

Personality, AI and Personalisation: Delivering a Better Customer Experience

WHITE PAPER

Introduction

Our personalities underpin how we think, feel and act. To understand customers as individuals and provide genuinely personal experiences for them in a digital age, marketers and customer relationship managers need to go beyond simple demographics and start considering customers' personalities.

Why does personality matter? Can it be predicted in a way that is accurate and practical at scale? How can insights be made actionable and deliver value to customers and organisations? What are the ethical considerations marketers should bear in mind?

Through the findings of our work at DataSine and the latest research from the world of psychology, we attempt to answer these questions. We'll take a look at contemporary models of personality, explore the role of Big Data and Machine Learning in personalised marketing, and share our success stories.

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About DataSine

DataSine was founded in 2015 with the mission to make customer experience more compelling, more personal, and more informed. Through our AI-powered platform, companies can understand their customers as individuals and personalise content at scale - building engagement, loyalty and trust.





Defining personality

Personality encompasses the thoughts, behaviours and social attitudes that impact how we view ourselves and the world around us. It is often described in terms of traits - broad cognitive and behavioural tendencies that remain relatively stable over time. Even at four days' old, we start displaying evidence of them. Scientists have [conducted studies](#) showing that babies who salivate more in response to sugar water are more likely to be introverts when they're older, as it can indicate that their nervous system is more sensitive to external stimuli.

Efforts to create taxonomies of these personality traits have a long and rich history - from Hippocrates' Four Temperaments model in 400BC to the Myers-Briggs Type Indicator (MBTI) and the Big Five in the 20th Century. The origins of the MBTI can be traced back to 1917 when Katharine Cook Briggs, a writer from Washington DC, became fascinated with the world of psychology after meeting her enigmatic future son-in-law. In 1923 she came across an English translation of *Psychologische Typen* by Carl Jung, which she found to explain the differences between her family members exactly. The theories contained within this book went on to be the basis for the MBTI - a pencil-and-paper test for establishing where an individual sits across four dimensions, which Katharine developed with her daughter, Isabel Briggs Myers. The four dimensions combine to make 16 different personality types. In 1975, California-based publishing company Consulting Psychologists Press (CPP) picked up the distribution rights to the test and heavily marketed it to American businesses. By 1993, three million people were taking it annually.

The test has been largely disregarded by psychologists, with critics arguing that the test is built on scientifically weak ground and is unreliable. Jung's personality types were based on his personal experiences rather than any science and very little academic research supports them. In fact, claims such as extraverts get their energy from social interaction have actually been [disproven](#) (introverts are simply more sensitive to stimulation). As to the unreliability, research has shown that [50% of people](#) that take the test arrive at a different result the second time around.

E xtraversion prefers outer world of people and things	I ntroversion prefers inner world of ideas and images
S ensing pays more attention to the five senses	N tuition pays more attention to the patterns and possibilities of information received
T hinking puts more weight on objective principles and impersonal facts	F eeling prefers the inner world of ideas and images
J udging prefers a more structured and decided lifestyle	P erceiving prefers a more flexible and adaptable lifestyle

The Myers-Briggs Type Indicator
A person's type is made up of four elements, (e.g. ENTJ) one from each dimension.

The other dominant contemporary model - the Big Five - is what we use as the foundation for our work at DataSine. In contrast to the MBTI, this is supported by a wealth of independent, peer-reviewed research and the dimensions do not represent a particular theoretical perspective. Instead the five dimensions are derived from analyses of the terms people use to describe themselves and others. It has its roots in the Lexical Hypothesis that was first put forward by Sir Francis Galton in 1884. The Hypothesis argues that most of the socially relevant and salient personality characteristics have become encoded in natural language. [Early work](#) by Allport and Odbert in 1936 identified over 18,000 terms that could be used to “distinguish the behavior of one human being from that of another”. Over the last century, these terms have been distilled into five dimensions, which are known today as the Big Five. These dimensions represent personality at the broadest level of abstraction, and each dimension summarises a larger number of distinct, more specific personality characteristics. There are no ‘types’, with each dimension existing on a continuum. The model has been found to be applicable across languages and cultures, with [De Raad and colleagues](#) finding “the general contours of the Big Five model as the best working hypothesis of an omnipresent trait structure.” The dimensions have even been found to have [genetic and biological bases](#), and neuroscientists have [begun mapping](#) the Big Five to relevant brain regions.

