Market Segmentation

Technical Report

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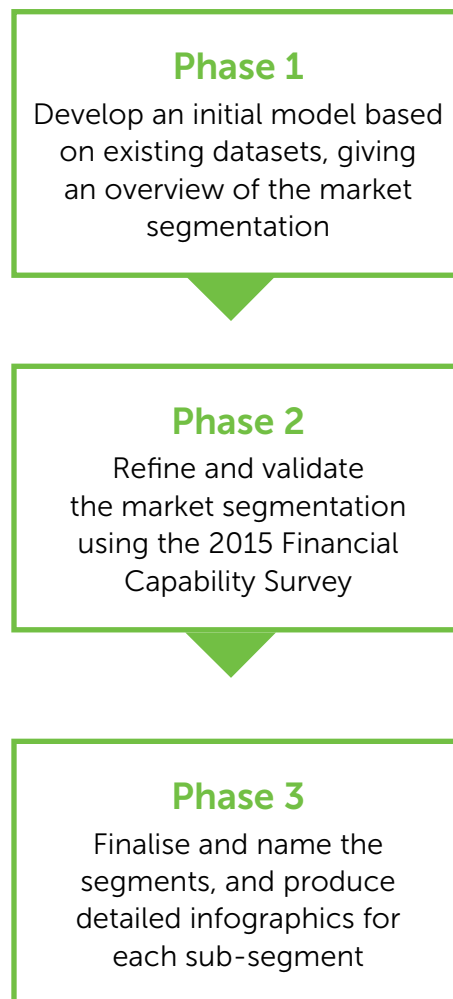
Background and Objectives

The Money Advice Service is a universal service for all, with a statutory remit to:

- enhance people's understanding and knowledge of financial matters
- enhance people's ability to manage their own financial affairs
- work with others to improve the availability, quality and consistency of debt advice services

To achieve this remit, it is essential to understand the different needs of UK consumers. A market segmentation exercise was undertaken to demonstrate how consumers can be grouped into addressable and discrete segments. This segmentation would need to be easy to understand, clearly linked to actions and easily applied to research surveys and customer databases.

The market segmentation was to be based on the levels of financial resilience in both the short and longer term. Resilience is based on five key pillars consisting of income, savings, protection, credit and demographics. Based on this, a set of segments and sub-segments were to be developed to help quantify and understand the groups of UK consumers who are most and least resilient.

The project was broken down into three phases:

Phase 1
Develop an initial model based on existing datasets, giving an overview of the market segmentation

Phase 2
Refine and validate the market segmentation using the 2015 Financial Capability Survey

Phase 3
Finalise and name the segments, and produce detailed infographics for each sub-segment

Phase 1 – Developing the Initial Model

Overview of datasets used

In order to build the initial segmentation model, two core CACI datasets were used – Fresco and Ocean.

Fresco

Fresco is the UK's leading individual level financial services classification, developed by CACI Ltd. It categorises the entire UK adult population into

- 12 core segments, and within these,
- 45 sub-segments, and within these,
- 134 micro-segments.

It was Fresco's 134 micro-segments that formed the building blocks of the market segmentation segments to ensure that the model was built at the most granular level possible.

Fresco combines a number of data sources that CACI hold on the UK population, along with the richness of data from GfK's Financial Research Survey (FRS). The FRS is a nationally representative survey of 60,000 GB adults per annum, interviewed both face-to-face and online. Having this online and offline element is important in ensuring that all elements of the population are adequately captured, and do not exclude certain groups in the population who are less likely to respond to an online only methodology (e.g. older or low income individuals).

Data from these sources includes:

- Holding of all financial products
- Financial attitudes

- Channel usage for both opening accounts and management
- Savings and investment values
- Credit behaviour including card spending, loans and mortgages
- House values
- Personal income
- Digital behaviour beyond financial services

The development of Fresco draws on CACI's expertise in creating both off-the-shelf and bespoke segmentation systems as well as utilising data collected both off and online.

Ocean

Ocean is an attribute-rich consumer database of the UK adult population, updated quarterly. Millions of records from research surveys, open data, government data and several other sources are collated together to create Ocean.

