coping’**<sup>48</sup>:
  - The older the respondent, the more (s)he expects police officers to be immune to stress

<sup>47</sup> Based on a multiple linear regression analysis including all socio-demographic characteristics as independent variables. The model as a whole was significant:  $F(9, 712) = 7.34, p < .001$ , R square = .09. Gender ( $beta = .13, p < .001$ ), political preference ( $beta = .11, p = .004$ ) and country of residence (dummy coded,  $beta$ 's between .11 and .28,  $p$  values between .000 and .02) were significant.

<sup>48</sup> Based on a multiple linear regression analysis including all socio-demographic characteristics as independent variables. The model as a whole was significant:  $F(9, 712) = 10.22, p < .001$ , R square = .11. Age ( $beta = .13, p = .001$ ) and country of residence (dummy coded; Belgium:  $beta = -.25, p < .001$ ; Netherlands:  $beta = -.25, p < .001$ ) were significant.

- Respondents from Belgium and the Netherlands seem to have lower expectations that police officers are immune to stress than respondents from the other countries
- For **‘tolerance for negative behavior towards police’<sup>49</sup>**:
  - The younger the respondent, the more tolerant (s)he is for negative behavior towards the police
  - Respondents from other ethnic backgrounds than a Caucasian background seem to be more tolerant for negative behavior towards the police
  - The more left-winged respondents situate themselves, the more tolerant they are for negative behavior towards the police
  - Respondents from Romania appear more tolerant for negative behavior towards the police than respondents from Belgium, Germany, and the Netherlands
- For **‘impact of stress on police DMA’<sup>50</sup>**:
  - Caucasian respondents seem to think that police officers make more mistakes when under stress than respondents with other ethnic backgrounds
  - Respondents from Romania appear to think that police officers make more mistakes under stress than respondents from the other countries

#### 4.2.2 Comparison of sensitivity to stress between groups

Next, respondents were given six distinctions between two groups of police officers and were asked whether one of these two groups experience more high stress than the other group, or whether they experienced similar stress. The figures below show the distribution in each of the compared groups.

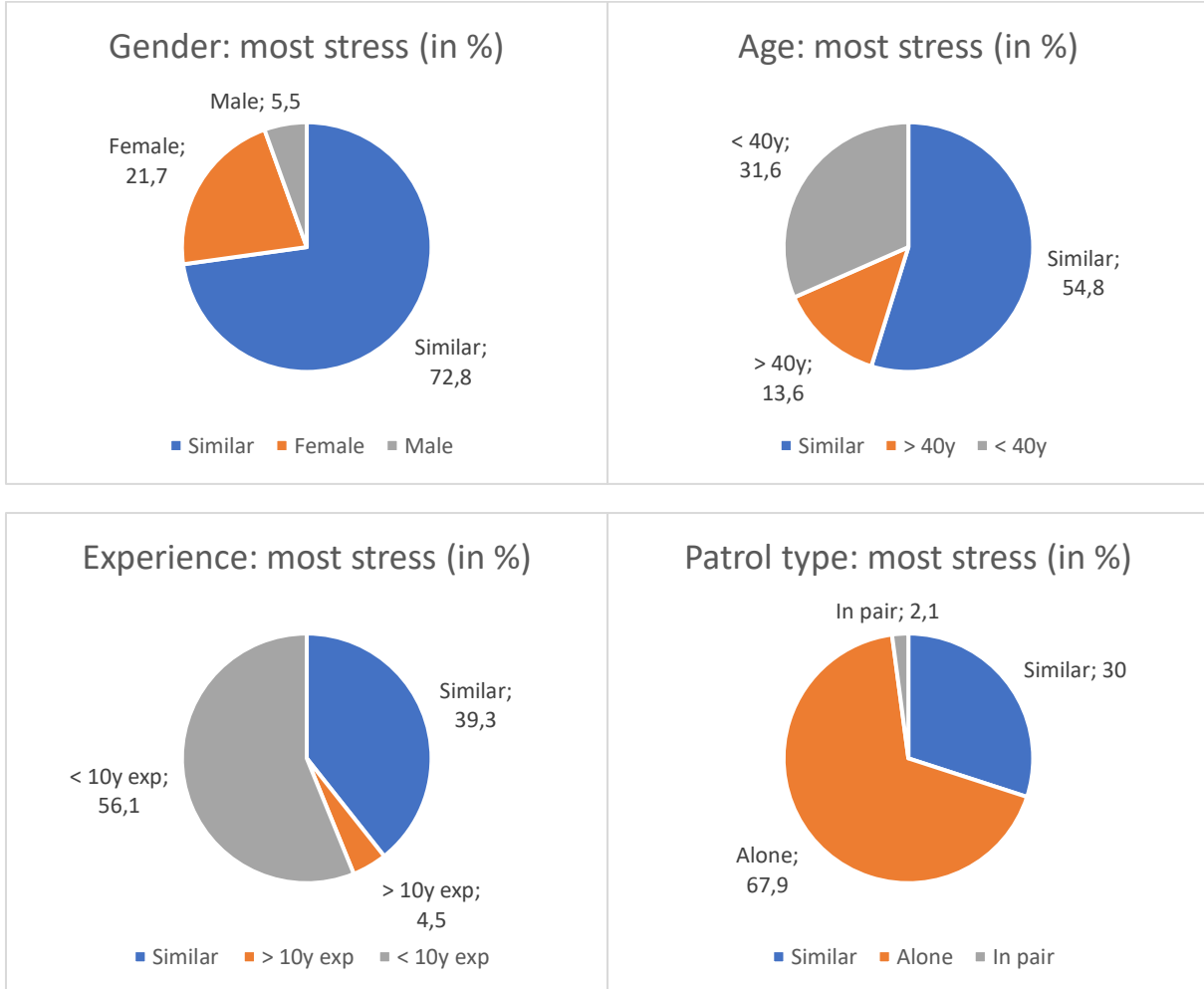
The majority of respondents felt that the gender, age, having a partner and kids, and ethnic background of the police officer did not make a difference in the police officers’ experience of stress. When they did make a distinction in these four groups, female officers, officers younger than 40, officers who have a partner and/or children, and officers from an ethnic minority

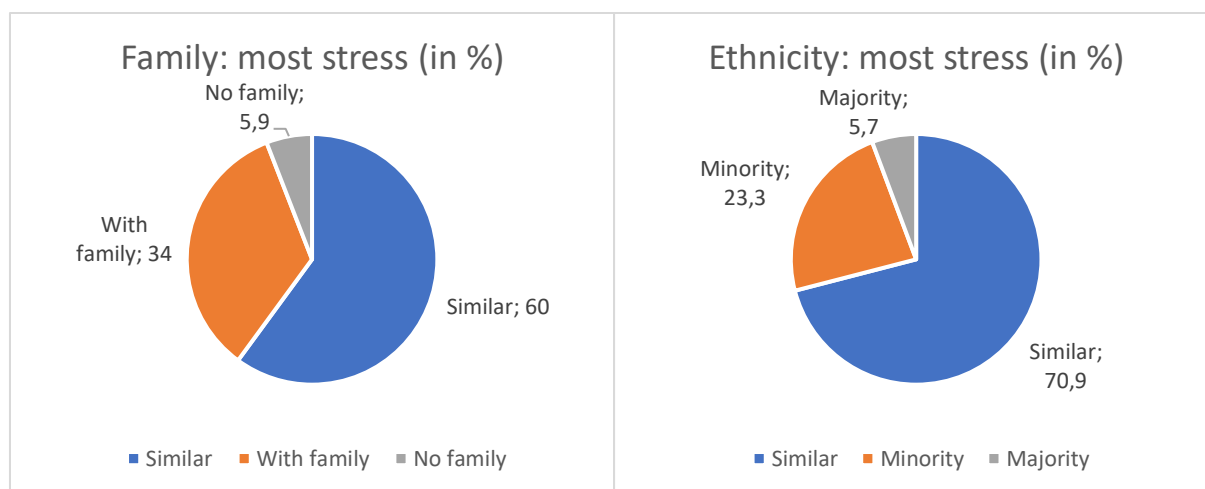
<sup>49</sup> Based on a multiple linear regression analysis including all socio-demographic characteristics as independent variables. The model as a whole was significant:  $F(9, 712) = 12.21, p < .001$ , R square = .13. Age ( $beta = -.14, p < .001$ ), ethnicity ( $beta = .19, p < .001$ ), political preference ( $beta = -.09, p = .019$ ) and country of residence (dummy coded; Belgium:  $beta = -.24, p < .001$ ; Germany:  $beta = -.25, p < .001$ , Netherlands:  $beta = -.14, p = .002$ ) were significant.