The Big Five Personality Model



Open-mindedness

The banner features a background image of a person's face in profile, looking towards the right, with a warm, orange-toned light filter. The text is white and positioned on the left side of the banner.

High: curious and inventive

Low: cautious and consistent



Conscientiousness

The banner features a background image of a hand holding a pen over a checklist or calendar, with a warm, orange-toned light filter. The text is white and positioned on the left side of the banner.

High: organised and efficient

Low: spontaneous and easy-going



Extraversion

The banner features a background image of a group of people in a social setting, with a warm, orange-toned light filter. The text is white and positioned on the left side of the banner.

High: outgoing and energetic

Low: solitary and reserved



Agreeableness

The banner features a background image of a person's hands holding a white string or thread, with a warm, orange-toned light filter. The text is white and positioned on the left side of the banner.

High: altruistic and empathetic

Low: individualistic and guileful



Neuroticism

The banner features a background image of turbulent, white-capped waves, with a warm, orange-toned light filter. The text is white and positioned on the left side of the banner.

High: unconfident and nervous

Low: secure and calm



Predicting personality

Traditionally a person's psychological traits have been established through questionnaires based on tools such as the [Big Five Inventory](#). These involved asking people about the extent to which they agreed or disagreed with statements such as "I am frequently coming up with new ideas". However, in the age of Big Data, psychological traits can be accurately predicted from consumers' digital footprints. Recently, academics were able to infer whether someone was introverted or extraverted from a [single Facebook like](#); other studies been able to predict personality from [mobile phone logs](#), [Facebook status updates](#), [Twitter posts](#) and [Sina Weibo blog entries](#). This means that it is now possible to predict personality at scale and in a way that is more reliable than self-reporting instruments such as questionnaires, where respondents tend to report positively about themselves.

At DataSine, we are able to predict personality from both first-party customer data supplied by our clients - such as transactional or behavioural data - and from testing different variations of personalised content. We use state-of-the-art deep neural networks to do this, drawing from multiple subfields of AI research including natural language processing and recommender systems.



Why personality matters

Marketers will be very familiar with using A/B testing and customers' digital footprints to optimise and personalise messaging, content and offers. To give a basic example, a user visits the extreme sports section of a clothing website and then they'll be sent content that is related to extreme sports. But if we instead analyse this behavioural data to understand the user's personality, then we are [able to gain much deeper insights](#). For instance, not only do we now know that the aforementioned user is interested in extreme sports, but that they are likely to be an extravert, sensitive to rewards and social attention, and a visual communicator. Furthermore, personality is linked to a range of different preferences, including:

- [Movie, TV, music and book preferences](#) (e.g. those with a high degree of openness tend to like tragedy, neo-noir, independent, cult, and foreign movies while those with a high degree of extraversion prefer drama, romance, comedy and drama movies).
- [Brand personality preferences](#) (e.g. Conscientious customers prefer 'Trusted' brands while Extravert customers prefer 'Sociable' brands).
- [Environmental preferences](#) (e.g. those that are more open and extraverted are more likely to support environmental programs than those that are agreeable or neurotic)

There is also a strong link between personality and preferred words, phrasings, images, colours, and fonts - something we are continuously conducting research on at DataSine. By using these insights to personalise content, we can increase appeal and engagement. A [2012 study](#) asked individuals to rate five different advertisements for a mobile phone, each tailored to a different personality trait. In each case, the advertisements were rated higher when they were aligned to the participant's personality profile. Then a [landmark study in 2017](#) - which involved delivering Facebook ads to 3.5 million people - found that those that were tailored to the individual's personality resulted in up to 40% more clicks and 50% more purchases. These findings are backed up by our own work at DataSine (see Hello bank! Belgium case study on page 10).



