

**School of Mathematics and Statistics**

**MSc Data-Intensive Analysis**

**MSc Applied Statistics and Datamining**

**MT5762 INTRODUCTORY DATA ANALYSIS**

GROUP: DRUNKEN MASTER 2

ID Numbers: 180012191; 180025784; 110013122; 180029941, 180024795

**What relationships are there between the measured variables and the birth weight of babies?**

*Producing a model that describes potential drivers of low birth-weight babies.*

Tutor: Dr. Carl Donovan

*“Investigators should, they recommended, assess whether ‘the association between two variables is in fact between the variables investigated and does not merely reflect relationships with a broader group, of which one or the other of the variables forms a part’”*[[1]](#footnote-1).

*“…as concerns grew about the health effects of cigarette smoking, several studies appeared suggesting that smoking mothers were more likely to have babies of lower birthweight compared with nonsmoking mothers”[[2]](#footnote-2).*

*“When looking only at lowbirth weight infants, they found surprisingly that the low birthweight infants of smoking mothers survived considerably better than those of nonsmoking mothers. This appeared highly implausible. ‘It is difficult to visualize a biological mechanism whereby mother’s smoking is the cause for these phenomena—that it exerts a beneficial effect on the infant of ‘low birthweight’ which reduces markedly his risk of early death,’ wrote Yerushalmy. Instead, Yerushalmy suggested that ‘It is not the smoking but the smoker which may offer an explanation for the observed differences’. In other words, the smokers in the study may represent a different group of people whose reproductive experience would have been similar independently of whether or not they smoked. In this case, smoking is not a cause of the difference in birthweight, but is simply correlated with some other factors that are influential”[[3]](#footnote-3).*

*“A prospective study of 2000 women, conducted by Scott Russell and colleagues at the University of Sheffield, had found that in addition to the expected differences in birthweight by smoking status, ‘the percentage of unsuccessful pregnancies (abortion, stillbirth, neonatal death) was higher for smokers’, even when controlling for education, social class, and other factors. This was the first large prospective study to have reported a difference in neonatal mortality. Extrapolating from the data, Russell went on to estimate that one out of every five unsuccessful pregnancies in women who smoked regularly would have been successful if the mother had not smoked during the pregnancy.”[[4]](#footnote-4)*[*14*](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4200064/#dyu163-B14)

*The results continue to serve as a case study in causal inference.*

*‘Yerushalmy’s work gained media attention…The evidence appears, therefore, to support the proposition that the incidence of low birth weight infants is due to the smoker and not the smoking.’*[*20*](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4200064/#dyu163-B20)*The paper received substantial news coverage, including a column in Family Health Magazine titled ‘In defense of smoking moms’.*[*21*](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4200064/#dyu163-B21)

*It wasn’t until 1980, with the report on*The Health Consequences of Smoking for Women*, that a definitive statement appeared in the reports of the Surgeon General regarding the influence of maternal smoking on neonatal mortality.*[*24*](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4200064/#dyu163-B24)*By this time, a substantial body of cohort data tracking birth outcomes was available.*

*In a British population cigarette smoking during pregnancy increased the late fetal plus neonatal mortality rate by 28% and reduced birth weight by 170 g, and these differences persist even after allowing for a number of “mediating” maternal and social variables. A change in smoking habit by the end of the fourth month of pregnancy places a mother in the risk category appropriate to her changed habit. This evidence should have important implications for health education aimed at getting pregnant mothers to give up smoking[[5]](#footnote-5).*

**Executive Summary**

The present report intends to determine what relationships are there between the measured variables (Ethnicity, Age, Smoking habits (…)) and the birth weight of babies[[6]](#footnote-6).

In order to do so it is required to produce a model that describes potential drivers of low birth-weight babies.