Ocean includes:

- Names and addresses of 51 million adults. The name and address base forms the 'spine' of the Ocean database. It is built by merging and de-duplicating names and addresses from multiple different high-volume sources, and then selecting the most up to date information.
- A wide range of variables for each individual. Variables can be supplied as hard facts (i.e. indicator variables) where known or where they can be confidently imputed from other knowledge about the individuals. Whenever they are not known for certain, values are inferred from modelling based on other known characteristics.

The real and modelled variables on Ocean cover a wide range of attributes, attitudes and behaviours.

They include:

Attributes

- Age and gender
- Social Grade
- Children: number and age
- Income: household and personal
- Household: size and composition
- Length of residence
- Housing: type, tenure, size, value
- Occupation
- Car ownership: number, age and type

Behaviours

- Technology: ownership and use
- Internet usage: frequency, location and technology
- Interests, hobbies and holidays
- Supermarkets: weekly spend and brands
- Mail order: frequency and kind of goods bought
- Financial products owned
- Savings and Investments value
- Online activities: gambling, dating, gaming etc.
- Social networking: activity and networks
- Music / video downloads
- Mobile phone: type of phone and usage
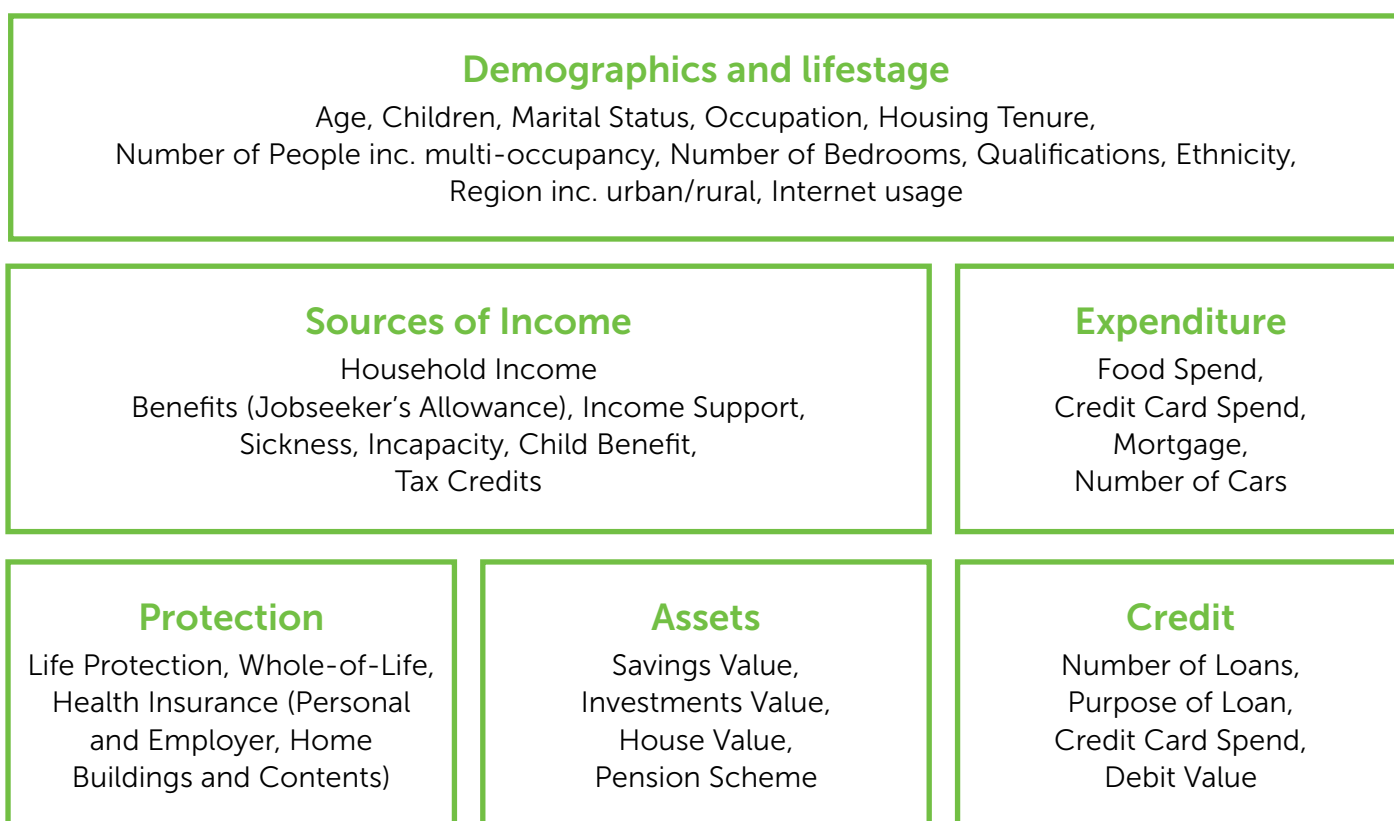- Environmentally friendly behaviour