<sup>50</sup> Based on a multiple linear regression analysis including all socio-demographic characteristics as independent variables. The model as a whole was significant:  $F(9, 712) = 2.72, p = .004$ , R square = .03. Ethnicity ( $beta = -.12, p = .002$ ) and country of residence (dummy coded; all significant,  $beta$ ’s ranging between  $-.10$  and  $-.15$ ,  $p$  values ranging between  $.002$  and  $.04$ ) were significant.

group are considered to be more at risk of experiencing more stress on the job. More than half of the respondents considered police officers with less than 10 years of experience and police officers patrolling alone being more at risk of experiencing stress.

*Figure 26: Visualisation of assessment of group differences in stress experience*





Concerning the influence of socio-demographic characteristics of the respondents on the decision of who experiences more stress, the following results were found<sup>51</sup>. However, it should be noted that the effect sizes are small.

- For the impact of **officer gender** on stress:
  - Men indicated more often than women that male officer experienced more stress than female officers
  - Belgian respondents indicated more often similar stress levels than Austrian respondents
  - Respondents with a high degree (master or PhD) reported more often similar stress levels than respondents with a low degree (high school or less) and reported more often higher stress in men than in women compared to respondents with a low or medium degree (high school or less and bachelors)
- For the impact of **officer age** on stress:
  - Men indicated more often than women that officers younger than 40 experienced the most stress
  - Respondents with a medium degree reported more often similar stress levels and less often highest stress in officers younger than 40y than respondents with a low degree
  - Students reported less often similar stress levels and more often higher stress levels in young officers than respondents who worked a job
- For the impact of **officer experience** on stress:
  - Respondents from the Netherlands reported higher stress in officers with more than 10 years of experience more often than German respondents

<sup>51</sup> Based on chi-square analyses.



- Caucasian respondents reported more often similar stress levels or higher stress in officers with a lot of experience than respondents from other ethnicities
- Employed people reported more often similar levels of stress than students
- For the impact of **officers' patrol type** on stress:
  - Belgian respondents reported less similar levels and more stress in officers patrolling alone than respondents from the Netherlands
  - Caucasian respondents reported less similar stress and more stress in officers patrolling alone than respondents from other ethnic backgrounds
  - Retired respondents reported less similar stress or higher stress in officers who patrol alone than respondents being at home (unemployment, not able to work, homemaker)
- For the impact of officers' **family situation** on stress:
  - Belgian respondents reported less often higher stress in officers without a family than respondents from Germany or the Netherlands, and all countries differ from each other in terms of ascribing similar levels of stress
- For the impact of **officer ethnicity** on stress:
  - Men ascribe less often similar levels of stress to both groups and more often high stress to officers from the ethnic majority than women
  - German respondents reported less often similar stress levels than Austrian respondents, and also less often high stress in officers from ethnic minority groups than respondents from Belgium and the Netherlands

## 4.3 Opinions about the training of police officers and the utility of VR in police training

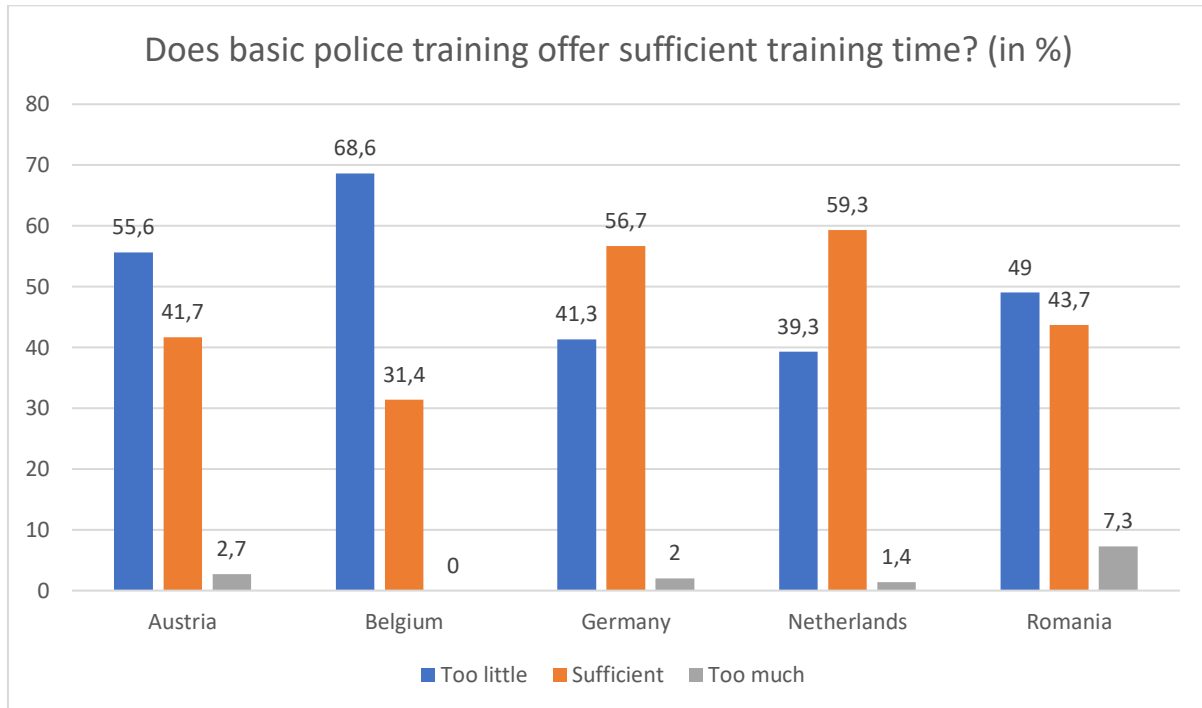
### 4.3.1 Training time of police officers in the different countries

Respondents were given the average duration of the basic police training in their country and were asked whether they felt this was enough training time to prepare officers in their country to deal with stressful and/or high-risk situations in the field. The basic training duration that was reported in the survey was 2 years for Austria, 1 year for Belgium, 2-3 years for Germany, 3 years for the Netherlands, and 1-3 years for Romania.

The bar charts below show that for Austria, and especially for Belgium, the majority of respondents felt that the basic training duration in their country was not sufficient. In

Romania, there was roughly a similar rate of people who felt that the training duration was too short or sufficient. The respondents from Germany and the Netherlands were more satisfied with the basic training duration in their country: the majority in these countries thought the duration of the basic training was sufficient. Indeed, there is a statistically significant differences between countries, with Belgian respondents being a lot less satisfied with the training time of officers in the basic police training than respondents from Germany, the Netherlands and Romania (but not compared to Austrian respondents)<sup>52</sup>.

Figure 27: Perceptions on training time in basic police training



There is a small, but significant association between age and satisfaction with basic training time duration: the older the respondent, the less satisfied he is with the training time offered in the basic training program<sup>53</sup>.

There are no gender differences.

Similarly, respondents were given the yearly hours of ‘on-the-job’ training for police officers in their country and were asked if they thought police officers in their country were given

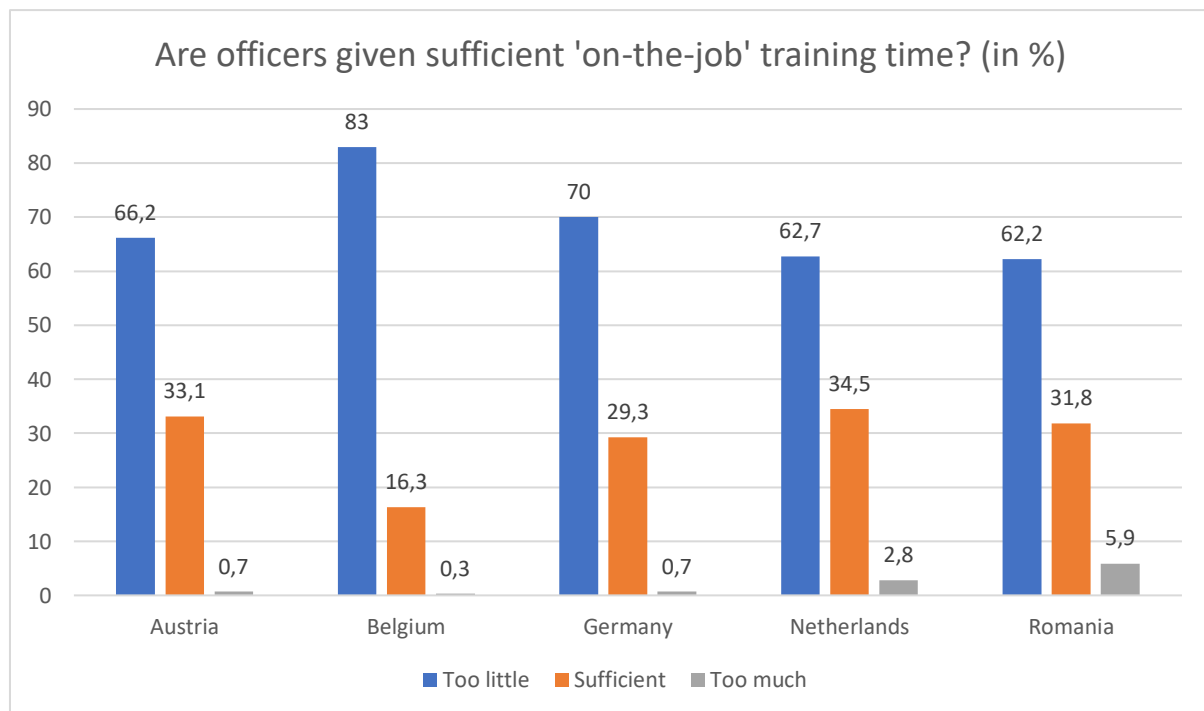
<sup>52</sup> A one-way ANOVA revealed a significant difference in estimation of training sufficiency for the basic police training between country,  $F(4, 745) = 8.34, p < .001$ .