**Abbreviations**

**A**

AC

**D**

DNS

**E**

EA

**H**

HACCP

**I**

IDU

**M**

MIS

**O**

ORM

**P**

PG

**Q**

QMS

**R**

RQA

**S**

SGBDR

**T**

TIC

**U**

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**X**

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# INTRODUCTION

As anyone ever said “life is a gamble” to you? Such a statement reflects the feeling thst our lives are surrounded by unpredictable, or “random”, events (Wild & Seber, 2000, p.1).

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| Figure 1 – Variables in Data File Babies  Source: Adopted from:  <https://github.com/ziqsu/MT5762-Project2/blob/master/description%20of%20babies%20data.txt> |
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# METHODS

## Method 1

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## Method 2

“Chegaram em número igual ao das folhas e das flores na primavera, qual nuvem de guerreiros!” (Homero, 2006)

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### Sub method 2

“O investigador que descobriu um novo facto da Natureza tem forçosamente de sentir uma impressão de domínio e de segurança na sua pessoa. Considerar-se-á, com certa justiça aparente, como «um homem que sabe» ” (Gasset, sem data).

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# RESULTS

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## Results Bla 1

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| Figure 3 – bla bla ERP |

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## Results Bla 2

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## Resultas Bla 3

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### Results 31

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### Results 32

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| Figure 4 – bla di bla |

### Results 33

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# DISCUSSION

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| C:\Users\RUI\Downloads\Capture.PNG  Figure 5 – Workflow Cliente ⬄ Servidor |

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## Discussion 1

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### Discussion 11

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#### Discussion 111

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### Discussion 12

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#### Discussion 121

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#### Discussion 122

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## Discussion 2

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| Figure 6 – bla di bla |

### Discussion 21

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| Table 1 – Table *Users*   |  |  | | --- | --- | | Nome | Descrição | | id (Integer, SERIAL PRIMARY KEY) | Número único de um utilizador | | Name (String) | Nome do utilizador | | Email (String, Unique) | Email do utilizador | | HashedPassword (String) | Password codificada | | Role (Admin / Employee) | Papel do utilizador na empresa | |

### Discussion 22

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut varius laoreet consectetur. Nulla in vulputate lacus. In et volutpat ante. In ultrices turpis neque, id dictum erat auctor ac. Pellentesque mattis, magna rutrum rutrum placerat, orci augue molestie nunc, vel porttitor risus tellus non dui. Vivamus id convallis odio. Duis ut nulla id nulla gravida vulputate a condimentum tellus. Ut purus justo, tempus sed iaculis at, accumsan id sapien. Etiam eu massa vehicula, accumsan urna sed, varius magna. Maecenas dapibus arcu leo, et tempus leo tincidunt id.

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| Table 2 – Tabela *businessAreas*   |  |  | | --- | --- | | Nome | Descrição | | id (Integer, SERIAL PRIMARY KEY) | Número único de uma área de negócio | | Name (String) | Nome da área de negócio | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tabela 2 – Tabela *businessAreaOption*   |  |  | | --- | --- | | Nome | Descrição | | id (Integer, SERIAL PRIMARY KEY) | Número único de uma opção da área de negócio | | Name (String) | Nome da opção | | BusinessAreaId (Foreign Key) | Chave estrangeira que referência o número único da área de negócio | |

# CONCLUSIONS AND RECOMMENDATIONS/DISCUSSION SUMMARY

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1. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4200064/ [↑](#footnote-ref-1)
2. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4200064/ [↑](#footnote-ref-2)
3. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4200064/ [↑](#footnote-ref-3)
4. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4200064/> [↑](#footnote-ref-4)
5. Br Med J 1972; 2: 127 doi: <https://doi.org/10.1136/bmj.2.5806.127> (Published 15 April 1972) [↑](#footnote-ref-5)
6. A proporção de empresas com menos de 10 pessoas ao serviço (micro empresas) no total das empresas foi na ordem de 96,2% (em 2015) (INE, 2017, p.32). [↑](#footnote-ref-6)