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**PUBLIC PERCEPTIONS OF NUCLEAR ARMS PROLIFERATION: A
CONTEMPORARY VIEW**

Master thesis

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I declare that I have compiled the paper independently and all works, important standpoints and data by other authors have been properly referenced and the same paper has not been previously presented for grading. The document length is words from the introduction to the end of summary.

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ABSTRACT

Nowadays, the global nuclear proliferation takes a special place in the agenda of international community. The recently escalating North Korean nuclear issue adds its own contribution to the already long-lasting question of expedience of global nuclear arms proliferation. While the existence of nuclear arms might contribute to the global stability and peace, it may also pose a serious threat to the whole world if it is used as intended. Therefore, any conceptual research on nuclear proliferation will have to enter an academic debate of whether or not the possession of nuclear arms represents a threat or a contribution to global security mechanisms. As a logical continuation of discussing this topic, the current study makes an attempt to map out the contemporary public opinion regarding the matter by defining the strategies that different groups of respondents stick to when talking about the global denuclearization. It helps to understand how important the issue of global denuclearization is in people's minds and if public audience actually thinks there is a need for it. The paper uses the local and international young educated people living in Estonia as its sample. While the main strategies of global denuclearization are defined with the help of literature review, the statistical analysis combined with results of electronic survey provides an opportunity to identify if public perceptions (opinion) towards the strategies of global denuclearization are statistically connected to the individual decision-making and actions regarding the topic of global denuclearization and nuclear arms proliferation. Despite the fact that previous studies identified that perceptions quite naturally influence the decision-making process and even actions of an individual, it quite surprisingly turned out to be not the case in the research related to global denuclearization and nuclear weapons proliferation.

Keywords: The Treaty on the Non-Proliferation of Nuclear Weapons, denuclearization, nuclear non-proliferation, nuclear arms, deterrence.

INTRODUCTION

The current research addresses the topic of global nuclear proliferation – the issue that has not been yet resolved since the end of the Cold War and onwards. While the leaders of the largest nuclear global powers are involved into the various negotiations and talks regarding nuclear non-proliferation, a number of newly emerging nuclear states has not been decreasing – on the contrary, it keeps growing (Osaghae 2016, 7). The positive fact here, however, is that the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) that was adopted by the United Nations (UN) in 1970 was extended indefinitely in 1995 and it is still in power (UNODA 2017, 1). Nevertheless, many experts in the field are in doubts that the NPT works effectively enough – some of the commentators even mention that the document is just a tool for monitoring without ensuring the ultimate goal of actual non-proliferation of nuclear weapons in the participant states (e.g. Fuhrmann et. al. 2015, 3).

When turning to the level of the general public, one can admit that there is a vast amount of previous researches done in regards to public awareness of the nuclear weapons proliferation issue. Some of these studies are addressed in the forthcoming chapters. For example, a comprehensive survey conducted by Soka Gakkai International (SGI) among the youth population from nine different countries, showed that most of the respondents consider the nuclear weapons to be inhumane; however, the majority is unaware about which countries possess the nuclear arms. Additionally, people living in the countries that possess nuclear weapons mostly thought that it is necessary for the states to possess nuclear arms (Asai 2013, 2-3). Considering the above, this research aims at contributing to previous studies of public awareness about the nuclear weapons proliferation, while offering to a contemporary perspective to detect the status quo, employing perceptions-related mechanisms of analysis. While previous studies have been examining the overall awareness of public audience regarding the global nuclear weaponry, this research complements previous works by analyzing how public defines the strategies that may help to achieve the global

denuclearization. It also identifies if people consider the global denuclearization to be a necessary matter at all.

The sample of the current research includes young educated people aged under 30 years' old who are residing in Estonia. The paper focuses on younger population because young people are "a creative force, a dynamic source of innovations and they have undoubtedly, throughout history, participated, contributed, and even catalyzed important changes in political systems, power-sharing dynamics and economic opportunities..." (UNDP 2012, 1). The author of this work also believes the opinion of young population matters a lot because especially younger people are the ones who will be able in a near future to facilitate changes in politics and even in such important issues like global nuclear arms proliferation. Turning back to the research itself, it is important to mention that in order to ensure the diversified results, the sample includes people belonging to different educational levels, different age categories but under 30 years old. Highly diversified young population of Estonia that includes differently aged representatives of various nationalities from all over the world explains Estonia to be a country of choice for picking the sample. In order to narrow down the sample size and to reach the target audience, author focuses on distributing the survey only within the universities of Tallinn and Tartu – the two largest cities of Estonia. Further justification, description and limitations of a sample choice for the current paper is further discussed in the chapter 1 and 3.2 of empirical framework.

The current paper sets as its main argument that there are significant correlations between perceptions and decision making, as well as between perceptions and readiness to act to support the personal opinion. The argument is important because such a noticeable topic like the global nuclear arms proliferation not only requires to identify the opinion of people, but also to find out if this opinion might actually lead to a decision making or potential actions in order to support it. As a result, this study answers the following research question: "Do contemporary perceptions of young educated people towards denuclearization influence their decision-making and readiness to act on the same topic?". This paper understands perceptions of young educated people to be public and defines them as opinion of respondents regarding the most viable approach towards resolution of nuclear arms proliferation problem. Decision-making in the current research is the process of identifying the course of action or a belief by the respondents. Readiness to act, at the same time, is identified as a set of actions

that support the decision of an individual and arise as a consequence of decision-making process.

In order to achieve the aim of the research, the current paper sets the following research tasks to be completed: To investigate the main reasons for the need of global denuclearization based on existing literature; To bring out the main approaches towards the global denuclearization; To develop a questionnaire and distribute it among the target audience; To analyze the gathered data and to categorize it according to the previously defined approaches; To conduct the statistical analysis in order to identify if public perceptions towards the denuclearization influence the decision-making of respondents and their readiness to make actions in support of their opinion.

Methodology wise, as specified, this research uses the wealth of international scholarly works on the concept of perceptions, contextualizing it with the topic. Namely, Alvarez et al. 2012, Scheufele et al. 1999, Wanta et al. 2004 and others. In a significant addition, the simplified qualitative content analysis technique will be employed in the process of analyzing the data. According to Patton (2002), the qualitative content analysis might be defined as “any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings” (as cited in Zhang et. al., 1). This paper uses this technique to define and categorize the main points of previous researches in the four main categories (or approaches): negotiations oriented (the need for talks to achieve the denuclearization), sanctions oriented (the need for sanctioning nuclear states in order to achieve denuclearization), force oriented (the need for hard power in order to achieve denuclearization) and acceptance oriented (nuclear proliferation creates safer world – nuclear deterrence theory).

Additionally, the author conducts a survey with the aim to define which approaches towards the global denuclearization are chosen by the people belonging to different nationalities, competences and age categories. According to Glasow (2005), the survey is a great technique for capturing the large sample size and gathering valuable information about opinions, characteristics or attitudes of people. Additionally, surveys provide a relatively easy way to make generalizations (Glasow 2005, 5). Bird (2009) mentioned that a questionnaire is “a well-established tool within social science research for acquiring information on participant...standards of behavior or attitudes and their beliefs and reasons for action with

respect to the topic under investigation” (Bird 2009, 1). Even though Bell (1996) mentioned that the surveys might be the subjects to biased responses (as cited in Glasow 2005, 6), the author believes that the nature of survey questions used for the current research will minimize the number of biased answers. The survey consists of both closed-ended and open-ended questions, however, the author focuses more on the closed-ended replies. Each of these, after conducting the survey, are coded accordingly into the four previously defined categories (or approaches).

Lastly, the author employs a statistical analysis in order to identify if the choice of a certain approach towards the denuclearization influences the decision-making and readiness to take related actions. This is achieved by firstly analyzing the set of responses, coding the answers according to the previously defined set of categories (approaches) and then looking for some statistically significant correlations between the perceptions and individual decision-making, as well as between perceptions and readiness to take actions in order to support the personal opinion. The quantitative research method is used in conjunction with a qualitative research technique because “where open-form and other verbal responses occur alongside numerical data it is often sensible to use a quantitative tool” (SSC 2001, 14). This said, the author believes the mixed qualitative and quantitative research methods will help to analyze the results more widely and more efficiently. Additionally, the combination of two methods helps to conduct a more profound research – not only by analyzing the survey results, but also looking for the noticeable correlations.

To shortly outline the results of this research, it would be important to mention that on the scale of the current study and in the context of global denuclearization and nuclear arms proliferation topic, there is no statistically significant correlations between perceptions of respondents and their decision-making and readiness to act in support of their opinion. These results go in contrast with the conventional assumption that perceptions influence the decision-making and actions of an individual. This study showed that this is not the case in relation to the chosen topic. Additionally, the majority of respondents believe that nuclear weapons should be eliminated and the majority of participants are strongly concerned about the topic. It is also noticeable that the majority of people who participated in a survey choose international negotiations to be the most efficient way to achieve the global denuclearization. Despite the strong interest towards the topic among survey participants, the overall interest to

subject among young educated people seems to be quite low judging from the representativeness of the sample.

THEORETICAL BACKGROUND ON GLOBAL DENUCLEARIZATION AND NUCLEAR NON-PROLIFERATION

In this chapter the theoretical background is provided as well as the literature review. The aim of this section is to provide a foundation for the research subject by outlining the arguments for and against the existence of nuclear arms based on existing literature, as well as to bring out the main strategies (approaches) towards the global denuclearization. Even though the current study focuses on the connection between perceptions and decision-making on the topic of nuclear weapons proliferation, identifying the pros and cons of nuclear weapons existence, as well as justifying the necessity of global denuclearization, aims to provide a reader with further reasoning why the subject of global nuclear weapons existence is important and, hence, chosen for the current research. Additionally, the straightaway discussion of approaches towards the global denuclearization seems to be inaccessible without an appropriate discourse about why the denuclearization is needed after all and what are the positive and negative sides of nuclear arms existence.