<sup>53</sup> Bivariate correlation:  $r = -.10, p = .005$

enough time and opportunities to train ‘on-the-job’. The number of hours listed in the survey was +/- 28 hours for Austria, 16 hours for Belgium, 24-30 hours for Germany, 16 hours for the Netherlands, and 96 hours for Romania.

Based on the bar chart, the Belgian respondents again felt most strongly that the ‘on-the-job’ training time (16 hours) for their police officers was insufficient. There is also a statistically significant difference between the perceptions of Belgian and Dutch respondents, with Belgian respondents being a lot less satisfied with the ‘on-the-job’ training hours of their police officers than respondents in the Netherlands<sup>54</sup>. Although officers in the Netherlands receive exactly the same amount of training hours per year, more respondents felt this was sufficient. Perhaps this is due to the fact that the basic training for police in the Netherlands was much longer than in Belgium. Overall, in all countries the majority of the respondents feel that the time for ‘on-the-job’ training is not enough.

Figure 28: Perceptions on ‘on-the-job’ training time for police officers



There seems to be a significant difference in terms of ethnic background of the participants, with Caucasian respondents being less satisfied with the police’s ‘on-the-job’ training time than respondents with a different ethnic background<sup>55</sup>. However, the effect size is small.

<sup>54</sup> A one-way ANOVA revealed a significant difference in country in the estimation of training sufficiency of ‘on-the-job’ training,  $F(4, 745) = 3.43, p = .009$ .

<sup>55</sup> A one-way ANOVA revealed a significant difference in ethnicity,  $F(1, 722) = 9.00, p = .003, \eta^2 = .012$

Also, there is a small association between age of the respondent and satisfaction with training time. The older the respondent the less satisfied he is with the 'on-the-job' training time for police officers. However, the association is small<sup>56</sup>.

There is also a very small association with political preference, with people orientating themselves more on the political right-wing, being more satisfied with the training time 'on-the-job'<sup>57</sup>. But again, this association is extremely small.

There are no gender differences

#### 4.3.1.1 Familiarity with VR and opportunities for police training

Most of the respondents in the survey were at least somewhat familiar with the concept of Virtual Reality (75.3%). After giving a short description of what Virtual Reality entails, the majority of the respondents also felt that VR can be of added value in our lives (61.7% somewhat or strongly agreed, 28.7% did not agree nor disagree) and that there are many interesting or relevant possibilities with VR (72.6% somewhat or strongly agreed, 21.7% did not agree nor disagree).

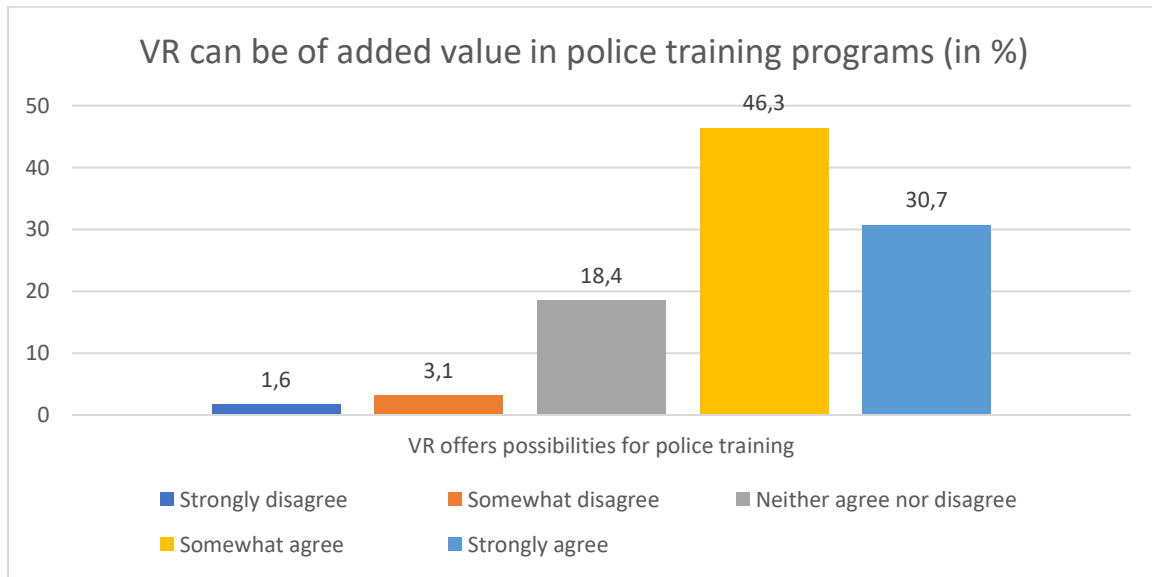
When then asked about whether VR can be of added value in training programs for police officers, the majority again saw some or high potential in VR (77% somewhat or strongly agreed). 18.4% did not agree nor disagree, and only 4.7% did not really see potential in VR for police training.

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<sup>56</sup> Bivariate correlation:  $r = -.16, p < .001$

<sup>57</sup> Bivariate correlation:  $r = .08, p = .04$ .

Figure 29: Opinion of added value of VR for police training programs

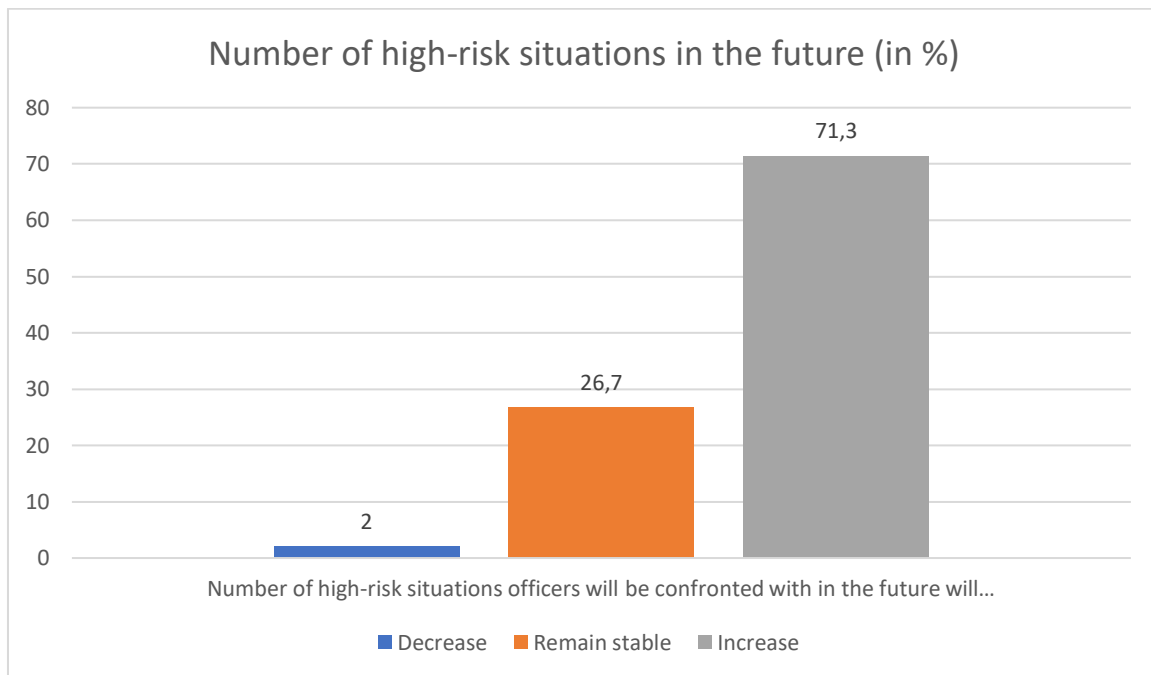


No gender differences were found.

Caucasian respondents reported seeing more added value in VR for police training programs than respondents with other ethnic backgrounds.

