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Consumer Risk Metrics

Investigation into the risks faced by insurance consumers and considerations for insurers to improve risk metrics

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Research paper from the Consumer Risk Metrics Working Party

Conclusions following initial research

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Abstract

This paper investigates some of the key considerations when presenting risk to insurance consumers. The aim is to stand in a consumer's shoes and look from their perspective at products which they typically buy, for example general insurance, life and to lesser extent investment products.

Risk communication is a broad topic and requires extensive analysis to reach firm conclusions. The Working Party took a holistic review of what a Consumer Risk Metric could look like. Quantitative methods were assessed to determine if one was dominant and could offer consumers a clear view of risk. Insurance and investment products are not homogeneous in terms of risk exposure; some products are designed to provide financial compensation for adverse life events whilst others are aim to increase wealth through investment returns. In light of this, the Working Party recommend Consumer Risk Metrics need to be tailored to products to ensure that the risk metric captures the most material risks related to specific products.

The impact of behavioural factors should not be underestimated. Recent advances in behavioural economics have shown how sometimes irrational biases impact a person's decision-making. The research highlighted three cognitive influences which are relevant to Consumer Risk Metrics and buying insurance. A consumer's risk-taking is also influenced by both their attitude to risk and an innate preference to the level of risk that they wish to tolerate, there are many factors which impact decision taking. Often consumers do not behave in a manner which is consistent with the assumptions made in insurer's models which they build to assess risk. The Working Party also explored the utility theory and risk taking, which was assessed in conjunction with risk metrics.

Insurance comparison websites are common place, a review of their methodology indicates the depth of their research to understand consumer profiles and what drivers influence a consumers' decision process to assess and buy insurance products. A consumers' ability to compare products as a result of the changes to standardisation in disclosure documentation was reviewed and whether the largely qualitative content is improved by the presence of a risk metric.

To understand consumer preferences in more depth, the Working Party commissioned a GB online survey. The results were largely consistent with the hypotheses set by the Working Party, although there were several variations. The survey confirmed that consumers want insurers to be responsive and accessible and to provide them with peace of mind. However, the survey did not support the hypothesis that a simple metric is what consumers are looking for, which surprised the Working Party. The "keep it simple" style of communication was only favoured by 17% of respondents. This will influence the design of future risk metrics and indicates the notion of having a single index metric may not be effective.

In summary; this investigation into Consumer Risk Metrics provides an insight into policyholder preferences and what they consider useful within their insurance decision making. There is not a 'one-size-fits-all'; the ideal risk metric is one which is tailored to the individual's risk appetite. However, there are substantial challenges in producing a quantitative function to represent an individual's risk appetite; therefore we do not recommend a definitive format. Instead, any metric included in the research which placed weight upon the lower half of the distribution are suitable. The Working Party concludes by recommending a number of practical considerations which insurers may note when designing Consumer Risk Metrics.

Keywords

Risk-taking; risk communication; metric qualities; risk attitude; consumer risk metrics

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1. Introduction

In well-developed insurance markets, consumers are presented with a vast array of general insurance, life and investment products. Many transactions are completed without advice, often through online purchase. The variety of insurance products available can be overwhelming, and consumers should search for one that meets their needs and personal circumstances.

The Consumer Risk Metrics Working Party was established at the end of 2015 to study and provide recommendations to the Institute and Faculty of Actuaries (IFoA) on the measurement of insurance consumer risk. The objective of the Working Party is to promote thought on matters relating to the communication of risks faced by insurance consumers. Consumers ought to easily compare risk across different insurance products and between providers, so they can choose a product that is suitable for their needs. Having a Consumer Risk Metric could help to facilitate this process, enabling consumers to compare the riskiness of products.

There have been various instances of consumers either misunderstanding or not being appropriately informed of the coverage offered by insurance products. This includes the mis-selling issues surrounding Payment Protection Insurance (PPI), unfortunately it was sold to individuals who did not understand how it would respond and in addition it may not have been suitable for a consumer's personal circumstances. Commission charged by PPI sellers was excessive and resulted in unfair customer outcomes. Other examples include endowment products that were sold heavily in the early 90s as a means of repaying a mortgage. Many consumers purchasing these products did not appropriately evaluate the risk of a shortfall on maturity and often believed maturity payments were guaranteed. (Reported in the FSA's (2004) paper "Consumer Understanding of Financial Risk").

The Working Party had two key objectives:

Objective 1: the identification and understanding of insurance consumer risks / concerns.

Objective 2: to highlight practical considerations of consumer risk metrics that allows the consumer to make an informed choice.

The remainder of this paper sets out research undertaken against these objectives.

2. Consumer Risk Metric definition

A *risk metric* in general can be defined as a numerical measure which captures the variability or volatility in a distribution. Example risk metrics are the standard deviation, Sharpe ratio and Solvency Capital Requirement (SCR) as defined in Solvency II.

The Working Party defined a *Consumer Risk Metric* as a metric which describes the riskiness of a product in a manner suitable for a consumer, intended to support decision making, such as selecting which product to purchase, or which funds to invest in. Whereas a metric like the SCR is clearly defined in purpose and methodology, consumers of retail financial products have:

- Varying appetite to risk and return.
- Different time horizons.
- Different needs (and products to meet those needs).
- Limited financial knowledge, and understanding of risk.

As such, in exploring and proposing possible Consumer Risk Metrics we need to tailor the metric to the audience, the Working Party's key considerations were:

- What are the key risks within retail products for consumers?
- What metrics suitably describe these risks?
- Is the metric statistically 'robust'?
- Can the metric be understood sufficiently by consumers?
- Where there is more than one risk, how should these be treated? (Solvency II dictates a multivariate distribution which recognises risk interaction).
- How do metrics compare, and is there a 'best' metric?

To address these points, we defined the *product risk spectrum*, which provides an approach to identifying key risks.

2.1 The Product Risk Spectrum

Insurance and investment products are not homogeneous in terms of risk exposure; some products are designed to provide financial compensation for adverse life events whilst others are aim to increase wealth through investment returns. In light of this the Working Party view is that Consumer Risk Metrics need to be tailored to products to ensure that the risk metric captures the most material risks related to specific products. Products can be viewed as being on a spectrum, with one 'end' being pure protection products, and the other 'end' being pure investment products. Traditional unit-linked insurance products typically combine both protection and investment elements, table 1 lists some example products ranging from guaranteed to investment related.

Product	Amount	Certainty of Payment	Key Risk(s)
Conventional Annuity	Certain (e.g. £100 per month)	Certain	Company default
Life and Critical Illness	Certain (e.g. £10,000)	Uncertain: Subject to underwriting	Claim acceptance
General Insurance	Uncertain: Subject to loss adjusting etc.	Uncertain: subject to claim acceptance	Claim acceptance
With Profits Policies	Uncertain, but generally subject to guarantees	Certain	Market, Bonus Strategy, Counterparty
Unit Linked policies with guarantees (e.g. Mortgage Endowment)	Uncertain, subject to guarantees based on nature of claim	Certain	Market, Counterparty
Unit Linked Life and Pension	Uncertain	Certain	Market, Counterparty
Direct Asset Ownership, including Shares / ISA / OEIC / SICAV	Uncertain	Certain	Market Risk

Table 1: The Product Risk Spectrum (Source: Consumer Risk Metrics IFOA Working Party 2018)

On basis of this 'spectrum', we split Consumer Risk Metrics into two simplified categories, which consider only one category of risk:

A. Protection Risk Metrics: concerned with whether a claim is paid or not: covered in section 5.
B. Investment Risk Metrics: concerned with the distribution of outcomes. This is explored in sections 2.2, 2.3 and 3.

2.2 Metric qualities

We have specified valuable attributes of a consumer risk metric:

- Be explainable to a consumer, either self-defining or with a simple description.
- The broad methodology can be understood with limited actuarial/statistical knowledge, as not all market participants may employ actuaries.

- Relatively easy to implement. Note we expect that a key challenge in implementation will be selection and maintenance of appropriate distributions for returns.
- Captures risk appetite of the consumer – as we expect the majority of consumers are risk averse the metric is more likely to be focused on lower tail risk.
- Statistically sound, particularly of use are coherent properties as outlined in section 2.3.

Consumer Risks Metrics should be preferably be describable as 'a figure representative of worse outcomes', i.e. if the consumer invests £1,000 over a five-year horizon, the expected payment at end of the period may be £1,400 – the Consumer Risk Metric should be an amount less than this, e.g. £1,100 or £500.

2.3 Coherent Risk Measures

A risk metric being coherent means it has some sensible properties, reducing possibility of illogical results (and thus inappropriate decision making). Coherence is of particular importance when combining risks into a portfolio, which applies for consumers as they are likely to be looking at multiple funds and/or products to meet their needs. For risks A and B (e.g. return on two assets), and Risk Metric (M), we can calculate metric results M(A) and M(B). Note that as we are concerned with variability of the overall amount rather than loss, A, B and M(.) are opposite in sign to loss metrics.

Property	Definition	Rationale
Monotonicity	If $A \geq B$ then $M(A) \geq M(B)$	A superior asset is reflected in a higher metric result.
Sub-additivity	$M(A+B) \geq M(A) + M(B)$	Combining assets into a portfolio will not give a worse result than measuring assets separately
Positive homogeneity	$M(kA) = kM(A)$ where k is a constant	As risk is scaled up, the metric increases in proportion
Translation invariance	$M(A+k) = M(A) + k$ where k is a constant	Fixed losses/gains don't alter the risk metric.
Convexity	For $0 \leq k \leq 1$: $M[kA + (1-k)B] \geq kM[A] + (1-k)M(B)$	The risk metric should give credit for diversification between risks.

Table 2: Coherent Risk Measures (Source: Consumer Risk Metrics IFOA Working Party 2018)

Further detail on coherent risk metrics is available in textbooks such as Quantitative Risk Management (McNeil et al. 2005), and Financial Enterprise Risk Management (Sweeting 2011).

3. Quantitative review of Consumer Risk Metrics

We expect there is no such thing as a 'perfect' metric, so have considered some common existing metrics, as well as proposing new potential metrics. Possible metrics are outlined below; italics indicate a more consumer friendly name:

- Expected Shortfall (@25%): *Average of bottom quarter of results.*
- Lower Quartile: *One in four worst scenario.*
- Value at Risk (@X%): *One in 1/X worst scenario.*
- Standard Deviation: *spread around the average.*
- Mean below the Mean: *Average below the average "bottom half".*
- Spectral Risk Measure: *Risk averseness weighted average.*

The first four are commonly defined in actuarial and statistical literature. "Mean below the Mean" is defined by the working party as the sum of all outcomes falling below the mean divided by the count of all such outcomes. Spectral risk is relatively novel, and is defined later in this section.

The Working Party compared statistical methods to determine if one was dominant and could offer consumers' the most balanced view of risk. The research examined risk metrics using three manufactured distributions modeling investment returns; these are for illustration only but representative of typical products:

- A: Normal Returns.
- B: Skewed Distribution.
- C: As B but adjusted to contain floor at 75.

