

Customer Story



Industry

Public Sector

Focus
Analytics

Business Issue

Support more powerful analytics and deliver new predictive insights covering key areas of government policy in work and pensions; provide valuable new intelligence to support decision making in multiple areas.

Solution

SAS® Analytics, predictive modelling and forecasting, including regression analyses and 'what if?' scenarios, plus powerful data access and data management capabilities to create an easy-to-use platform requiring no specialised SAS skills.

Benefits

New insights for decision making in a complex and high-profile area of government - for the UK's largest public service delivery department; helping the DWP better understand and support essential policy initiatives aimed at helping UK individuals become financially independent.

SAS® Provides the Department for Work and Pensions with Powerful Predictive Insights in Highly Complex Policy Areas

The Department for Work and Pensions (DWP) uses SAS® to run simulations and test 'what if' scenarios, helping project everything from pensioner income distributions to benefit expenditure



Department
for Work &
Pensions

Serving over 20 million customers, the DWP is the largest public service delivery department in the UK, responsible for welfare and pension policy. Its key aims include helping individuals to become financially independent and tackling child poverty. SAS® is used extensively in many areas of the DWP, supporting teams in Fraud and Error, Compliance, Customer Insight, Finance, Analytics and Information Management.

Modelling the impacts of change

The DWP's Strategy Directorate used SAS to develop Genesis, a generic architecture for implementing dynamic micro-simulation models. This involves taking a sample of the population and simulating forward to take account of likely changes in circumstances during a given time period. The solution was originally intended to provide the architecture for Pensim2, a pensioner incomes model, but is now a standalone system that enables models to be constructed rapidly and 'evolve' independently, increasing cost effectiveness.

Genesis models fulfill a range of key functions including long-term simulation of pensioner income distributions and forecasting benefit expenditure. The models are also increasingly used to experiment with 'what if' scenarios and different policies, enabling DWP to find out, for example, the likely impacts on particular groups, types of individuals in the community and public expenditure if the government raised the state pension age by a given amount.

Predictive analytics made easy

Within Genesis, users specify the sequence of operations to be performed on a sample of population data, using Excel parameter spreadsheets. The model reads the spreadsheets and uses SAS code to perform the required simulations. The DWP utilises a code generator developed specifically for the SAS environment.

The data, operations and the order in which they are performed are all specified in spreadsheets so users don't need any SAS knowledge to develop and run simulation models. The DWP also makes extensive use of SAS predictive analytics for regression analysis, to evaluate historical data and develop models to predict the likelihood of a particular event happening to an individual based on their characteristics at a particular point in time.

Why SAS?

The DWP chose SAS for a number of reasons. SAS was already widely used by the department's analytical community. The entire organisation's input data sets are in SAS, and skill sets are based around SAS being the main programming language used. In addition, the DWP was determined that Genesis and its complementary applications would be developed in-house; it did not want to outsource this function to external consultants, who might develop it in a language other than SAS, effectively creating a 'black box' solution.

By contrast, SAS represented a company, approach and language DWP staff were familiar with and could also customise to address their precise needs. Moreover, the ability to produce several different models using the same underlying approach ensured staff could share and adapt new models quickly, increasing productivity and project efficiency. And because Genesis has an Excel interface, users do not require an in-depth understanding of micro-simulation models or SAS to enable them to work effectively. With a shortage of expert micro-simulation modellers available on the market, this means the DWP can be self-sufficient. Also key to success has been the versatility and flexibility of the architecture, underpinned by SAS data management capabilities. This is critical when running 'what if' analysis on changes in policy in what is a dynamic, fast moving and high-profile area of public services.

SAS gives the Department for Work and Pensions THE POWER TO KNOW®