Furthermore, most respondents (71.3%) are of the opinion that the number of high-risk situations that police officers are confronted with, will increase in the future.

Figure 30: Estimation of in- or decrease of high-risk situations for police officers in the future



Respondents were then given a set of possible general and specific training objectives for police training and were asked to indicate to what degree they felt VR could be of added value for these training goals<sup>58</sup>.

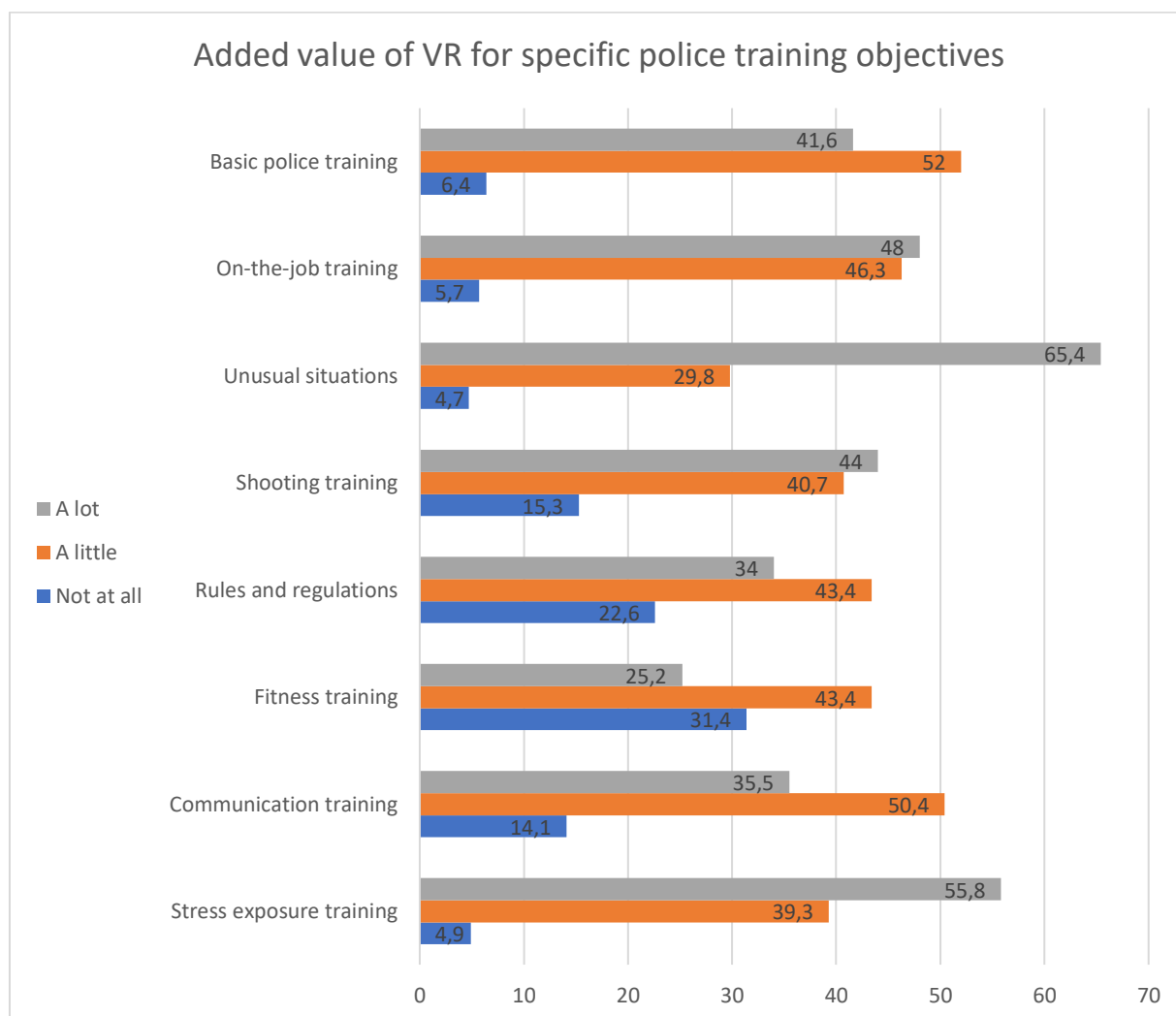
Overall, the majority saw some or great potential of VR in the training of the specific police training objectives (see Figure 31). The first two questions related to more general opinions about the added value for either basic police training and additional ‘on-the-job’ training. Participants clearly saw huge potential for VR: 92.6% of participants thought VR could offer some to a lot of added value for basic police training and 94.3% of participants felt VR could also bring added value to ‘on-the-job’ training. However, a few specific training objectives clearly seem to stand out as ideal for training with VR according to participants:

- In total, 95.2% of participants saw some to a very high potential of VR for the training of police officers in unusual (non-routine) situations. Of these 95.2%, 65.4% considered VR to have a high added value.
- In total, 95.1% of participants saw some to a very high potential of VR for exposure training to stressful situations and stress cues. Of these 95.1%, 55.8% considered VR to have a high added value.

<sup>58</sup> Respondents who previously indicated they saw absolutely no added value of VR for police training were excluded from this analysis.

This confirms the relevance of the SHOTPROS project and her work on the development of a VR training program to training police officers in DMA in high-risk and high-stress situations; It is clear from these results that the EU citizens also agree that VR could be a very useful tool for this type of police training.

Figure 31: Overview of added value estimates for specific police training objectives



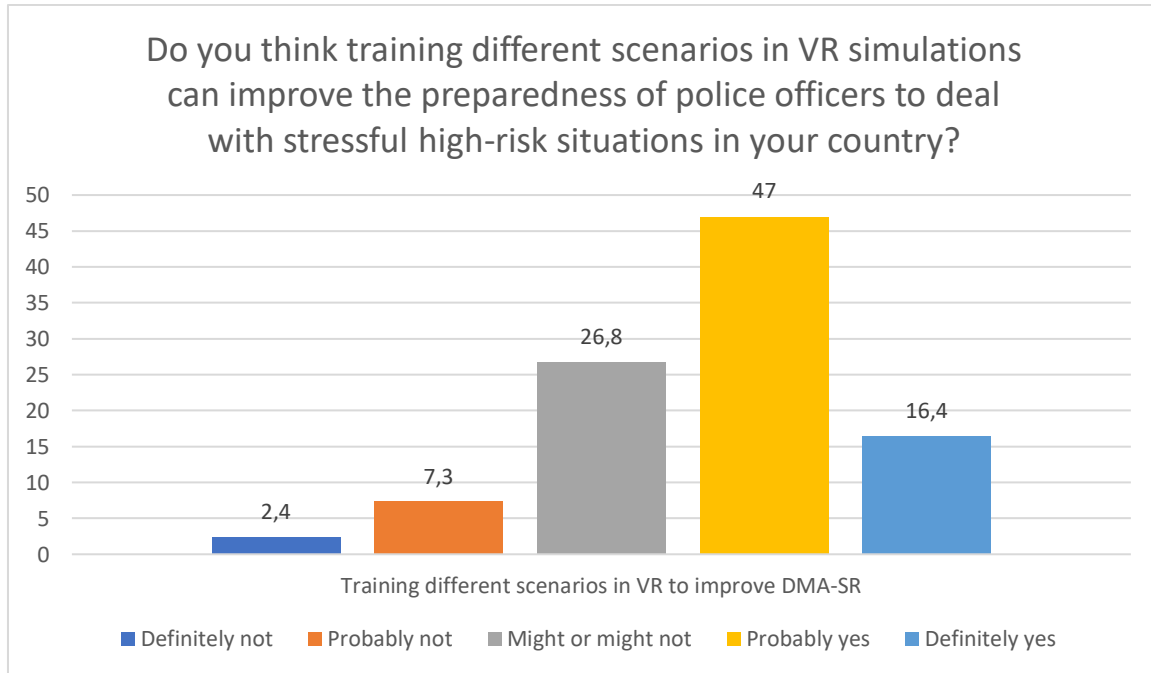
Men were somewhat more hesitant about the usefulness of VR for additional training ‘on-the-job’ than women<sup>59</sup>. Men indicated more often than women that VR had some added value for communication skills training than women<sup>60</sup>. No significant differences between men and women were found in the estimation of the usefulness of VR for specific police training objectives.

<sup>59</sup>  $\chi^2(2, n = 736) = 6.50, p = .04, phi = .09$  (very small effect size).

<sup>60</sup>  $\chi^2(2, n = 736) = 7.51, p = .02, phi = .10$  (very small effect size).

Findings on the last question also confirm the positive attitude of EU citizens towards the use and usefulness of VR as a tool for simulation training to prepare police officers to better respond to stressful high-risk situations.