Attitudes

- Reading preferences: books and magazines
- Charities: which causes supported and how
- Newspaper readership
- Attitudes to financial products and channels
- Intention to switch financial products
- Attitudes to online privacy and safety
- Lifestyle attitudes
- Shopping attitudes

Identifying market segmentation driving variables

To build the market segmentation, a set of relevant driving variables were required from the myriad of data available. Initial driving variables were based on evidence from existing research which identified them as a key factor likely to explain high or low resilience. Through this process, the Money Advice Service identified a number of key themes that the market segmentation should be based on, including:
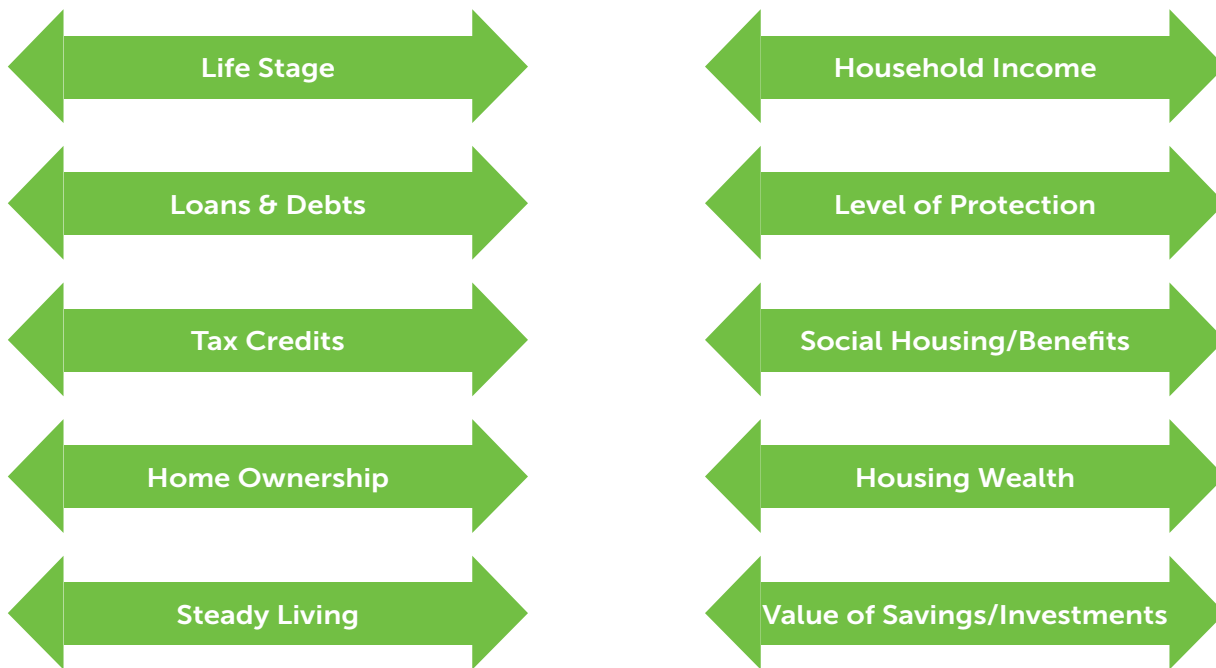
- Demographics
- Sources of Income
- Expenditure
- Protection
- Assets
- Credit

