

Actuarial Society of South Africa

EXAMINATION

October 2022

Subject N211 — Communications

EXAMINERS' REPORT

This subject report has been written with the aim of helping candidates. This report summarises the main points that the examiners were looking for and some common problems encountered.

The examination required the candidates to draft

1. A letter to an editor of a US-based newspaper in response to Covid-19 data interpretations.
2. A presentation to an employer association on the differences in inflation at a household level.

General Examiner’s comments

QUESTION 1

This question required candidates to explain the differences in interpretation of different sources of mortality data associated with Covid-19 in South Africa. The aim was to balance the tone of the letter to an editor of an international newspaper with factual corrections.

Most candidates were able to include the required content reasonably well with better candidates making sure to cover all the sections required in sufficient detail and to highlight the anomaly that occurred in early 2022 due to the audit conducted by the National Department of Health.

Many candidates did not explain the anomaly that Covid-related deaths exceeded excess deaths during February 2022. At the same time, excess deaths appeared to be decreasing while Covid-related deaths were increasing which was incongruous with previous experience. The original article interpreted the anomaly to imply that the Omicron variant was potentially much more harmful than initially anticipated. However, the anomaly was attributable to a historical audit of Covid-related deaths which were added under their audit date instead of death or reporting date.

Some candidates misinterpreted the reference to the anomaly as the marked difference between excess deaths and reported deaths, which the audit attempted to correct, to some degree.

Many candidates lost marks for not highlighting details on the requested graph, either graphically or by way of discussion.

Better candidates were able to communicate the shortcomings in the original article clearly and respectfully and ended by inviting contact if further clarification necessary.

In terms of the word count, many candidates did not count the words and numbers in the graph as requested. As inserted graphics are not counted automatically, they must be added manually. This led to many candidates losing four marks.

Spacing issues in the format also caused a loss of what we term “easy” marks. The default should be on single (not multiple) spacing for Word questions.

Question 1 - Draft Solution

**Communications Question – Data and misinformation in the time of Covid-19
Suggested Solution:**

[Letterhead with full address and contact details]

28 March 2022

*Mr John Wayne, Editor
The Houston Chronicle
1500 Hadley Street
Houston
TX 77002
USA*

Dear Mr Wayne

Covid-19 data in South Africa – differences in interpretation

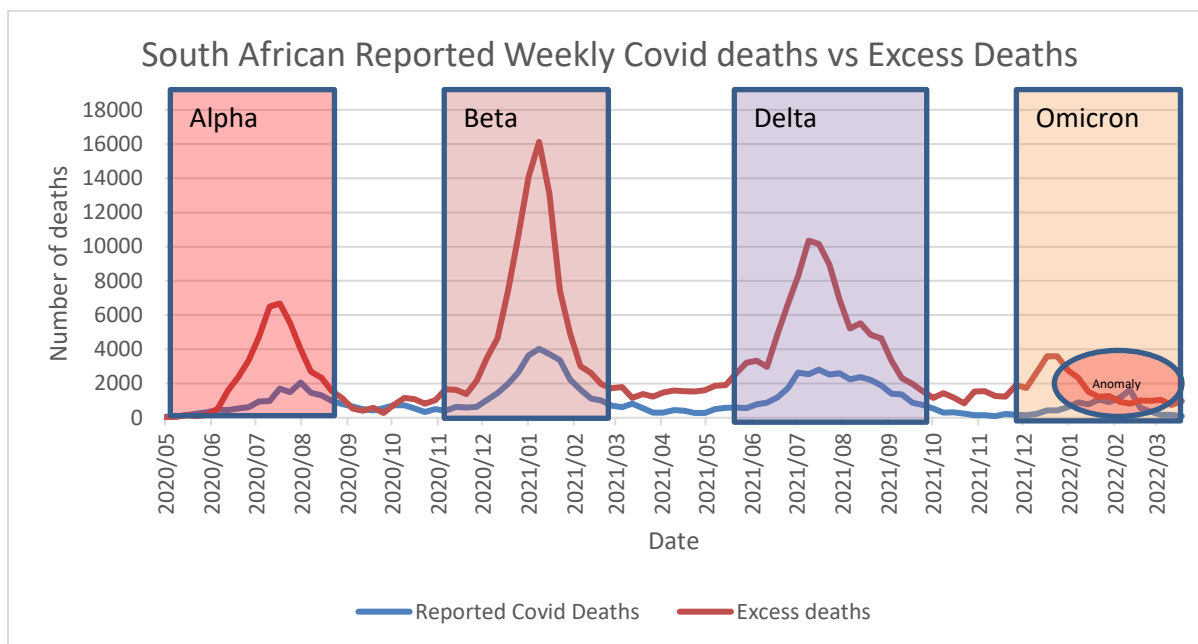
Your article outlining potential problems with South African data reporting on the Covid-19 pandemic has been brought to my attention. While your journalist captured part of the truth, some key information which provides valuable context to the underlying differences in the graph, was not included in the article.