Figure 32: Opinion about improvement of police DMA-SR through VR simulation training



## 5 Conclusion

SHOTPROS aims at better understanding the decision-making and acting processes of police officers in stressful and high-risk situations (DMA-SR) and to advance in the training of DMA-SR by taking advantage of all the benefits of Virtual Reality (VR). As the vision of the project is to aid in the improvement of police performance and capabilities in all types of stressful situations that they can encounter in their work as first responders, the European citizens should be viewed as the ultimate stakeholders. Namely, we want to further support police officers in their capabilities of effectively fighting crime and terrorism, and as such also contributing to and strengthening the perceptions of citizens that the EU is a region of freedom, justice and security. Therefore, this deliverable focused on the perspective of the European citizens on issues such as feelings of safety and security, perceptions about police and police performance and DMA, stress experienced by police officers and situations that citizens consider to be particularly stressful for officers, and their ideas about training and the possible added value of VR for police training. As such, the aim of this deliverable was to



explore this societal perspective and to gather insights to include this societal perspective maximally in the further course of the SHOTPROS project and beyond.

To acquire knowledge about this societal perspective, two online surveys have been administered to a total of 1390 European citizens (640 participants in the first survey and 750 participants in the second survey). In this deliverable, nine research questions were posited, that strongly guided our research and data collection. This sections structures the main findings within each of these research questions and will also highlight the relevant insights we have acquired and will make recommendations for future implementation of the societal perspective within the SHOTPROS project.

## 5.1 Perceptions of EU citizens concerning their safety and security

The first research questions was: “What are the perceptions of EU citizens concerning their safety and security and how does the police contribute to these perceptions?”. This research question was addressed in the first survey.

In general, it can be concluded that the European citizens who participated in our survey reported feeling relatively safe in their neighborhood and not perceiving crime as a big problem in their neighborhood. Although there is still room for improvement, this finding already highlights that citizens tend to already perceive their neighborhoods as safe places. Our findings, however, do suggest that some citizens are more vulnerable to feeling unsafe and insecure than others, although the effect sizes remain relatively small. Women and people with lower education levels tend to feel less safe, and citizens with lower socio-economic status (SES) perceive crime more often as a problem in their neighborhood. Thus, findings do indicate that some European citizens are more vulnerable to be confronted with crime and feelings of unsafety.

Although these findings do not directly impact specific developments within SHOTPROS, it seems that we as a project also put forth a societal mission, which is to support European police organisations in their fight against crime and as such make Europe a safer place, especially for those who are particularly vulnerable to experiencing feelings of unsafety.

## 5.2 Satisfaction with the police and possible influencing factors

The second research question is: “How satisfied are EU citizens with the police, how much legitimacy do they attribute to the police, and what are possible influencing factors?”.

On average, participants in study 1 reported high levels of satisfaction in the police in their local area. Furthermore, they are of the opinion that the police in their neighborhood is quite

effective in fighting crime. They also attribute relatively high legitimacy to the police, thus seem to approve police's authority. Citizens coming from higher SES tend to report higher legitimacy of police and higher satisfaction with police. There were no differences in the assessment of police effectiveness.

Participants also reported relatively low perceived police misconduct. Nevertheless, women, citizens with a lower SES, young citizens, and citizens with a left-wing political orientation report more police misconduct.

An important finding, which corroborates the strong body of literature of procedural justice, is the strong association between having positive personal experiences with the police (feeling treated fairly and just by the police) and attributing higher legitimacy to and higher satisfaction with police on the one hand, and lower perceptions of police misconduct on the other hand. Although no firm conclusions can be drawn in terms of the causal relationship between these factors (i.e., will people who are 'pro-police' more easily be satisfied with their police contacts or will people who were satisfied with their police contact become more 'pro-police?'), it is clear that the importance of the quality of the interactions between police and civilians should not be ignored. Feeling treated fairly and with respect during police-citizen encounters results in high perceptions of procedural justice and satisfaction, which also influences general positive views on police and police performance.

It is imperative that police officers communicate appropriately and respectfully with civilians, even in high-stress situations. This should be an important training goal for police cadets as well as for officers in the field. Therefore, it is recommended that this would also be taken into account as training focus in a DMA-SR training program in VR. DMA is not only about shoot/no-shoot decision or deciding which weapon to use, it is also (and even more so) about making the best decisions to keep control over the situation, to de-escalate situations, in a correct and fair way. The contact with the police is the thing citizens see, experience and remember and it can have a high impact on perceptions and attitudes towards police. This should be taken up in the training curriculum developed in WP3, D3.3.

Policy efforts need to be made to also present police in a positive way. Citizens should know that the police takes their safety seriously and that they put all efforts in place to send out well-trained, capable police officers into the streets. Police can work on further training of police officers to increase perceptions of effectiveness, and they should also try to improve effectiveness by introducing new technologies, such as VR, and showing to citizens that the police is has a strong desire and is willing to innovate to continuously improve their performance and abilities to fight crime.

### 5.3 Assessment of quality of own experiences with police

The third research questions was: “How do EU citizens assess the quality of their own experiences with the police and what might be possible influencing factors in this assessment?”

As reported already, participants generally felt treated procedurally just in their last contact with police and were also quite satisfied with this contact. No socio-demographic characteristics of participants influenced the scores for procedural justice and satisfaction. However, an important influencing factor is the initiation of the police contact. If the contact was initiated by the police, and as such involuntary for the citizen, the assessments of procedural justice and satisfaction tend to be lower. This is not surprising, as people who go to the police ‘voluntarily’, out of own initiative, generally need something from the police.

In terms of characteristics of the police officers present in the most recent contacts, it seems that participants still usually come into contact with male officers or with a team of a male and female officer. The encounters with only female officers are scarce. Furthermore, most contacts with police are with officers who have the same ethnic background. There is still much growing potential in creating truly diverse, multicultural teams. This is supported by the finding that participants seem to be more satisfied and felt treated more fairly when their contact was with a team of officers who represented similar and different ethnicities. There was no difference in satisfaction based on the gender of the officer(s) or the number of officers present during the contact.

It is recommended to invest in creating multicultural teams as it shows to have a (small) positive effect on procedural justice and satisfaction

There is also still room for improvement in the feelings of procedural justice of those who come into contact with the police ‘involuntarily’. These situations should then also be practiced often and could also be a working point in VR training scenarios.

### 5.4 Experiences of EU citizens with police use of force

The fourth research question is: “What are the experiences of EU citizens with police use of force?”.

Overall, not a high number experienced some type of police use of force personally (7.2%). When asked if they know somebody who experienced police use of force, the rating is considerably higher (26.7%), yet less reliable. It should also be noted that the question used to measure police use of force also included shouting. As this question was only visible to

respondents who answered ‘yes’ to the question if a police officer had ever used force against them, it might be that they didn’t consider shouting to be an example of ‘force’. The types of force most often mentioned by participants were ‘shouting’, ‘pushing or grabbing’, ‘threatening to use force’ and ‘threatening to arrest the civilian’.

Thus, it seems that the experiences of citizens with police use of force is still relatively rare, but findings do suggest that women experience significantly less police use of force than men. It can be hypothesized that women tend to engage less in criminal or antisocial activities or that they are less ‘defiant’ against police. It might of course also be that police officers tend to refrain more often from using force towards women.

As will also become apparent in a later research question, citizens are not particularly tolerant to the use of force by police officers. Although of course the use of force is sometimes necessary, officers should be trained in not resorting to the use of force too quickly, and to first explore if it is advisable to use other techniques to manage and control a situation, such as communication management or de-escalating techniques. This should also be an important part of their training.

Officers should also be trained in dealing with defiant civilians who, with their behavior, induce high stress in the officers. Even in these situations, officers should be able to keep their head cool and refrain from using force out of frustration.

## 5.5 Impact of current societal trends on perceptions of police

The fifth research question is: “What is the impact of current societal trends (e.g., COVID-19, police misconduct in the media) on EU citizens’ perceptions of the police?”.

Findings show that the COVID-19 crisis did not really have a major impact on the perception of police. Of the 30% of participants who indicated that it did in some way change their perceptions, about 50% said it made their perception more positive.

More problematic are the highly mediatized cases of (alleged) police misconduct, for example the examples of possible racism and disproportionate use of force on black citizens by police officers in the US. About 40% of participants indicated that such cases do influence their perceptions, and 90% of them report that it made their perception of the police more negative. Furthermore, about 75% of participants report that they think that police officers use ethnic or racial profiling quite often in their daily work. Women tended to have more negative opinions about this than men.

Police organizations should show citizens how serious they take their job and their service to society. It might be good to show citizens how good European police officers are, how trained,

how seriously they take training and education of police officers, that they work evidence-based and thoroughly.