Variables were selected from Ocean and Fresco that aimed to explain these themes:

Demographics and lifestage

Age, Children, Marital Status, Occupation, Housing Tenure,
Number of People inc. multi-occupancy, Number of Bedrooms, Qualifications, Ethnicity,
Region inc. urban/rural, Internet usage

Sources of Income

Household Income
Benefits (Jobseeker's Allowance), Income Support,
Sickness, Incapacity, Child Benefit,
Tax Credits

Expenditure

Food Spend,
Credit Card Spend,
Mortgage,
Number of Cars

Protection

Life Protection, Whole-of-Life,
Health Insurance (Personal
and Employer, Home
Buildings and Contents)

Assets

Savings Value,
Investments Value,
House Value,
Pension Scheme

Credit

Number of Loans,
Purpose of Loan,
Credit Card Spend,
Debit Value

A number of statistical methods were undertaken, including correlation and principal component analyses, through which the above variables were distilled into a core set of driving factors. The purpose of this was to reduce the number of variables in the analysis by using a surrogate variable or factor to represent a number of variables, while retaining the variance that was present in the original data.

The output from this analysis identified ten driving factors:

Life Stage	Household Income
Loans & Debts	Level of Protection
Tax Credits	Social Housing/Benefits
Home Ownership	Housing Wealth
Steady Living	Value of Savings/Investments

At this stage, all individuals in the UK had scores for each of the driving factors - the higher the score, the more prevalent the factor for that particular individual.

Individuals were then assigned to their Fresco micro-segment and their scores aggregated so that each of the 134 micro-segments was comprised of the average scores of the individuals within that micro-segment. Using Fresco as the building block for the market segmentation ensures that the solution would meet all of its key criteria – easy to understand, transparent, insightful, and can be applied to further research studies and to customer and prospect databases.

Two-step clustering

The development of the market segmentation, like the development of any high-quality classification system, was an iterative process. Many aspects of the segmentation must come together for the solution to meet its core quality criteria. These quality criteria relate both to its clarity as a segmentation, whose types are recognisable and understandable, and to its technical performance in differentiating relevant kinds of behaviour and attitude.

The development process used hierarchical clustering, a proven segment design method, which used an agglomerative approach: each observation (Fresco micro-segment) started in its own cluster, and pairs of clusters were merged by the similarity in their driving variables as one moved up the hierarchy.

After each iteration, the resulting segments were assessed (via profile analysis and calculating R-squared and F-statistic metrics), and suitable adjustments made to the driving factors and distance measures. These were then fed into the next iteration. This process was repeated until all the required aspects of the segmentation were met from both a statistical and insight perspective.

Initial iterations (using equal weights on all the driving factors) clearly identified four natural data-driven segments. Different weights were then applied to the factors in subsequent iterations with a view to optimising the profiles and statistical measures.