One of the most consistent findings suggests that consumers show more positive cognitive, emotional and behavioral responses to products, brands or marketing messages that match their own psychological traits

Sandra C Matz and Oded Netzer
[Using Big Data as a window into consumers' psychology](#)

Selected findings from our research

Open-mindedness

Open personalities are more likely to prefer products that are shown to be reliable, efficient, innovative, and eco-friendly. They find abstract images with bluer palettes particularly appealing. Open people tend to frequent operas, concerts, and museums more and enjoy investing in the arts such as photography or record stores. On the other end of the spectrum, traditional people tend to spend more on cars, bowling, casinos, and newspapers.



Conscientiousness

Like those with open-minded personalities, conscientious people typically prefer products that are shown to be reliable, efficient and effective. Conscientious consumers tend to be bargain hunters and put great emphasis value for money.



Extraversion

Extraverts can have a preference for redder palettes and find photos of couples, friends, families, and social events more appealing. Contrastingly, introverts tend prefer greener palettes and pictures with fewer people and more solitary themes, perhaps depicting nature, architecture, abstract art or objects. While introverts enjoying nature scenes, extraverts are more likely to spend on active outdoor activities. Products that are advertised as 'exclusive' or 'epic' are also more likely to receive attention from extraverted consumers.



Agreeableness

Agreeable people tend to donate more to charity, prioritise spending time with their family and like brands such as Mango. Products that are family oriented, safe, reliable, good value, efficient, and effective are more appealing.