As ethnic profiling seems to occur fairly regularly according to EU citizens and since the media-cases often also deal with questions about possible racism, it would be advisable to be extra attentive to issues concerning race in the development of training programs. This has also already been recommended in D2.3, but the database of virtual characters should be large, varied, multicultural, and avoid stereotypical depiction of people with a certain ethnicity (or religion).

Furthermore, training scenarios should also include civilians who accuse officers of bias or racism. In training exercises, trainers could also deliberately systematically include characters from different ethnic backgrounds to assess if police trainees behave differently to them. This can then also be a learning goal.

## 5.6 Assessment of DMA choices of police officers

The sixth research question is: “How do EU citizens assess DMA choices of officers in specific police-citizens encounters in terms of legitimacy, appropriateness, proportionality and danger posed to the officer and citizen, and what are possible influencing factors (e.g., perspective on the situation, choice of DMA)?”

As already mentioned, in both situations (car control and knife assault) the scenario in which the officer draws his weapon is considered to be the best option according to police officers. This is also the optimal DMA and these are the procedures training in police academies. The main motivation is that these procedure allow the officer to keep a safe distance from the suspect. Some of the other DMA options shown required close contact with the suspect/civilian and as such rendered the officers much more exposed and vulnerable to injury. However, in both situations, participants systematically considered the ‘gun’ condition as the least legal, the least appropriate and the least proportionate given the situation. It seems that people have the impression that police will only use (or at least draw) their gun as a reaction to other guns. The most favored approaches by the participants were ‘pulling out of the car’ (in the car control situation) and ‘fighting the suspect to take away the knife’ (in the knife assault). Both DMA’s are considered suboptimal by police officers, as both options in fact pose the greatest risk for the police officer.

Interestingly, women also tend to be more skeptical to all the of the DMA conditions than men.

An interesting finding is also that participants who viewed the videos from the bodycam perspective systematically rated the same scenarios as more legal, more appropriate and more proportional. This was clearer in the situation of the car control, and less in the knife assault situation. This could possibly be due to the fact that some participants reported finding it hard to identify the type of weapon used in the bodycam version of the knife assault. Nevertheless, findings do suggest that it might be possible that experiencing situations from a first-person perspective changes the way you assess the situation. When citizens experience situations from a similar perspective as police officers normally experience, this might help them understand better the choices that police officers make in these situations.

The VR training tool might also offer new opportunities to raise awareness in citizens about the complexity of DMA-SR that officers face. From an observer perspective, it is much more difficult to truly assess the danger or the options available to the police. Citizens could be further educated and informed by letting them use the VR tool to experience such situations. Also, the VR tool can be used to use first-person recordings of virtual training sessions as communication and dissemination material for police organisations.

## 5.7 Assessment of police and dealing with stress

The seventh research question is: “To what degree do EU citizens think police officers encounter high stress in their daily work and what possible situations do they consider to be most stressful for police officers?”.

On average, citizens do realize that police officers are confronted with stressful situations frequently (70.3%). No differences were found in gender. Most of them also think that stress has a negative impact on performance (64%). 20% also thinks that stress does not really have any effect on police performance. It is unclear whether they just don’t know what the impact of stress is, or that they are of the opinion that officers should be immune to stress.

The stressful situations rated as most stressful by the citizens are:

- Having to shoot or kill someone
- Being confronted with a dead child
- Being in a situation with a high risk of personal physical injury
- Being confronted with abused or neglected children
- Being confronted with dead or mutilated bodies
- Being confronted with agitated or aggressive crowds
- Being alone without back-up
- Being confronted with large man-made disasters

- Situations requiring the use of force.

Some of these situations deal with the risk of personal physical injury (risk of injury, aggressive crowds, alone without back-up, man-made disasters, use of force), but others are also very much focused on the possible adverse psychological impact of the context (e.g., dead child, abused children, dead bodies). Thus, training should also focus on this psychological aspect. Stress inducement can come from introducing specific stress cues (e.g., weapons, sounds), but also by creating a context that is psychologically challenging for trainees. These situations might sometimes not be high-risk, but can also induce a lot of stress, even on the long-term. Our findings suggest that women seem to be more sensitive to these situations that involve children or vulnerable victims.

Furthermore, if we focus on DMA-SR training in VR, it seems to also be advisable to also provide the possibility for psychological counseling or support after training psychologically challenging scenarios. If trainees need it, such counseling should be available. Investing in it, is also investing in better officers.

During the SHOTPROS requirements and feedback workshops (WP2, D2.2.), different stressors have been identified and ranked by SHOTPROS LEA's, and have also been further examined in the Risk Assessment Tool survey (D4.7). The present study have further examined these and other possible stressors and stressful situations. The ranking of stressors and stressful situations by EU citizens will be combined with the prioritized ranking done by SHOTPROS LEA's and then become a crucial part of the technical requirements for VR training (D4.6) and can be used as stress cues or events in the development of training scenarios focusing on DMA-SR, but can also serve as 'inspiration' for the development of contexts for training scenarios.

## 5.8 Opinions of EU citizens concerning the way police officers (should) deal with stress

The eighth research question is: "What are the opinions of EU citizens concerning the way police officers (should) deal with feelings of stress?"

Participants agreed most strongly with the fact that officers should be trained in stress management, that they should be able to keep their head cool in every situation, that they should be respected at all times, and that civilians who try to hinder an officer's work should be punished. Especially the first two statement provide a clear motivation for the SHOTPROS project. It is clear that participants place high emphasis on the ability of officers to cope with stress well. That is exactly the aim of SHOTPROS.



When comparing groups in terms of experiencing stress, participants mostly felt that patrolling alone made an officer much more vulnerable to feeling stress compared to pairs of officers. Concerning gender, age, having partners and kids, and ethnic background, the majority of participants felt that these groups experienced similar levels of stress. Those who did choose one of both groups within these groupings, felt that female officers (21.7%), younger officers (31.6%), officers with partner and children (24%) and officers from ethnic minority groups (23.3%) were more at risk of experiencing high stress. Men seem to have these opinions more often than women.

It is important that future studies in SHOTPROS pay particular attention to these groups in terms of stress experience. If in fact it is true that these groups are more vulnerable for high-stress, than specific training programs (WP3) should be developed that are tailored to their specific needs, or that have adapted training plans or training scenarios.

## 5.9 Opinion of citizens on police training in VR

The ninth research question was: “What are the opinions of EU citizens concerning the utility of police training in general and police training in VR specifically for training good police officers”.

Belgian respondents seem to be significantly less satisfied with the duration of the basic training than the respondents from the other countries. Overall, participants mainly felt that the ‘on-the-job’ training opportunities were far too limited (more than 60% of respondents in each country). It is clear that improvement is necessary. Perhaps it is not always possible to increase the number of training hours, but at least efforts can be made to take as much advantage out of the available training hours as possible. VR can provide these possibilities.

Also, more than 70% think that high-risk situations will increase even more in the future, thus further supporting the need to invest now in better, more efficient and more effective training to prepare officers for the future.

A very important findings that gives important legitimacy to all the SHOTPROS activities is that more than 90% of participants see some to a lot of potential for VR in the basis training and training ‘on-the-job’ for police officers. Even more so, they indicated that they saw the most potential in the training of unusual situation and in exposing trainees to stressful situations. This again supports the relevance of SHOTPROS and the fact that using new technologies, such as VR, to further improve and support the training of officers in stressful situations is the way to go forward.



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## 7 Appendices

### 7.1 Survey 1

# EU Citizens Survey

### Survey on citizens' perceptions of police

Dear Sir, Madam,

Welcome to our international survey on citizen's perceptions of police. The goal of this survey is to explore how citizens perceive the police, how they feel about certain police interventions, and how they have experienced their own contacts with the police. The survey takes about 15 minutes to complete.

This survey is part of a larger European project (funded by the European Commission, grant nr. 833672), called SHOTPROS, which studies the decision-making and acting processes of

police officers on duty and which factors result in appropriate versus suboptimal choices. For more information about our SHOTPROS-project, please visit [www.shotpros.eu](http://www.shotpros.eu).

Before you start the survey, please read the information below.

### **Data processing and your rights**

Your participation in this survey is voluntary. You have the right to withdraw your consent to participation at any time (including during and after the study). You do not have to justify this withdrawal and you are not disadvantaged by your withdrawal in any way.

There is no link between your personal data (such as IP address) and your responses to this survey. All data will be collected anonymously and treated confidentially, i.e., data cannot be traced back to an individual. Results from this study can be used for scientific purposes and can be published.

This study received ethical approval from the Social and Societal Committee of KU Leuven (Nr. G-2019 09 1712). If you require further information about your rights or the study itself, or if you have further questions or wish to exercise your rights or abort the study, please contact dr. Emma Jaspert ([Emma.Jaspert@kuleuven.be](mailto:Emma.Jaspert@kuleuven.be)). For any complaints or other concerns about the ethical aspects of this study, you can contact the Social and Societal Committee of KU Leuven ([smec@kuleuven.be](mailto:smec@kuleuven.be)).