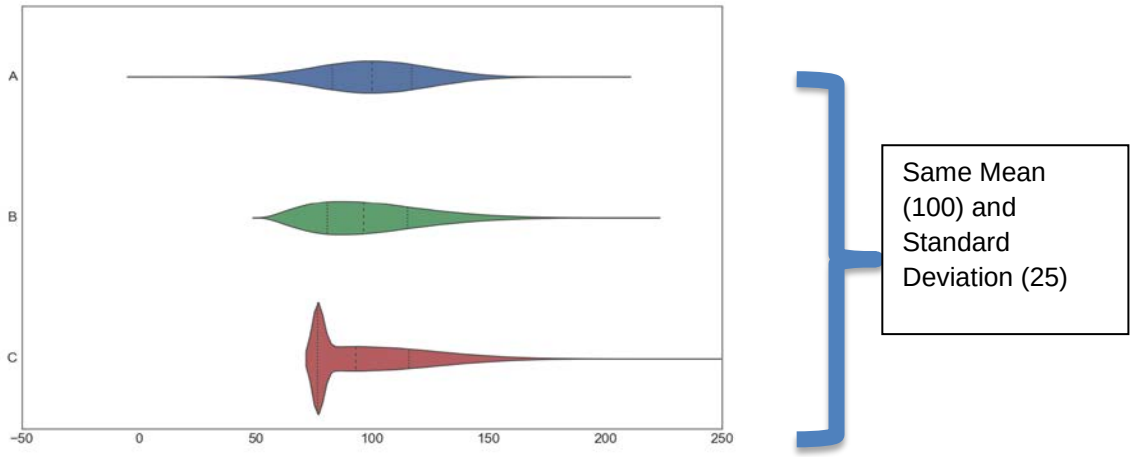

Table 3: Metric comparison (Source: Consumer Risk Metrics IFOA Working Party 2018)

The three distributions were calibrated with different shapes of return but have the same mean (100) and standard deviation (25), i.e. using common Mean-Variance approach would lead to no difference in decision, using similar principles as in Anscombe 1973 quartet datasets. The Working Party assumed consumers would choose the distribution based on the highest score, all else being equal. Results illustrated in Table 4 indicate that under the Expected Shortfall measure, Product C is best. Under Lower Quartile, Product A is best; and under Mean Below Mean, Products B and C rate equally. As expected, different metrics highlight different features of the data sets, so the 'ideal' metric is subjective. As noted by Anscombe and others, using a single statistic to describe a distribution leads to a loss of information. Graphical methods can alleviate this loss of information; however, invite their own problems, particularly when comparing large numbers of options, or making decisions.

Product	Expected Shortfall 5%	Lower Quartile	Mean Below Mean
Product A	48	83	80
Product B	62	81	82
Product C	76	76	82

Table 4: Product statistical comparison (Source: Consumer Risk Metrics IFOA Working Party 2018)

A key issue is consumers have different risk appetites; the Working Party recognise this cannot always be quantified and modeled as consumers are not necessarily consistent in their decision making. One solution is to allow for a consumer's specific risk appetite, this can be achieved using Spectral Risk Measures which combine risk appetite and distribution into a single metric, putting more weight on the points of the distribution that particularly interest the individual. This is expressed below in the discrete case; where $M_s(x)$ is the spectral risk measure, s(p) is the spectral function (based on consumer risk appetite), and $Q_X(p)$ is the quantile function of the distribution.

$$M_s(X) = \sum_{\forall p} s(p)\, Q_X(p)$$

Figures 1 and 2 show the quantile functions for products A and C, and several variations on the spectral weighting function, for different consumer risk profiles. The quantile function $Q_x(p)$ for the two distributions are outlined below, (B outperforms in in the lowest 20% and highest 20% of outcomes).

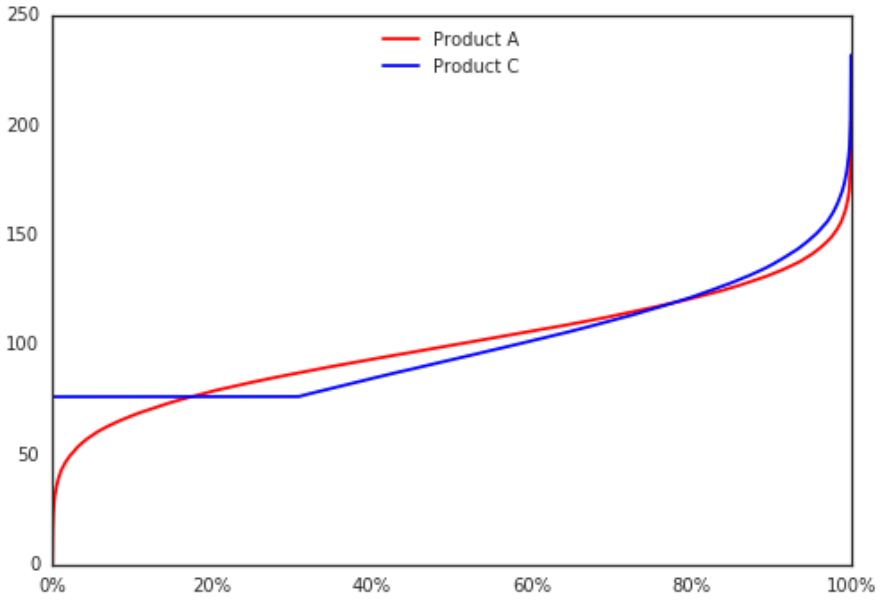

Figure 1: Quantile Functions Qx(p) (Source: Consumer Risk Metrics IFOA Working Party 2018)

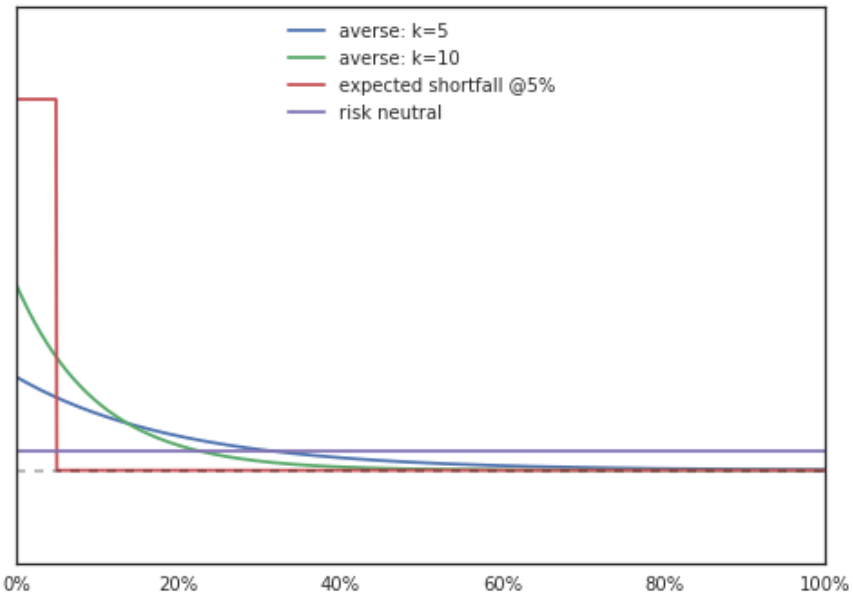

Figure 2: Spectral Weights s(p) (Source: Consumer Risk Metrics IFOA Working Party 2018)

Figure 2 outlines several spectral functions the Working Party have manufactured to represent different consumer's risk appetites. "Averse: k=5" and "Averse k=10" represent risk averse functions for consumers, where weight is increasingly placed on the tail (via a higher value of the parameter k); Expected shortfall places equal weight on each outcome below the selected percentile; finally a risk neutral investor places weight equally on the distribution, i.e. has spectral risk equal to the mean. As these are weighting functions, the area under each curve equals one.

The results in Table 5 illustrate that as consumers become more risk averse, the Spectral Metric increases the preference for Product C, as more weight is placed on the lower tail. In the case of Product C, the guarantee means that in more adverse scenarios they would get a better return.

Spectral measure	Metric / Product A	Metric / Product C	Decision
Risk Neutral	100	100	Only interested in mean returns
Mild Risk Aversion (k=5)	73	80	Take C
More Risk Aversion (k=10)	62	77	Take C
Expected Shortfall @5%	48	76	Take C

Table 5: Spectral risk measure assessment (Source: Consumer Risk Metrics IFOA Working Party 2018)

3.1 Conclusions and Recommendations from the quantitative review

The ideal risk metric is one which is tailored to the individual's risk appetite. However, there are substantial challenges in producing a quantitative function to represent an individual's risk appetite, therefore we do not recommend any one metric, but in our view any of the metrics we have looked at which placed weight upon the lower half of the distribution are suitable. Using two metrics which focus on different properties may also be beneficial to avoid 'gaming' in product design. In order to be of value, the metrics need to be applied consistently across the products being assessed: this may mean either a prescribed metric by an industry or regulatory body (e.g. in the UK, either bodies such as the ABI, FRC, or FCA), or an independent body carrying out the assessment of products.

4. Risk metric interpretation by consumers

Sections 2 and 3 of this paper considered the measurement of the likelihood and/or impact of the event on a consumer. The Working Party also assessed the subjective nature of risk assessment by the user of a metric.

4.1 Utility theory and risk-taking

Under classical economic theory, a customer buys insurance to protect against a potential loss when their assessment of the impact of that loss is greater than the immediate loss of wealth from paying the insurance premium. The assessment is traditionally framed in terms of a utility function *u* which assesses the 'value' from a customer's perspective. A customer will pay an insurance premium P to buy insurance if:

$u(w-P) > E[u(w-L)]$[1]

Where w is a measure of their wealth, L is a random variable representing distribution of losses associated with the insured event, and E is the expectation function. In this case the utility (usefulness) is negative in both cases – the decrease in utility of wealth due to the payment of the premium and the decrease in expected utility of wealth due to the loss under the insured event(s). The transaction can be viewed as a bet - which customers are willing to gamble the utility of the money P to pay for the insurance against the expected utility of the loss that they would suffer under a range of different possible circumstances without the insurance. The loss can also be a positive payment, for example in the case of life assurance or investments.

The utility function is assumed to be a concave curve to represent risk aversion. Small losses are felt more keenly than small gains are appreciated, and large losses are considered much worse than small losses. Marginal utility was also considered – what else the customer could be doing with the money spent on the insurance premium or lost in the insured event. An insurance company will also charge loadings for administrative expenses and profits. In classical economic terms, the customer

[1] Newton L Bowers et al, Risk Theory, Society of Actuaries (1986)

will need to value the insurance more than premium including these loadings before being motivated to buy.

If we consider risk metrics, then consumers would spend time (and money) to gather information up to the point where any extra information gathered was not positively increasing the utility of the transaction. This information gathering can be outsourced to third parties such as price comparison websites and advisers provided that the increase in marginal utility was greater than the value of the time spent and any fees paid.

Utility is also broader than money, so that it can be assumed to include broader elements such as convenience, psychological reassurance from having insurance, and the time value of money if the loss from the insured event could occur in the future. Utility functions are not directly measured but are assumed by economists to be 'revealed' through a customer's choices. Where wealth may not be a useful proxy for utility, it may be possible to equate utility with happiness or well-being. A consumer would then buy an insurance product or save for a pension if their expected overall well-being across time was increased, and consumer metrics might try to communicate risks in terms of this future well-being.

Nobel Prize-winners Kahneman and Deaton[2] studied the impact of income on two aspects of subjective well-being. The first aspect, known as emotional well-being, looks at everyday experience. A survey asks questions about experiences during the day to measure the frequency and intensity of joy, stress, sadness, anger and affection that make life pleasant or unpleasant. The second aspect is life evaluation - how satisfied people are people with their lives in general when they reflect on them. When plotted against income, life evaluation rises in a steady curve, whereas for emotional well-being there was no further progress beyond an annual income of about $75,000 (about 50% higher than the median US income). Savings above this upper limit will bring little additional day-to-day well-being. In theory, flattening this curve across throughout a person's lifetime through insurance and saving for retirement should bring an increase in overall well-being.

