B9DA106 Data Visualisation: CA_TWO

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Critical Reflection: Tableau vs Power BI

Introduction

This report critically reflects on the experience of creating identical recruitment dashboards using Tableau Public and Power BI Desktop. The assignment involved creating five interconnected visualisations to support football player recruitment decisions for the Director of Recruitment. This assignment helped us to compare capabilities, limitations, and user experiences of both tools.

Dashboard Development

Initial Setup and Data Preparation

One of the main differences we noticed was during the initial setup. In Tableau creating a calculated field helped in quick creation of fields like Primary Position using **SPLIT([Player Positions], ',', 1)**. Power BI required creating columns using Power Query, like **Text.BeforeDelimiter([Player Positions], ",")**. Power BI gives more data transformation options, Tableau's in-context calculations were more useful for quick field creation.

Visualisation Development Experience

Squad Depth Bar Chart

Tableau was way better in giving flexibility for customisation. Manual sorting of positions, custom colour assignments as per the "player urgency" calculated field, and precise label positioning helped get a desirable result. Power BI's implementation revealed significant limitations, the automatic scrollbar for longer lists disturbed the visual flow (Tableau would resize automatically), and there was no option to rotate axis labels or customise tooltips other than basic formatting was very frustrating. We also had to create separate lookup tables for manual sorting which added unnecessary complexity.

Top Players Scatter Plot

Both tools handled the basic scatter plot well, but Tableau's advantage was the very user-friendly UI and flexibility it provided. The logarithmic scale for market value, size by wage, and colour by position worked really well. Power BI did give us the same functionalities but with the extra benefit of having legends inside the visual instead of as separate elements like in Tableau. This integration was cleaner and we didn’t have to think much about where to position the legends on the dashboard.

Scouting Treemap

The treemap showed how Power BI's was better in native visualisations, it was fairly easy to implement without much configuration. However, Tableau's custom tooltip capabilities were much better for providing detail. Power BI's rigid tooltip structure only gave options for field renaming and data type formatting. The inability to add gradient colour legends in Power BI also meant no visual indicator for average player quality.

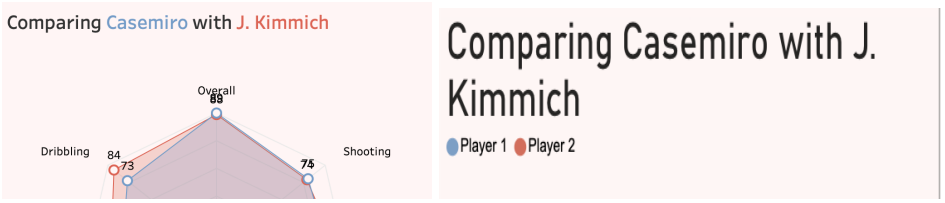
Tooltip in Tableau (Left) vs PowerBI (Right)

Contract Status Donut Chart

Power BI's native donut chart required simple dragging and dropping of fields, while for Tableau we had to do a workaround using dual-axis pie charts and calculated fields. Despite the implementation complexity, Tableau did offer more control over label formatting and positioning.

Player Comparison Radar Chart

We had to use an external extension with limited functionality, while Power BI's native radar chart (available as an "extension" by Microsoft). Power BI did however need an extra "attribute" table that had all values to compare from the original data and multiple measures for creating user control parameters for player selection but still provided a professional result. The inability to replicate Tableau's multi-coloured dynamic titles in Power BI was balanced out by the clean, easy radar chart.



While both tools gave us the option to implement dynamic titles, Tableau (Left) gave the ability to use different colors in title to act as pseudo-legends.

Interactivity and Dashboard Assembly

Dashboard Structure

Tableau's dedicated dashboard workspace was really good for layout designing with clear visual hierarchies. Power BI's page-based approach felt very "user-unfriendly". It required manual copying of visuals to create a unified dashboard, which was very tedious and error-prone as everything was cluttered. The edit interactions mode in Power BI was also very frustrating, with options often hidden behind visuals or off-screen, which all created a really bad user experience compared to Tableau.

Filtering and Actions

Both tools successfully implemented cross-visual filtering, but with different approaches. Tableau's action configuration felt more easy to work with and more clear of what we are doing. The hover highlighting in Tableau gave a small but impactful visual edge, which couldn't be replicated in Power BI . Power BI's slicer for filtering and for parameters was more straightforward than Tableau's parameter controls which often needed a calculated field to implement it.