1. Terminology

When talking about the topic of abolition of nuclear weapons and examining the related literature, one probably may notice that the subject usually employs a few most common terms, such as denuclearization, nuclear disarmament and nuclear arms non-proliferation. The subject of the current study makes it to be no exception to this commonality and, hence, it would be important to at least shortly outline the difference between the three concepts and to justify their usage in this research.

There might be an impression that the terms “denuclearization”, “nuclear disarmament” and “nuclear arms non-proliferation” may sound as the ones having a similar meaning, but there is still a difference between them. According to Gastelum (2012), the international

community does not have a single legally right definition for nuclear disarmament. However, the difference between the “denuclearization” and “nuclear disarmament” in this case lies in that the first one basically means the removal of an opportunity for the certain country to produce nuclear arms, while the second one means the overall reduce in quantity of available nuclear weapons in the world. (Gastelum 2012, 3 - 4). Another research by Osaghae (2016) suggests that the term “denuclearization” refers only to elimination of nuclear arms in the countries possessing such weapons. At the same time, the term “nuclear non-proliferation” mostly means the prohibition of transferring or spreading nuclear arms from the countries possessing them to the states that do not yet have this kind of weapons. (Osaghae 2016, 8)

It is important to outline that even though these three terms bring slightly different definitions, the current paper makes use of and focuses on all three definitions and these will be used in the text reciprocally.

2. Why is there a need for the global denuclearization?

The basic and the most important need for the global denuclearization arises, obviously, from the destructive power of nuclear weapons. Nuclear explosions, that are thousands times more powerful than the conventional explosives, not only require less explosive material in order to be produced, but also cause an invisible killing power that may not be eliminated for years or even decades – the radioactive contamination (Glasstone et. Al. 1977, 1). The history did prove how deadly the nuclear weapons are – it is enough to remember the Hiroshima & Nagasaki bombings. On 6 August 1945 marked the first time in history when the nuclear arms were used against the real enemy. The original report by the Manhattan Engineer District of the United States Army published in June 1946 states that two blasts of atomic bombs took lives of more than 100,000 people of Hiroshima and Nagasaki instantly. The amount of injured people at that time was nearly the same. The largest parts of both cities were razed to the ground. (MED 1946, 3 – 6) Surprisingly, the example of consequences of using nuclear weapons in Hiroshima & Nagasaki did not stop the further global development and proliferation of nuclear arms. The time period between the 1945 – 1999 is remarkable due to the enormous amount of nuclear arms tests conducted mainly in the USA and USSR. The year 1961 marked the test of the largest man-made explosion of nuclear bomb in history so far. It was carried out by the USSR and the blast was 1400 times more powerful than both

Hiroshima and Nagasaki explosions combined (Dias et. Al., 6). The perceptible atmosphere pressure wave circled the globe three times after the explosion and the blast wave was felt by the people living in 1000 kilometers from the epicenter of the explosion. Generally, the test did show that the power of man-made nuclear explosion has no limits – it is just the question of the mankind survival.

As the danger posed by the possible use of nuclear arms might be the main reason for the global denuclearization and nuclear non-proliferation, another one lies the large amount of nuclear weapons stockpiles that exist in the world nowadays. The reports on the current amount of world’s nuclear stockpiles presented by The Bulletin of the Atomic Scientists state that “A quarter century after the end of the Cold War, the world’s combined stockpiles of nuclear weapons remain at unacceptably high levels” and the statistics that are currently presented just prove this fact (Ploughshares Fund 2017). Table below is summarizing the amount of nuclear arms stockpiles by the possessor states:

Table 1: The total amount of nuclear warheads available by the possessor states

The country	Total amount of nuclear warheads
Russian Federation	7000
USA	6780
France	300
China	260
UK	215
Pakistan	130
India	120
Israel	80
North Korea	15 or less

Source: Kristensen & Norris (2017), retrieved from (<https://goo.gl/pyvxEZ>)

The table above sums up all available nuclear warheads by the possessor countries for the state of 2017. The total numbers are approximate because the exact amounts of nuclear warheads are the confidential information for every state possessing them. Additionally, the total amounts here include both ready-to-use nuclear warheads as well as retired ones but that are still in working condition and might possibly be used. The separate reports published by

Kristensen & Norris for every state mentioned in the table above also include the intentions of possessing countries to gradually reduce the amount of nuclear weapons. The one example of noticeable reduce in amount of nuclear weapons belongs to the UK: the country produced ~1200 nuclear warheads in the time period of 1953 – 2013 but, currently, this amount was reduced to only 215 nuclear warheads (Kristensen & Norris 2015, 69 - 74). However, despite the decrease of nuclear arms stockpiles in some countries, we still see that the total global amounts of nuclear arms available nowadays are enormous. If the stockpiles of nuclear weapons stay on the same level or continue to grow, the threat of their usage against the enemy state is present.

In order to prevent the nuclear arms proliferation, the NPT treaty was developed in 1995 and was prolonged to be active indefinitely. While the treaty is aimed at eliminating nuclear arms proliferation, its shortcomings pose another reason for the new urgent actions and changes that are required towards the achievement of global denuclearization. There are at least two major constraints of the NPT treaty. The first one, as outlined by Granoff (2008), mentions that the two states with the world's largest stockpiles of nuclear weapons – Russia and the USA, have not decreased their own nuclear arsenal and do not plan to get rid of it in the near future. At the same time, these two leading states (in terms of nuclear weapons stockpiles capacity) tend to dictate the rules to the other possessing countries and to prohibit these states of keeping their current and manufacturing their new nuclear weapons. (Granoff 2008, 2) Such an approach seems to be highly ineffective and not logical. The second one, as mentioned by Lettow (2010), states that the whole regime and principles of the NPT treaty are inefficient because it is not capable of enforcing the existing rules – the disregard of core NPT principles by North Korea and Iran prove the fact that the treaty does not have enough power to keep its members intact (Lettow 2010, 3). The current structural weaknesses of the NPT treaty allowed the North Korea to withdraw from the membership and Iran to violate its rules and still develop the nuclear arms.

Overall, the deadliness of nuclear weapons, the huge global stockpiles of nuclear warheads and the shortcomings of the current nuclear non-proliferation regime constitute the main reasons for the need of complete global denuclearization and further ensured nuclear non-proliferation.

3. Is there a positive side of nuclear weapons existence?

While it is difficult to say that the existence of nuclear weapons stockpiles may have any positive effects, it is a true fact that the nuclear weaponry creates a deterrence between the possessing states. This phenomenon is called to be a deterrence theory – the situation when the countries possessing nuclear weapons understand that the use of nuclear arms will cause the retaliation from the other nuclear-capable state against which the nuclear weapon was used. Simply put, it is a mutual understanding that the use of nuclear weapon will cause the identical response from the targeted country against the aggressor state. (Johnson 1998, 2)

The deterrence that comes from the fear of possible use of nuclear weapons might be the key point when the nuclear arms may have the positive role – for example, to prevent the military conflict. The armed conflict is less likely to appear between two states when there is a fear that one of them may use the nuclear power against the other. At the same time, the states possessing nuclear weapons are also less likely to enter the conflict with each other because of the fear to be mutually destructed.

However, the negative fact here is that the nuclear deterrence exists not because it was specially created on purpose, but because it is the only possible way to cope with the existing nuclear weapons stockpiles without the scenario of using them for what they were initially created. According to Delpech (2012), “as long as nuclear weapons exist, deterrence appears to be the most— some would say the only—acceptable policy” (Delpech 2012, 11). In fact, there are few or no working alternatives to nuclear deterrence and it seems to be the only way to ensure that the nuclear weapons will not be actually used. However, the deterrence is not that unbreakable: Delpech (2012) defines at least two reasons for possible failure of nuclear deterrence. First, the states possessing nuclear weapons should define the number of nuclear stockpiles when the deterrence will still be relevant: while the one state may continue to reduce their arsenal, the other one might be averse to do so. In the end, the balance may be simply lost and deterrence will be no longer valid. Second, as the time flies and the government changes, the future leaders may lose control of how to keep the deterrence effective. This might happen because the newer generations of rulers may not be scared enough of using the nuclear weapons simply because of the lack of experience in the real wars and the lack of knowledge about what consequences the use of nuclear arms might cause.

(Delpech 2012, 14)

While this chapter did not address the deeper aspects of nuclear deterrence theory, the analysis of its basic advantages and disadvantages shows that the nuclear deterrence seems to offer a very unstable balance: while currently it keeps the states from using nuclear weapons, it is important to remember that the deterrence theory appeared because of nuclear weapons and not vice-versa. Hence, the deterrence in this case is a subject to plenty of fluctuations that, in the end, might break the balance.

4. Different approaches towards the global denuclearization and nuclear arms non-proliferation

There are plenty of scholarly works regarding the need for the global denuclearization and non-proliferation of nuclear weapons. However, all of them imply completely different views on the process of achieving the denuclearization or even suggest to maintain the nuclear weapons stockpiles for a safer world. This chapter is going to examine the most common possible approaches towards the global denuclearization, their advantages and weaknesses: negotiations approach, sanctions approach, acceptance approach and hard power approach.