In this letter I will outline the differences between the sources of death reporting associated with the pandemic and how the data may have been misinterpreted.

Sources of data used

Two sources of data have been largely reliable as an indication of the effect of each new variant of Covid as spreading through our population. Your journalist was correct to reference the excess deaths published by the South African Medical Research Council (SAMRC) and the daily death reporting by our National Department of Health (NDoH).

The graph below illustrates the relationship between weekly NDoH reporting and the estimate of excess deaths by the SAMRC.



The above graph illustrates the severity of the effect of Covid on the South African population during the Alpha, Beta and Delta waves in 2020 and 2021. It also shows that Covid-19 deaths were very likely underreported by as much as a factor of three during the first three waves of infection in South Africa.

You can also see that South Africa paid a heavy toll during the early days of the Covid pandemic, with current excess deaths exceeding 300 000.

An anomaly identified

International commentators were particularly concerned about the data being published during February 2022. Although the number of excess deaths were declining, the number of deaths reported appeared to be increasing, as outlined in detail in your publication. The effect of the Omicron variant was largely unknown and there was a lot of speculation surrounding the possible reasons for this anomaly.

Interpreting the data

The NDoH has been conducting an audit of Covid-related deaths over the past six weeks to align total reported deaths with excess deaths. However, audited corrections are not reported by date of death.

The NDoH data is published not by date of death, but by date of reporting. When audits occur, the data is not corrected retrospectively by date of death, and instead reported within the current week. The SAMRC model uses data supplied by the Department of Home Affairs by date of death. Any audits to this data here will make retrospective adjustments in the week of death. Therefore, the difference was due to a difference in underlying definitions of the dates used for each metric.

Currently we are seeing better than expected outcomes from the Omicron variant due to high population immunity and a successful vaccination programme.

Lessons to be learnt

South Africa is in a good position to report on the effects of the pandemic due to the joint efforts of public entities and researchers, but context is key when comparing two different sets of data.

I hope this letter sets your readers’ minds at ease that the data and research from South Africa are sound. However, if you require any additional information, please contact me at a.archer@healthco.co.za.

Yours sincerely

Adam Archer

Adam Archer
Actuary
Healthcare data specialist

Word Count: 583

QUESTION 2

This question asked the candidates to explain why an individual household’s inflation experience may differ from the projected, official inflation figure of 10,5% for 2022. The way in which inflation is calculated was provided in a formula. Sufficient information was given to enable candidates to determine 2022 inflation rates of 11,4% and 14,3% for Association members and their employees respectively. The spending pattern of the average household was not provided, so candidates had to work with the information given to explain why both member and employee household inflation was expected to exceed the official figure and why employee inflation was expected to exceed member inflation.

Candidates had to explain the concept of inflation in general terms, without reproducing the formula, before explaining why household inflation differed from official rates. Some students did not give an appropriate, generic explanation of inflation before moving on to specific households. Others did not address how specific households would differ from the average household on which official figures were based nor give specific examples of differences to cement the ideas for the audience. These were useful in providing context for the remainder of the presentation.

A logical way to explain why a general household’s inflation rate would differ to the official figure was to provide the inflation rate per spending category in the context of the official inflation figure. This could be used to explain why a household spending more than average on travel and food and beverages would have a higher inflation rate as both these spending categories had projected inflation of above 10,5%. Many candidates explained the difference only in context of a difference in percentages spent on travel. If the remainder of the presentation was of a good standard, then these candidates could still have received an exemption level mark for this question. However, it was more difficult to do so if the reason why the three inflation rates ranked as they did was not addressed.

Better candidates showed the breakdown of member and employee spending in percentage terms. This would help members to understand that, even though members spend more in monetary terms than employees on travel, they spend less in percentage terms and would therefore have been less influenced by travel inflation. A number of students failed to give a sufficient explanation of why employees’ projected inflation exceeded that of members.

Question 2 - Draft Solution

Inflation experience
Why household’s experience may differ from official figures

To: WC Gardening Services Association Members
By: Jo Adams

XYZ Labour Management Consultancy

25 October 2022

1

Inflation experience
Why household’s experience may differ from official figures

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Concept behind official inflation figures

Official inflation rate

- Concept = year-on-year average percentage increase in spending cost
 - Based on basket of goods bought by representative household
- 5 categories of spending measured in basket
 - rent, food and beverages, work-related travel, clothing, entertainment/leisure

Inflation influenced by:

- Average amount spent per category
- Average inflation per category

High inflation in high spend category influences average > if in low spend category

Need to consider the high spend categories for your employees!