At the opposite end, low income is associated both with low life evaluation and low emotional well-being, and increases the emotional pain associated with negative events such as divorce, ill health, and being alone. To highlight the value of insurance in decision making, communications in their broadest sense should ideally cover the full range of emotional and financial benefits in terms that customers can readily identify with from their own experience.

Recent advances in behavioural economics have shown how sometimes irrational biases impact a person's decision-making. We highlight here three cognitive influences that are relevant to consumer risk metrics and buying insurance:

- **Presentism:** is the tendency for current experience to influence one's views of the past and the future. Stumbling on Happiness by Daniel Gilbert[3] explores how we make decisions about the future and how our imagination lets us down when we think about the future. It concludes that we are not as different from everyone else as we like to think, and that the best way to plan ahead is to ask people who are already there, experiencing something similar to what's ahead for the customer. The utility of an insurance or savings product decreases if the full impact of a scenario is hard to fully grasp the benefit that insurance brings. In the UK, the 7 Families initiative tried to overcome presentism bias. It was a charity led campaign, backed by insurers, which provided a tax-free income for one year to seven people who lost their income due to a serious or long-term illness or disability. The aim was to communicate the value of income replacement insurance by showing the difference it could make in real life situations

[2] Daniel Kahneman and Angus Deaton, High income improves evaluation of life but not emotional well-being (2010), PNAS Vol 107 No. 38

[3] Stumbling on Happiness, Daniel Gilbert (2006), ISBN-13 978-0-00-718313-5

that were then easier to empathise with. Companies strive to communicate effectively the positive benefits impact that insurance can have in a way that is meaningful to consumers within the context of their present-day lives. Arguably the most successful communications in the UK are for over-50s savings plans where potential customers are already considering the consequences of the insured event – the end-period of their own life.

- **An inability to estimate the likelihood of events:** Through a combination of biases, consumers may believe that salient but highly unlikely events (for example, alien abduction) are more likely to happen than is the case. On the other hand, pension planning tools try to help consumers understand the high probability that they will need retirement income to a ripe old age. According to utility theory, a customer is supposedly taking into account the probability that an event will happen to them when assessing the value of insurance. An insurer is also estimating the same probability using advanced statistical techniques, based on detailed customer, claims and exposure data from across its book, and worrying about underwriting and selection. It has a much better understanding of the likelihood and potential impact of the insured event. The role of risk metrics here can be to try to communicate the likelihood of an event in a way that a consumer will understand.
- **An irrationally positive outlook:** Even when potential consumers are able to internalise the impact of life-changing events and understand the likelihood that it will happen to them, most people are still irrationally positive. Indeed, Tali Sharot[4] shows that people are likely to have been genetically selected this way. This bias permeates professional, emotional and financial decisions, and means there is a difference between understanding that an event will happen on average, and fully believing that this likelihood applies equally to the customer themselves.

To summarise, consumers bring different combinations of biases to the table when deciding whether to buy insurance. They can implicitly discount the expected benefits of insurance through a combination of presentism and optimism. Risk metrics would ideally aim to communicate probabilities and outcomes in terms that consumers understand to 'counteract' these biases.

4.2 Risk-taking and personality

In this section we examine how aspects of a consumers' personality impact their approach to risk-taking and potential implications for the use of risk metrics. Psychologists PCL[5] assert three fundamental principles in their research:

- **Risk-taking behaviour is linked to personality**: Risk taking is an intrinsic and unavoidable part of life, not an occasional event. How a person perceives risk, reacts to risk and how much risk they are disposed to take, are day-to-day issues shaped by personality.
- **Risk-taking is not a simple linear variable**: Risk behaviour takes many forms and may be a consequence of, for example, impulsivity, poor vigilance, over-reaction, fear, over-confidence, imperturbability, excitement seeking, unwarranted trust, carelessness, prudence, and many other personality characteristics. A simple linear variable with extreme risk aversion at one end and reckless impulsivity at the other is a relatively crude simplification of this reality.
- **Risk is always situationally and subjectively defined**: Risk is all-pervasive, and anything can be perceived as a risk. People are usually more comfortable taking larger risks when they have accumulated experience from taking similar risks in the past.

Each of these principles makes developing a universal Consumer Risk Metric more challenging. A risk metric can be viewed as summarising more objective, probabilistic risks in a way that the user of

[4] The Optimism Bias, Tali Sharot (2012), ISBN 978-1-78033-263-5

[5] Psychological Consultancy Limited: www.psyhcological-consultancy.com

the metric will find helpful to their situation. However, evaluation of risk will depend on both the risk inherent in the situation and the perception of that risk by the user of the metric.

Psychologists in general have identified five key factors that can be viewed as the 'primary colours' that underpin all personality. Together they are termed the 'Five Factor Model' and it is well supported by research findings over the past 20 years. One firm PCL, reviewed by the Working Party, identified 25 themes and arranged them on two conceptually orthogonal scales which highlight the emotional and logical drivers behind approaches to risk-taking. PCL differentiated between Risk Type and Risk Attitude. Risk Type reflects a natural disposition – to what extent you are, for example, usually optimistic or anxious, or perhaps a careful planner rather than acting on impulse. Risk Type is deeply rooted in an individual's personality and will influence how much risk they are willing to take, how much uncertainty they can cope with and how they react when things go wrong. An assessment by PCL places a candidate in one of eight categories on the Risk Type Compass®, shown by the labels at the compass points in Figure 3.

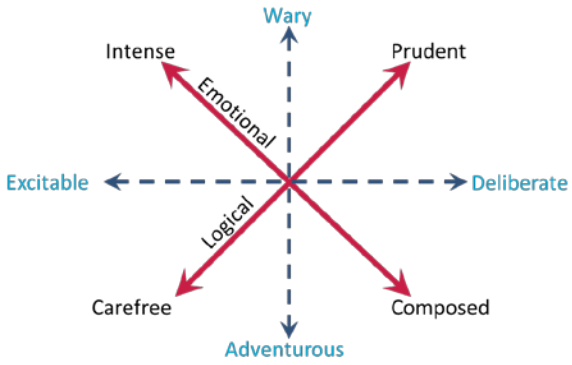

Figure 3: Emotional and logical drivers behind PCL's eight Risk Types (Source: Psychological Consultancy Limited 2017)

Risk Attitude looks at how experience and personal circumstances contribute to risk-taking behaviour. Whereas Risk Type is deeply rooted and unlikely to vary, Risk Attitude will depend on experience and personal circumstances. People are usually more comfortable taking larger risks when they are on familiar ground. For example, wealth, age, financial experience and the importance of an investment in the bigger picture will all influence a customer's willingness to take financial risk. Taken together, Risk Type and Risk Attitude determine risk-taking behaviour, and PCL combine these two into a Risk Tolerance index for the purposes of financial advice. Figure 4 shows an example of how a deliberate investor might map to the risk tolerance index.

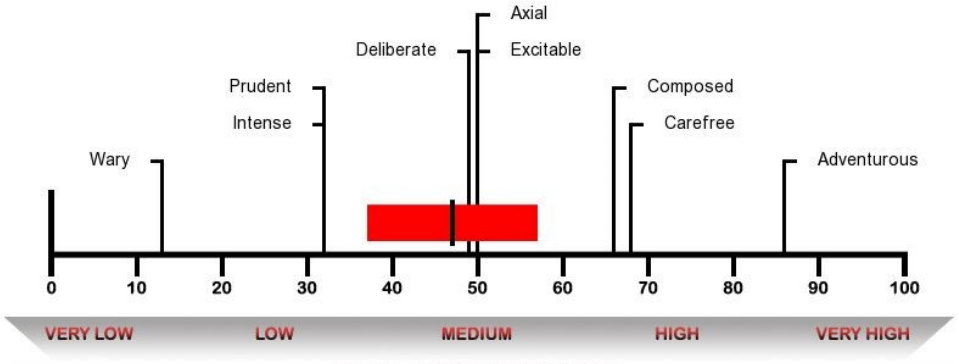

Figure 4: Risk Tolerance Index (Source: Psychological Consultancy Limited 2017)

Risk tolerance can be condensed to a single number and onto a scale of descriptive categories. This forms the basis of traditional attitude-to-risk assessment tools which are now a familiar part of the investment product toolkit for advisers. Risk tolerance varies according to the consumer's Risk Type and so does their entire approach to making risk-based decisions. A traditional risk metric does not vary according to the personality type of the consumer using the metric.

To be effective, a traditional risk metric will need to be put into context and where possible consider the way that metric will be interpreted by the user. Ideally that requires an understanding of the risk disposition of the consumer, which in turn implies the need for a risk personality assessment; either formally through questionnaires, or informally as part of the natural interactions of a face-to-face advice process. The Working Party recognise that many consumers buy products on-line, without advice, these are via comparison websites.

4.3 Willingness and ability to take risks

The ability to withstand the impact of adverse events increases with wealth. However, risk personality is pervasive regardless of wealth. To show this, we can consider the distribution of Risk Types among the general population and compare that to the Risk Types of those found in management in Figure 5. The management category can be considered as more likely to have higher average wealth than the general population. There is still a reasonably even distribution of Risk Types present among management. Those who are both more or less comfortable taking risks are able to 'succeed' in management, reinforcing the earlier statement that there is no single linear scale for risk-taking.

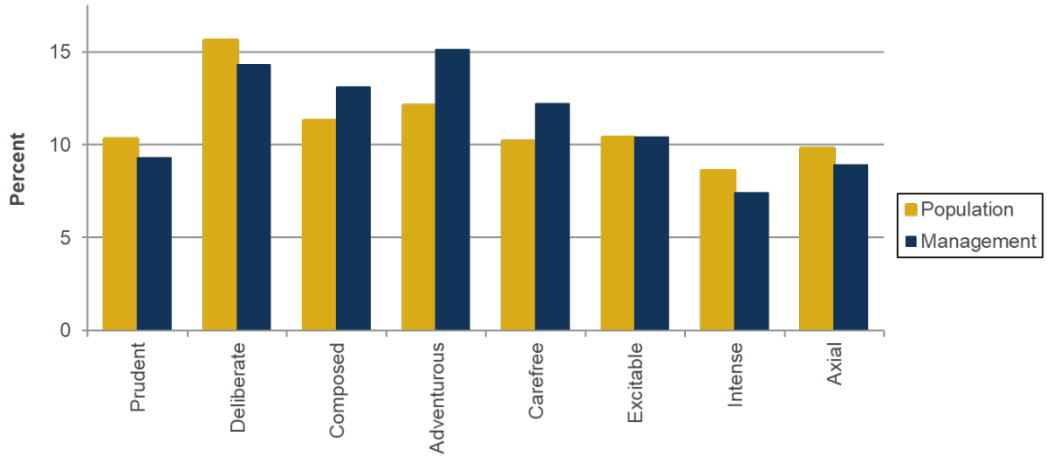

Figure 5: Distribution of Risk Types among management and the general population (Source: Psychological Consultancy Limited 2017)

As an aside, we see small increases among the general management distribution for the Composed and Adventurous Risk Types. Wider personality studies have identified conscientiousness combined with high adjustment scores (i.e. composure) as being associated with greater life success. The Adventurous Risk Type is a mixture of composure and risk-taking.

People may be willing to take risks but not have the ability to take risks. As we have seen above, although the distribution of Risk Types may vary slightly by wealth, there are still plenty of Adventurous, Carefree and Composed Risk Types with less wealth. Although these people are comfortable taking more risk than others, their financial positions may preclude them from doing so. Experience lessens the perception of risk. However, by the very nature of the products, it is difficult to accumulate financial experience when dealing with long-term insurance and savings unless customers have sufficient wealth to make repeated investments over time and to bear the consequences. Customers use external sources of information – family and friends, advisers, websites and the media[6] - to help lessen the perceived risk of making a financial decision.

