

Group 4 Case Study

MS 984 Data Analytics in Practice

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OVERVIEW

Aims & objectives:

- Clean and Standardise Data; To ensure consistency across all competitions and seasons
- Model Data using DAX & Power BI; To enable advanced filtering and time-series trend analysis (21/22-25/26)
- Visualise Error Distribution of the Top Leagues; England and Scotland's top tiers of football highlight recurring issues
- Find Out the Most Common Cause of the Major Error Mistakes between Scotland and England



METHODOLOGY

- The Dataset was reduced from 919 -> 895 rows in Power Query:
 - Any non-football data was removed 15 rows
 - A further 9 rows were removed for Missing Mistake Types
- The priority of Cleaning the Data was to find inaccuracies; this was found in row 178 'Hibernian vs St Johnstone' which was registered as in England changed to Scotland in Excel.
- Key Filters were produced in Power BI such as using DAX functions:
 - U21, U23, Senior Teams
 - Competition (No Year)
 - Season Year (21/22- 25/26)

919

14 Ice Hockey and
1 Basketball rows



904

9 empty (mistake)
rows



895

Total rows

FINDINGS & LIMITATIONS



Frequent Errors: Most Errors occurred in VAR decision making situations requires observation and situational analysis that a statistician in the ground doesn't have access to (2-3 minutes).



Regional Variance: Scotland's dataset showed a lower variance of the type of errors in the dataset due to potential limited data entry in Scottish lower leagues.



Limitations: Sample size variation due to smaller number of statisticians monitoring between Scotland(44) and England (177).

Uneven training time for VAR system implementation in Scotland (Oct 2022) compared to England (Aug 2018).

CONCLUSION & CLIENT VALUE

- Key points include:
 - Requiring Statisticians to have functions to delay the logging of the VAR command as the interpretation by the referee may take longer, treating VAR like DRS!
 - Informing the Scottish Referees Association of the findings and work together to improve the interpretation of VAR. Creating Short Presentations for Referees to regularly review based on Interpretation of the Football rulebook.
 - Act as a voice to improve the quality of VAR referring in Scotland and England to improve the time and efficiency of VAR decision making.
 - To Closely amend and follow close games as to ensure accurate data logging in tight match scenarios – 50% of Major Statistician errors in the premier league where in games with one goal between each side.