4.1. Negotiations

Probably the most promising way to achieve the global denuclearization. The main advantages of negotiations are the uselessness of applying the hard power to achieve nuclear non-proliferation and the general applicability to every country that nowadays possesses the nuclear arms as well as to the “non-nuclear” states. The International Campaign to Abolish the Nuclear Weapons (ICAN) stated that in regards of achieving the adoption of the TPNW treaty that might finally put a ban to use and employment of nuclear weapons, the negotiations are “the genuine opportunity for the international community, at long last, to break through the logjam in multilateral nuclear disarmament efforts and to make real progress towards a world free of nuclear weapons” (ICAN 2017, 9). Another research published back in time by Wright (2009) already suggested that the negotiations towards the Nuclear Weapons Convention is the unavoidable and “politically feasible” matter in order to overcome the dead end in looking for the solutions to nuclear disarmament (Wright 2009, 4). While these researches only mentioned that negotiations towards the solutions for global

denuclearization are important, the report by Nuclear Age Peace Foundation states that the negotiations play the most crucial role and should never come to their dead end because “our future is at stake when nuclear disarmament negotiations stall” (NAPF 2017, 1).

It seems to be the fact that negotiations play a crucial role in creation of the world free of nuclear weapons. Negotiations are the starting point to adopting the international agreements that may finally lead the world to nuclear disarmament and nuclear weapons non-proliferation. The main weakness of negotiations, however, is that they do not always lead to the result as this approach might be purposefully used as a stalling one and the parties are often not legally obliged to continue participating in the negotiations (Orlando, 1).

4.2. Sanctioning

It is a more pressing way in order to achieve a denuclearization and nuclear arms non-proliferation in a certain country. Nowadays, sanctions most often are put in context of nuclear disarmament of countries like North Korea and Iran. While there are many proponents and opponents of using sanctions as a way towards the denuclearization, the research by Haggard (2016) suggests that sanctions played a crucial role in helping Iran to start negotiations and, later on, the gradual relief of sanctions allowed to create an action plan towards the resolution of a situation with possible nuclear weapons development in Iran (Haggard 2016, 940). Another study by Dickson (2016) focuses on the North Korean situation and suggests that, according to the US foreign policy, the nuclear disarmament of North Korea stays on top of the agenda. Hence, the sanctions in this case are a sort of tool that prevents this situation from further escalation that may bring along the use of hard power in order to achieve the North Korean denuclearization (Dickson 2016, 9). The positive effect of sanctions as a tool that helps to avoid armed conflict was also outlined in the research by Yesun (2017) that calls sanctioning to be “a viable alternative to military force and can be an effective instrument for achieving critical foreign policy agendas” (Yesun 2017, 9). As for the shortcomings of using sanctions, the situation is not as straightforward as it seems to be.

On the one hand, there is a widespread negativity about usage of sanctions while they don't bring any results but instead inflict high costs. Additionally, the cases where sanctions are proven to be ineffective receive a very large publicity which only increases the negativity level. Not a very long time ago this was the case with North Korean situation. Plenty of

scholars showed their pessimism regarding the applicability of sanctions towards the North Korean regime. For example, it was stated by Yesun (2017) that the sanctions were proven to be effective in the case of Iran, but not in the case of the DPRK. It was a very naïve move to consider both states to be similar in regards of their motivation towards the development of nuclear program. (Yesun 2017, 14) Additionally, DeThomas (2016) considered the current sanctions against the North Korean nuclear program to have a little effect – the sanctions are not broad enough to threaten the regime and cannot be considered the one and only tool in order to achieve the denuclearization of DPRK (DeThomas 2016, 8 – 9).

But, on the other hand, the situation has a potential of drastic change after the recent summit between the North and South Korea. While it is still unclear which one of the many reasons drives the regime to halt their nuclear missiles tests, this breakthrough point might be considered by some as nothing more than a clear argument in defense of using economic sanctions against North Korea. Even though the peace establishing process with North Korea is still in its earliest phase, it is very important that it started at all and that it is moving in the right direction, surely not without the help of economic sanctions.

What can be still a crucial limitation of sanctioning, however, is that this approach can only be used against the “rogue states” and not against the leading global powers like the USA. In this aspect, sanctioning seems to benefit the global denuclearization only by fighting the states that are unwanted by the international community to develop the nuclear arms while the countries with the world’s largest nuclear weapons stockpiles (e.g. USA) are left untouched – simply because they are the ones imposing sanctions.

4.3. Nuclear proliferation advocates - acceptance

In the current paper, the so-called acceptance approach revolves around the nuclear deterrence theory that was previously described in Chapter 3 of the existing theoretical framework. In this section, however, the author provides some more theoretical evidence that strongly suggests the existence of nuclear weapons might create a safer world and not only creates a deterrence that prevents states from the military conflict.

According to the theory by K. Waltz, the nuclear weapons are considered to be a tool of national security rather than the inevitable danger to humanity. In Waltz’s point of view, the

states should definitely try to avoid the nuclear war, however, the existence of nuclear weapons creates a deterrence that helps to establish a world security by the means of military force. Additionally, Waltz argues that the nuclear weapons should be proliferated because the more nuclear arms are in existence, the more stable the world order will be. In his opinion, the nuclear deterrence is a very effective guarantee of world security. (Harrington 2016, 93 – 101) Surprisingly, the nuclear deterrence approach takes roots from the long past when Brodie (1946) suggested that the nuclear weapons are not necessarily a tool of war, but they are a tool of deterrence against the enemy that helps to prevent the war (as cited by Sato 2013, 5). Additionally, Bull (2002) confirmed this statement by mentioning that the nuclear deterrence makes states unlikely to use the nuclear arms in a real war (Bull 2002, 146). One more argument was introduced by Perkovich et. Al. (2009) and says that “Nuclear deterrence is one way to build cautious, war-avoiding interests” (Perkovich et al. 2009, 21). This said, the abolition of the nuclear weapons will inevitably lead to a huge military conflict because the major deterrent will not be there anymore. So, one might say that the nuclear armament not only creates a nuclear deterrence, but also contributes to the global security. According to the abovementioned theories it certainly does. However, it is not possible to leave this topic to be one-sided.

The main flaws of the acceptance of nuclear weapons’ existence come from the arguments of the nuclear abolitionists. The research by Perkovich et. Al (2009), in this sense, suggests that the nuclear deterrence makes the nuclear arms possessing states to be the leaders of the world order while the direction of their leadership might be catastrophic. Additionally, the study suggests that the advocates of nuclear deterrence approach strongly neglect the consequences that may arise if their theory fails to work one day. Simply put, the research tries to tell that the benefits of living in a “nuclear-free” world are much higher rather than living in a world of nuclear deterrence that might one day come to terms. (Perkovich et. Al. 2009, 21 – 22) And it is actually hard to argue with this statement – if the deterrence fails, even the middle- or small-sized nuclear weapons may create a chaos that will not be comparable to the destructive power of the conventional war. One more study by Ayson (2001) suggests an interesting yet quite obvious argument that the “more fingers on the nuclear trigger” there are, the higher is the probability of the nuclear war. Additionally, this study also mentions the “dangerous fingers on the nuclear trigger” like North Korea. (Ayson 2001, 2) Again, the argument is quite valuable and it is difficult to argue with this opinion: if

the nuclear weapons are in wrong hands and plenty of countries have access to it, the probability of its use is growing because “any gun will fire one day”.

4.4. Hard power use

Hard power in the current paper is defined as the use of military force in order to achieve the denuclearization. While this approach is criticized by the ultimate majority of scholars and, normally, is not even taken into consideration as it might bring along the nuclear war (e.g. in case of North Korea), the use of hard power, despite its obvious negative effects, is also considered by some to be a possible measure towards the nuclear disarmament. For example, a research by Etzioni (2005) suggests that the use of force may take place in order to achieve the nuclear deproliferation. However, it must be regarded as a “way to go” only if all other measures have failed and if the use of force is legitimized. (Etzioni 2005, 8) Additionally, the research by Spencer (2016) mentions that the use of hard power in regards of nuclear disarmament of North Korea may take place because of the “skepticism that soft power will work” (Spencer 2016, 14). In this case, the author refers to the strategy used by the United States that is typically more inclined to use of hard power.

While the use of military force in order to achieve denuclearization is mentioned in some studies as a possible scenario, there are none that would justify it. Despite existing historical cases that prove the constant readiness of the US to use military force in order to settle the conflicts, Pak et. Al. (2017) mentioned that the US president D. Trump admitted the use of military force to be ineffective way to achieve the nuclear disarmament of North Korea because it might cause way too costly political and economic consequences (Pak et. Al. 2017, 1). More than that, Gray (2011) states that the proponents of military force approach fail to face the ugly reality of war and the consequences that it will bring along (Gray 2011, 7). This said, war may surely be a possible scenario, however, this approach brings along a pure violence so it must be regarded as the very last resort.