Risk metrics can help identify the riskiness of the product as, for example, in the Summary Risk Indicators in Packaged Retail and Insurance-Based Investment Products (PRIIPs). A mathematical approach might aim to match the risk propensity of the investor against the risk rating of their entire

[6] See, for example, p107, Study on Consumers' Decision Making in Insurance Services: A Behavioural Economics Perspective, EU Publications (2017). ISBN 978-92-9200-750-8

portfolio, including the marginal impact of the investment under consideration. However, this is not yet a practical reality.

At the other end of the spectrum, many customers may be unwilling to take risks but may be forced to accept them due to their circumstances. The Financial Inclusion Commission's report into improving access to household insurance[7] found that nearly 16m adults in the UK have no contents insurance, and many have little or no savings with which to replace possessions through fire, flood or theft. According to the paper, those on lower incomes face a higher risk frequency, being exposed to twice the level of burglaries, 8x the flood risks from living on floodplains, and 30x the risks from arson.

The marginal utility of contents insurance should be increased for this group. Only one-quarter of the 5.1m renters living in social housing could afford to replace white goods such as a washing machine from their savings. These consumers are also likely to be charged comparatively higher premiums to reflect the expected increase in claims frequency and any fixed administrative cost element of the premium, as well as other actuarial loadings (for example, for paying premiums monthly). Those customers who are most likely to benefit from insurance are charged comparatively higher premiums in a market where individual risk factors are used to determine commercial loadings.

The Financial Inclusion Commission report recommends (among other things) that there needs to be a better evidence base to understand the question of what is affordable and the beneficial impact of cover when losses strike those on low incomes, and the attitudes of excluded consumers as to the value of insurance and triggers for them to engage. Attitudes to risk and ways to communicate the impact of (un)insured events could be an important part of this research.

Members of UK workplace pensions are offered a choice of funds to suit their different risk-taking profiles. 92% of members invest in their scheme's default fund according to the Pensions Regulator. It is hoped that engagement will increase over time alongside the size of a member's investment fund. However, until members make an active choice, the Adventurous and the Carefree scheme members will be exposed to the same level of investment risk as the Prudent and the Wary members. At the point at which they do engage, the challenge is a similar one for risk metrics – to communicate the possible upsides and downsides of over- or under-adventurous investment strategies in terms that members can easily translate into an impact on their everyday experience.

5. General insurance consumer satisfaction, quality and value metrics already in use

Capturing a consumer's risk appetite prompted a review of metrics which are used elsewhere, firstly within insurance comparison websites. Comparison sites aim to provide consumers with a user-friendly means to simultaneously assess products. The Working Party researched some of what was available to consumers and the methods used to display qualitative comparative information.

According to their website, as of 21 April 2018 MoneySuperMarket.com (MSM) was the UK's leading price comparison website. Along with MoneySavingExpert and Travelsupermarket it comprises Moneysupermarket Group PLC, a member of the FTSE 250 Index, with annual revenue for 2017 of £329 million. The number of average monthly users of MSM is quoted as 6 million. The scale of MSM means it has sizeable resources to develop methodology to help their customers find "the product most suited to their needs".

For general insurance, the risk to the consumer is not generally linked to investment performance, but to other factors, including whether the risk is covered under the policy, how generous (or otherwise) the provider is in paying out claims, etc. MSM, for a range of general insurance products, compares the price of different providers' products. However, increasingly, additional information is provided to

[7] Nick Hurman and Jackie Wells, The Missing Piece in the Financial Inclusion Debate? Improving Access to Household Insurance, Financial Inclusion Commission (2017)

allow the customer to assess the quality of the different offerings as well as price. For household insurance, for example, as at April 2018 ratings are given for overall quality, claims experience customer ratings, legal expenses, home emergency and accidental damage.

For household, therefore, MSM produce five different metrics for each of the more than 80 providers they compare. For legal expenses, home emergency and accidental damage add-ons, the metric is largely measured by the benefits provided by the policy. For claims experience, a metric is derived from data collected by MSM and by a specialist market research company; customers rate their experience of actual claims. The overall quality score is derived by firstly asking customers what three most important factors affect the quality of their insurance, and then testing every policy for these three factors, which were claims handling, what the insurance includes, and the quality of customer service; customer priorities and requirements being used to drive how the second and third of these were measured.

From this, it is clear that MSM have committed a considerable amount of resource to the production of their metrics, and that the on-going maintenance of these metrics will continue to require substantial resources. The metrics are useful for consumers who are MSM customers, however not all insurers provide information on exactly this basis or appear on the MSM website therefore it is not easily scalable.

Secondly, we looked at metrics published by the Financial Conduct Authority (FCA) for general insurers. The FCA has also been considering the provision of information additional to pricing for certain general insurance products. It is expected that some consumers will access the statistics. The FCA had found poor value in both add-on and some standalone products sold by firms, which was exacerbated by there being no commonly available measures to assess the value for money of general insurance products. As a result they have pilot tested the publication of claim frequencies, claims acceptance rates, and average claims pay-out for four products (value measures or KPI). The four products are home (combined buildings and contents), home emergency insurance, personal accident insurance sold as an add-on, and key cover sold as an add-on.

The FCA has published two sets of this data representing 2016 and 2017 for a number of insurers, and intends publishing a third set in early 2019. The FCA considers that the publishing of this data improves transparency and allows firms to benchmark their performance. It is highly likely that a wider range of general insurance products will come under scrutiny and all relevant general insurance firms will be required to participate. (FCA General Insurance value measures 18/09/2018 update).

The Working Party also considered the role played by Consumer Groups and whether they used metrics to assess the risks faced by consumers. There are many Consumer Groups dedicated to financial matters which impact consumers, however the focus is predominantly on debt issues and there is less reference to investment/insurance product selection. The Working Party found this avenue of research to be limited and therefore it was not progressed further. If a risk metric was to be designed and tested in the future, then a consumer group could be used to gauge the effectiveness and then incorporate their recommendations.

6. How insurance disclosure can help consumers understand risk

In June 2017, the IFoA's Risk and Customer Outcomes Working Party published their research paper 'How can we improve the customers' experience of our life products?' one of the conclusions related to disclosure, they recommended customer outcomes could be improved if a consumer's risk profile is matched to a product. Also, customers should be made aware of 'what could go wrong'; having forward looking projections could assist in this matter. The implication is that when presented with the right information, consumers will make better decisions.

Throughout Europe, in 2018 the Product Information Document (IPID), for general insurance products was introduced. IPIDs are of a standardised format, for product comparison, they do not contain a risk metric. The European Commission also introduced regulations to make the complex investment environment more understandable by consumers. As a result, the FCA mandates a Key Information Document (KID) for PRIIPs products. The KID should be clear to ensure the consumer receives the right information on the risk exposure. The Working Party acknowledges this as a positive step by the FCA in order to regulate communication and protect consumers who buy investment-type products. The European Supervisory Authorities (ESAs) provide practical tools as risk measures for life investment products sold to consumers, this requires the KID contains a risk metric, the Summary Risk Indicator (SRI) for market risk and credit risk assessment. The SRI is a quantitative metric which aggregates market and credit risk, the result is presented to the consumer along with performance scenario calculations. SRI is presented as a standardised risk score between 1 and 7; this is accompanied by a narrative to disclose the main risks associated with the investment. The Working Party recognises the on-going challenges in the implementation of the KID. Overall, it is beneficial for consumers to see a SRI as this is a metric which aims to consolidate complex statistical calculations.

Overall, the recent regulatory changes in product disclosure will benefit consumers; however, do they go far enough? Some would argue that are insufficient efforts by the regulator, there should be a high level of consumer protection across all lines and through different channels.

7. Consumer risk metrics survey 2017

Following the technical research conducted by the Working Party, empirical evidence was needed to gain an insight into insurance consumers' risks and concerns. The feedback would gauge what consumers would like to see from insurers to better optimise the suitability of insurance protection to their risk profile. A survey was performed to collect data to understand insurance consumers':

- Concerns: what is their perceived insurance risk?
- Opinions: what insurance providers can do better to address their concerns?
- Preferences: what information is used to make insurance / risk decisions?
- Behaviour: how do they want to see insurance information provided to them?

7.1 Survey hypotheses

The Working Party established hypotheses to explore the level of consumers' engagement with insurance and how insurance products satisfy their risk profile; these are illustrated in table 6. The survey was an opportunity to test the hypotheses which could then inform the design of a metric.

Survey Hypotheses	Description of the hypotheses to be tested during the survey
Hypothesis 1	**Peace of mind** is a policyholders' main concern. Policyholders want assurance / peace of mind from their insurance policy
Hypothesis 2	**Anticipation of needs**. Policyholders would like insurers to better anticipate their needs and provide value added services
Hypothesis 3	**Advisors and price influence** policyholders, typically insurance advisors (life) and price (general insurance)
Hypothesis 4	**Keep it simple -** Policyholders want simplicity in communication

Table 6: Hypotheses tested during the survey (Source: Consumer Risk Metrics IFOA Working Party 2018)

7.2 Consumer Risk Metrics survey questions, methodology and population sample

The survey was performed on-line by YouGov; it comprised a preliminary background question to filter respondents who had one or more insurance policies, as eligible to take the survey. It used YouGov's standard selection of insurance products (general insurance, life and health, and indirectly

for long term insurance savings products by way of endorsements or insurance wrappers).The survey contained 6 multiple choice questions. Full details of the survey methodology, all the questions plus a review of the survey methodology controls and limitations are included in the Appendices. The population sample covered 11 regions in England, Scotland and Wales. A total of 4,181 people from YouGov's population set were assigned the survey. 3,393 respondents had one or more insurance policies, these qualified for further analysis. Some responses were considered unusable due to inconsistencies within the data. The relatively high number of responses that could not be used raises concerns as to how well respondents understood the questions, and potentially the topic of insurance, the Working Party considers this a limitation of the research.

7.3 Summary of the key findings from the Consumer Risk Metrics survey

Insurance consumers' concerns	
Be more responsive, accessible and give me peace of mind	Responsiveness of insurance providers (57%), provision of peace of mind (53%), accessibility (44%) were top concerns. Results were consistent, irrespective of gender, age, social / economic group. *Hypothesis1 = True.*
You do not need to predict what I want	Consumers did not expect their insurers to anticipate their demands and needs (24%). *Hypothesis 2 = Untrue*.
Price is important to me but not advisors	3 out of 4 factors which influenced policyholders related to cost; price affordability (58%), price relativity (50%) fees/charges (25%). Price sensitivity increased with age. Advisers were found not to be influential (7%) *Hypothesis 3 = Partially True.*
Simple metrics do not tell me what I want to know	The simple style of communication in the form of a counter or a rating was not significantly favoured by respondents to the survey (17%) *Hypothesis 4 = Untrue.*

Table 7: Key findings from the survey – consumers' concerns (Source: Consumer Risk Metrics IFOA Working Party 2018)

The survey confirmed that consumers want insurers to be responsive and accessible also to provide them with peace of mind. However, the survey did not support the hypothesis that a simple metric is what consumers are looking for, this surprised the Working Party. The "keep it simple" style of communication was only favoured by 17% of respondents. This will influence the design of future risk metrics and indicates the notion of having a single index metric may not be effective.