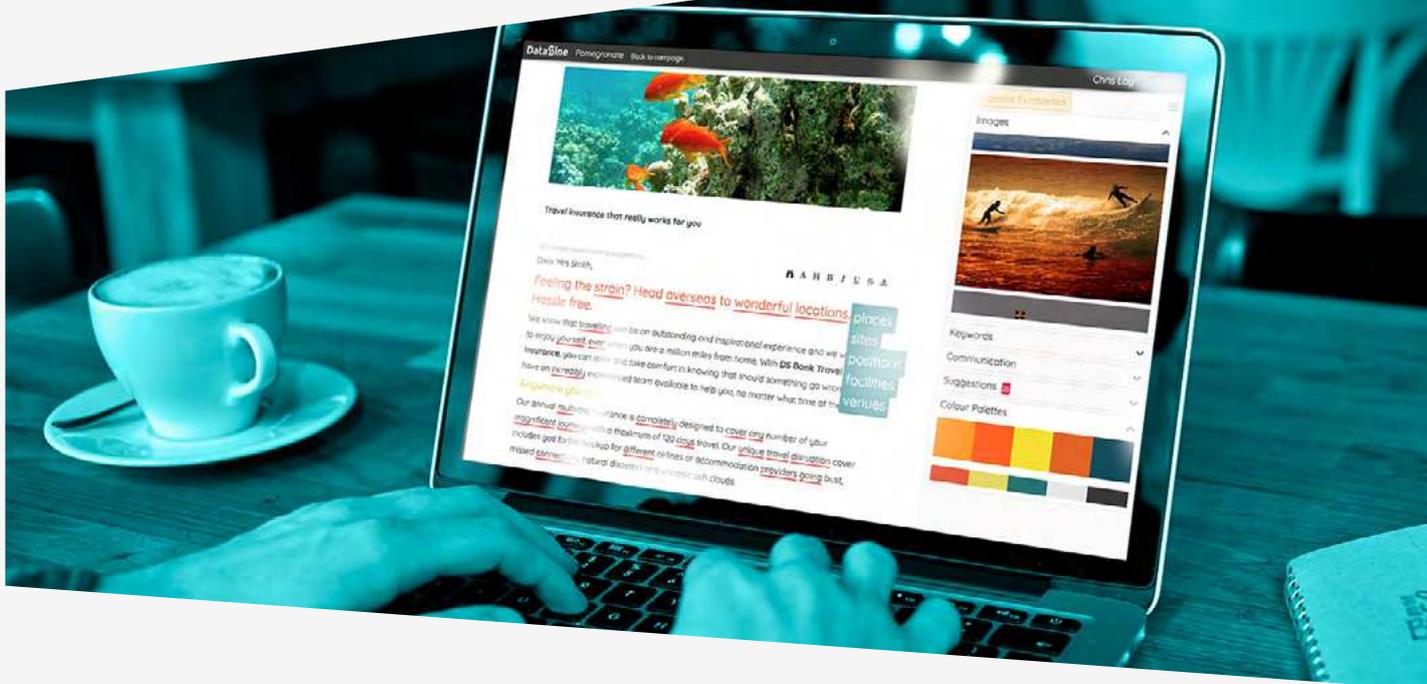




Making customer insights actionable

Insights into the distinctive characteristics and preferences of customers have limited value on their own. We might know that Steve is very receptive to new ideas, conscientious and sensitive to aesthetic beauty but what is an organisation to do with this information? It is only when we are able to use the insights for a purpose that has organisational value - e.g. increasing customer engagement, loyalty and trust - that their value is fully realised.

As we discussed in the previous section, our personality informs how we like to be communicated with - the images, words, fonts, colours, layouts we find most compelling; the communication channels we prefer; the topics and product features that appeal most to us. This is what we focus on at DataSine. We have built an AI-powered platform that is able to take generic content - for instance, an email or landing page - and provide recommendations on how to optimise it for different personalities - at scale.



Our platform in action

A travel agency is putting together an email that is trying to re-engage existing customers by sharing their latest offers. The marketer has uploaded the generic version of the email and now wants to create a version for their more extraverted customers. Our platform analyses the images and words used and recommends alternatives that would appeal more to extraverts; it then goes on to provide recommendations for how colours, fonts, themes and even layouts could be made more compelling.

Over 1.4 million emails personalised using the DataSine platform have been sent out to date, each one of them helping improve our proprietary models that are used to predict personality and provide content recommendations.

Hello bank! Belgium Case Study

Hello bank! Belgium wanted to see how DataSine's approach to personalisation could be used to increase user activation. First we used Hello bank! Belgium's first-party data to understand the distinctive characteristics and preferences of a selection of their customers. Then we created personalised user journeys for a campaign designed to encourage existing customers to increase account usage. The result: 80% increase in customer engagement.



Ethical considerations

Considering personality for targeting and personalisation has enormous positive potential. But as with most new technologies and approaches, it also has the potential for abuse. To ensure it is done ethically, there are some things marketers should bear in mind: data should be gathered and used in a way that is transparent and legal; the targeting and personalisation should be in the interests of both the company and its customers. This is something we care deeply about at DataSine and have prohibited use of the platform for political purposes and for personalising content for neurotic personalities - the personality type with the greatest potential for abuse. That being said, there are positive applications of targeting and personalising content for those with neurotic personalities; for instance, [targeting neurotic people](#) who display early signs of depression with materials that offer them professional advice or guide to them to self-help literature.



Personality insights and other aspects of behavioral science offer opportunities to better connect with individuals, and if done ethically it can be beneficial for consumers and businesses alike.

Christopher Graves and Sandra Matz
[What Marketers Should Know About Personality-Based Marketing](#)

Conclusion

For the first time, the scientific community is reaching a consensus on a personality model - the Big Five. It has been found to have genetic and biological roots and be applicable across multiple languages and cultures. Technological advances and increases in the availability of data have meant that is now possible to accurately predict personality from a customer's digital footprint accurately. This predictive capability combined with a deeper understanding of the links between personality and a whole range of different preferences has allowed for the creation of digital tools that can make customer experience more compelling, more informed and more personal - at scale.



For more information on how to understand your customers' personality and personalise content at scale:



VISIT OUR WEBSITE

Find out more about DataSine and read the latest content from our blog at datasine.com.



SCHEDULE A DEMO

Have a member of our team walk you through our AI-powered platform and its capabilities - fill in our request form [here](#).



CONTACT US

Submit our contact form online [here](#) and our team will respond shortly.