3

Household differences from average surveyed

Participating households surveyed represent average Lalaland households

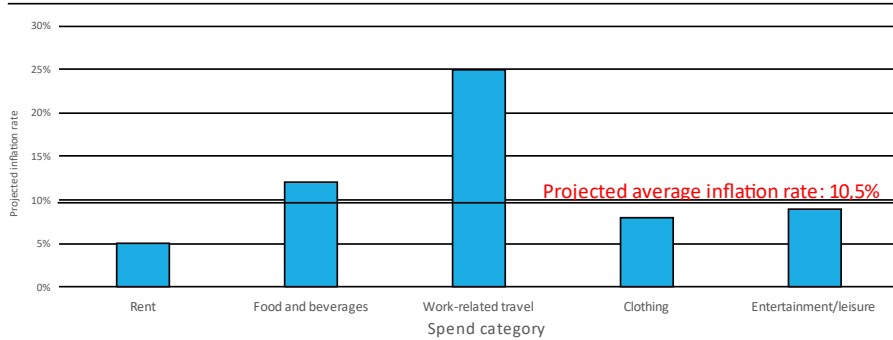
- Geographic spread eg Western Cosmos and other provinces
- Household demographics eg 2 parent, multi-generational, or single occupant etc
- Level of income eg minimum wage, top 2% etc
- Brand of goods purchased eg no-name, Beststore etc

Average household

- Not representative of any real household
 - eg average number of children per household = 2,2 (impossible)
- Spend choice different to real household
 - ➡ different inflation to real households

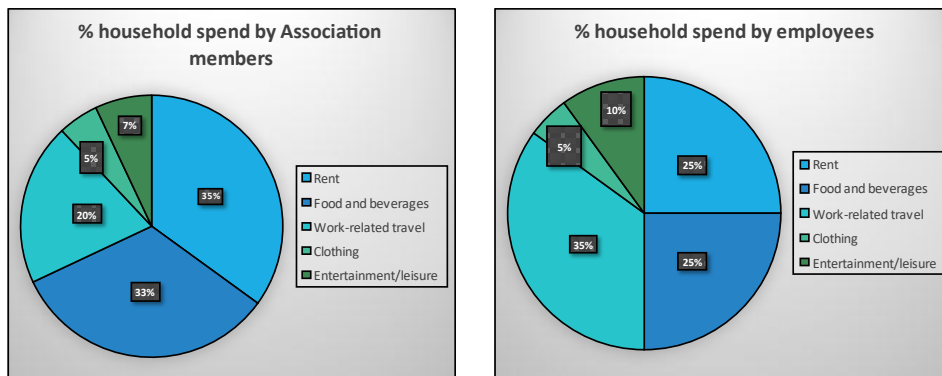
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Projected 2022 inflation by spend category



Household spend more than average on travel and food and beverages
 → household inflation likely higher than 10,5%

Spending patterns: members and employees

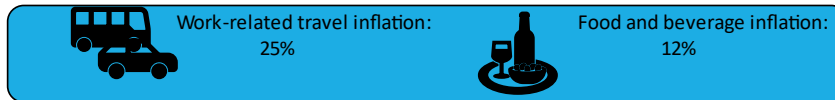


Comparative inflation experience: members and employees

Compared to average households, employees and members

- Spend more on higher-than-average inflation items (travel, food and beverages)
- Spend less on lower-than-average inflation items (other)

⇒ Experience higher than average inflation



Compared to employees, members

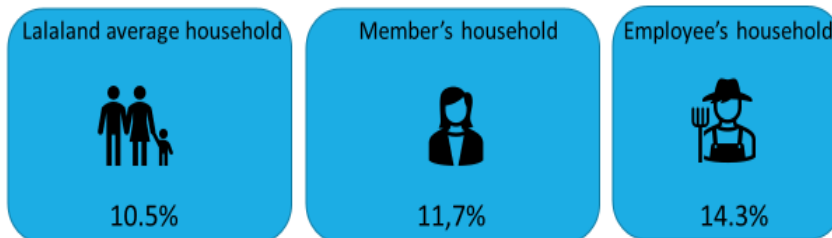
- Spend relatively less on travel than food and beverages

⇒ Experience lower inflation

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Projected inflation experience of households

Expected inflation per household in 2022



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Summary

Official annual inflation rate (2022 = 10,5% projected)

- Based on change in price of average household’s basket of goods
- Differs from actual household’s inflation experience

Actual household experience

- Based on actual spend per category
- Higher inflation than official rates if spend relatively more on high inflation categories

Projected 2022 inflation

- Members = 11,7%
- Employees = 14,3%

Employee service and salary conditions could be adjusted accordingly.

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Any questions?

Contact details:

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Thank you

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END OF EXAMINERS’ REPORT