### **Informed consent**

I hereby declare that I am voluntarily participating in this survey. I can withdraw my consent at any time (including during the study) without any justification or consequences. I agree that the collected data may be stored, analyzed and published anonymously for scientific purposes.

- YES, I AGREE to the above-mentioned conditions and would like to participate in the survey
- NO, I DO NOT AGREE to the above-mentioned conditions and would like to terminate my participation

What is your gender?

- Male
- Female
- Non-binary/third gender
- I prefer not to answer

What is your age (in years)?

---

In which country do you live?

▼ Austria ... Other

Please specify which country

---

Which categories best describe you? Select all that apply to you.

- White / Caucasian
- Asian
- Black / African
- Middle-Eastern / North-African
- Latino / South-American
- Other \_\_\_\_\_
- I prefer not to answer

How would you describe your relationship status?

- Single
- Dating
- Cohabiting
- Married
- Other \_\_\_\_\_

Do you have children?

- Yes
- No

How many children do you have (biological children, stepchildren, and adopted children)?

▼ 1 ... 7 or more

What is your current professional situation?

- Employed / Self-employed / Freelance
- Student
- Unemployed / Homemaker / Not able to work
- Retired
- Other \_\_\_\_\_

Do you work for the police?

No

Yes

What is currently your highest level of education?

Elementary school diploma

High school diploma

Professional bachelor's degree

Academic bachelor's degree

Master's degree

Doctorate degree

Other \_\_\_\_\_

What is your religion?

- None (atheist, agnostic)
- Christian (Catholic, Protestant, other Christian)
- Buddhist
- Hindu
- Jewish
- Muslim
- Other \_\_\_\_\_
- Prefer not to say

To what extent can you make ends meet financially with your family's total available income?

- Extremely difficult
- Moderately difficult
- Slightly difficult
- Slightly easy
- Moderately easy
- Extremely easy

Please situate your political preference

Far left		Center		Far right		
-3	-2	-1	0	1	2	3

Please read the following statements and indicate the degree to which you (dis)agree with them. (7-point matrix from strongly disagree to strongly agree)

Police officers usually make fair decisions when enforcing laws

Police officers usually have a reason when they stop or arrest people

Police do their best to be fair to everyone

Police officers treat people with respect

Police officers communicate well with people

The presence of police makes me feel safe

Police officers are generally kind

If I have a problem, I feel confident that the police can help me solve it

I'm not afraid to call the police when I need to

People should trust the police to help

I feel that police officers are willing to listen to me when I come into contact with them

I believe what officers tell me

I can rely on police officers to ensure my safety

I feel relieved to see police officers when I am out in the community

Police officers desire justice

People become police officers to serve their community

The explanations that police officers give for a stop are typically reasonable



Please read the following statements and indicate the degree to which you (dis)agree with them.

Police officers take their duty to protect and serve seriously

People become police officers to help others

People become police officers because they want to maintain order

Law enforcement agencies hire the best people available

People should be confident that police officers are only there to help

Police officers are held to higher standards than regular citizens

For the most part, police do a good job maintaining order in society

Police officers are respected by the communities they serve

Police officers' interactions with others makes me feel like they are part of my community

Police officers' goals are to protect the community

Police officers are a welcomed presence at community events

My community is a better place because of the police

Most police officers care about the communities they work in

Most police officers define right and wrong the same way that I do

Police officers uphold values that are important to me

The police usually act in ways consistent with my ideas about what is right and wrong

The police and I have many values and beliefs in common

Overall, how safe do you feel being alone outside in your neighborhood?

- Very safe
- Somewhat safe
- Somewhat unsafe
- Very unsafe

How serious a problem is crime in your neighborhood?

- Very serious
- Somewhat serious
- Not serious
- Not a problem at all

How effective are the police in your neighborhood in fighting crime?

- Very effective
- Somewhat effective
- Somewhat ineffective
- Very ineffective

How often do you think police officers stop people on the streets of your neighborhood without good reason?

- Never
- On occasion
- Fairly often
- Very often

How often do you think police officers, when talking to people in your neighborhood, use insulting language against them?

- Never
- On occasion
- Fairly often
- Very often

When police officers use force against people, how often do you think they use excessive force (i.e., more force than is necessary under the circumstances) against people in your neighborhood?

- Never
- On occasion
- Fairly often
- Very often

How common do you think corruption (e.g., taking bribes, involvement in the drug trade) is in your city's police department?

- Not at all common
- Not very common
- Fairly common
- Very common

Have you ever had direct contact with a police officer, for any reason whatsoever?

- Yes
- No

Think about the **last** contact you had with the police. Below, you will be asked a few questions about this contact.

Please rate the following statements thinking about your **most recent** contact with the police

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The police were polite, respectful and courteous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police were approachable and friendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police were professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police were fair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police were helpful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Overall, how satisfied were you with your most recent contact with the police?

- Extremely satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Extremely dissatisfied

Was this contact:

- Voluntary (initiated by you)
- Involuntary (initiated by the police)

What was the reason for this contact?

- I asked for assistance
- I needed information or a document
- I reported a crime or misdemeanor as a witness
- I reported a crime or misdemeanor as a victim
- Other \_\_\_\_\_

What was the reason for this contact?

- I was stopped in traffic or while on foot
- They contacted me for information
- I was suspected of doing something illegal
- I was caught doing something illegal
- Other \_\_\_\_\_

In this last contact, how many police officers were present?

- Only one police officer
- Two or more police officers
- Don't remember

Was this police officer

- Male
- Female
- Don't remember

OR: Were these police officers

- All male
- All female
- Both male and female
- Don't remember

This police officer

- Was of the same ethnicity as I am
- Was of a different ethnicity than mine
- Don't remember



OR: These police officers

- Were all of the same ethnicity as I am
- Were all of a different ethnicity than mine
- Some were of the same ethnicity as I am
- Don't remember

Have you ever been in a situation in your life where a police officer has used force against you?

- No, never
- Yes

Do you personally know someone who has been in a situation where a police officer has used force against him or her?

- No
- Yes

During this contact, did the police do any of the following?

- Shout at you
- Curse at you
- Threaten to arrest you
- Threaten to use force against you
- Actually push or grab you
- Handcuff you
- Actually kick or hit you
- Actually spray you with a chemical or pepper spray

- Actually use an electroshock weapon against you, such as a stun gun
  - Actually point a gun at you
  - Use any other type of force
- 

In your opinion, were the actions of the police against you justified in this situation?

- Completely unjustified
- Somewhat unjustified
- Neither justified nor unjustified
- Somewhat justified
- Completely justified

Overall, how satisfied are you with the police in your neighbourhood?

- Extremely satisfied
- Moderately satisfied
- Slightly satisfied
- Neither satisfied nor dissatisfied
- Slightly dissatisfied
- Moderately dissatisfied

Extremely dissatisfied

Has the recent COVID-19 crisis affected your perception of police in your country?

Yes

No

In which direction did it change your perception?

Much more negative

Somewhat more negative

Somewhat more positive

Much more positive

In the past year, a number of cases of (alleged) police misconduct reached the news and sparked international protests.

Have these reported incidents affected your perception of police in your country?

Yes

No

In which direction did these cases change your perception of police in your country?

Much more negative

Somewhat more negative

Somewhat more positive

Much more positive

Do you think police officers in your country use racial or ethnic profiling?

Not at all

Sometimes

Often

All the time

#### End of Block: Influences on perception

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In the following section, you will be shown a set of short videoclips of situations of police-citizen encounters.

Please watch each videoclip completely and answer a few questions about what you have seen in the videoclip afterwards.

NOTE: It might appear that all videoclips are the same, but this isn't the case. They all start the same way, but the ending is different each time.

**VIDEOCLIPS: same questions for all clips**

Do you think the action of the police in this videoclip is legal?

Yes

No

Please answer the following statements concerning this videoclip

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
This action of the police is appropriate in this situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This action of the police is proportionate to the level of threat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please answer the following statements concerning this videoclip

	Not at all						A great deal
	0	1	2	3	4	5	
This action puts the police officer in danger							
This action puts the citizen in danger							



## 7.2 Survey 2

# Citizens perceptions on stress and training of police officers

### Survey on citizens' perceptions of stress and training in police officers

Dear Sir, Madam,

This is a short survey to explore citizens' point of view on feelings of stress and specific stress factors police officers might experience in their daily work on the field, and their opinions about police training. There are no right or wrong answers, we are only interested in your opinion and in your assessment of possible stress in police officers. The survey takes about 10 minutes to complete.