The top-level segments used higher weightings on the following factors: Social Housing/Benefits, Loans & Debts and Household Incomes, and resulted initially in four macro UK segments:
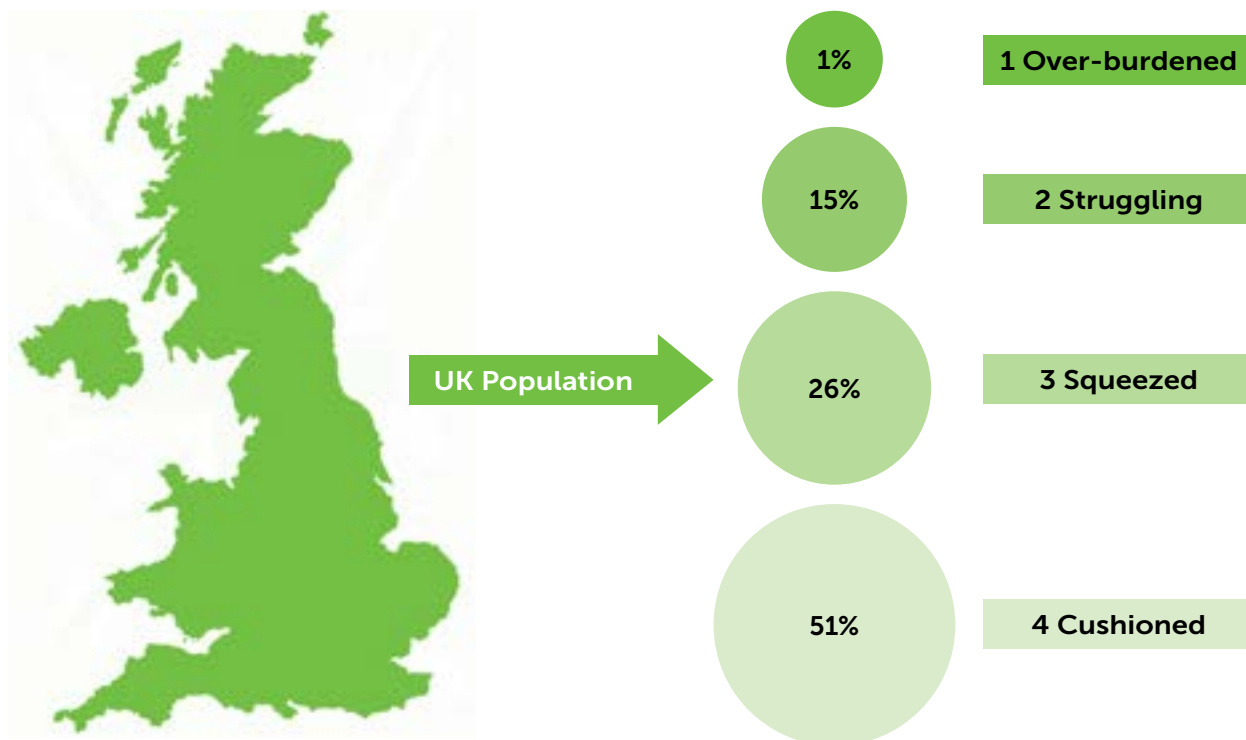
A secondary clustering exercise was then undertaken which aimed to split Segments 2 (Struggling) and 4 (Cushioned) into a set of distinct sub-segments.

The same driving factors were used but the following additional variables were used to breakdown and differentiate Segment 2:

- Unemployment
- Use of consolidation loans
- Receipt of sickness benefits

These variables were selected as they were identified from the profile analysis as being particularly strong indicators in both Segments 1 and 2.

Furthermore, the following additional variables were used to pull apart Segment 4:

- Working status
- Savings Value

The same development process was followed and Segment 2 split into four further sub-segments and Segment 4 split into seven.

At this stage, Segment 3 was not split, but it was later split using data from the 2015 Financial Capability survey as described on page 9.

Phase 1 outputs

Segment knowledge Excel workbooks were developed which profiled each segment and sub-segment by over 300 variables from Ocean and Fresco. In addition, draft pen portraits were created to help embed the segments within the Money Advice Service.

Phase 2 – Developing a Refined Model

Overview of dataset used – 2015 Financial Capability (FinCap) Survey

FinCap is the Money Advice Service's own flagship survey and consists of over a thousand data points on 3,500 respondents on its core survey with research conducted (both offline and online) from April to June 2015.

Key themes covered include:

- Personal well-being, financial well-being and confidence
- Over-indebtedness
- Planning and goals
- Product holding and credit use
- Keeping track of money
- Savings
- Retirement and pensions
- Budgeting
- Bills and commitments
- Pressures
- Life shocks and plannable life events
- Information, advice and guidance
- Skills and ability
- Attitudes to money

Segment validation

The segments developed in the initial model were valid in terms of being intuitive and statistically sound, but with the availability of the FinCap data in summer 2015 it was prudent to cross-validate the segments and evaluate any inconsistencies between all of the research datasets available.