The table №2 below is summarizing the four different approaches towards the nuclear proliferation and denuclearization in a simplified and visualized form:

Table 2: Solutions towards denuclearization by approach

Author	Citation	Negotiations approach	Sanctions approach	Acceptance approach	Hard power approach
The International Campaign to Abolish the Nuclear Weapons, ICAN (2017), p.9	“The negotiation of a new legally binding instrument to prohibit nuclear weapons – or, as it is widely known, a ban treaty – is a genuine opportunity for the international community, at long last, to break through the logjam in multilateral nuclear disarmament efforts and to make real progress towards a world free of nuclear weapons.”	X			
Haggard (2016), p.940	“The Iran negotiations demonstrate these dynamics. Sanctions — including secondary sanctions — clearly moved Tehran toward negotiations; it can hardly be argued that they didn’t work.”	X	X		
Spencer (2016), p.14	“Hard power costs more, and in a more economically constrained environment, soft power should be better utilized and resourced. Weisman concludes that the reason for this hard power security culture is because there is skepticism that soft power will work.”				X
Harrington (2016), pp.93-101	“In contrast to the nuclear abolitionists who saw in the spread of nuclear weapons the ultimate danger, Waltz famously defends the ‘spread’ of nuclear weapons, arguing, ‘more may be better’.”			X	
Wright (2009), p.4	“Many states and most antinuclear civil society groups now see negotiations for an NWC in the near future as politically feasible and indeed necessary if we are to	X			

	move beyond the current disarmament stalemate.”				
Dickson (2016), p.9	“The economic sanctions by the U.S and international community on the North are kind of maneuvers that turn away physical weapons or collateral damages in order to prevent the sufferings and mass killings on North Korean citizens.”		X		
Perkovich (2009), p.21	“Nuclear deterrence is one way to build cautious, war-avoiding interests.”			X	
NAPF (2017), p.1	“Above all, our future is at stake when nuclear disarmament negotiations stall.”	X			
Yesun (2017), p.9	“Advocates of this newfound optimism toward economic sanctions acknowledge that sanctions have limitations and do not consistently work; however, they argue that sanctions are a viable alternative to military force and can be an effective instrument for achieving critical foreign policy agendas.”		X		
Etzioni (2005), p.8	“A full implementation of a deproliferation strategy may well have to draw on some exercise of force, when all else fails, and whether such an approach can be legitimated.”				X
Bull (2002), p.146	“What is novel about deterrence in the age of nuclear weapons is that states have been driven to elevate it to the status quo of a prime object of policy by their reluctance to use nuclear weapons in actual war.”			X	

Source: Compiled by the author

As it can be seen from the Table №2 above, there are plenty of different opinions among the scholars towards the ways of achieving the denuclearization. Some of them even consider that there is no need in nuclear disarmament because the existence of the nuclear arms prevents wars and creates safer world (e.g. Waltz). However, most of the researchers agree that there is a need for denuclearization. The most interesting part for us, however, is that their views towards the ways of achieving the nuclear deproliferation are very different. While the different approaches towards the denuclearization among the previous researches are now identified, the next paragraph comes closer to the topic of empirical part of the current research and focuses on the analysis of previous studies of public opinion towards the denuclearization and nuclear proliferation as general.

THEORETICAL BACKGROUND ON PUBLIC PERCEPTIONS TOWARDS THE NUCLEAR WEAPONS

As this paper primarily focuses on discovering public perceptions towards the ways to achieve the global denuclearization, it is very important to examine the overall framework of public perceptions – what does it mean, why exactly the paper defines public perceptions to be its main area of research and how the research on public perceptions correlates with decision-making process.

1. The concept of public perceptions

The basic definition of “perception” is quite understandable and suggests that it is a process of “interpreting and organizing sensation to produce a meaningful experience of the world” (Pickens 2005, 52). More precisely, perception was also identified as “the process by which the individual forms an image of the surrounding reality” (Alvarez et al. 2012, 3). The process itself is split into two major parts: first, it is a recognition of the information (or a stimuli) and, second, it is the interpretation. Simply put, perception is the process of transforming a certain information into something meaningful for a person, usually this transformation is based on the previous experiences of an individual. “Public perceptions”, at the same time, is the same process but it is applied to a larger scale – to a group of individuals, not just one. In academic research, the definition of public perception can be generally defined as the information that was gathered with the help of public survey and represents a public opinion regarding the certain topic (Dowler et al., 2).

Following the latest framework where public perceptions generally represent the public opinion, it would be also very important to draw the difference between the individual and public perceptions. According to the research by Scheufele et al. (1999) which refers to the

Noelle-Neumann's spiral of silence model, public and individual perceptions differ significantly when it comes to expressing the opinion:

The individual's tendency to remain silent when faced with an increasingly unfavorable climate of opinion is a key assumption underlying Noelle-Neumann's (1933) spiral of silence model. Public opinion, in this model, is defined as opinions that can be expressed without risking sanctions or social isolation, or opinions that have to be expressed in order to avoid isolation. (as cited in Scheufele et al. 1999, 28)

For the current paper, this argument may be summarized by saying that an individual might be unwilling to express his/her opinion in the environment that seems to be unfavorable for it because of the risk of being criticized. On the other hand, public opinion (or perceptions) does not follow the same mechanism because it does not fall under risks of overwhelming criticism or does not incur further social isolation. This simple example leads to the fact that perceptions inevitably influence the decision-making, be it the individual or public scenario.

2. How perceptions influence a decision-making process

While the concept of perceptions itself is incredibly extensive and may require a separate research in order to be investigated deep enough, the current paper moves towards a bit different direction and attempts to learn to what extent perceptions influence the decision-making of individuals. As for the previous works regarding this topic, the research by Wanta et al. (2004) suggests that perceptions seem to influence the individual decision-making: it was previously discovered the personal interpretations of any issues significantly influence the decision-making pattern (Wanta et al. 2004, p. 368). When talking about the mechanism itself, the research by Alvarez et al. (2012) claimed that every person has their own and unique way of processing information (a cognitive profile) which, in turn, influences multiple individual preferences among which is the decision-making process of an individual (Alvarez et al. 2012, p. 3). Simply put, individual perceptions towards a certain information definitely influence such factors as decision-making process of that person. A research by Kondalkar et al. developed this idea even further and pointed out that there are multiple factors that influence the individual perceptions and decision-making. These include the adequacy of

information that is received by a person and used as a basis for making a decision, individual prejudices that might affect the decision and actions of an individual, personal habits that might lead to making an obviously wrong decision, narrow timeframes to make a decision and so on (Kondalkar et al., 121 - 122). This information shows that the topic of perceptions and decision-making is not as straightforward as it might seem from the beginning. Perceptions have the influence on decision-making, however, both are subjects to change because of the individual characteristics of a person. The current work tries to employ this idea by not only gathering public perceptions on topic of the global denuclearization, but also by attempting to put respondents before a choice and to give them a chance to make a basic decision based on their perceptions. The forthcoming empirical framework section of the paper reveals the outcomes of this process.

3. Previous researches on public perceptions towards the use of nuclear weapons

The topic of public awareness about the nuclear arms proliferation seems to already have a vast amount of previous related researches. Some of the works were already done in order to gain more insight about how public perceives the existence of nuclear weapons and what is the public opinion regarding the actual use of nuclear arms.

For example, a research by Post et. Al. (2017) identified the two major opinions regarding the use of nuclear arms among the public. The first one states that people prefer the conventional war to nuclear one, but the second one argues that public views the military objective and their country's foreign policy to be the most important aspects and it does not matter for them which type of weapon was used in order to achieve success. The research itself, however, focused on the large survey conducted among American citizens and did show that the public opinion regarding the actual use of nuclear weapons is very dependent on the political messages that public receives – if it is mentioned that the military force is going to be used, public prefers conventional weapons to nuclear ones. At the same time, if there is nothing mentioned about the actual use of force, people tend to equal the use of conventional and nuclear arms. Additionally, the study also shows that public holds some negative prejudice regarding the nuclear weapons but there are none of these regarding the use of conventional arms. (Post et. Al. 2017, 28 – 29) These results are quite peculiar in the sense that people tend not to care about which type of weapon will be used unless they are told that

the military conflict is about to emerge. The positive point is, however, that people do not generally support the use of nuclear arms as a tool of the actual warfare.

Another study by Pelopidas (2017) focuses on European citizens' attitude towards the nuclear weapons and is conducted with the help of the huge survey among the all member states of the EU. The research rejects common assumptions about the lack of knowledge, indifference about the future and large support of nuclear weapons programs among the European citizens. None of these three statements did prove themselves. Instead, it turned out that European citizens seem to be mostly aware about the nuclear weapons that exist in their countries, however, they generally do not support the nuclear arms proliferation and feel that they have no power of changing the government policies regarding the topic. (Pelopidas 2017, 12 – 13) Overall, the study claims that European citizens do not support the nuclear arms proliferation in the EU and are not indifferent about this topic. They probably would like to change the situation but they feel powerless towards the government's policies in this field.

One more research that was partially mentioned in the beginning of this paper was published by Soka Gakkai International (SGI) in 2013. It included a huge survey conducted on young population from nine countries all over the world. The survey aimed to find out if the young population is aware about the consequences of using nuclear arms as well as to find out about their attitudes towards the existence of nuclear weapons. Luckily, the respondents generally believed the nuclear weapons are strongly inhumane and were aware of the possible consequences of using nuclear weapons. However, some noticeable percentage of respondents were not clearly aware of which countries actually possess the nuclear weapons and some of them did show positive attitude towards the existence of nuclear weaponry. (Asai 2013, 2 – 3) In general, the results of this survey were predictable in a sense that older respondents show higher level of awareness towards the existence of, consequences of use of and about the countries possessing the nuclear arms.

There is one more research that might be of an interest for the author of the current paper because it partially focuses on youth's attitudes towards the nuclear weapons. It was written by The Simons Foundation (2007) and conducted a huge survey among young Canadian citizens. The study did show that Canadian population strongly believes that nuclear weapons create a more dangerous world because 9 in 10 respondents did reply so. However, the younger participants aged between 15 – 24 did show even stronger negative attitude towards

the existence of nuclear arms – nearly 93% of respondents from this age group did think that nuclear weapons account for a more dangerous world. (CWP, 40) In order to sum up the findings from the previous researches on public attitudes towards the nuclear weapons proliferation, the table below is presented:

Table 3: Previous researches on public attitudes towards nuclear weapons

Author	Focus of the study	Key findings	Method and sample
Post et. Al. (2017)	Public attitudes regarding the use of nuclear weapons.	Attitudes of people are very dependent on political messages that they receive. Public equals the nuclear weapons to conventional ones if the use of force scenario is not mentioned to them. When talking about using force, public sticks to conventional weapons use strategy.	Survey, 1600 American respondents of different ages.
Pelopidas (2017)	Attitudes of young EU citizens towards the nuclear weapons.	The assumption that young EU citizens are careless about the nuclear proliferation is wrong – instead of carelessness, the results show that young generation is powerless to change the nuclear weapons policies, even though they would've liked to do it.	Survey, 10455 European respondents aged between 14 – 30 years old.
Soka Gakkai International (2013)	Youth attitudes towards the nuclear weapons and consequences of their use.	Most of the respondents believe the nuclear weapons are inhumane and must be banned. However, the public awareness of countries possessing the nuclear arms is very low. Also, the survey showed not very high level of public awareness about the consequences of using nuclear weapons.	Survey, 2840 young respondents from nine countries.