What style of risk communication would consumers like to see from their insurers?	
Financial information matters to me	3 of the top 4 influence on the policyholders were money related for all insurance products. *(Question 4)*
I want to research before buying insurance	Half the respondents said they will compare and check user/independent reviews before buying or deciding on their insurance purchase. Aggregators and comparison sites play a significant role. This is observed as not too dissimilar to consumer experience in other industries where aggregators are increasingly playing a major role *(Questions 4 and 6).*
I do not want to be influenced by the media or advisors when buying insurance	Media and insurance advisors/broker did not play a significant in the decision making of consumers (Media 5%, Advisors/Brokers 7%); this could be a contributing factor to the advice gap. Limited confidence in engaging advisors with financial issues and the lack of trust following past instances of miss selling in the country. *(Question 4).*
I like to see what others have to say	Insurance consumers are most receptive when information/reviews are coming from other users (27%), and independent bodies such as Which, an independent consumer research group or the Actuarial profession (36%). *(Question 6).*
Social media does not influence our insurance decision making	Social media did not influence the insurance purchase of most consumers; though for the younger segment of the population and those in the socio-economic grouping of C2 and below were more receptive to this channel of communication. *(9%) (Question 6).*
Easy to understand insurance products	The ability to easily understand their insurance coverage was called for by customers across all spectrums (66%) *(Question 3).*

Table 8: Key findings - risk communication preferences (Source: Consumer Risk Metrics IFOA Working Party 2018)

8. Review of progress against the Working Party's objectives

The aim of the Working Party is to promote thought on matters relating to the communication of risks faced by insurance consumers. Thought has indeed been given, and at times the Working Party felt overwhelmed by the scope of the research, which in retrospect was too broad.

Reviewing progress against the Working Party's objectives:

- **Objective 1: the identification and understanding of consumer risks / concerns.** The Working Party assessed the risks and concerns faced by consumers and the role performed by insurance to mitigate these. The YouGov survey indicated consumers look for unbiased information from insurers and easy to understand coverage. The insurance industry is built upon reputation and trust, a policyholders' risk assessment of their needs and selection of insurance protection should result in good customer outcomes. Consumer's preference to refer to independent bodies and other users when sourcing and reviewing insurance information was noted by the survey. The consumer's lack of expectation of guidance from insurers and intermediaries surprised the Working Party. What could the insurance industry do to improve this?

- **Objective 2**: **to highlight practical considerations of consumer risk metrics that allows the consumer to make an informed choice.** The research identified that there is not a dominant measure for consumer's to aid their choice of products. The Working Party recommends a number of factors for the insurance industry to consider when designing a Consumer Risk Metric, these should:
    - Reflect the risk disposition of the customer and personalise for them.
    - Communicate probabilities and outcomes in terms that consumers understand to 'counteract' consumer biases for presentism and optimism.
    - Evaluate the risk inherent in the situation and the perception of that risk by the consumer.
    - Avoid over simplification, consumers want to understand the risks.
    - Be expressed in a variety of mathematical formats, as consumers find multiple methods useful to convey risk.
    - Place weight upon the lower half of the distribution. Using two metrics which focus on different properties may also be beneficial to avoid 'gaming' in product design.

A consumer's risk profile is complex, consumers may not think and behave exactly as insurers try to predict within their models. Insurance models should be adjusted to take into consideration the behavioural variance. 'Behavioural research shows us that consumers are not the economically rational "super consumers" research models might assume.' (FCA (2017) FCA Mission: Our Future Approach to Consumers).

Understanding risk and applying this to financial service products has implications for consumers' long term prosperity. One industry expert has estimated that if someone who played the lottery every week since its inception had invested the same money in a pension instead, they would have had an expected return approximately five times greater from the pension. While a small flutter on the lottery each week may be low risk, and indeed have a low instant financial impact, the accumulated effect of investing as an alternative would make a significant difference too many. However, while the life-changing potential of winning the lottery is clearly communicated, the chances of winning are not often fully appreciated.

9. Further research recommended by the Working Party

This investigation into Consumer Risk Metrics demonstrates there is further research needed; this is the start rather than the end. Throughout the review, the Working Party has acknowledged the importance of a personalised risk measure(s) for consumers; how this can be achieved warrants further investigation. To be successful, the method must generate a level of risk self-awareness in the consumer, whether this is ascertained by a series of questions or on-line assessment should be researched. Risk ownership by the consumer is essential to avoid un-due influence and potential mis-selling. Increased personal risk awareness would make the development of risk metrics by insurers more meaningful and generate fair customer outcomes.

The communication of risks faced by consumers is an important matter for insurers and regulators; there are financial consequences when things go wrong. In order to be of value, risk metrics need to be applied consistently across the products being assessed: this may mean either a prescribed metric by an industry or regulatory body (e.g. in the UK, either bodies such as the ABI, FRC, or FCA), or an independent body carrying out the assessment of products.

The on-line survey was useful to gain an insight into insurance consumers' attitude to risk and their preferences. The relatively high number of responses in the in the survey which could not be used raised concern as to how well respondents understood the questions. In future research, to avoid misinterpretation, the Working Party recommend deep dive interviews to explore fully the motivations and reasons for some of their answers; this could inform the future design of Consumer Risk Metrics. The survey also focused on British consumers, these results may not be representative of consumer preferences in other locations. A comparative review could be performed in other countries, the Working Party is aware of other studies which could be used as a comparison (Society of Actuaries (2014)).

10. Acknowledgements

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12. Appendices

Appendix 1 - Survey process and methodology

The Working Party received funding from the Institute and Faculty of Actuaries' Life Board to conduct a survey. Following a request to tender from several leading survey companies, YouGov, who is registered with the Information Commissioner, was selected to perform the survey, as it scored the highest using the following selection criteria:

- Fit to criteria in Request for Tender
- Robustness of proposal
- Practical application
- Evidence of similar projects
- Ability to meet within timescale
- Value for money

YouGov was appointed for the Consumer Risk Metrics survey in conjunction with a Working Party that were performing research into consumer attitudes towards life policies having a 'With Profits' benefit. The Consumer Risk Metrics survey and Value of With-Profits surveys were independent surveys released at a similar time by YouGov as part of the YouGov daily Omnibus survey. The aim of the survey was to reach a representative cross section of the UK population which could be analysed by:

- Gender
- Age Range (5 bands)
- Social economic Grade (ABC1 / C2DE split)
- Government Office Region
- Marital Status
- Working Status
- Family composition in the household, and
- Social Media Usage

The YouGov surveys were performed using their online interview administered to members of the YouGov Plc UK panel of 800,000+ individuals who have agreed to take part in surveys. The survey process is as follows:

- Emails were sent to panellists selected at random from the base sample. The e-mail invited them to take part in a survey and provides a generic survey link.
- The interested panel member clicked on the link they were sent to the survey that they were most required for, according to the sample definition and quotas. (The sample definition was "GB adult population"). Invitations to surveys do not expire and respondents can be sent to any available survey.
- The responding sample was weighted to the profile of the sample definition to provide a representative reporting sample.
- The sample data selected aimed to mirror the population distribution based on the latest census or from industry accepted data.

The Consumer Risk Metric survey went live on 1st and 3rd November 2017. Survey results, including the underlying data, were provided to the Working Party in December 2017.

Appendix 2 – YouGov Survey questions

Number 0 is the qualifying question which determines eligibility to take the survey; this was taken from YouGov's set list of insurance policies.

0. **Which of the following insurance policies do you currently own?** Please tick all that apply. Standalone home contents insurance policy (i.e. policy does not have buildings insurance)
    i. Standalone home buildings insurance policy (i.e. policy does not have contents insurance)
    ii. Joint home/building and contents insurance
    iii. Motor insurance (fully comprehensive)
    iv. Motor insurance (third party only)
    v. Motor insurance (third party fire and theft)
    vi. Travel insurance (single trip – in this case please select this option if you have had cover at any point in the last 12 months)
    vii. Travel insurance (annual cover)
    viii. Mobile phone insurance
    ix. Pet insurance
    x. Life insurance
    xi. Credit card or loan Payment Protection Insurance (PPI) (pays your credit card or personal loan costs if you can't work because of ill health and/or unemployment)
    xii. Mortgage Payment Protection Insurance (MPPI) (pays your mortgage costs if you can't work because of ill health and/or unemployment)
    xiii. Income Protection (IP) (e.g. pays you a monthly income if you're unable to work due to accident, sickness or unemployment)
    xiv. Private Medical Insurance (PMI) (e.g. cover for treatment or medical expenses)
    xv. Private Dental Insurance
    xvi. Individual income protection (IP) (paid for by myself)
    xvii. Group income protection (provided by my company)
    xviii. Mortgage payment protection
    xix. Life insurance
    xx. Critical illness
    xxi. Personal Sick Pay
    xxii. Over 50s plan
    xxiii. Other
    xxiv. Don't know
    xxv. None of these

1. **You previously said that you hold at least one insurance policy. Thinking about your expectations as a customer regarding your insurer. Which, if any, of the following do you agree with?** (Please select all that apply).
    i. I expect the insurer to carry out what they say they will do
    ii. I expect the insurer to anticipate my needs
    iii. I expect the insurer to provide expertise and "pay up" when there is a claim
    iv. I expect the insurer to keep premiums low and maintain high service levels
    v. I expect the insurer to be fair (e.g. I can change or surrender without excessive charges/ penalties)
    vi. I expect the insurer to help me understand what I'm buying and how I can claim/ guide me on financial protection

vii. I expect the insurer to provide "real insurance", with detail so that I know what is covered
viii. None of these
ix. Don't know

2. **For the following question, please think about all your insurance policies/ insurers that you deal with. Which, if any, of the following are key concerns for you?** (Please select all that apply. If nothing in particular concerns you, please select the 'Not applicable' option)
    i. Assurance (e.g. to provide peace of mind in times of crisis or in the insured event, pay on time or provide me with the assistance needed to get me out of the crisis)
    ii. Reliability (e.g. mistakes made by the insurer are corrected)
    iii. Not able to speak to a person live or go to a service areas/ website
    iv. Responsiveness (e.g. responds quickly to my requests)
    v. Suitable (e.g. receiving appropriate advice for my needs from the insurer)
    vi. Empathy (e.g. to be my friend whenever I or my loved ones reach out to my insurer)
    vii. Trust and Value (e.g. making me aware of better opportunities for me)
    viii. Accessible (i.e. being able to reach them on mobile, online, social media, etc.)
    ix. Other
    x. Don't know
    xi. Not applicable - nothing in particular concerns me

3. **Still thinking about all your insurers that you deal with... Which, if any, of the following would you like to see your insurer do?** (Please select all that apply)
    i. Continuously help give me the best value for my policy, and not only when I threaten to renew/ leave
    ii. Help me understand what my own best interest are and my potential risks (i.e. not the best interests/ risks to the insurers)
    iii. Treat my money as mine, rather than the insurers
    iv. Anticipate my needs and understand the risks that I face. Even prompt me to re-assess my cover (e.g. if asset values have increased)
    v. Have real experts and professionals to support me and understand my policy
    vi. Make it easier and quicker for me to claim and be serviced - anytime, anywhere, and "one-stop shop"
    vii. Explain what is covered and what is not in the language that I can understand
    viii. That they do not charge me other than my premium
    ix. Other
    x. Don't know