The segments and sub-segments were re-profiled using the FinCap data and the statistical T-test performed to check for differences in proportions on key variables that were available on FinCap, Ocean and Fresco.

Comparing data from FinCap to the initial model showed no significant differences in gender, age, marital status, region, property type, tenure, benefits and product holdings for Segments 3 and 4 indicating that the segments were indeed robust and reflective of the UK population.
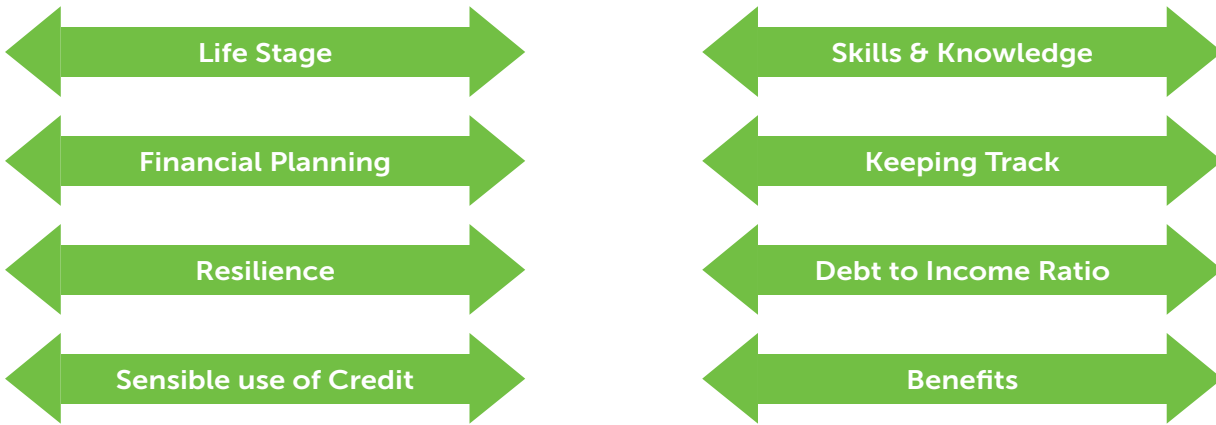
In Segments 1 and 2, the FinCap data showed a slight bias towards younger people compared to the initial model, and more of a bias towards social housing and the use of benefits. These differences added weight to the fact that Segments 1 and 2 were the most vulnerable sections of society and that the segmentation solution as a whole was valid.

Splitting Segment 3

It became apparent from Phase 1 that the Squeezed segment is one of key importance to the Money Advice Service given their high financial commitments and relatively low provision for coping with unexpected income shocks.

Therefore, further analysis was undertaken to develop a set of sub-segments using all the datasets available, with particular weight put on the FinCap data.

Eight new driving factors were identified that were prevalent within Segment 3:

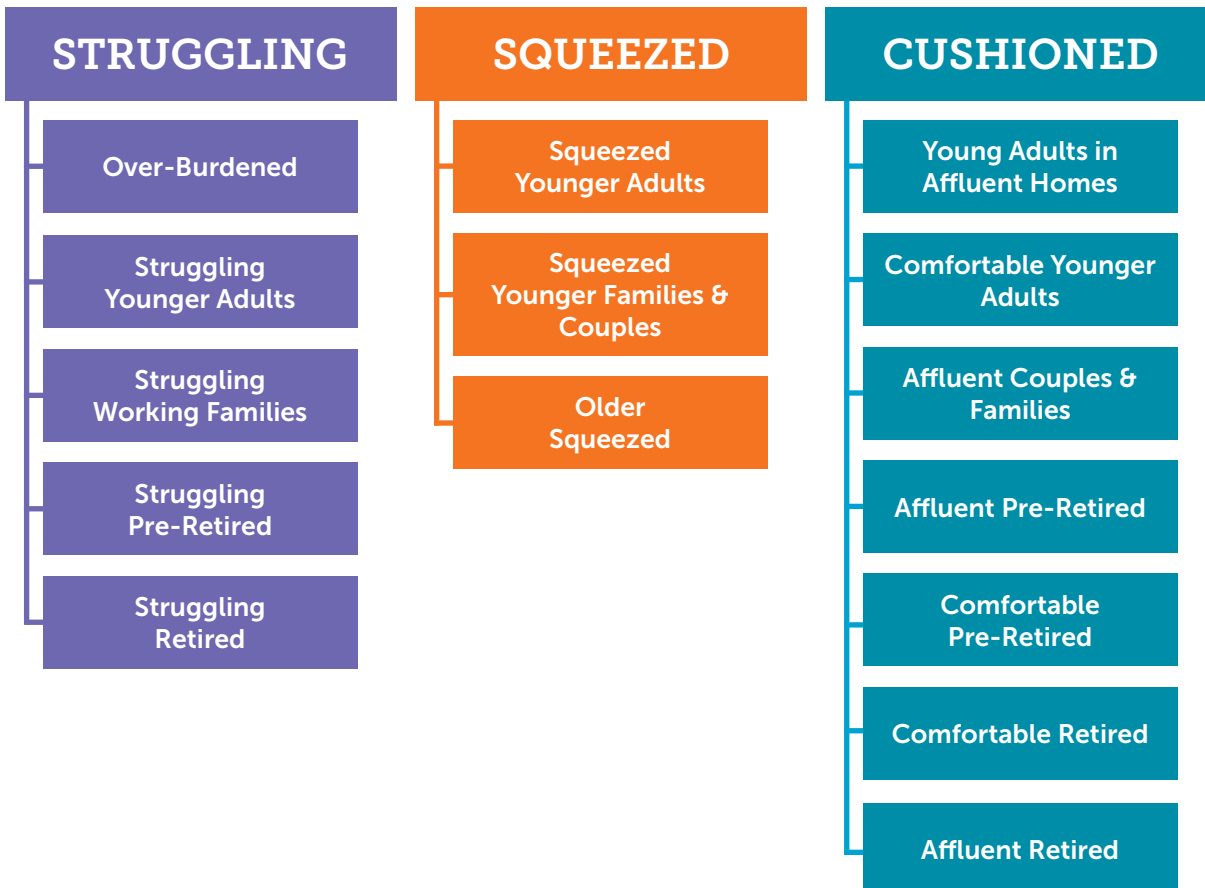| Life Stage	Skills & Knowledge
Financial Planning	Keeping Track
Resilience	Debt to Income Ratio
Sensible use of Credit	Benefits

As before, a hierarchical clustering algorithm was developed which identified three sub-segments that were statistically robust and primarily differentiated on life stage and economic inactivity.

The final segments

It was apparent that Segments 1 (Over-Burdened) and 2 (Struggling) were very similar in profile and situation to each other. However, Segment 1 was shown to be just a more 'extreme' version of Segment 2 with higher levels of indebtedness and a greater dependency on benefits. It was therefore decided to merge these to form a single macro-segment called 'Struggling', with the over-burdened group as a sub-segment of these. The outcome of this was three final macro-segments with a total of fifteen sub-segments to describe the variations in life stage and situation within segment.

The final stage of the process was to agree a suitable naming convention for each segment and sub-segment. These were chosen to reflect their current life stage and levels of financial resilience. Within 'Cushioned', it was apparent that there were two broad types of individuals within this group: those who are 'affluent' with very high resilience and those who are 'comfortable' who have medium or high resilience.

STRUGGLING	SQUEEZED	CUSHIONED
Over-Burdened	Squeezed Younger Adults	Young Adults in Affluent Homes
Struggling Younger Adults	Squeezed Younger Families & Couples	Comfortable Younger Adults
Struggling Working Families	Older Squeezed	Affluent Couples & Families
Struggling Pre-Retired		Affluent Pre-Retired
Struggling Retired		Comfortable Pre-Retired
		Comfortable Retired
		Affluent Retired

# Phase 3 – Communicating the segments

Excel workbooks

Similar to the output from the initial model, segment knowledge Excel workbooks were developed which profiled each segment and sub-segment by all the FinCap variables, giving in depth insight into the solution.