Source: Compiled by the author

As we can see from the results of the previous public surveys, the majority of respondents truly believe the nuclear weapons are dangerous and inhumane. People are also mostly aware

of the consequences that may arise if the nuclear arms are used. However, there are also few negativities that arise from the previous researches: people seem to be little aware of the countries possessing the nuclear weapons and, among the European citizens, the feeling of powerlessness does exist. It shows that public might be willing to vote for changes in nuclear weapons policies, however, they get little chances to do so. One more interesting tendency is that young people seem to be even more negative about the nuclear weapons proliferation than the older respondents. Generally, public does not support the use of nuclear weapons, especially if people are aware that this might be a real-life scenario – there are some opinions that theoretically say nuclear arms might be used in a conflict but these opinions exist only unless people become aware that this might really happen.

EMPIRICAL INVESTIGATION OF CONNECTION EXISTENCE BETWEEN CONTEMPORARY PUBLIC PERCEPTIONS, THE DECISION-MAKING AND READINESS TO ACT

This part of the paper aims to present an empirical evidence of connection between public perceptions towards the global denuclearization and public decision-making on the same topic. The upcoming sections focus on describing the sample and the process of gathering data, analyzing the results of empirical part, defining main trends and drawing up the conclusions.

1. General description of the sample and research process

As it was previously mentioned in the introduction, the sample for the current research was decided to be formed from the young educated people aged under 30 years old and currently residing in Estonia. In order to narrow down the sample size, to make sure it is possible to reach the target audience and to stick to the limited timeframe of gathering replies, the survey was distributed among the four major universities in both Tallinn and Tartu. These include Tallinn University of Technology, University of Tartu, Tallinn University and Estonian Business School. Even though it was possible to reach all four institutes, the response rate was surprisingly low – the total amount of answers received is 57 (N=57). The highest response rate comes from the Tallinn University of Technology – the survey was distributed to approximately 200 people there and 35 answered. The response rate, therefore, is approximately 17.5%. However, the other three schools did not bring that high response rates. The other 22 replies that are left after excluding the Tallinn University of Technology are nearly equally divided between the three universities. Considering that the survey was distributed to at least 150 students in each of three institutes, the response rate for the University of Tartu, Tallinn University and Estonian Business School combined stays at a miserable 4.9%. The author suspects that response rates that are this low arise from the two

aspects: (1) the topic itself is not of great interest for the young educated people in Estonia and (2) the level of cooperation is dramatically different among the chosen schools: in the majority of cases it was possible to deliver the survey to students only indirectly through the school newsletters with various (usually quite low) readability chances. In order to visualize the composition of a sample for the current research, the table below is presented:

Table 4: Composition of the sample

Gender	Number of respondents
Male	24
Female	33
Age group	Number of respondents
16 - 20	7
21 - 25	38
26 - 30	12
Nationality	Number of respondents
Belarus	4
Brazil	1
Egypt	1
Estonia	18
Finland	10
France	1
Georgia	3
Germany	1
Italy	2
Latvia	1
Nigeria	2
Pakistan	1
Russia	6
Slovakia	1
Tanzania	1
Ukraine	2
USA	1
Yemen	1

<i>TOTAL</i>	57
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Source: compiled by the author

As it can be seen from the table above, female respondents turned out to be more responsive rather than males. Additionally, the prevailing age category is 21 – 25 years old. As the survey was conducted in Estonia, it is quite obvious yet noticeable enough to mention that the most common nationality of respondents is Estonian.

Turning back to the research process itself, the electronic survey that was distributed among the students includes 12 (twelve) questions. It starts with the general ones with the aim to define the gender, nationality, age, level of education and current occupation of respondents (see Appendix 1, questions 1 - 5). The questionnaire continues with further topic-related questions. In general, the topic-related section of the survey (excluding additional questions mentioned above) can be formally divided into two parts.

The first part of the survey tries to capture the overall perceptions of respondents towards the denuclearization and nuclear weapons proliferation (see Appendix 1, questions 6, 11, 12). Namely, the author refers to the deterrence theory and focuses on asking respondents if, in their personal opinion, the existence of nuclear arms contributes to global security mechanisms by being largely a measure of deterrence. There is another question that aims to find out the level of concernment of respondents regarding the topic of nuclear weapons proliferation and their possible use on the 1 – 5 scale. The final question of the survey asks respondents if they believe denuclearization is needed at all – it was designed so that it does not only receive “yes or no” answers, but so that it gives a chance to understand the reasoning behind the negative reply. These reasons to answer in defense of keeping the nuclear weapons stockpiles are pre-defined by the author in order to narrow down the huge variety of possible replies – respondents just can choose one option that is closest to their beliefs. The questions asking for necessity of global denuclearization and for the overall level of concernment regarding the topic are deliberately relocated to the end of the survey in order to avoid the “spoiling effect”. Imagine these questions to be in the beginning of a survey: a person believes there is no need for the global denuclearization and is not at all concerned about nuclear arms proliferation topic, then quite an obvious dilemma arises on whether or not to continue filling the survey at all because the upcoming questions will ask respondents what sort of strategy they would choose in order to achieve the global denuclearization and so on.

In order to avoid this trap, it is decided to make the questions of awareness about the topic and necessity of global denuclearization to be concluding ones.

The second part of the survey includes questions specifically designed to connect perceptions and decision-making on the topic of global denuclearization (see Appendix 1, questions 7, 9, 10). In order to find out which approach towards the denuclearization respondents would prefer, the author follows the previous theory-defined set of four possible approaches to achieve the denuclearization: negotiations, sanctioning, hard power and acceptance (no need for the denuclearization). These four approaches are basically the four options to answer the question. It is important to mention that answers to this question are designed based on the following scenario: there are few imaginary states that are unwilling to eliminate their nuclear stockpiles and, therefore, the global denuclearization is impossible unless these countries are denuclearized. Respondents have to choose only one strategy to achieve the denuclearization of these states and, as a general and rationally following outcome, to accomplish the ultimate goal of the global denuclearization. In other words, they can choose between three options of negotiating, sanctioning or military invading resisting states in order to denuclearize them and to achieve the global denuclearization as a goal. The fourth option only assumes that there is no need for the global denuclearization, that states will keep their nukes and refers to the advocates of nuclear weapons proliferation. As it is truly difficult to narrow down such a wide topic to only four possible options to answer, the survey also provides respondents with opportunity to give an open-ended description of the perfect strategy towards the denuclearization (see Appendix 1, question 8). Nevertheless, this question is more of a supplementary type and just gives a better overview of respondents' opinion. Additionally, as the further analysis of results shows, respondents did not define any extra strategies to achieve the denuclearization except the four approaches mentioned above. After the preferred strategy towards the global denuclearization is defined, the task is to link the perceptions of respondents to their decision-making and readiness to take actions on the same topic.

Even though the initial main goal of the paper was to find out if there is a link between perceptions and decision-making, taking actions is often regarded as a natural outcome of making a decision. Therefore, the discussion focuses not only on looking for correlation between perceptions and decision-making, but also between perceptions and readiness to take actions in support of individual opinion. Unfortunately, the essence of the subject quite

obviously does not make it possible for individuals to directly decide and take related actions in the real life on whether or not the states will keep nuclear weapons or eliminate them. However, the survey puts respondents in a scenario where they are able to decide and act accordingly on this topic (see Appendix 1, questions 9, 10). The ultimate goal of this simulation is to gather the replies that will be further used (1) to find out whether perceptions influence the decision-making and (2) to find out whether perceptions influence the readiness to take actions. There are two questions in the survey to address these two issues respectively. The first one is quite direct and asks people if they are ready to support their opinion regarding nuclear arms proliferation and global denuclearization by actions if there is such a chance. The second question is to find out whether respondents would vote for the political party whose goals are overall favorable for them but oppose their opinion regarding the future of nuclear arms proliferation. It is important to stress that this scenario is introduced not to find out the political preferences of people, but in order to find out if perceptions of respondents are strong enough to influence their decision-making process – whether they would decide in favor of their perceptions or not. Overall, the questions are carefully designed in order to make respondents to face a dilemma, a situation where the choice is not simply straightforward. At the same time, in order to avoid the answer options to be too narrow as 90% of the survey questions are of a closed type, the author does not provide only “yes or no” options to answers. Every answer to each survey question is detailed and includes short description that goes beyond seeing a narrow “yes or no” options to answer by respondents (e.g. Appendix 1, question 10). At the same time, each of these descriptive replies are easy to be coded to “yes or no” by the author of the survey in order to prepare the data for analysis.

2. Process of analyzing results

As it was already mentioned before, the current research uses two-staged approach for achieving the aim of the paper which is to find out if contemporary public perceptions towards denuclearization influence the decision-making and readiness to take related actions on the same topic. The two-stages include (1) gathering the data and (2) conducting a statistical analysis to look for some significant correlations. As the main argument of the paper is that public perceptions regarding the most viable denuclearization strategies are correlated to the public decision-making and actions to support their opinion on the topic of global denuclearization, the following hypotheses are constructed:

H0: There are positive and statistically significant correlations between perceptions, decision-making and readiness to act.

H1: There is a positive statistically significant correlation between perceptions and a decision-making and negative statistically significant correlation between perceptions and readiness to act.

H2: There is no statistically significant correlations between perceptions, decision-making and readiness to act.