4. **Still thinking about all the insurers that you deal with... Which, if any, of the following have led you to select any insurance product you own from any insurer?** (If nothing in particular led you to select any insurance product you own from any insurer, please select the 'Not applicable' option)
    i. The amount I pay for my premium
    ii. The amount of fees I pay to the insurer
    iii. Word of mouth (e.g. from my neighbours, friends, family, etc.)
    iv. Media (e.g. social media comments, blogs, websites, advertisements, etc.)
    v. My past experiences with the insurance policies/ insurers
    vi. The information (both written and verbal) provided to me by insurers

vii. Comparing the insurer with other insurance companies
viii. The products that the insurer provides (e.g. investments, income, etc.)
ix. My financial advisor/ broker/ expert
x. Other
xi. Don't know
xii. Not applicable - nothing in particular led me to select any insurance product you own from any insurer

5. **Which, if any, of the following would you find useful for your insurer to provide to you?** (Please select all that apply)
    i. Provide and anticipate my insurance needs specific to my circumstance
    ii. Give me facts about the cover so I can decide myself
    iii. Do not try to predict the future by giving unrealistic expectations
    iv. Informing me of all fees and charges, options, risks, benefits, trade-offs
    v. A "yes/ no" assessment for my personal needs based on my current financial situation
    vi. Communicate with me through the channel I prefer (e.g. face-to-face, social media, email, SMS etc.)
    vii. Help me manage or mitigate my risks (e.g. tell me the latest scientific research to prevent stress, what to do to avoid thief in my area etc.)
    viii. None of these
    ix. Don't know

6. **For the following question, please think about your insurance with regards to "risk management" (i.e. avoiding any potential loss) in which, if any, of the following ways would you like insurers to express risk in a way that is easy for you to understand?** (Please select all that apply)
    i. "Calorie counter" style - a single numerical/ alphabetical/ rating (e.g. "grade 1", "A+', etc.)
    ii. "Amazon/ Trip Advisor" style - a star rating and user reviews
    iii. "Which?" style - qualitative review rating by the Institute of Actuaries
    iv. Social Media - user reviews (e.g. from YouTube, Twitter, etc.)
    v. None of these
    vi. Don't know

Appendix 3 – YouGov sample population demographics

Table 9 reflects the cleansed survey sample, based on GB adults who have an insurance policy; it shows that the sample population is skewed towards older age groups, working and retirees, social economic classes of C2 and above and those with general insurance policies. The family status of the respondents was not analysed.

	Description			
Total Number of Respondents	3,393 individuals			
Gender	Females: 1,843 (54%)		Males: 1,550 (46%)	
Age Group (years by last birthday)	18-24: 219 (6%) 25-34: 441 (13%) 35-44: 589 (17%)		45-54: 660 (19%) 55+: 1,484 (44%)	
Employment status	Not Working: 230 (7%) Unemployed: 64 (2%) Full Time Student: 99 (3%) Part Time Working (<8 hrs.): 64 (2%)		Part Time Working (8-28hrs): 445 (13%) Fulltime Working: 1,499 (44%) Retired: 899 (26%) Other: 90 (3%)	
Regional Spread	North East: North West: East Midlands: East England: London: Scotland South East South West: Wales: West Midlands: Yorkshire and the Humber:	155 350 262 330 384 288 488 348 181 292 315	5% 10% 8% 10% 11% 8% 14% 10% 5% 9% 9%	
Socio Economic Class	A: 458 B: 675 C1 : 999		C2: 597 D: 356 E: 308	
Insurance Type*	Respondents with General Insurance cover(s): 3,331 Respondents with Life Insurance cover(s): 1,448			

Table 9: YouGov sample population demographics (Source: Consumer Risk Metrics IFOA Working Party 2018)

* Individuals can have both Life and General Insurance.

Appendix 4 – YouGov Survey detailed results

1. Results for question 1: You previously said that you hold at least one insurance policy. Thinking about your expectations as a customer regarding your insurer. Which, if any, of the following do you agree with?

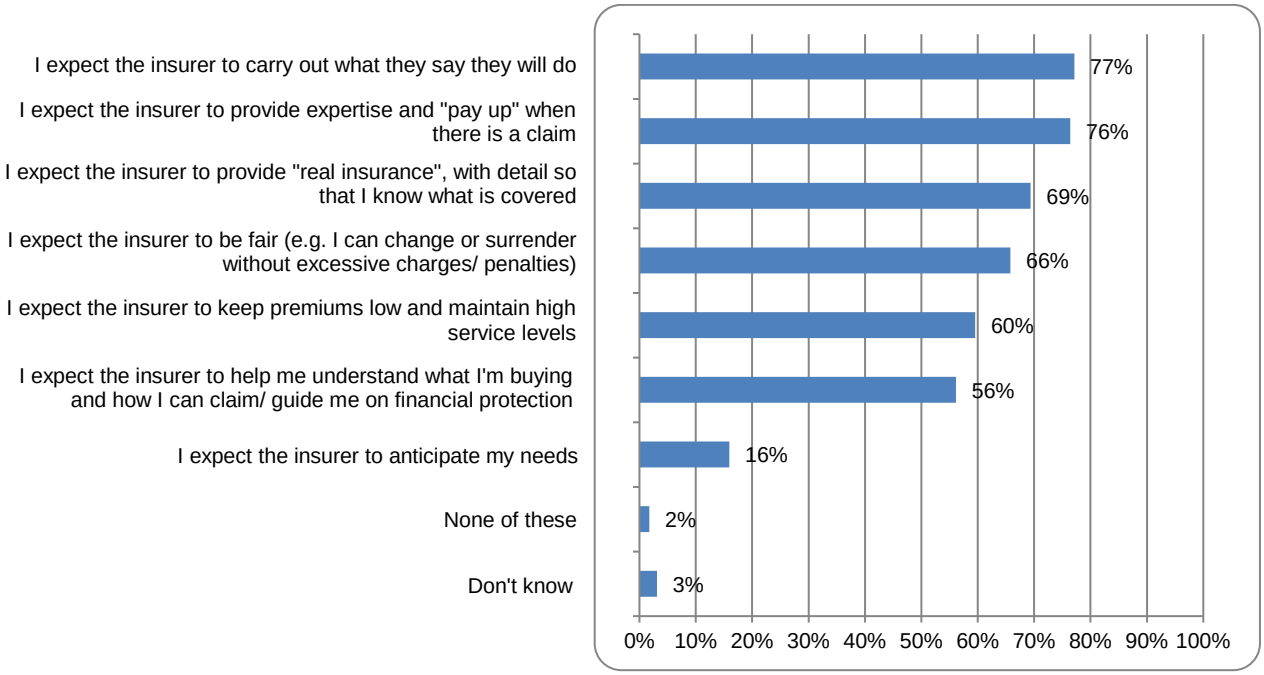

Table 10: Expectations of customers from their insurers (Source: YouGov Survey 2017)

Unweighted base: All GB adults who have an insurance policy (3,393)

- Consumers expect their insurers to fulfil their duties by carrying out their obligations within the policy (77%). This is marginally ahead of insurers being experts and paying claims (76%).
- Keeping premiums low and maintaining a high level of service (60%) received endorsement from insurers but was less of a priority.
- Anticipation of consumer needs by insurers was significantly lower (16%) and anticipation by consumers that they value current service more than looking ahead.
- The categories for ‘none of these’ (2%) and ‘don’t know’ (3%) were infrequently used which illustrates that consumers have an expectation that insurers should actively engage with them and providing a product / service.

2. **Results for question 2: "For the following question, please think about all your insurance policies/ insurers that you deal with. Which, if any, of the following are key concerns for you?**

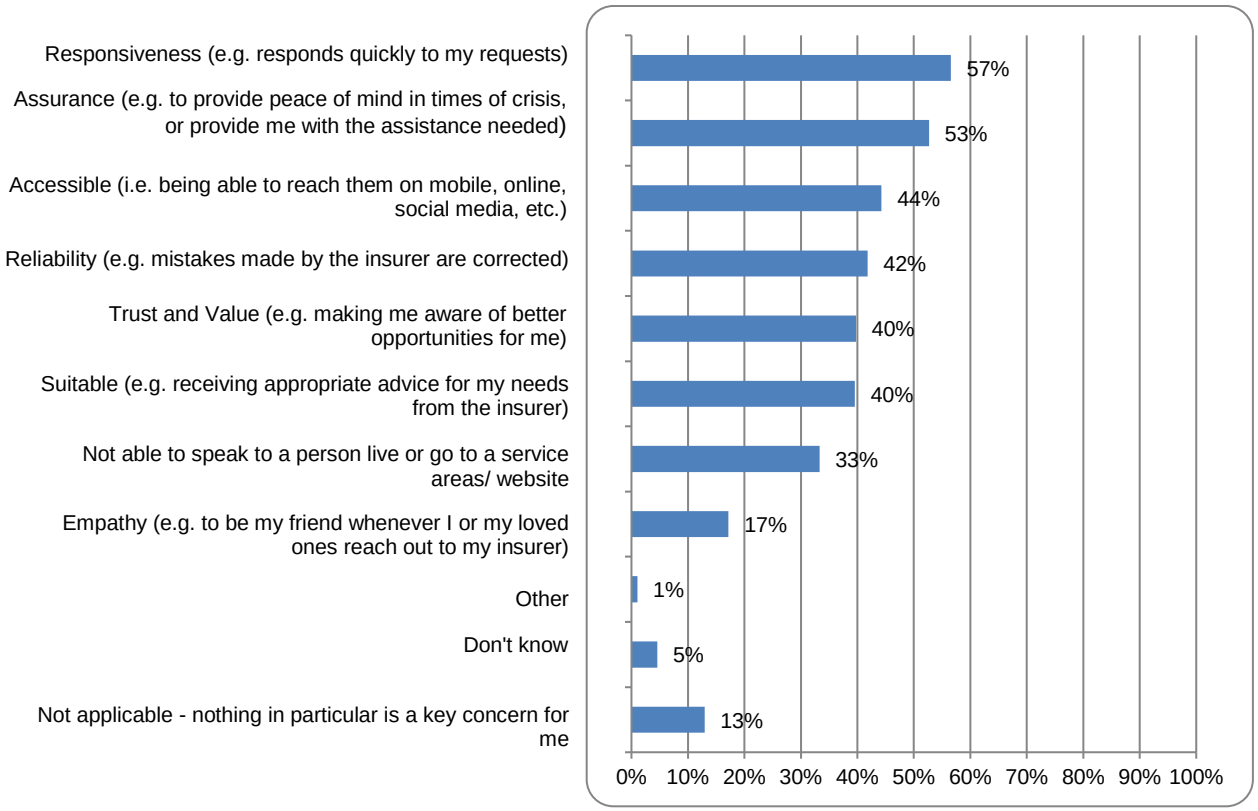

Table 11: Key concerns from policyholders in relation to their insurers (Source YouGov Survey 2017)

Unweighted base: All GB adults who have an insurance policy (3,393)

- Both Life and General Insurance consumers are concerned about the responsiveness (57%) and accessibility (44%) of their insurance, aside from the obvious assurance (53%) ability of their providers. This result is consistent across both genders and for all age groups, social economic groups as well as for working and non-working respondents. The concern is particularly prominent amongst those aged over 45.
- Consumers do not seek much empathy (17%) from their insurance providers.

3. Results for question 3: Still thinking about all your insurers that you deal with... Which, if any, of the following would you like to see your insurer do?

