

REPORT

The purpose of this survey is to explore individuals' self-perceptions of intelligence. In particular, we are interested in understanding how people view their own IQ and whether this view is correlated with other factors such as age, type of university, gender and political views. We have included the question in the survey that asks respondents whether they think they are smart. By analysing the responses to this question, we hope to gain insights into how people perceive their own intelligence and how this perception may influence their actions and decisions. Ultimately, the results of this study may help us to better understand the role of intelligence in shaping individuals' lives.

There are several institutions that could potentially find a report on the results of a survey on individuals' self-perceptions of intelligence to be useful. Some examples include:

1. Government agencies: Governments may be interested in understanding the factors that influence individuals' self-perceptions of intelligence, as this information could inform policy decisions related to education and acknowledging people with the IQ scale.
2. Research organisations: Researchers and scholars in fields such as psychology, education, and sociology may be interested in using the results of the survey to inform their own research on intelligence and its role in shaping confidence of people
3. Political parties could analyse the data in order to see what age groups are in favour of current government movements and so they could adjust their election programmes to suit any given electorate more.

Our single statistical unit is a person currently at Warsaw centrum and the respondents were selected by a convenience and purposive sampling. We have used a primary method of data gathering, that is by performing a questionnaire with 6 questions at the vicinity of metro Centrum.

IQ-Quantitative variable, level of measurement: Ratio, exemplary level: 89, 97, 123.

Age-Quantitative variable, level of measurement: Ratio, exemplary level: 19, 21, 34.

University-Qualitative variable, level of measurement : Nominal, exemplary level: Public Private.

Government-Qualitative variable, level of measurement: Nominal, exemplary level: Yes ,No

Smart-Qualitative variable, level of measurement: Nominal, exemplary level: Yes, No

Primary data collection, Convenience and preference sampling

Limitations of the research were that due to the usage of primary data we have only gathered data from a small sample size. Furthermore, the fact that we have used convenience and preference sampling at only one location means that the group of respondents included by us was not truly diverse, meaning that our age is concentrated around university age, and we were asking people at only one location that suited us the

most. Also, the number of questions in a questionnaire was limited due to time restraints of the project, in other words it should be mentioned that using secondary data would allow us to include many more variables and thus provide a more detailed rapport, perhaps more useful for some.

ANALYTICAL PART

Sex					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	42	42,0	42,0	42,0
	Male	58	58,0	58,0	100,0
	Total	100	100,0	100,0	

Based on the information that we have got from the sample, we can deduce that **42% of the sample was taken from females and 58% from males.**

University					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Non	17	17,0	17,0	17,0
	Private	31	31,0	31,0	48,0
	Public	52	52,0	52,0	100,0
	Total	100	100,0	100,0	

As for the question, regarding which university the person has studied in, **17% of respondents** have decided not to acquire their higher education, **31% in private** universities and **52% in public.**

Gov					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	83	83,0	83,0	83,0
	YES	17	17,0	17,0	100,0
	Total	100	100,0	100,0	

When asked whether the respondents support the actions of the current government or not, **83% of the whole sample have said to not support the government** and the remaining **17% said to support** the government.

Smart					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	17	17,0	17,0	17,0
	YES	83	83,0	83,0	100,0
	Total	100	100,0	100,0	

To the question of whether the respondents think of themselves as smart/clever people, **17% think that they are not smart** and **83% think otherwise.**

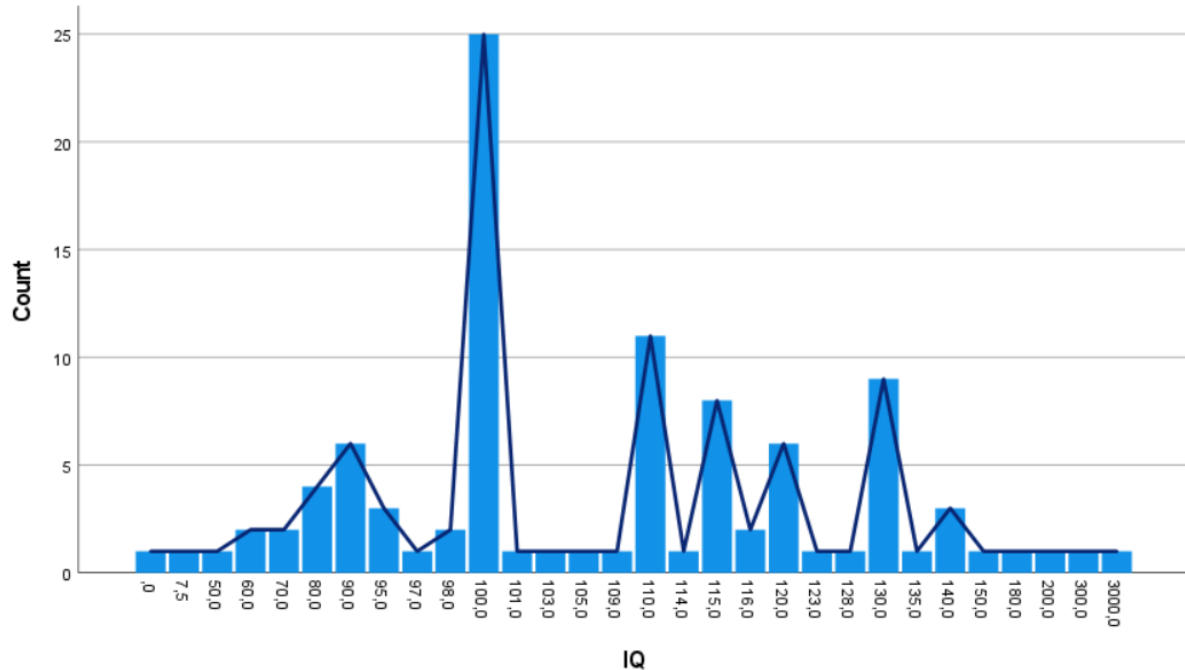
1) AGE

- a) Arithmetic mean is equal to **21,55** which means that the average age of the sample is equal to **21,55**
- b) Standard deviation is equal to **6,48** which means that age of people in the sample is spread by **6,48** years from the mean
- c) Coefficient of variation is equal to **0,3** which means that mean is **3,33** times higher than standard deviation
- d) Median is equal to **20,00** which means that 50% of people are older than **20** years
- e) First quartile is equal to **18,00** which means that 25% of people are younger than **18** years
- f) Third quartile is equal to **21,75** which means that 25% of people are older than **21,75** years
- g) Mode is equal to **20,00** which means that most people in the sample are **20** years old
- h) Skewness is equal to **2,85** which means that the variable is not normally distributed and its skew is positive
- i) Kurtosis is equal to **9,09** which means that variable is not normally distributed and its scores are more focused around one value

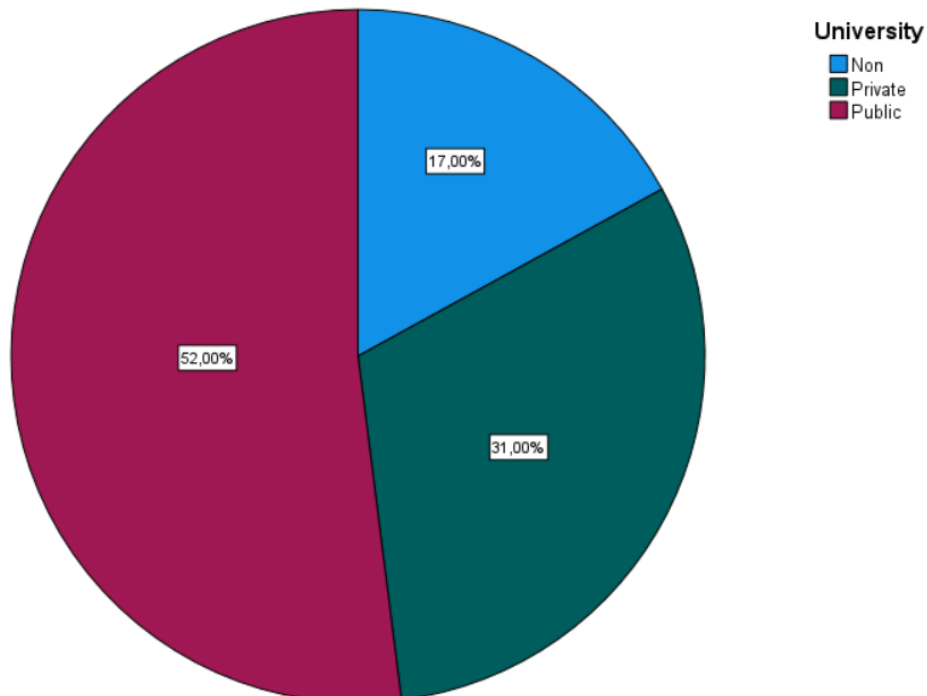
2) IQ Level

- a) Arithmetic mean is equal to **136,76** which means that the average IQ level of the sample is equal to **136,76**
- b) Standard deviation is equal to **291,01** which means that the IQ level of people in the sample is spread by **291,01** IQ points from the mean
- c) Coefficient of variation is equal to **2,13** which means that standard deviation is **2,13** times higher than mean
- d) Median is equal to **104,00** which means that 50% of people in the sample has more IQ points than **104,00**
- e) First quartile is equal to **100,00** which means that 25% of people in the sample has less than **100,00** IQ points
- f) Third quartile is equal to **120,00** which means that 25% of people in the sample has more than **120,00** IQ
- g) Mode is equal to **100,00** which means that most of the people in the sample has **100,00** IQ
- h) Skewness is equal to **9,82** which means that the variable is not normally distributed and its skew is positive
- i) Kurtosis is equal to **97,49** which means that the variable is not normally distributed and its scores are more focused around one value

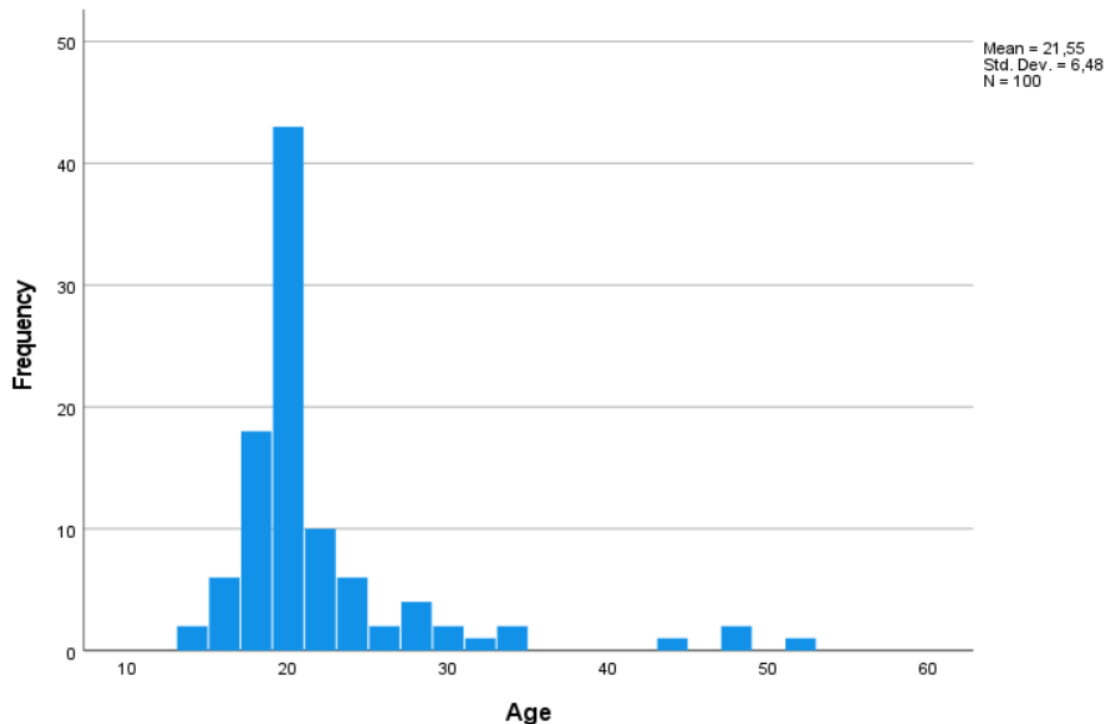
Diagrams



Among the respondents, **most of the people**, that is being **25% of them**, have answered to **have an IQ of 100**. Beside this fact, the other biggest groups of people, who have stated the certain amount of IQ are as follows: **110 IQ - 11%**, **130 IQ - 9%**, **115 IQ - 8%**.

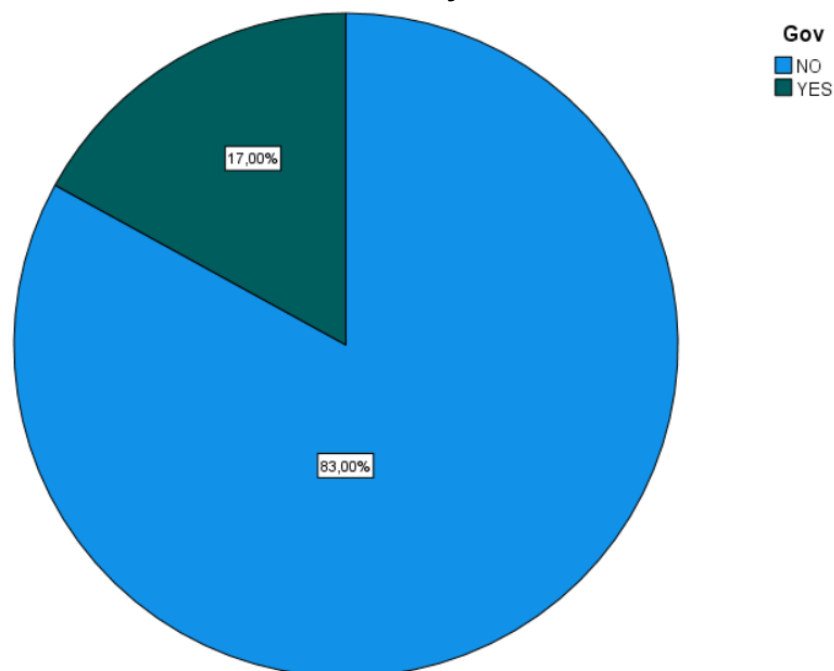


The pie chart illustrates the percentage of people who attended different types of universities. Specifically, it shows that **52% of the people surveyed attended a public university**, **31% attended a private university**, and **17% did not attend any university at all**.



The histogram presents the distribution of ages among the people surveyed.

The age range depicted in the histogram is from 14 years old to 51 years old. The data shows that **31% of the respondents were 20 years old**, **13% were 18 years old**, and **12% were 19 years old**. The histogram gives an overview of the age distribution among the respondents, showing that a significant proportion of the people surveyed are in their **late teens and early twenties**.



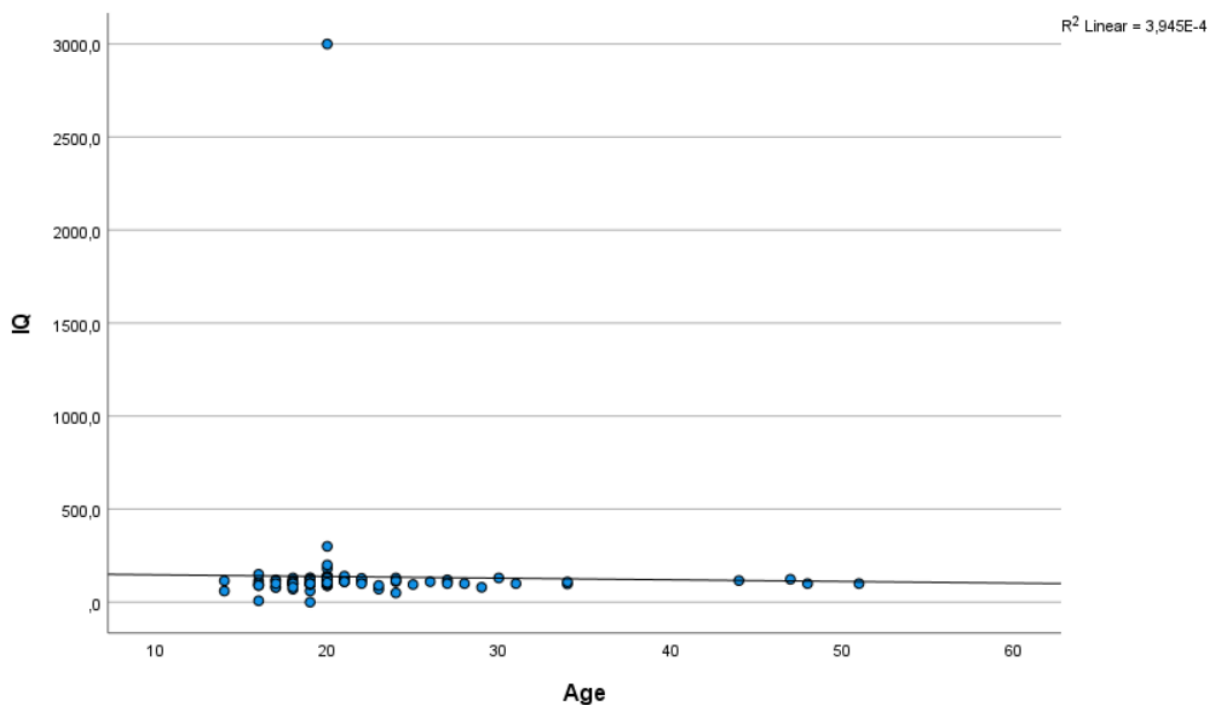
*The pie chart illustrates the percentage of people who support or do not support the current government. The data shows that **83% of the people surveyed do not support the current government**, while **17% of the respondents support it**. This suggests that a majority of people surveyed hold a negative view towards the current government.*

CORRELATION BETWEEN IQ SCORE AND AGE

Correlations

		IQ		Age	
Spearman's rho	IQ	Correlation Coefficient	1,000	,176	
		Sig. (2-tailed)	.	,079	
		N	100	100	
	Age	Correlation Coefficient	,176	1,000	
		Sig. (2-tailed)	,079	.	
		N	100	100	

Due to the fact that variables are not normally distributed we have chosen to use Rho Spearman's analysis. Due to the Rho Spearman's value we can observe that there is a low positive correlation between the variables such as IQ Level and Age. It shows that statistically within the sample the older a person is the higher the IQ score he/she has.



RELATION BETWEEN BEING SMART AND TYPE OF UNIVERSITY

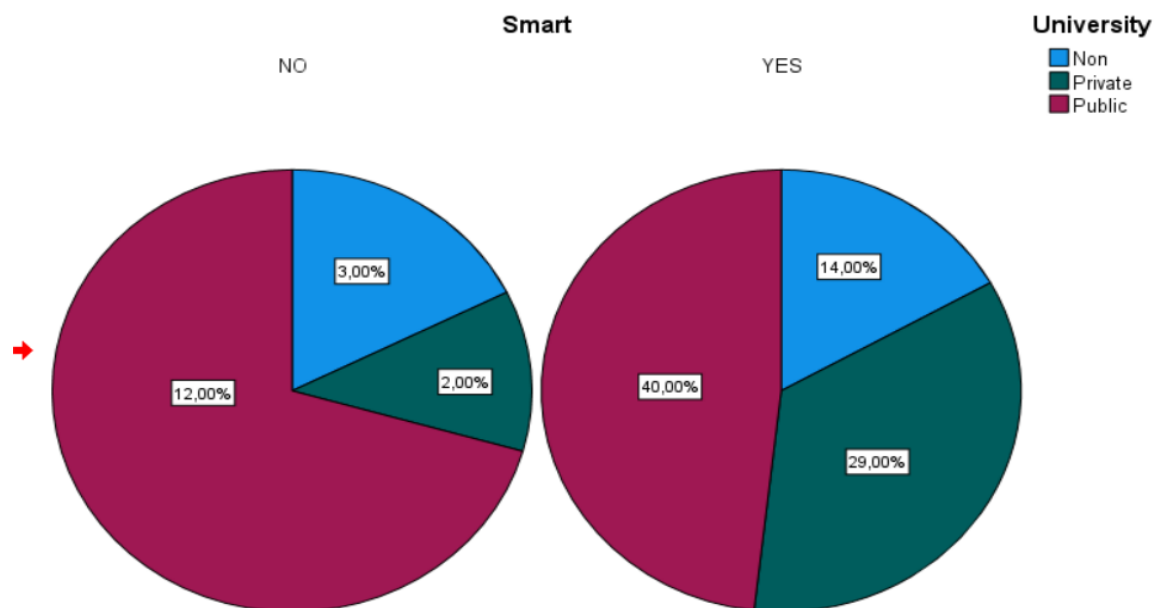
Smart * University Crosstabulation

		University			Total
		Non	Private	Public	
Smart	NO	Count	3	2	12
		% within Smart	17,6%	11,8%	70,6%
		% within University	17,6%	6,5%	23,1%
		% of Total	3,0%	2,0%	12,0%
	YES	Count	14	29	40
		% within Smart	16,9%	34,9%	48,2%
		% within University	82,4%	93,5%	76,9%
		% of Total	14,0%	29,0%	40,0%
Total	Count		17	31	52
	% within Smart		17,0%	31,0%	52,0%
	% within University		100,0%	100,0%	100,0%
	% of Total		17,0%	31,0%	52,0%

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	,195	,149
	Cramer's V	,195	,149
N of Valid Cases		100	

There is a weak relation between the choice of type of university and whether people think they are smart. We can clearly see that 83% of people in the sample think they are smart. However, among people that go to private universities only 2% think that they are not smart, whereas in the case of public universities it's 12%.



RELATION BETWEEN GENDER AND OPINION ABOUT GOVERNMENT

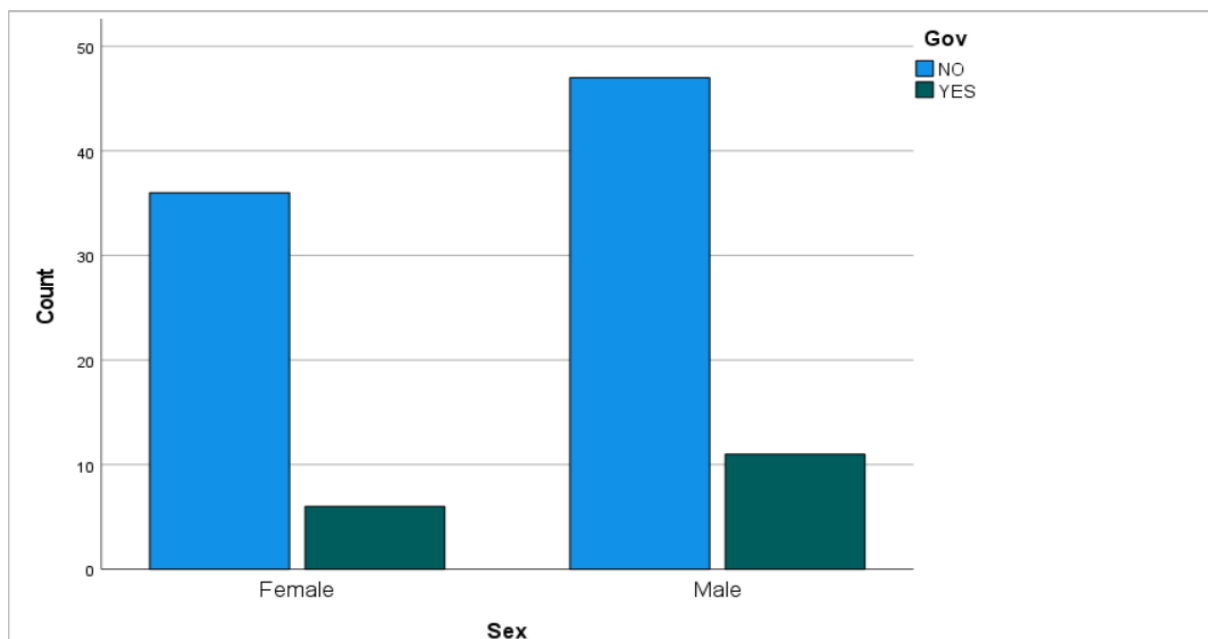
Sex * Gov Crosstabulation

			Gov		
			NO	YES	Total
Sex	Female	Count	36	6	42
		% within Sex	85,7%	14,3%	100,0%
		% within Gov	43,4%	35,3%	42,0%
		% of Total	36,0%	6,0%	42,0%
	Male	Count	47	11	58
		% within Sex	81,0%	19,0%	100,0%
		% within Gov	56,6%	64,7%	58,0%
		% of Total	47,0%	11,0%	58,0%
Total	Count	83	17	100	
	% within Sex	83,0%	17,0%	100,0%	
	% within Gov	100,0%	100,0%	100,0%	
	% of Total	83,0%	17,0%	100,0%	

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	,061	,539
	Cramer's V	,061	,539
N of Valid Cases		100	

There is a very weak relation between the variables. We can notice that 81% of males do not current government movements while within females it is 85,7%. In total 83% of people are against the current government.



RELATION BETWEEN GENDER AND IQ

Now, let us create a pair of hypotheses and get a deeper understanding of the relation between two variables.

H0: Average self-perception of IQ is the same for men and women

H1: Average self-perception of IQ of men and average IQ of women differ

To begin our analysis, we need to check whether this relation has an asymmetrical or normal distribution.

Statistics			
		IQ	Sex
N	Valid	94	94
	Missing	0	0
Mean		106,255	
Median		102,000	
Mode		100,0	
Std. Deviation		18,0131	
Variance		324,472	
Skewness		-,376	
Std. Error of Skewness		,249	
Kurtosis		,902	
Std. Error of Kurtosis		,493	
Range		100,0	
Minimum		50,0	
Maximum		150,0	
Percentiles	25	100,000	
	50	102,000	
	75	116,000	

We can clearly see that both *skewness and kurtosis are within the range of (-1;1)*, which means that this is a data set with a normal distribution. So, we will choose a parametric test, Independent Samples T Test to be precise. It shall give us the results that go like this:

T-Test

Group Statistics					
	Sex	N	Mean	Std. Deviation	Std. Error Mean
IQ	Male	53	107,491	18,3278	2,5175
	Female	41	104,659	17,6941	2,7634

Independent Samples Test										
Levene's Test for Equality of Variances				t-test for Equality of Means						
		F	Sig.	t	df	Significance One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
IQ	Equal variances assumed	,084	,772	,754	92	,226	,453	2,8320	3,7552	-4,6261 10,2902
	Equal variances not assumed			,758	87,557	,225	,451	2,8320	3,7382	-4,5973 10,2614

Independent Samples Effect Sizes					
		Standardizer ^a	Point Estimate	95% Confidence Interval	
IQ	Cohen's d	18,0550	,157	-,252	,565
	Hedges' correction	18,2039	,156	-,250	,560
	Glass's delta	17,6941	,160	-,250	,568

The rather high significance ($p \Rightarrow 0,05$) makes us conclude that the null hypothesis is to be rejected and, thus, we came to the final point that the alternative hypothesis is true, meaning

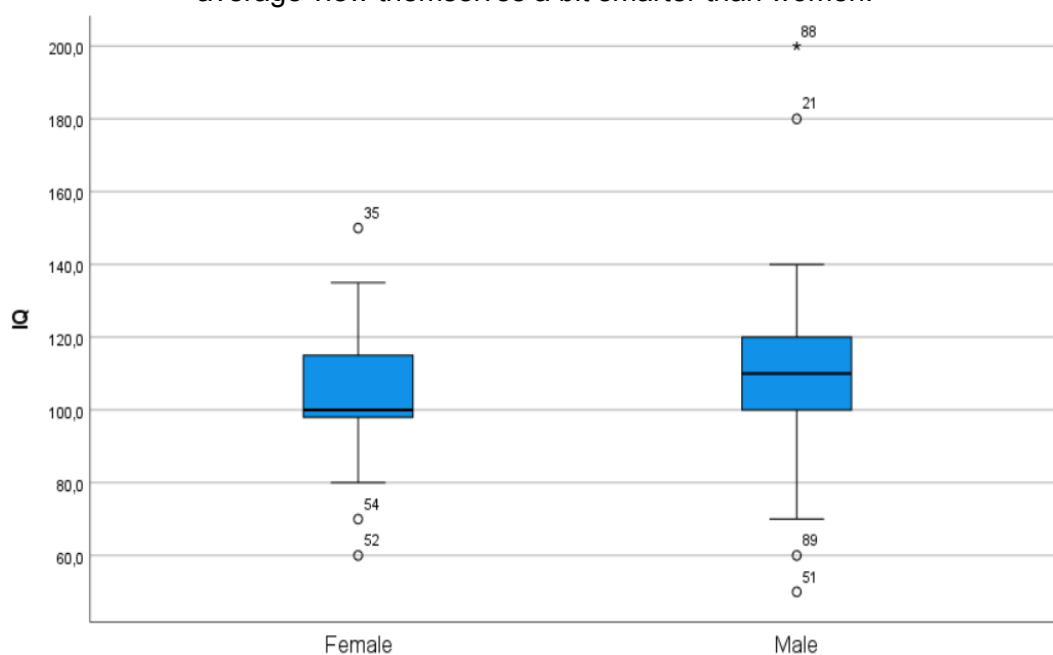
the average IQ of men and average IQ of women differ from each other. However, how big is that difference ?

Statistics			Statistics		
IQ			IQ		
N	Valid	55	N	Valid	41
	Missing	3		Missing	0
Mean		110,491	Mean		104,659
Median		110,000	Median		100,000
Mode		100,0	Mode		100,0
Std. Deviation		23,8777	Std. Deviation		17,6941
Variance		570,143	Variance		313,080
Skewness		,954	Skewness		,065
Std. Error of Skewness		,322	Std. Error of Skewness		,369
Kurtosis		4,155	Kurtosis		,771
Std. Error of Kurtosis		,634	Std. Error of Kurtosis		,724
Range		150,0	Range		90,0
Minimum		50,0	Minimum		60,0
Maximum		200,0	Maximum		150,0
Percentiles	25	100,000	Percentiles	25	98,000
	50	110,000		50	100,000
	75	120,000		75	115,000

MALE

FEMALE

From the data above, we can notice that 50% of males have IQ higher than 110, whereas 50% of females have IQ higher than 100. However, in both groups, males and females, the most frequent answer was 100 IQ. Also, based on the research, we can assume that men on average view themselves a bit smarter than women.



RELATION BETWEEN IQ AND BEING SMART

Let us create hypotheses for these two variables:

H0: On average, people who may see themselves as smart and people who think they are smart have a similar perception of their IQ to each other.

H1: On average, people who think that they are and people who don't think they are smart have a different perception of their IQ between each other.

Let's start the analysis with determining the distribution of data.

Statistics

		IQ	Smart
N	Valid	94	94
	Missing	0	0
Mean		106,255	
Median		102,000	
Mode		100,0	
Std. Deviation		18,0131	
Variance		324,472	
Skewness		-,376	
Std. Error of Skewness		,249	
Kurtosis		,902	
Std. Error of Kurtosis		,493	
Range		100,0	
Minimum		50,0	
Maximum		150,0	
Percentiles	25	100,000	
	50	102,000	
	75	116,000	

As we can see, the relation has a normal distribution, because skewness and kurtosis are in the range between (-1;1). To test the hypotheses, we will use the Independent Samples T Test. Here are the results:

Group Statistics

		Smart	N	Mean	Std. Deviation	Std. Error Mean
IQ	YES		79	109,114	14,6050	1,6432
	NO		15	91,200	26,0390	6,7232

Independent Samples Test

Levene's Test for Equality of Variances				t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
IQ	Equal variances assumed	7,978	,006	3,774	92	<,001	<,001	17,9139	4,7466	8,4867	27,3411
	Equal variances not assumed			2,588	15,712	,010	,020	17,9139	6,9211	3,2199	32,6079

As we can see the significance is smaller than needed to continue this test. We cannot be absolutely sure to conclude that the null hypothesis (N0) is false and there exists a significant difference between the means, as there is a possibility to be a Type II error in the making. Here's how the results may differ among the surveyees.

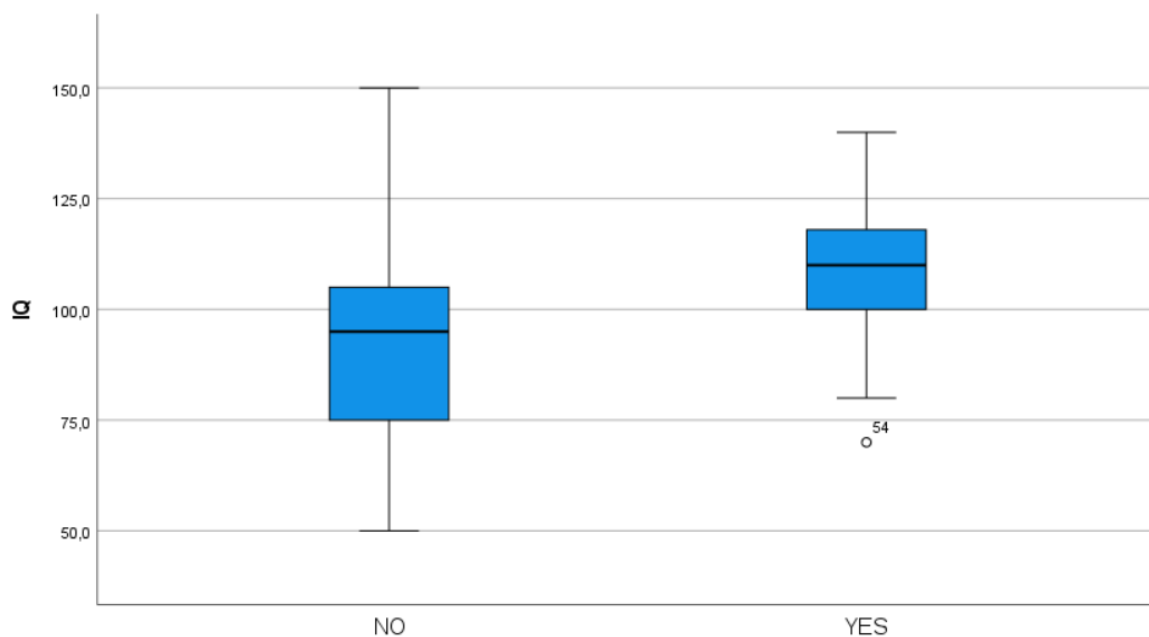
Statistics		
IQ		
N	Valid	15
	Missing	0
Mean		91,200
Median		95,000
Mode		60,0 ^a
Std. Deviation		26,0390
Variance		678,029
Skewness		,460
Std. Error of Skewness		,580
Kurtosis		,512
Std. Error of Kurtosis		1,121
Range		100,0
Minimum		50,0
Maximum		150,0
Percentiles	25	70,000
	50	95,000
	75	110,000

Statistics		
IQ		
N	Valid	79
	Missing	0
Mean		109,114
Median		110,000
Mode		100,0
Std. Deviation		14,6050
Variance		213,307
Skewness		,156
Std. Error of Skewness		,271
Kurtosis		-,126
Std. Error of Kurtosis		,535
Range		70,0
Minimum		70,0
Maximum		140,0
Percentiles	25	100,000
	50	110,000
	75	120,000

DO NOT THINK THEY ARE SMART

THEY DO THINK THEY ARE SMART

Among people that think they are not smart 50% of them have lower IQ than 95, while 50% of people that think they are smart answered that they have more than 110 IQ. Which shows that statistically people that think they are smart have higher IQ.



As a conclusion, the survey shows us how self-perception of intelligence influences people's lives. An extensive sample of respondents was surveyed, representing different ages, genders, and educational backgrounds. In the following section, we summarise the most common data that appeared in the report.

There was an uneven gender distribution in our sample, since 58% of our sample was male. A total of 83% of the sample obtained higher education after completing secondary education, with 52% of the entire sample graduating from public schools. Hence, we can see yet again that the sample was not equally distributed. The 83% of people who do not support the current government was also the same percentage as the percentage of people who think they are smart. Hence, there is a perfect correlation between the two factors.

The average age of our respondents was 21,55, but the standard deviation of 6,48 indicates that some respondents differed by that much from the mean. The most common age among respondents was 20, which represented 31% of the data set. Because our convenience sampling is conducted at a location near Metro Centrum, many people of "school-age" appear. As an explanation of the purposive sampling, we must say that we mainly asked people of the same age as the data collectors.

It appears that respondents' average IQ is 136,76, which is a very high value compared with the national average (97) according to secondary data sources such as worlddata.org. However it must be pointed out that this average is affected by one outlier(IQ 3000) so if we were to omit this single variable it would give us an average of around 107. A standard deviation of 291,01 indicates that some IQs differ from the mean by that amount. In other words, the sample contained people with very different self-perceptions of intelligence. The most common IQ chosen by respondents was 100, which accounted for 25% of the data.

Rho Spearman's value indicates that there is a low positive correlation between IQ Level and Age. Within the sample, statistics show that people with a higher IQ score are older on average. As a result, this research shows that intelligence increases with age.

There is a significant difference in perception between those who take public and private education, with those who take private education having a higher perception. Based on our sample, we can conclude that people who take private education are more confident about their intelligence perception.

It is clear that the current government is less popular with females, but the difference is so small that it is barely significant (4,7% gender disparity). In spite of this, it should be noted that in general, females dislike the current government more than males do.

Among the respondents in our sample, males believe themselves to be smarter than females. Therefore, men have a higher self-perception of intelligence than women.

In order to obtain more data and more precise results, I recommend switching from convenience/purposive to random sample size, since the results are not very accurate with

our small sample size. The best method would be to conduct an anonymous internet survey since we could ask about income and therefore add one more important variable to our data, allowing us to reflect on how income level affects confidence level.

Our research may be useful to government parties that wish to target a particular age group for change based on popularity among different generations of voters. Moreover, psychologists could use the data to study how education and gender influence confidence about self-perception of intelligence.