Therefore, the aim of the statistical analysis is to either confirm or reject these hypotheses. The survey for the current research was largely presented in the form of closed-ended questions. This design of the survey was chosen because closed-ended questions provide answers that are ready to be (1) coded into simple words or phrases and then (2) numerically coded for the statistical analysis. This process follows a basic logic where a “code” relates to a word or a phrase that captures and summarizes the essence of a language-based data (Saldana 2013). The process of basic coding can be visualized in the form of a table with example of question from the survey below:

Table 5: The example of coding

Question	Options to answer	Qualitative code	Numerical code
Given these four choices, which approach do you consider the most reasonable towards the global denuclearization?	Sanctioning the countries that are unwilling to eliminate their nuclear stockpiles by other states until achieving their and then global nuclear disarmament.	Sanctioning approach	1
	International negotiations with the resisting states until achieving their and then global nuclear disarmament.	Negotiations approach	2
	The use of hard power (military conflict) towards resisting countries in order to achieve their and then global denuclearization.	Hard power approach	3
	I believe nuclear weapons contribute to global security mechanisms and there is no	Acceptance approach	4

	need in global denuclearization.		
When deciding whether to vote for the party whose political goals you believe are favorable for you in most of the aspects but oppose your opinion regarding the nuclear proliferation topic, will you consider changing your mind and vote for the different party?	Yes, I will consider changing my mind because it is a decisive factor for me.	Perception is a decisive factor	1
	No, I will not vote for the different party because my opinion regarding nuclear proliferation is not a decisive factor for me.	Perception is not a decisive factor	2

Source: Compiled by the author

The questions shown in the Table above are derived from an actual survey and the answers to these questions are among the ones used for a further statistical analysis. More specifically, the first question gathers the data regarding what kind of approach towards achieving the denuclearization a person chooses. The other question is designed to find out if a person’s perception towards the topic seems to be influencing his/her decision. In this case, the person is facing a basic dilemma which will show if his/her perceptions are a decisive factor when making a decision or not. There is one more question of the same type that is also used for a statistical analysis but does not require coding as the answers are already provided in a numerical form. The aim of the question is to find out to what extent person’s perception towards the topic influence his/her readiness to act in support of their perceptions. This question is: “How willing you believe you are to support your opinion regarding the nuclear proliferation topic with related actions if there is a chance (even a small one) to do so?” and it

gives the respondents an option to evaluate their willingness on a scale from 1 to 5, where 1 is the lowest possible willingness and 5 is the highest.

All other questions that exist in the survey are either of an additional character (e.g. age group, nationality, educational level etc.) or the ones that have an aim to gather the additional noticeable data connected to a research topic that is further used to note down related observations. These questions do not require two-staged coding as they provide only two options of answer: “Yes” or “No”, where “Yes” is coded as 1 and “No” is coded as 2. Additionally, there are two questions which give an option to answer on a scale from 1 to 5. As it was already mentioned above, these do not require further coding as the answer is already in a numerical form.

It is also important to mention that the survey employs one question of an open-ended type: “How would you describe in your own words the perfect strategy to achieve a global denuclearization considering that states possessing nuclear arms are unwilling to eliminate their nuclear stockpiles at their own will?”. The aim of this question is to verify and double-check if the choice of four possible approaches towards the denuclearization provided by the author is enough for respondents to choose from. The table below visualizes how the closed-ended choice of a person links to his/her open-ended reply:

Table 6: Linkage between closed- and open-ended replies

Answer to a closed-ended question	Answer to an open-ended question
I believe nuclear weapons contribute to global security mechanisms and there is no need in global denuclearization.	“There should be no denuclearization, every state should be able to nuclearize under global agreed standards: every state should be able to define its investment in nuclear weapons...”
International negotiations with the resisting states until achieving their and then global nuclear disarmament.	“Negotiation appears to be the only possible solution, both the use of sanctions and hard power could have the opposite result...”
Sanctioning the countries that are unwilling to eliminate their nuclear stockpiles by other states until achieving their and then global	“Cripple the country's financial resources so they are forced to put the money elsewhere...”

nuclear disarmament.	
The use of hard power (military conflict) towards resisting countries in order to achieve their and then global denuclearization.	“To move from negotiations to sanctions and then to military conflict if necessary.”
I believe nuclear weapons contribute to global security mechanisms and there is no need in global denuclearization.	“Make something better or use hard embargos. Overall I'd let countries keep the nukes.”
International negotiations with the resisting states until achieving their and then global nuclear disarmament.	“Increasing international dependencies as an alternative deterrence.”
Sanctioning the countries that are unwilling to eliminate their nuclear stockpiles by other states until achieving their and then global nuclear disarmament.	“I believe there should happen a change in people's minds and beliefs in long-term perspective, so that this action would be done voluntarily.”

Source: Compiled by the author

As it can be seen from the table above, the analysis of the linkage between some examples of the gathered closed-ended and open-ended replies shows that it is mostly enough for the respondents to choose from the four provided options. This simple analysis shows that in the ultimate majority of cases respondents did not just choose any of the four possible options of answer just because they needed to answer the question. When they were asked to describe the ideal strategy to achieve the denuclearization in their own words, the formulated one was very close to the one chosen from the closed-ended options. However, despite this positive fact, it is still important to admit that providing just four possible options to answer still can be identified as a limitation of the current study. The author believes that in the case of the chosen topic there are always some deviations from the provided frames because the nature of the subject is too wide and cannot be easily summarized into the four approaches that are provided to respondents to choose from.

3. Results

The current section represents the findings of the current research. Overall, this chapter could be divided into three parts. Firstly, it represents and discusses the results of a statistical analysis conducted with the aim to find out if there are statistically significant correlations between the (1) public perceptions and (2) decision-making, and (3) readiness to take actions. The statistical analysis will either confirm or reject the hypotheses set in the chapter 3 of the empirical part of the paper. Secondly, the current chapter presents and analyzes the additional noticeable observations regarding the topic conducted with the help of a survey. Thirdly and lastly, the limitations of the current research are identified and discussed.

The public perceptions gathered with the help of question №7 of the current survey are identified as an independent variable, while the readiness to decide based on perceptions (question 9) and readiness to act in support of perceptions (question 10) are used as dependent variables (see Appendix 1, questions 7, 9, 10). Assuming that the correlations are considered statistically significant if they are <0.05 and we are looking for both positive and negative correlations, the two-tailed Pearson correlation test is applied. The results of the Pearson two-tailed correlation test are presented in the table below:

Table 7: Pearson’s correlation test

Correlations				
		Perception	Readiness to decide	Readiness to act
Perception	Pearson Correlation	1	,188	-,042
	Sig. (2-tailed)		,161	,757
	N	57	57	57
Readiness to decide	Pearson Correlation	,188	1	,093
	Sig. (2-tailed)	,161		,491
	N	57	57	57
Readiness to act	Pearson Correlation	-,042	,093	1
	Sig. (2-tailed)	,757	,491	
	N	57	57	57

Source: Compiled by the author

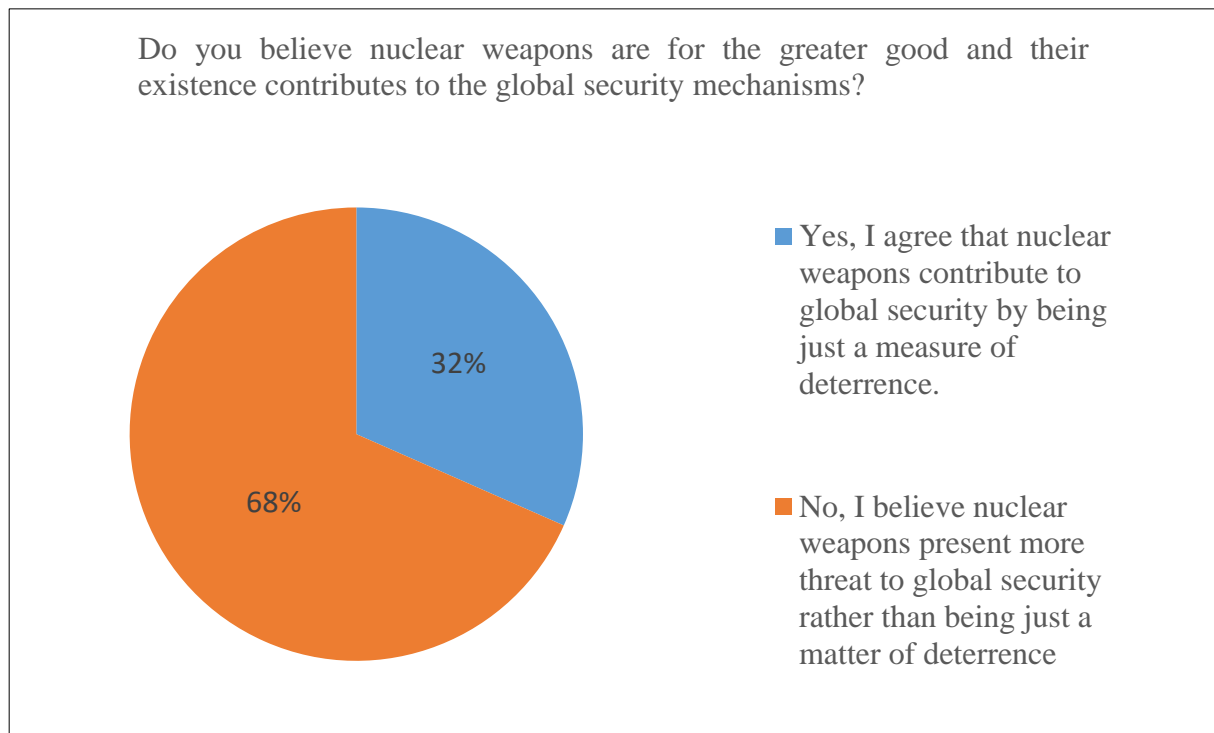
The statistical analysis is carried out with the help of the IBM SPSS statistical analysis tool. The table above identifies that there is a positive correlation between the perceptions and readiness to decide based on these perceptions. However, there is a negative correlation between the perceptions and readiness to act. In other words, it means that the change in perceptions might be negatively influencing the degree of readiness to act based on perceptions. Both of these correlations are marked by a green color in the table above. However, it is very important to note that on the 0.05 significance level both correlations are very weak and are not statistically significant, where the correlation between perceptions and readiness to decide based on perceptions is somewhat getting closer to being significant ($.161$) but is still very weak. Correlation between perceptions and readiness to act based on perceptions is even weaker ($.757$). Such an unsteady correlation might probably show that it is more likely just an occasional correlation rather than a constant one. With such a low level of statistical significance, both correlations are confirmed to be statistically insignificant. According to these results, the null hypothesis (H_0) is rejected in favor of alternative hypothesis (H_2). The H_2 is the only confirmed hypothesis because the statistical analysis showed that there are no statistically significant correlations between the perceptions, decision-making and actions of respondents on the topic of global denuclearization.

It would be also crucial to mention that the most common approach to achieve the denuclearization in respondents' opinion is through negotiations, while sanctioning takes the second place in this chart. The third most common strategy is the acceptance – this means that people who answered in favor of this approach believe that nuclear weapons should not be destroyed. Finally, there were only 4 out of 57 respondents who believed that military conflict is a possible measure to achieve the denuclearization. Judging from the survey replies, it is also noticeable that the majority of respondents believe they are more likely to be willing to support their opinion regarding the nuclear proliferation topic with related actions if there is such a chance, rather than not to do so. But it is surprising that, at the same time, the statistical analysis proved the opposite and showed that there is no significant statistical dependence between these two factors. The majority of respondents also believed that they will not make an important topic-related decision based on their perceptions regarding the nuclear proliferation issue. In this case, the statistical analysis did prove the same – there is no significant statistical dependence between these two factors as well.

3.1. Additional results

As it is mentioned in the previous chapter, the survey also includes three questions of an additional character (see Appendix 1, questions 6, 11, 12). The aim of these questions is to gather a data for noticeable topic-related observations. For example, the question №6 has the aim to find out what percent of respondents believes in a deterrence theory. The question did not ask respondents straightforward if they believe in it or not. It is designed to ask respondents if they believe nuclear weapons are for the greater good and if their existence contributes to the global security, which actually means that nuclear arms are the measure of deterrence. The chart below summarizes the findings:

Figure 1: Deterrence theory believers and non-believers



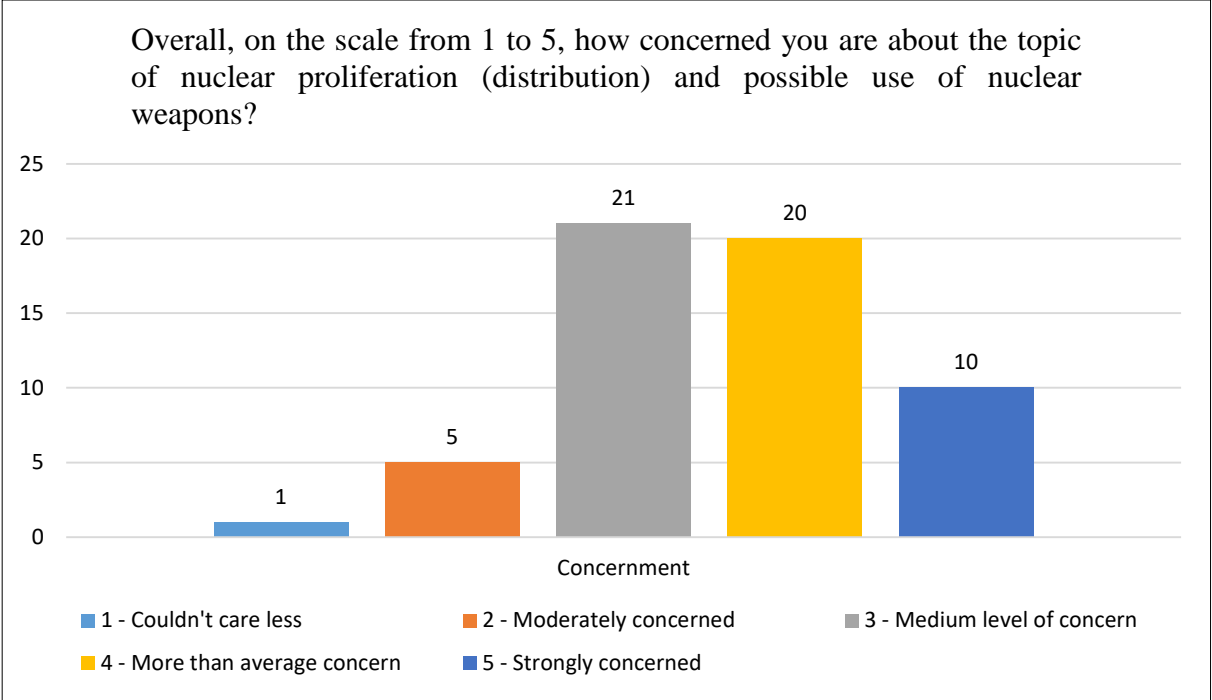
Source: Compiled by the author

As it can be seen from the chart above, the majority of respondents (68%) does not believe in a deterrence theory and still thinks that nuclear weapons must be eliminated. However, 32% of respondents think that nuclear arms are a measure of deterrence and their existence contributes to global security. There is no doubt that these results are highly debatable, however, the aim of this question is just to grab the people’s opinion and to present it because the deterrence approach itself is a large topic that may require a separate study to be fully

addressed. At the same time, the author of the paper believes it is a good trend that majority of people who replied to this question believe that nuclear weapons present more threat rather than just being a measure of deterrence.

Another question (№11 from the survey) has the aim to find out how concerned people are about the topic of nuclear weapons proliferation overall. The findings are presented in a graph below:

Figure 2: Public concernment about the topic



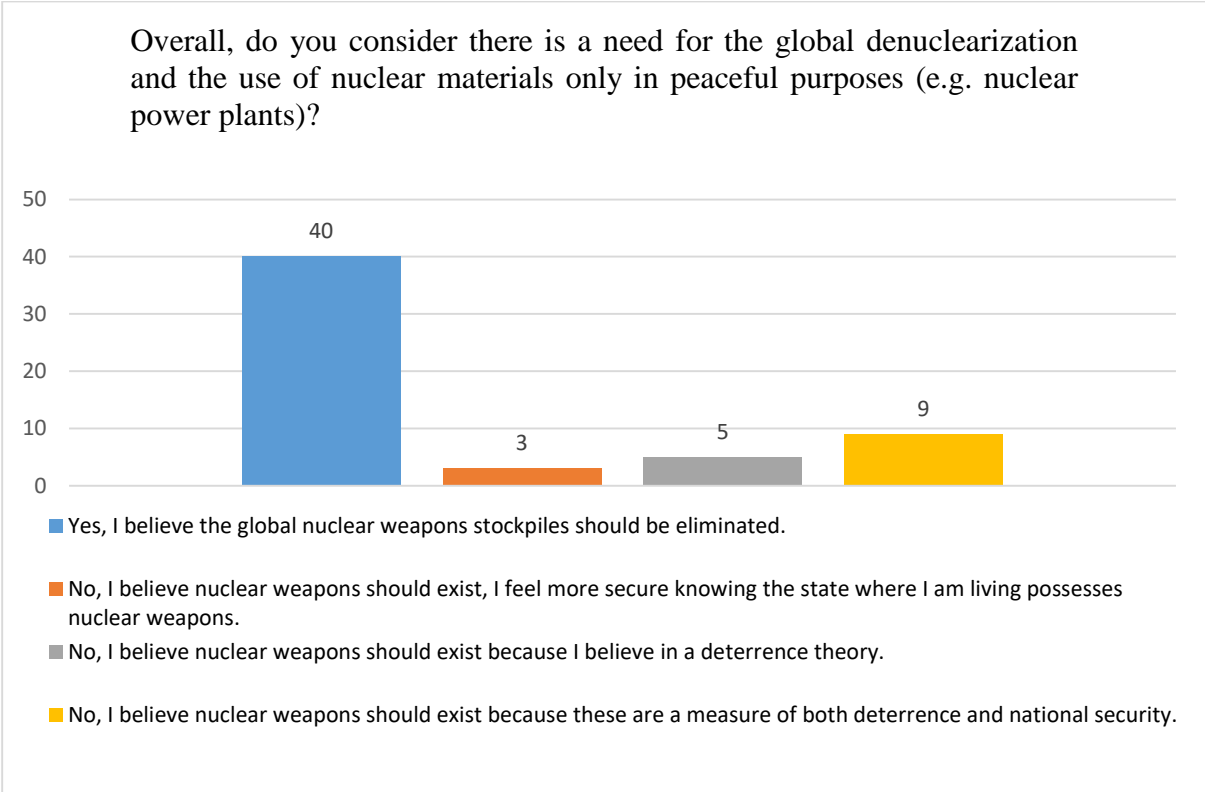
Source: Compiled by the author

As it is seen from the graph above, the large number of people (21 replies) are on the medium level of concern regarding the topic. However, what is surely a positive fact is that 30 respondents are above the average level of concern and 10 people are even strongly concerned about the issue. It is very surprising to find out that people are mostly preoccupied about the topic of nuclear weapons proliferation and the number of average, above average and strongly concerned replies is many times higher than the number of low-interest answers.

The final observation worth mentioning comes from the question №12 of the survey and its aim is to find out if people believe there is the overall need for the global denuclearization and also to find the reasons behind the opinion of people who believe in positive sides of

existence of nuclear weapons (except the deterrence theory). The question is designed in the following way: “Overall, do you consider there is a need for the global denuclearization and the use of nuclear materials only in peaceful purposes (e.g. nuclear power plants)?”. The respondents either have a choice to once again confirm that they believe nuclear weapons should be eliminated or they are asked to choose the reason why they believe nuclear weapons should exist. Respondents can also choose if they feel more secure knowing that state where they live possesses nuclear weapons or if nuclear arms contribute to the national security. As it was already mentioned in the previous chapters, this question about the overall need for the global denuclearization is deliberately put in the end of the survey. The results are summarized in the graph below:

Figure 3: Is there a need for the global denuclearization?



Source: Compiled by the author

The majority of respondents (40 people) confirm that they believe nuclear weapons should be eliminated. However, some of them also mention that they feel more secure living in a country that possesses nuclear weapons which is quite surprising observation. It might also be peculiar that 4 out of 12 respondents who either feel more secure living in a country with

nuclear weapons or believe that nuclear arms are a matter of national security are from the actual nuclear states. However, this percentage is not large enough in order to make any generalizations.

3.2. Limitations of the research

Firstly, some may consider the sample size of the current research (which is $N=57$) to be quite small to make any noticeable generalizations. However, this sample size is rather enough to document the non-existence of the connection between perceptions, decision-making and readiness to act among the sample representatives of the current research. Even though the findings of this research do not support the argument set in the beginning, the results are still valuable because the chosen group of young educated people do not tend to have their perceptions towards the global denuclearization supported by a decision-making or related actions from their side. This research and its results might establish a path for a larger-scale study on a similar topic that will have a larger sample size and, as a result, stronger statistical power.

Secondly, the topic that is chosen for the research is extremely extensive which makes it difficult to gather the required data in the form of a short survey. Topic-specific definitions and the nature of the questions require the standardization of a survey for the general public. At the same time, even after the standardization the survey turns out to be not as short as it ideally can be. Additionally, the nature of the questions makes it impossible to provide short questions and short answers to respondents. Considering this, the survey could of course benefit from the open-ended questions because it is very difficult to standardize the possible answers into the closed-ended options to reply. However, only closed-ended questions are applicable to the chosen methodology – the main survey question is linked to a theoretical framework and, therefore, requires only four specific options to answer. The author did his best to standardize the survey and to provide as accurate options of answers as possible to respondents.

Thirdly, the lack of statistically significant correlations might be considered as a limitation because this result goes against the main argument of the paper that claims there are correlations between perceptions, decision-making and readiness to act. The research proved otherwise and, even considering the size of a sample, the results are valuable in a sense that

not every topic seems to allow a significant correlation between perceptions, decisions and actions of people. In the current study and with its sample size, absence of significant correlations between the three shows that respondents do not have a statistically valid connection between their opinion and their decisions or actions on this exact topic – probably they could have it in regards of a different subject, but not in this one. In this sense, the results of a study on this exact topic are somewhat unique as they go in contrast with the conventional assumption that perceptions influence decision-making and actions of individuals in regards of every topic. Undoubtedly, this result still provides a room for a research with larger number of participants where the bigger sample size would positively influence the validity of a study – even if results will stay the same, the larger statistical power that follows larger sample size will prove the outcomes to be more valid and justified.

SUMMARY

The current research sets the global denuclearization and nuclear weapons proliferation to be its main area of focus. The subject in question is surely highly debatable and fast changing nowadays. It is also extremely extensive in terms of academic researching. Nevertheless, there is a vast amount of related works done in regards of each of the many sides of this topic. Hence, the direction of a research is to be chosen in order to properly understand what side of this vast subject is to be covered by a current work. As the author of this paper personally believes that the global existence of nuclear arms is unnecessary, mostly unjustified and brings more threat to global security system rather than benefits it, it was peculiar to find out the public perceptions on the same matter. It was decided to proceed in a direction of gathering and analyzing public perceptions on the topic of relevance of global denuclearization and nuclear arms proliferation. However, it is not only to find out what is the public opinion regarding this topic, but also to understand if it influences decision-making and actions of individuals – if public opinion can actually cause a change in the system and help to achieve the global denuclearization. Despite the fact that previous studies identified that perceptions quite naturally influence the decision-making process and even actions of an individual, it turned out to be not the case in the research related to global denuclearization and nuclear weapons proliferation.

Even though this outcome might seem to be undesirable when taking into consideration the relevance of the topic, it is important to outline that by all counts, and with proven results, the answer to a research question of the current study is negative. The study proved that in the scale of the current research, contemporary public perceptions of young educated people do not influence their decision-making and readiness to act on the same topic as there are no statistically significant correlations between the perceptions of respondents, their decision-making and readiness to act in support of their opinion on the topic of global denuclearization. However, it is crucial to admit that the scale of the research makes the results to be only valid for the sample group of the current study. When answering the question “Do contemporary

perceptions of young educated people towards denuclearization influence their decision-making and readiness to act on the same topic?”, it is important to acknowledge that the findings are legit only for the sample size mentioned in the current study – 57 young educated people of different nationalities, different educational levels and various social statuses, but currently residing in Estonia. Additionally, the word “influence” should be understood by a reader as a presence of statistically significant correlations between perceptions of respondents, their decision-making and readiness to take related actions to support their opinion. Hopefully, this limitation in the form of a sample size has a room for change in the larger-scale research on the similar topic.

Despite the lack of statistically significant correlations, the research identified that the public awareness about the global denuclearization and nuclear weapons proliferation in the scale of 57 participants seems to be appropriate – the ones who participated in the survey tend to be mostly familiar with and concerned about the subject in question. Additionally, sample representatives seem to have versatile and diverse opinions regarding the global denuclearization and nuclear arms proliferation which is very good indicator for analyzing the research and, what is even better, the majority of participants believe that there is certainly a need for the global denuclearization and nuclear weapons should be eliminated. Even though there are a few nuclear deterrence advocates and adherents of military conflict as a possible way to achieve the denuclearization, the most common opinion is that nuclear weapons stockpiles should be destroyed and the denuclearization should be achieved through international negotiations, not by sanctioning or by military force. These are, overall, quite positive results.

Even considering the above-mentioned findings, there is clearly a need for a larger scale research in order to generalize the results that are currently applied only to the small sample of this study. Even though the aim of this work was to carry out a research on existence of connection between perceptions, decision-making and actions of a relatively small group of respondents on the topic of global denuclearization and nuclear weapons proliferation, there is surely a room for a way larger study on this phenomenon. For the future research more focus should be done in order to increase involvement of public audience into the topic of global denuclearization and nuclear arms proliferation - the representativeness of the sample for the current work showed that the topic probably is not of the greatest interest for public. However, it brought quite unexpected yet valuable results.

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APPENDIXES

Appendix №1: The survey questions

Question	Options to answer
1) Please, identify your age group.	(1) 16 – 20, (2) 21 – 25, (3) 26 – 30.
2) Please, identify your gender.	(1) Male, (2) Female.
3) You are a citizen of what country?	Open-ended replies.
4) What is your current occupation?	(1) Studying, (2) Working, (3) Working and studying, (4) None of the above.
5) What is your highest educational level?	(1) High School, (2) Bachelor’s degree, (3) Master’s degree, (4) PhD.
6) Do you believe nuclear weapons are for the greater good and their existence contributes to the global security mechanisms?	(1) Yes, I agree that nuclear weapons contribute to global security by being just a measure of deterrence, (2) No, I believe nuclear weapons present more threat to global security rather than being just a matter of deterrence.
7) Given these four choices, which approach do you consider the most reasonable towards the global denuclearization?	(1) Sanctioning the countries that are unwilling to eliminate their nuclear stockpiles by other states until achieving their and then global nuclear disarmament, (2) International negotiations with the resisting states until achieving their and then global nuclear disarmament, (3) The use of hard power (military conflict) towards

	<p>resisting countries in order to achieve their and then global denuclearization,</p> <p>(4) I believe nuclear weapons contribute to global security mechanisms and there is no need in global denuclearization.</p>
<p>8) How would you describe in your own words the perfect strategy to achieve a global denuclearization considering that states possessing nuclear arms are unwilling to eliminate nuclear stockpiles at their own will?</p>	<p>Open-ended replies.</p>
<p>9) How willing you believe you are to support your opinion regarding the nuclear proliferation topic with related actions if there is a chance (even a small one) to do so?</p>	<p>On a scale from 1 to 5, where 1 - I am not ready to support my opinion on this topic by actions, 5 - I would push for actions that support my opinion on this topic.</p>
<p>10) When deciding whether to vote for the party whose political goals you believe are favorable for you in most of the aspects but oppose your opinion regarding the nuclear proliferation topic, will you consider changing your mind and vote for the different party?</p>	<p>(1) No, I will not vote for the different party because my opinion regarding nuclear proliferation is not a decisive factor for me,</p> <p>(2) Yes, I will consider changing my mind because it is a decisive factor for me.</p>
<p>11) Overall, on the scale from 1 to 5, how concerned you are about the topic of nuclear proliferation (distribution) and possible use of nuclear weapons?</p>	<p>On a scale from 1 to 5, where 1 - I couldn't care less, 5 - I am strongly concerned about the topic.</p>
<p>12) Overall, do you consider there is a need for the global denuclearization and the use of nuclear materials only in peaceful purposes (e.g. nuclear power plants)?</p>	<p>(1) Yes, I believe the global nuclear weapons stockpiles should be eliminated,</p> <p>(2) No, I believe nuclear weapons should exist, I feel more secure knowing the state where I am living possesses nuclear weapons,</p> <p>(3) No, I believe nuclear weapons should exist because I</p>

	<p>believe in a deterrence theory,</p>
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	<p>(4) No, I believe nuclear weapons should exist because they are a measure of both deterrence and national security.</p>
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Source: Compiled by the author