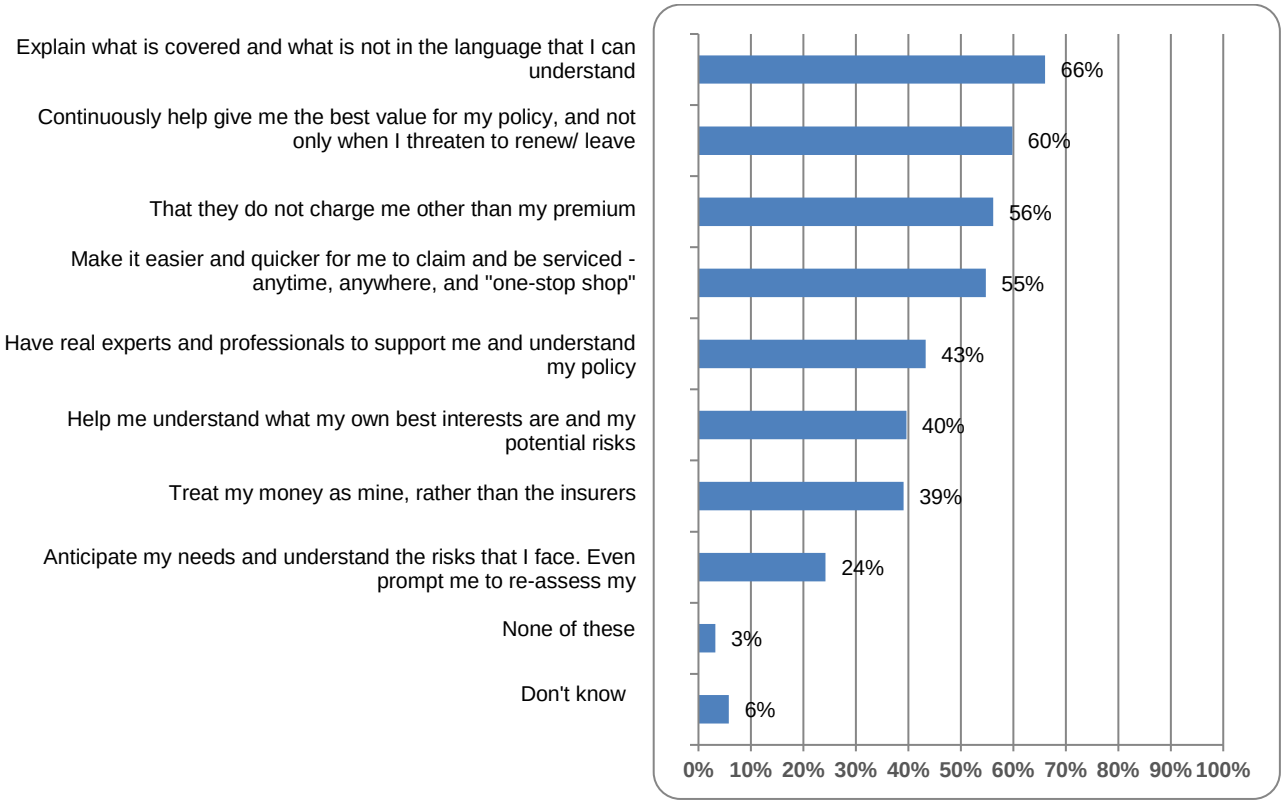

Table 12: what consumers would like their insurers to do (Source: YouGov Survey 2017)

Unweighted base: All GB adults who have an insurance policy (3,393)

- The desire to better understand one's insurance coverage (66%) is called for by customers across all spectrums.
- The demand for insurance providers to better anticipate the demand and needs of their customers is not as high as the Working Party has expected.

4. **Results for question 4: Still thinking about all the insurers that you deal with... Which, if any, of the following have led you to select any insurance product you own from any insurer?**

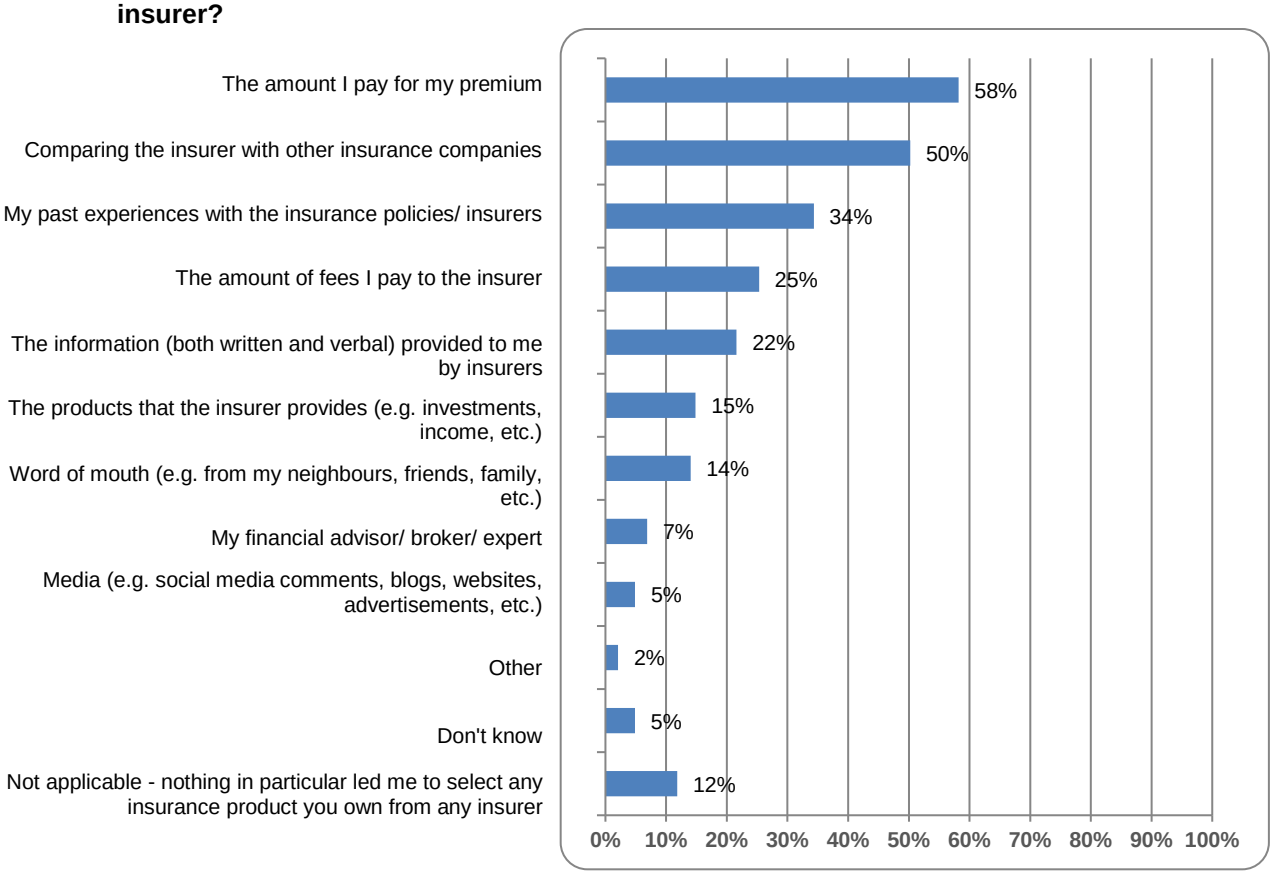

Table 13: Factors which influence product choice from insurers (Source: YouGov Survey 2017)

Unweighted base: All GB adults who have an insurance policy (3,393)

1. 3 of the top 4 top influencers to a policyholder are money related. Price affordability (59%), price relativity (50%) and fees and charges (25%) are key factors to the decision making of an insurance consumer. Furthermore, price sensitivity increases as age increases.
2. Half of the respondents say they will compare and check user/independent reviews before buying or deciding on their insurance matters. Aggregators and comparison sites such as Money Super Market (MSM) and others as indicated in Question 6 play a significant role here. This is observed as not too dissimilar to consumer experience in other industries such as news sites, retail and the music industry, where aggregators are increasingly playing a major role as consumers respond and trust them more than the direct providers.
3. Media and insurance advisors/broker do not play a significant in the decision making of consumers. This could be a contributing factor to the advice gap that results in 66% of respondents appear to not fully understand the insurance cover(s) they hold. The root causes could arise from the prohibitive cost of financial/insurance advice, the limited confidence in engaging advisors with financial issues and the lack of trust following past instances of miss selling in the country. (Media 5%, Advisors/Brokers 7%).

5. **Results for question 5: In general, which, if any, of the following would you find useful for an insurer to provide to you?**

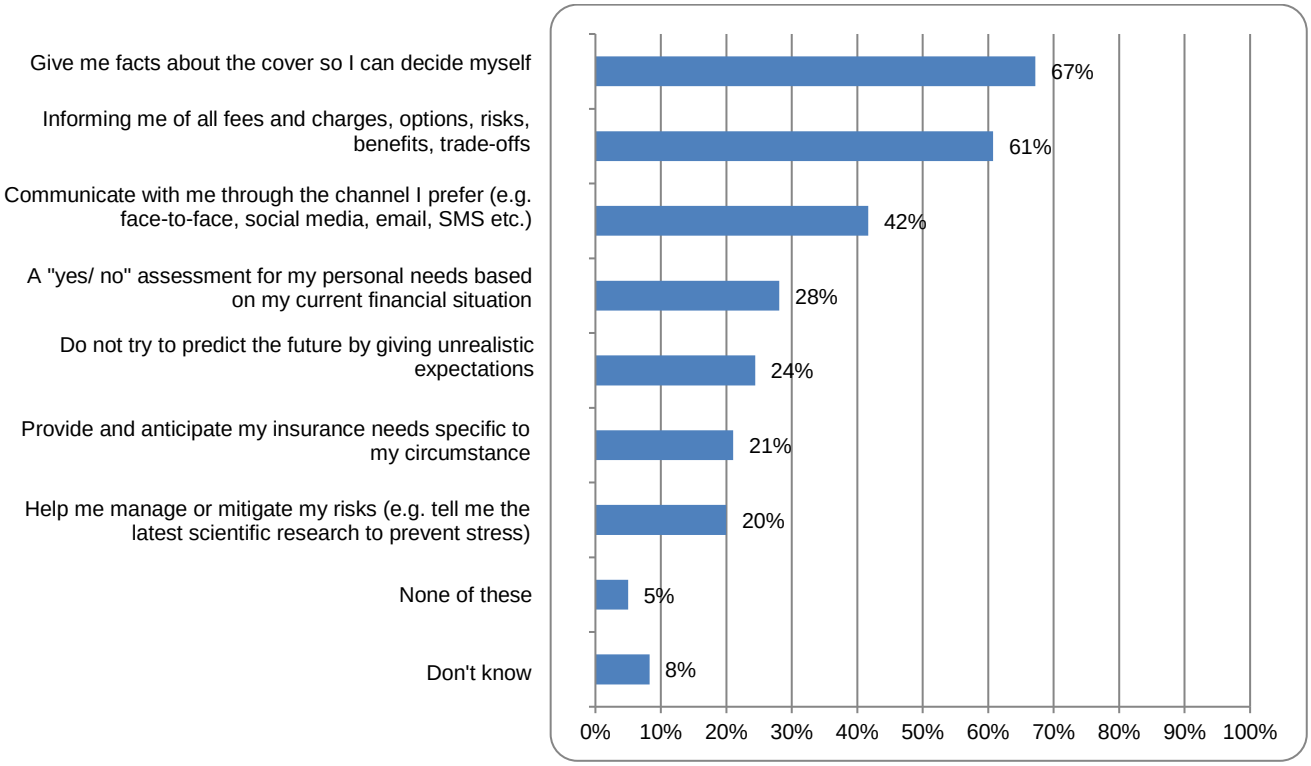

Table 14: Useful indicators from insurers to consumers (Source: YouGov survey 2017)

Unweighted base: All GB adults who have an insurance policy (3,393)

- Customers like to make decisions for themselves if they are given facts by the insurers (67%). A similar number of policyholders (61%) also rated highly the need to understand all of the fees, charges and options within their contracts. Having information allows the customers to make informed decisions.
- Lower preference was given to insurers trying to anticipate customer needs (21%) and providing information to policyholders on e.g. scentific developments.

6. **Results for question 6: For the following question, please think about your insurance policies/ insurers with regards to "risk management" (i.e. avoiding any potential loss) ... In which, if any, of the following styles would you like insurers to express risk in a way that is easy for you to understand?**

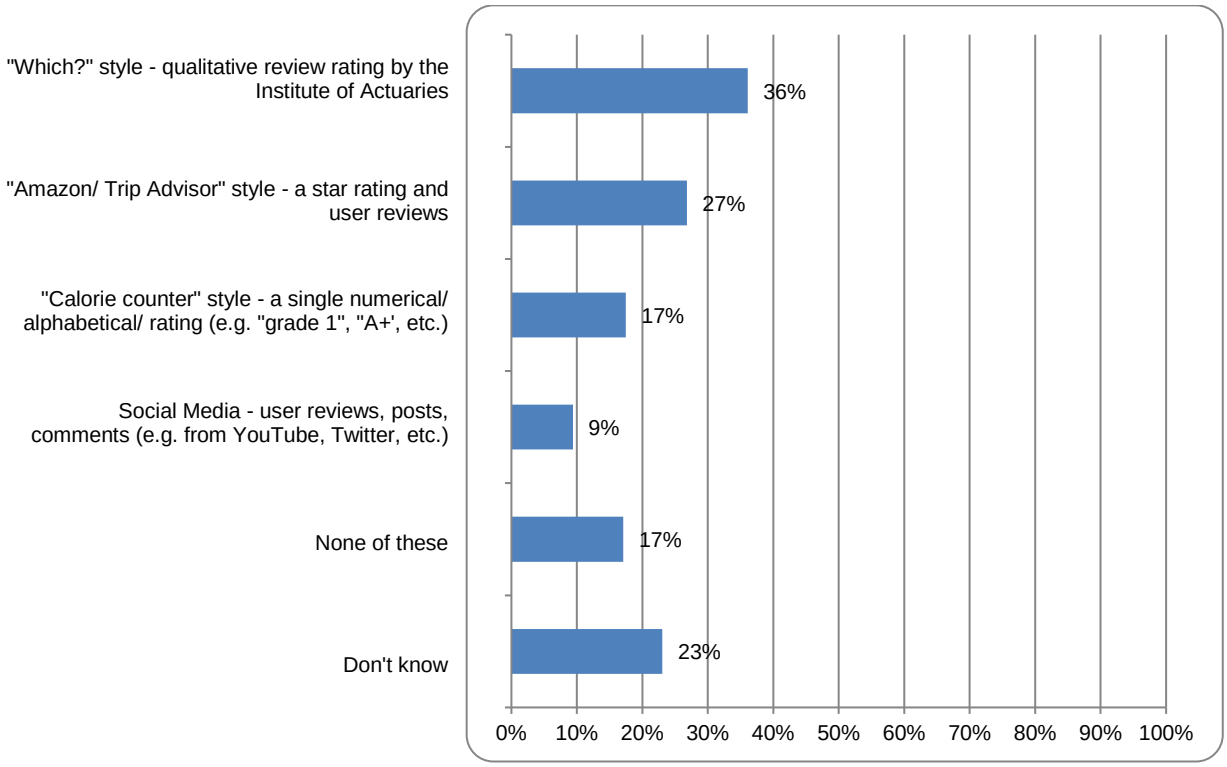

Table 15 Consumer preference for the expression of risk from their insurer (Source: YouGov survey 2017)

Unweighted base: All GB adults who have an insurance policy (3,393)

4. Insurance consumers are most receptive when information/reviews are coming from other users (27%) and independent bodies such as Which, an independent consumer research group or the Actuarial profession (36%).
5. Social media is not yet fully embraced by the larger group of insurance consumers; though for the younger segment of the population and those in the socio-economic grouping of C2 and below are more receptive to this channel of communication (9%).
6. The simple form communication in the form of a counter or a rating also does not prove to be effective to British insurance consumers (17%).

Appendix 5 – YouGov Survey methodology controls and limitations

All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 4181 adults. Fieldwork was undertaken between 1st - 3rd November 2017. The survey was carried out online. The figures have been weighted and are representative of all GB adults (aged 18+).

The Working Party reviewed the controls within the survey methodology:

- **Anti-selection controls and targeted approach** – Through the preliminary scanning questions for eligibility of respondents, the survey focuses on the responses from insurance consumers only. This control helps mitigate potential anti-selection of respondents to allow all insurance consumers to participate in the survey and not limit it to only insurance influencers or insurance aware who are more likely to choose to complete the survey. The response rate is also calibrated to ensure that it reflects the British population distribution at the time of survey. The questions allow the ability to statistically identify each of the respondents in the survey to provide a level of granularity and a degree precision in the survey results.
- **Bias controls** – The survey is consciously structured by YouGov under clear instructions, to randomise survey answer options to avoid any lead on effect to our hypotheses on the various survey issues. There is also no third party to influence the results, as it is an online self-completion survey approach. Though, we believe there is room for improvement including getting respondents to rank their options by priority to enrich the results further.
- **Population study** – The YouGov population survey methodology aims to mirror the population socio demographic spread in the UK and ensures statistically sampling size is large enough for the British population (2017: N: 4000 for a typical UK population survey). This reduces the risk, of result variance and undependable results problem as the sample size is being targeted to a statistically sample relevant size that would fit the population being surveyed.
- **Consistency** – the survey questions were structured to allow certain correlation and cross checking to ensure a good degree of consistency in the issues being studied. (Questions 1 -3 on consumer demands and concerns, Questions 4-6 on style of communication).
- **Validation** – the survey high response rate showed some degree of correlation with the responses from a similar survey conducted by the Financial Services Market Authority (FSMA) in recent years, in relation to advisor and accessibility issues for insurance consumers. This gives some assurance of the integrity of the results from the survey though there are other outcomes from the results, which appear surprising and could not be validated, as it seems to be not one that had been explored by the regulators nor publicly available survey studies in the UK to date.
- **Efficiency** – the survey was conducted efficiently by YouGov over the course of 2 weeks and within a reasonable cost level. The data was easy to collate, and the homogeneous structure enable quick and easy analysis.

Although the Working Party is reasonably comfortable with the survey methodology there are several reservations. These limitations need to be highlighted to ensure that the usage of the results is taken with full consideration. The limitations, typical of many such population surveys, are as follows:

- **Data Integrity** –The cleansing of the sample set including the removal of blank responses of all or some survey questions or the suspicious responses due to time spent on completion of the survey had resulted to the underlying distribution of respondents being skewed more towards the older population and working/retirees. The survey results do not represent all demographic segment of the population in Britain.

- **Online survey respondents** – YouGov has assured the IFoA that the methodology of surveying online respondents is statistically sufficient to reflect the general consumer population of Britain. The Working Party has some reservation on this assumption and was unable to obtain further assurance and supporting documentation from YouGov to verify this point.
- **Depth of explanations** – the survey results do not provide any depth, or explanation of the respondent views nor understanding of how a respondent would interpret the question and answer options. Many of the results in the survey would require a further deep dive to clarity and understanding of context for the response provided.
- **British Only** - This is a British insurance customer survey and may not reflect the behaviour of insurance consumers in other populations.
- **Comparison to population (Census 2011)**. The Working Party compared characteristics of the survey data with the population data in the 2011 census; this revealed:
    - The survey data is regionally representative of the wider population data and is somewhat representative of the overall split by working pattern (e.g. full time, student), but there are more workers and fewer retirees compared to the census.
    - The ages of the members are not entirely representative of the 2011 census population as there are a significantly larger proportion of survey respondents in the 45 to 74 age range. So, they are more clustered around the mean age than in the census. Some of this will be due to the relatively small size of the survey (compared to the census) meaning that extreme ages will not appear as often. Furthermore, the census and survey mean ages are different and fail tests to check if they are the same (given a level of random variation). Table 16 illustrates the differences, negative means that the survey has a higher proportion than the census.
    - The socio-economic sample population diverges between those in the survey compared to those in the census data. There are a considerably higher proportion of members in the A and B social grade, which corresponds to those from a more affluent social grade than the general population. This does not seem surprising given the topics being surveyed likely to result in more educated/employed members participating in the survey.

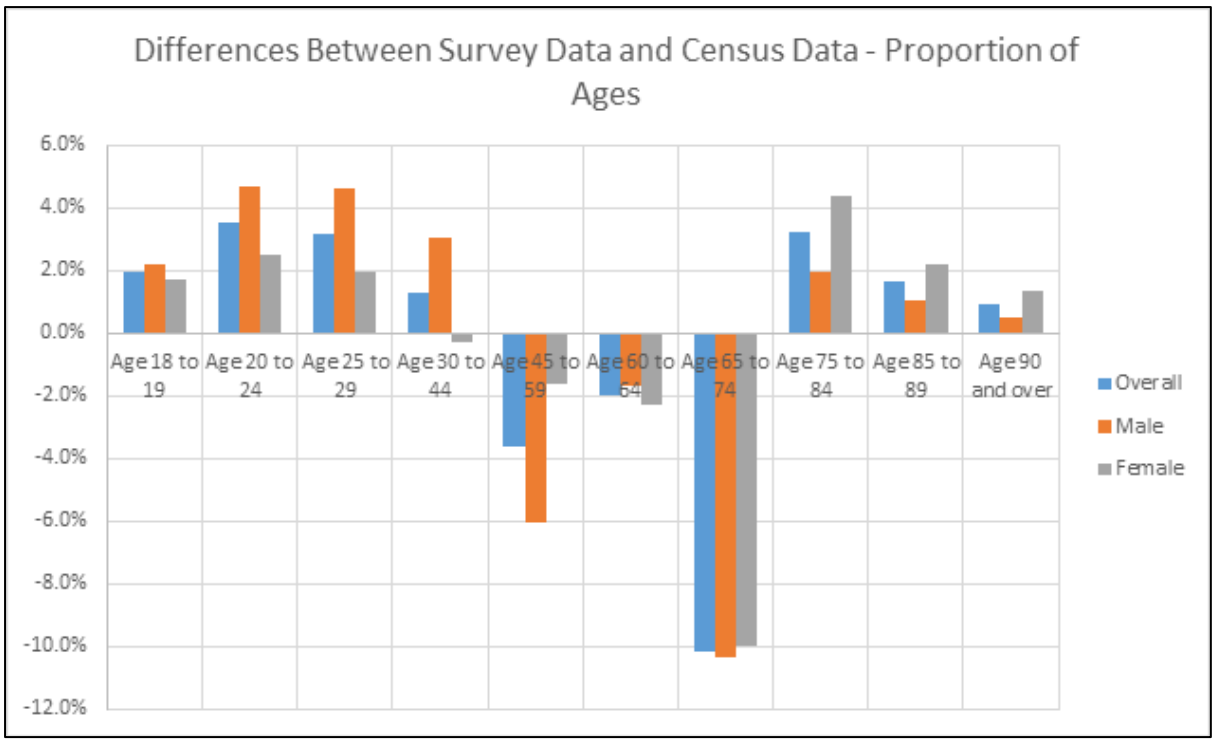

Table 16: Comparison of YouGov survey population v 2011 census (Source: Consumer Risk Metrics IFOA Working Party 2018)

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