This survey is part of a larger European project (funded by the European Commission, grant nr. 833672), called SHOTPROS, which studies the decision-making and acting processes of police officers on duty in high-stress and high-risk situations and which factors influence (sub)optimal police performance. Our goal is to develop a Virtual Reality training programme for police officers. For more information about our SHOTPROS-project, please visit [www.shotpros.eu](http://www.shotpros.eu).

Before you start the survey, please read the information below.

#### **Data processing and your rights**

Your participation in this survey is voluntary. You have the right to withdraw your consent to participation at any time (including during and after the study). You do not have to justify this withdrawal and you are not disadvantaged by your withdrawal in any way.

There is no link between your personal data (such as IP address) and your responses to this survey. All data will be collected anonymously and treated confidentially, i.e., data cannot be traced back to an individual. Results from this study can be used for scientific purposes and can be published.

This study received ethical approval from the Social and Societal Committee of KU Leuven (Nr. G-2019 09 1712). If you require further information about your rights or the study itself, or if you have further questions or wish to exercise your rights or abort the study, please



contact dr. Emma Jaspaert (Emma.Jaspaert@kuleuven.be). For any complaints or other concerns about the ethical aspects of this study, you can contact the Social and Societal Committee of KU Leuven (smec@kuleuven.be).

### Informed consent

I hereby declare that I am voluntarily participating in this survey. I can withdraw my consent at any time (including during the study) without any justification or consequences. I agree that the collected data may be stored, analyzed and published anonymously for scientific purposes.

- YES, I AGREE to the above-mentioned conditions and would like to participate in the survey
- NO, I DO NOT AGREE to the above-mentioned conditions and would like to terminate my participation

What is your gender?

- Male
- Female
- Non-binary/third gender
- I prefer not to answer

What is your age (in years)?

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In which country do you live?

- Austria
- Belgium
- Germany
- Netherlands
- Romania
- Other \_\_\_\_\_

Which categories best describe you? Select all that apply to you.

- White / Caucasian
- Asian
- Black / African
- Middle-Eastern / North-African
- Latino / South-American
- Other \_\_\_\_\_
- I prefer not to answer

What is your current professional situation?

- Employed / Self-employed / Freelance
- Student
- Unemployed / Homemaker / Not able to work
- Retired
- Other \_\_\_\_\_

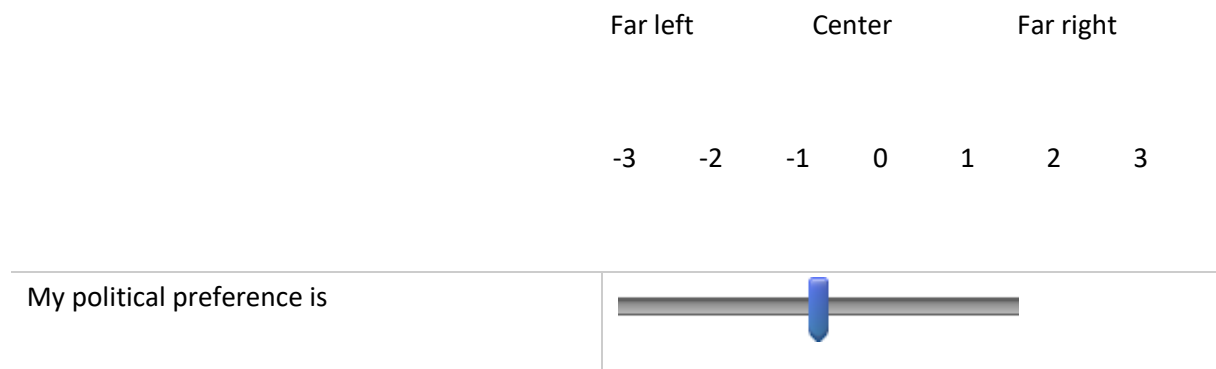
Do you work within the police?

- No
- Yes

What is currently your highest level of education?

- No diploma/degree
- Elementary school diploma
- High school diploma
- Professional bachelor's degree
- Academic bachelor's degree
- Master's degree
- Doctorate degree
- Other \_\_\_\_\_

Please situate your political preference



How often do you think police officers experience high stress in their daily work in the field?

- Very often
- Often
- Sometimes
- Seldom
- Never

In general, do you think high stress has a positive or a negative impact on police officers' performance on duty?

- Extremely positive
- Somewhat positive
- Neither positive nor negative
- Somewhat negative
- Extremely negative

On a scale from 0 to 10, how stressful do you think the following situations are for a police officer? (scale from not at all stressful to extremely stressful)

Being confronted with severely wounded victims	
Being exposed to dead or mutilated bodies	
Being exposed to abused or severely neglected children	
Being confronted with a dead child	
Dealing with people under the influence of drugs or alcohol	
Encountering people infected with transmittable disease (e.g., COVID-19)	
Being confronted with agitated or aggressive crowds	
Being verbally or physically attacked by a civilian	
Having to make critical on-the-spot decisions	
Situations requiring the use of force	
Situations requiring shooting or killing someone	
Facing a situation with a high risk of physical injury (e.g., being threatened with a weapon)	
Responding to a crime in progress	
Being confronted with an aggressive animal	
Having insufficient manpower to adequately handle a job	
Being alone and no back-up is available	
Dealing with a colleague who makes critical mistakes on the job	
Dealing with complex or unclear rules and regulations	
Being confronted with a sexual or domestic violence case	
Being confronted with a large man-made disaster	
Doing a pursuit on foot or by car	
Administering first aid or cardiopulmonary resuscitation (CPR)	
Facing an unpredictable situation	
Attending a serious road traffic accident with multiple injuries and possible fatalities	
Dealing with gear malfunction	

Please indicate to what degree you (dis)agree with the following statements.

	Completely disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Completely agree
Police officers find themselves in stressful situations every day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Police officers are well trained to deal with high-stress situations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Police officers should not be influenced by stress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Police officers should be trained in stress management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Police officers under stress will use disproportional force more quickly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Police officers under stress make more mistakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Civilians who use verbal or physical force against police officers usually have good reasons to do so	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Police officers should be respected at all times	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Police officers should be able to keep their head cool in every situation

It should be illegal for bystanders to film a police officer

Civilians who try to hinder a police officer from doing his job, should be punished

Police officers should be immune to stress

Police officers are able to make the most appropriate decisions and actions, even in high-risk situations

Which group of officers do you think experiences MORE stress?

- Female officers
- Similar stress
- Male officer



Which group of officers do you think experiences MORE stress?

- Officer older than 40y
- Similar stress
- Officers up to 40y

Which group of officers do you think experiences MORE stress?

- Officers with over 10y of experience
- Similar stress
- Officers with up to 10y of experience

Which group of officers do you think experiences MORE stress?

- Officers patrolling alone
- Similar stress
- Officers patrolling in pairs

Which group of officers do you think experiences MORE stress?

- Officers with a life partner and/or children
- Similar stress
- Officers without a life partner and children

Which group of officers do you think experiences MORE stress?

- Officers from the ethnic majority
- Similar stress
- Officers from an ethnic minority group

Do you think the number of high-risk situations police officers are confronted with will increase or decrease in the future?

- Number will increase
- Number will stay the same
- Number will decrease

To become a police officers, people have to go through a basic training programme of 1 year (Belgium), 1-3 years (Romania), 2 years (Austria) 2-3 years (Germany), or 3 years (the Netherlands).

Do you think this is enough training time to prepare officers in your country to deal with stressful and/or high-risk situations in the field?

- Far too little
- Too little
- Neither too much nor too little
- Too much
- Far too much

When you already are a police officer, you get about 16 hours (Belgium and the Netherlands), 24-30 hours (Germany), 28 hours (Austria) or 96 hours (Romania) of 'on the job' training per year.

Do you think police officers in your country are given enough time and opportunities to train?

- Far too little
- Too little
- Neither too much nor too little
- Too much
- Far too much

Are you familiar with the concept of Virtual Reality (VR)?

- No
- A little
- Yes

Virtual Reality can simulate a real or a fantasy environment for the user to make him/her feel like (s)he is truly present in that world and can interact with it. This approach is commonly used in video gaming for entertainment or sportive activities, but there are also approaches to use Virtual Reality for training methods in medicine, military or other industries too. Please indicate if you agree or disagree with the following statements.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
VR can be of added value in our lives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are many interesting or relevant possibilities in VR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
VR can be of added value in training programs for police officers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For which types of training of police officers do you think VR can be of added value?

	Not at all	A little	A lot
For basic training of cadets (to become a police officer)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For additional training of police officers on the job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For special training for unusual situations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For shooting training without real weapons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For knowledge training (laws, regulations, rules, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For physical fitness training (sports related)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For communication skills training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For exposure training to many different stressors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you think training different scenarios in VR simulations can improve the preparedness of police officers to deal with stressful high-risk situations in your country?

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes