SQL for Data Science Capstone Project

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Data

This analysis is based on Olympic sports data ranging from 1896 to 2016. With over 66 different sport disciplines.

Audiance

- The audience of this report are Lithuanian basketball strategist, who are interested in knowing, if Lithuanian national basketball team is becoming “older”, “lower” and “older”? As some players return every 4 years to play again for their country. They want to know, if the competitiveness of the national team might decrease due to players physique.

Hypotheses

I have raised following hypotheses:

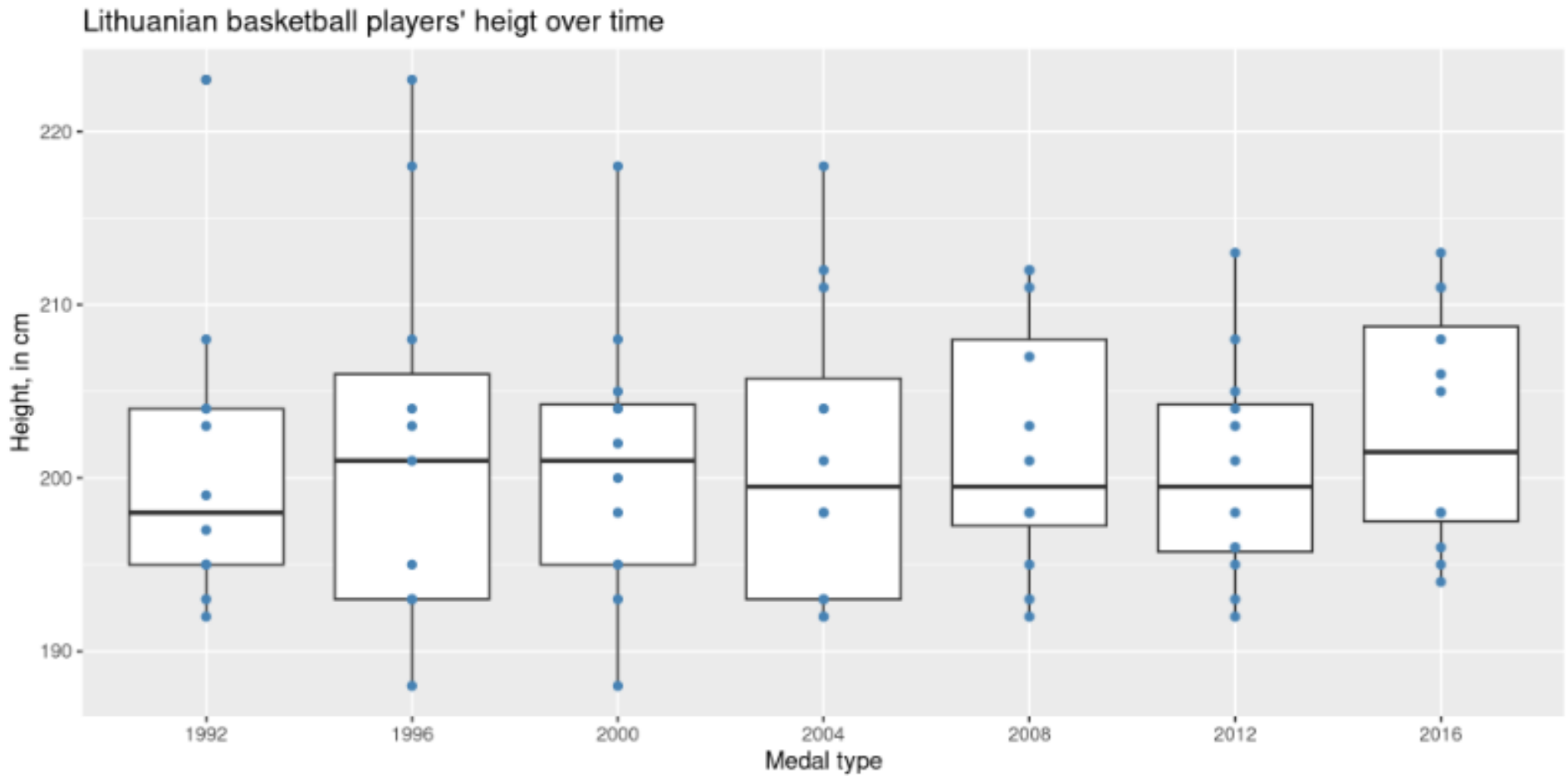
1. Hypothesis average height **decreased** among Lithuanian players at Olympics in period 1992 vs 2016
2. Hypothesis average weight **increased** among Lithuanian players at Olympics in period 1992 vs 2016
3. Hypothesis average age **increased** among Lithuanian players at Olympics in period 1992 vs 2016

H1 Height

1. Hypothesis average height **decreased** among Lithuanian players at Olympics in period 1992 vs 2016

- The Box plot diagram shows that the median has slightly increased over time, while the variation has decreased when comparing to 1996-2004 era.

H1 Height


Lithuanian basketball players' heigt over time
Height, in cm
220
210
200
190
1992
1996
2000
2004
2008
2012
2016
Medal type

H1 Height

Summary statistics table:

Summary statistics

Lithuanian Basketball players

Year	avg_height	sd_height	median_height
1992	200.7	8.7	198.0
1996	201.7	11.1	201.0
2000	200.8	7.9	201.0
2004	201.3	8.7	199.5
2008	201.7	7.3	199.5

H2 Weight

2. Hypothesis average weight **increased** among Lithuanian players at Olympics in period 1992 vs 2016

- The Boxplot diagram shows that the median weight has slightly increased over time, while the variation has remain approximately the same over time.
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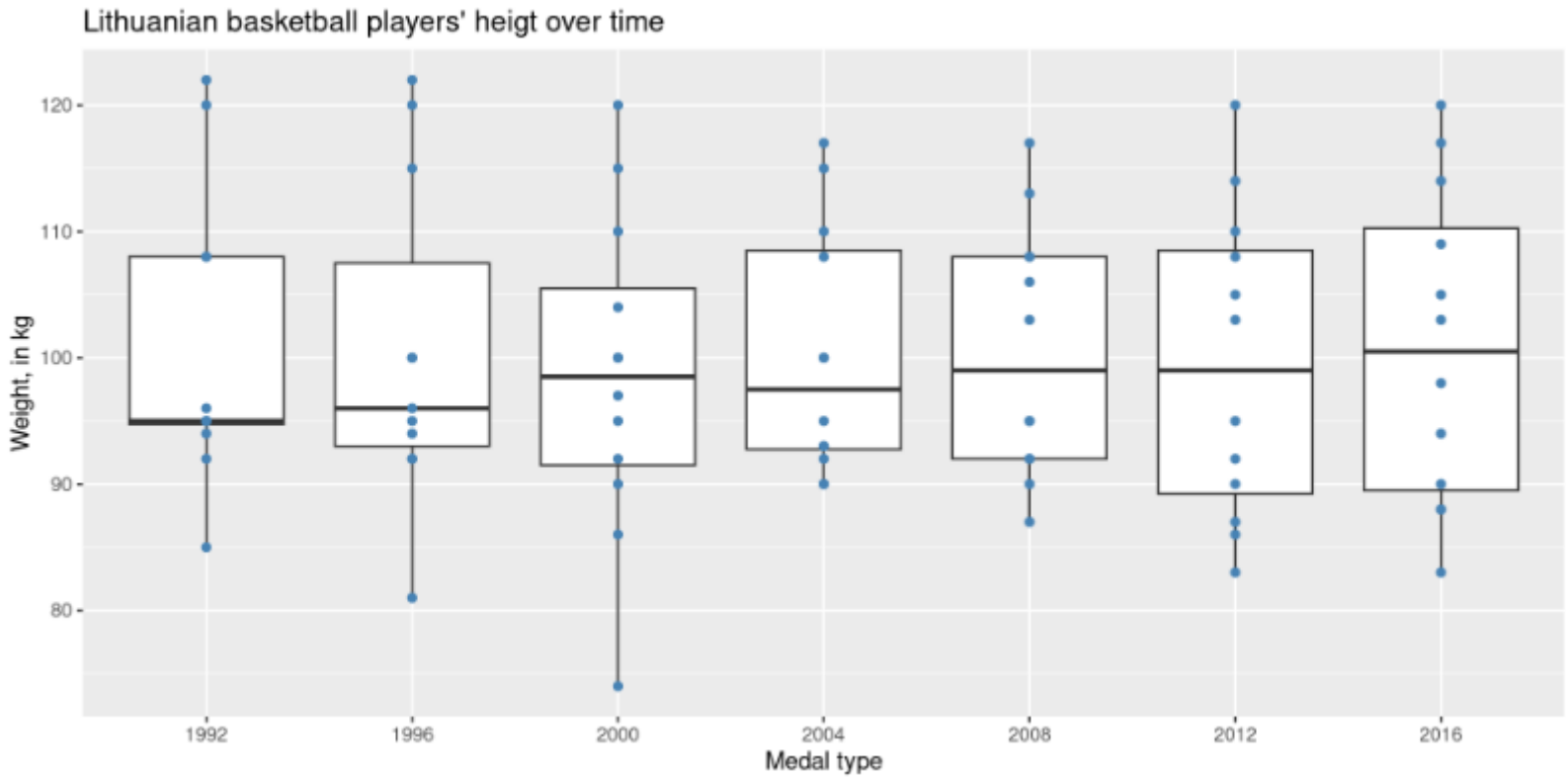
H2 Weight


Lithuanian basketball players' heigt over time
Weight, in kg
120
110
100
90
80
1992
1996
2000
2004
2008
2012
2016
Medal type

H2 Weight

Summary statistics table:

Summary statistics

Lithuanian Basketball players

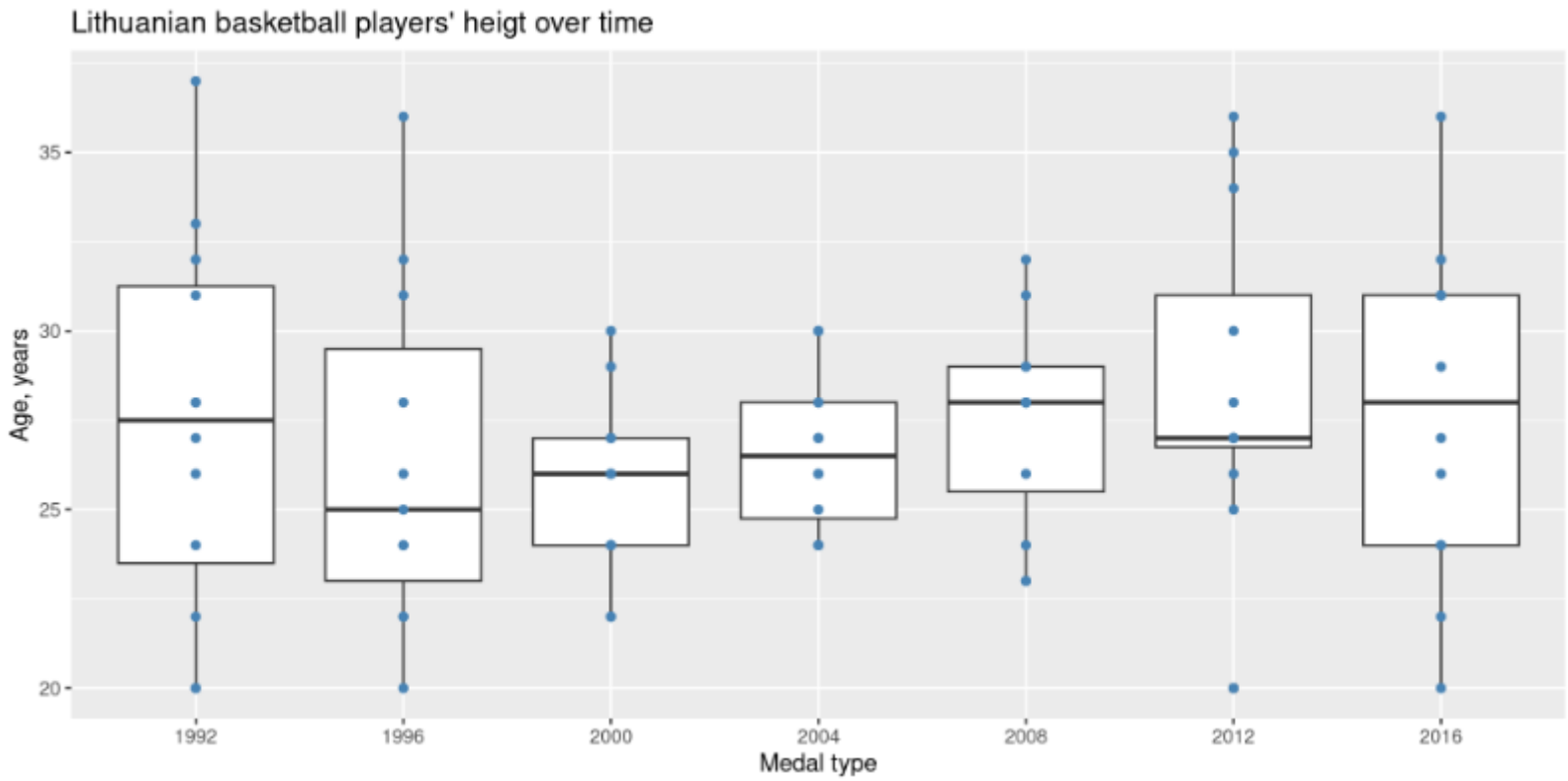
Year	avg_weight	sd_weight	median_weight
1992	100.4	11.5	95.0
1996	100.6	12.9	96.0
2000	98.6	12.7	98.5
2004	100.2	9.8	97.5
2008	100.5	9.9	99.0

H3 Age

3.Hypothesis average age **increased** among Lithuanian players at Olympics in period 1992 vs 2016

- The Box plot diagram shows that in 1922 there was the largest variation in data, then in 1996 the median age dropped and every games past that more or less the same players returned to Olympics, the median age increased. In 2016, although completely different players were playing, the median variation appears to be very similar to 1996

H3 Age


Lithuanian basketball players' heigt over time
Age, years
35
30
25
20
1992
1996
2000
2004
2008
2012
2016
Medal type

H3 Age
Summary statistics

Lithuanian Basketball players

Year	avg_weight	sd_weight	median_weight
1992	100.4	11.5	95.0
1996	100.6	12.9	96.0
2000	98.6	12.7	98.5
2004	100.2	9.8	97.5
2008	100.5	9.9	99.0
2012	99.4	12.2	99.0

Hypotheses testing

Despite exploratory data analysis showing some relative increases in basketball players physique - none of it appears to be significant

Lithuanian basketball players metrics 1992 vs 2016

student-t statiscis for height, weight, age

variable	estimate1	estimate2	rel_change	p.value
Age	27.33	27.75	1.52%	0.841
Height	200.67	202.75	1.04%	0.523
Weight	100.42	100.75	0.33%	0.946

Conclusions

- Lithuanian basketball strategists can be calmed down, despite some players returning to play for their country, the national team does not become older, heavier and does not loose height. Thus competitiveness of national team will depend on skills and not on physique.