Critical Evaluation

Tableau Strengths

- **Customisation Depth**: Every element could be customised very easily
- **Tooltip Flexibility**: Custom tooltip options helped with better information delivery
- **Visual Effects**: Multi-coloured titles, dynamic labels, and precise positioning
- **Interface**: Clean UI, automatic resizing and clutter free workspaces

Tableau Limitations

- **Extension Dependency**: Radar chart required third-party extension
- **Complex Workarounds**: Donut chart implementation was unnecessarily complicated

Power BI Strengths

- **Native Visualisations**: Radar and donut charts were very easy to implement
- **Data Modelling**: Power Query gives lots of transformation capabilities
- **Measure Flexibility**: DAX measures provide powerful calculation options

Power BI Limitations

- **Rigid Formatting**: Limited tooltip and label customisation
- **Layout Constraints**: No dedicated dashboard canvas
- **User Interface:** Would often feel hard to navigate and use, cluttered pages, edit interactions very frustrating and tedious
- **Sorting Complexity**: Required lookup tables for custom sorting
- **Visual Effects**: Less control over aesthetic details

Conclusion

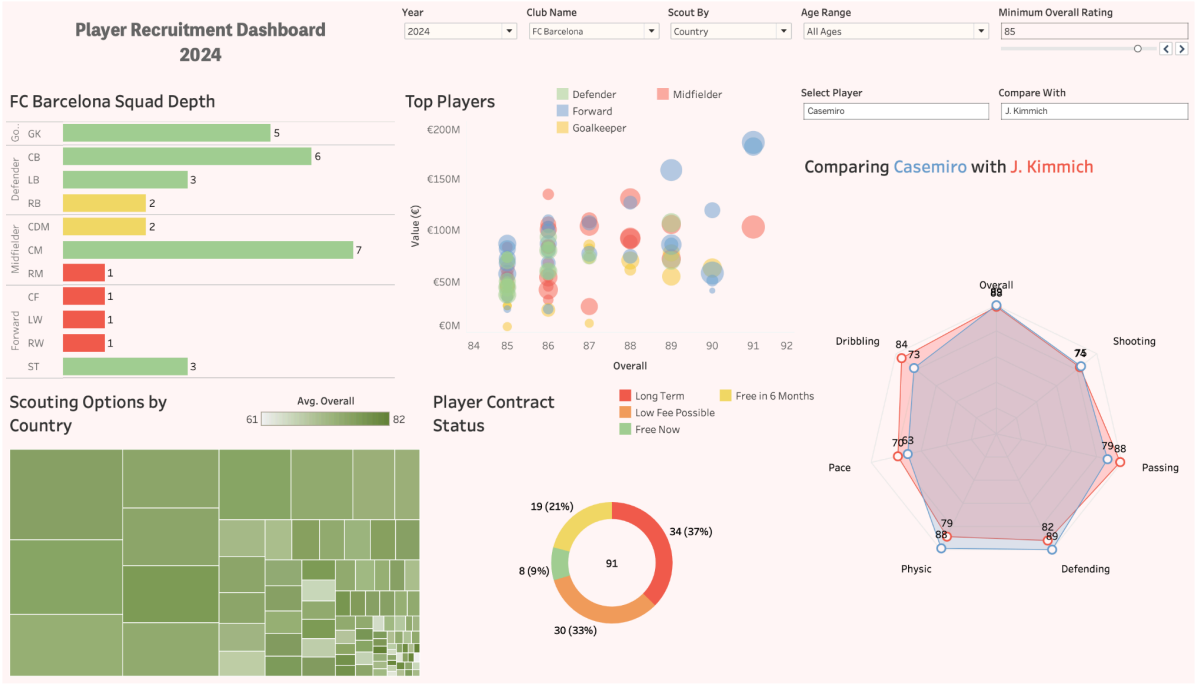
This assignment revealed that selecting the tool depends a lot on requirements of the project and user priorities. Tableau is much better when pixel-perfect customisation and advanced interactivity is very important. Power BI is better for quick reporting with standard visualisations and situations needing complex data modelling which would rarely be the case.

For this recruitment dashboard, Tableau gave a really good result because of its flexibility, despite requiring some workarounds for certain visualisations. The ability to create custom tooltips versus Power BI's basic field display felt like a big difference. However, Power BI's easy donut and radar chart implementation and other native features make it a good choice for those who prefer quick functionality over just good looking visuals.

This assignment shows how neither tool is superior to the other. They both provide good value in different use cases. Understanding these strengths and limitations is important to decide which tell is better for specific project requirements.

Final Dashboards

Tableau



PowerBI