CAMBRIDGE
UNIVERSITY PRESS & ASSESSMENT

Job Description

Role title	Senior Research & Data Analyst
Role reports to	Senior Data & Analytics Manager
Direct reports	None
Indirect reports	None
Level	5
Department	Assessment Operations, Assessment Excellence
Location	Triangle, Cambridge
Effective date	1.1.2025

Purpose of the role

To carry out development, provision and interpretation of statistical analyses critical to the delivery of valid, accurate and meaningful candidate results for all Cambridge Assessment English assessment products and to conduct research on innovative data analysis and technical/psychometric solutions to enable advancements in the validation of assessment products.

Key accountabilities

1. Conduct small scale research projects and contribute to larger research programmes aimed at informing the development of assessment operations and ensuring that specific processes and technology areas support the quality of Cambridge English products.

2. Identify innovative solutions to improve the processes and systems used in Assessment Measurement: designing, developing and testing new analysis and data processing routines/pipelines (e.g. by creating R/SAS programs) for departmental use, providing evidence about their effectiveness.

3. Carry out and interpret the results of core operational and psychometric analysis for Cambridge English Exams, accurately and to agreed schedules, making appropriate recommendations for further decisions. Analysis includes standard and ad-hoc processes around trialling, marking, grading, malpractice detection and post exam evaluation.

4. Provide data analysis and interpretation to support projects and new business initiatives.

5. Ensure that internal documentation and work instructions are reviewed and on a regular basis to keep them accurate and, up-to-date and that changes are communicated and implemented effectively to meet regulatory requirements.

6. Provide input to Assessment Measurement information dissemination tools, e.g. management reports, updates on internal and external projects.

7. Actively participate in Cambridge Assessment English induction and training programme in general and to internal departmental groups and meetings in particular. Providing advice and support for individual staff members on processes and systems.

Key relationships (internal and external)

Other Data and Analytics Analysts and Managers, Validation Managers, Assessment Managers, Operations Managers.

Role impact (people, policy, financial)

Budgets

(over which you hold direct or indirect management responsibility. Please exclude headcount)

Income *(that role is responsible for delivering or makes direct contribution to delivery of)*

None

Direct costs *(budgets set and controlled by post holder)*

None

Indirect costs *(post holder authorises spending on budget, delegated by budget holder)*

None

People
(The number and grades of colleagues you manage)

None

Other numbers
(any financial data that puts the role into context)

None

What is the major impact of this role on the business?

Senior analysts are central to the research, development, provision and interpretation of statistical and psychometric analyses which are integral to the provision of accurate and timely results for five million candidates per year, including standard product and non-routine educational projects and research initiatives for internal customers or third parties.

These analyses are essential as they provide the technical monitoring that ensures candidates' results are an accurate reflection of their ability. They are used to ensure that standards of achievement are consistent over time, by using statistical models and psychometric techniques that can identify and correct for any unwarranted variations (e.g. due to potential malpractice, variation in the difficulty of exam questions, or the performance of examiners).

The expertise that goes into researching innovative approaches and implementing these analyses, coupled with the interpretation and decisions made based on their outcomes, are central to the global recognition of the quality of our world leading products.

Decisions and Recommendations

Identifying improvements to processes and internal systems to improve efficiency without impacting the end product. The day-to-day organisation of operational tasks to meet processing schedules. Recommendations for further action (e.g. items to be reviewed, malpractice cases to follow up) within agreed parameters.

Essential knowledge

- A degree in a science/maths/statistical field with a strong analytic focus (or equivalent work experience) is essential to effectively carry out the specialised nature of this role, and to provide credible and effective recommendations to colleagues across the business
- Familiarity with best practices in relation to the collection, management, analysis and interpretation of large and complex data using database and computational statistical software
- Knowledge at programming level of at least one statistical package used within the Department (SAS, Python, R, Power BI) and willingness to learn others

- Familiarity with quantitative research methods and statistical analysis procedures, possibly in educational assessment
- Theoretical and practical knowledge of a range of data science and analytical techniques as well as in the design of user-friendly data applications (e.g., markdown reports, visualisations, dashboards)

Essential skill(s) & experience

- Good interpersonal skills dealing with colleagues at all levels both internally and externally
- Ability to communicate effectively and work as part of a team
- Ability to prioritise and time-manage tasks and larger scale projects
- Advise on appropriate and feasible analytics, and inferences that can be made from them
- Fluent or native in English (C1 or above)
- Experience of assessment and educational measurement is desirable
- Highly numerate and able to work with large datasets
- Effective research/statistical report writing and presentation skills
- Ability to work under pressure and with a good attention to detail
- Ability to collaborate effectively with colleagues from a variety of backgrounds on complex issues, and to seek out innovative solutions.
- Understanding of, and commitment to, a non-profit making educational ethos which seeks to expand opportunity for learners and promote the best of international language assessment and learning practice
- Interest and potential to learn and develop new statistical approaches to address challenges in our context

Key competencies (values or organisational values)

Empowerment - Taking ownership of analyses and key processes, allow us to develop and maintain core work, along with providing clear recommendations, for example from malpractice analysis to identify suspicious behaviour can lead directly to the cancelling of results, or even the closing centres where cheating is found to have occurred.

Innovation - Often senior analysts have to identify creative solutions to the challenges that arise when working with complex IT systems and large data sets. Automation of processes through writing code/programs is a key aspect of the role to ensure that we can continue to efficiently service a growing business.

Collaboration - Working with other analysts and managers in our team and in other departments particularly with assessment and operations colleagues for the provision accurate and timely results for five million candidates per year.

Responsibility - Our tests run 24/7 365 days per year around the world. This post needs to be flexible in responding to unexpected challenges, which can sometimes impact at short notice on working hours and the working week (inclusive of UK times weekdays 10am-4pm.

Key competencies (functional)

Data literate

Statistical Analysis

Programming (e.g. SAS, R, Python)

Problem Solving

Communication

Key competencies (leadership)

- Achieving
- Inspiring
- Inclusive
- Trusted & trusting
- Confidence with humility