Pen Portraits

A refined set of pen portraits based on FinCap data have been developed for each sub-segment to help communicate the market segmentation both internally within the Money Advice Service and also to relevant external organisations.
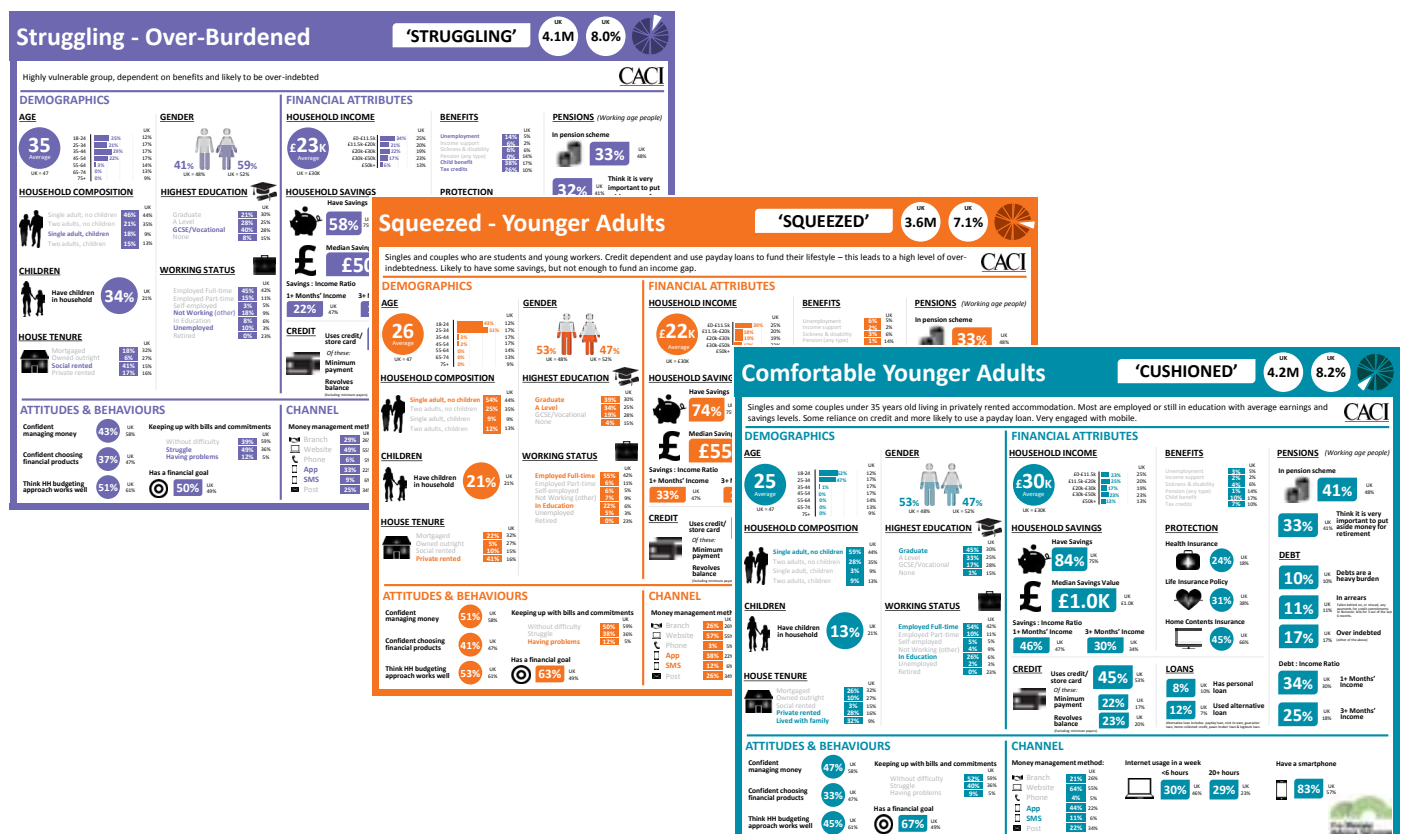
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Insight and Evaluation work, go to:
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en/corporate/research**