



 **BARCLAYS**

The psychology of entrepreneurship:

A data driven study into the motivation behind new business creation

Introduction by Greg B. Davies PhD, Head of Behavioural and Quantitative Finance

Entrepreneurs have an important role in supporting economic growth and social progress through the creation of new jobs and proliferation of new skills.

And yet they remain largely misunderstood – often stereotyped in media and popular culture.

Getting smarter in how we identify and foster innovation and entrepreneurship can be crucial to driving economic growth and to rethinking employment in an increasingly automated world.

There is a role to play for policymakers, local government initiatives, businesses and academia in supporting the ‘entrepreneurial ecosystem’, but one factor that will unite all successful work in this area is a better understanding of what makes an entrepreneur.

That means understanding who today’s entrepreneurs are and what pushes, motivates and frustrates them. It also means getting to grips with what stops people from becoming entrepreneurs, and working out whether this is something that can be overcome.

This study amassed a psychological dataset that looks at the question of what an entrepreneur is, how this changes depending on industry or geography – and what difference it makes if you are female, a migrant, or aged 50+.

We are not looking to make overarching conclusions about a particular demographic nor to add to existing stereotypes. Rather this study aims to shine a light beyond what we already know to better inform future planning and policy decisions.

Academic research alone can neither create nor sustain the entrepreneurial ecosystem we strive towards. It will require an unprecedented level of cooperation between academics, businesses, policymakers, local communities and entrepreneurs themselves. Connecting these stakeholders will help entrepreneurs gain access to the right information, resources, guidance and support; enabling them to go beyond the start-up phase and achieve meaningful scale.

At Barclays, we are focused on helping businesses achieve their ambitions. We recognise the huge contribution that entrepreneurs make to any economy. Because of this, we have made it a priority to understand entrepreneurs – as individuals and businesses – and the political and financial context in which they operate. Helping entrepreneurs to achieve their ambitions will fuel innovations, create jobs and strengthen economies to the benefit of society as a whole.

Banks like Barclays will not have all the answers but we have a role to play in terms of the products we offer, the partnerships we instigate and the knowledge we share.

This report is another step in the journey to creating a better environment for entrepreneurs.

Entrepreneurship as a driving force

Entrepreneurs are an increasingly essential contributor to global economic growth and social progress. Through the creation of new products, services and jobs, or through personal investment in education and local communities, we rely on entrepreneurs across all tiers of the economy.

The perceived psychology of entrepreneurs is often founded in media rhetoric rather than data-driven scientific enquiry. This can lead to a disconnect between the potential of entrepreneurship and often the rigid political, financial and regulatory conditions in which it is often exercised. Starting a business is about much more than simply making money. The motivations are multi-dimensional and can vary widely among different groups of people. Entrepreneurs should not be treated as a homogeneous group and understanding individual differences in entrepreneurial behaviour provides an opportunity to support meaningful progress for entrepreneurs today.

Executive summary

Barclays, in conjunction with The Psychometrics Centre, University of Cambridge, embarked on a research study to explore the factors that drive or inhibit entrepreneurship, and to understand the psychological aspects of business creation. The research examines the opinions and psychological profiles of more than 2,000 individuals, made up of both entrepreneurs and employees¹, in Germany, Singapore, UK, and USA. The main findings are as follows:

1. While entrepreneurs do not conform to the cultural stereotypes often associated with them, they do stand out from employees. There are significant differences between entrepreneurs and employees regarding 10 of the 13 psychological traits identified as being relevant to business creation². The top three traits which most distinguish entrepreneurs from employees are:
 - a. Need for autonomy – “How important is it for you to influence the objectives of your work?”
 - b. Self-efficacy – “It is easy for me to stick to my aims and accomplish my goals”
 - c. Achievement motivation – “Are you satisfied to be no better than most other people at your job?”
2. The study identified two broad ‘types’ of entrepreneur:
 - a. The type A entrepreneur profile, defined as – artistic, well-organised, highly competitive, emotionally stable, and neither extraverted nor introverted; this BIG5 profile is commonly observed in leadership positions; they also score well above average on most of the key entrepreneurial constructs, but score only slightly above average on risk propensity and attitude towards autonomy; and
 - b. The type B entrepreneur, who tends to be more traditional or conservative, emotional, spontaneous, and more focused on team-working. They score below average in all of the entrepreneurial constructs, aside from need for autonomy and risk propensity, where they score slightly above average.
3. Male and female entrepreneurs have a similar psychometric profile. Male entrepreneurs were more likely to take financially risky decisions and are more introverted. Meanwhile the study found that female entrepreneurs are significantly better organised, extraverted, slightly more competitive and more emotionally stable. Furthermore, women:
 - a. Are more modest than men, with just 42% saying their business is prospering compared to 62% of males. This is despite the fact female-run businesses were shown on average to report higher pre-tax profits.
 - b. Show greater entrepreneurial ambitions, with 47% of them claiming they are very / extremely interested in starting another business in the next three years compared to 18% of men.
 - c. Tend to strive for steady, profitable expansion and prefer to re-invest business profits than take equity investment. Male entrepreneurs are more likely to take risks in order to achieve fast growth and a quick exit.

¹ Data was collected from both people who had started their own business and from those who had not. For further details on the research methodology see page 24.

² See page 28



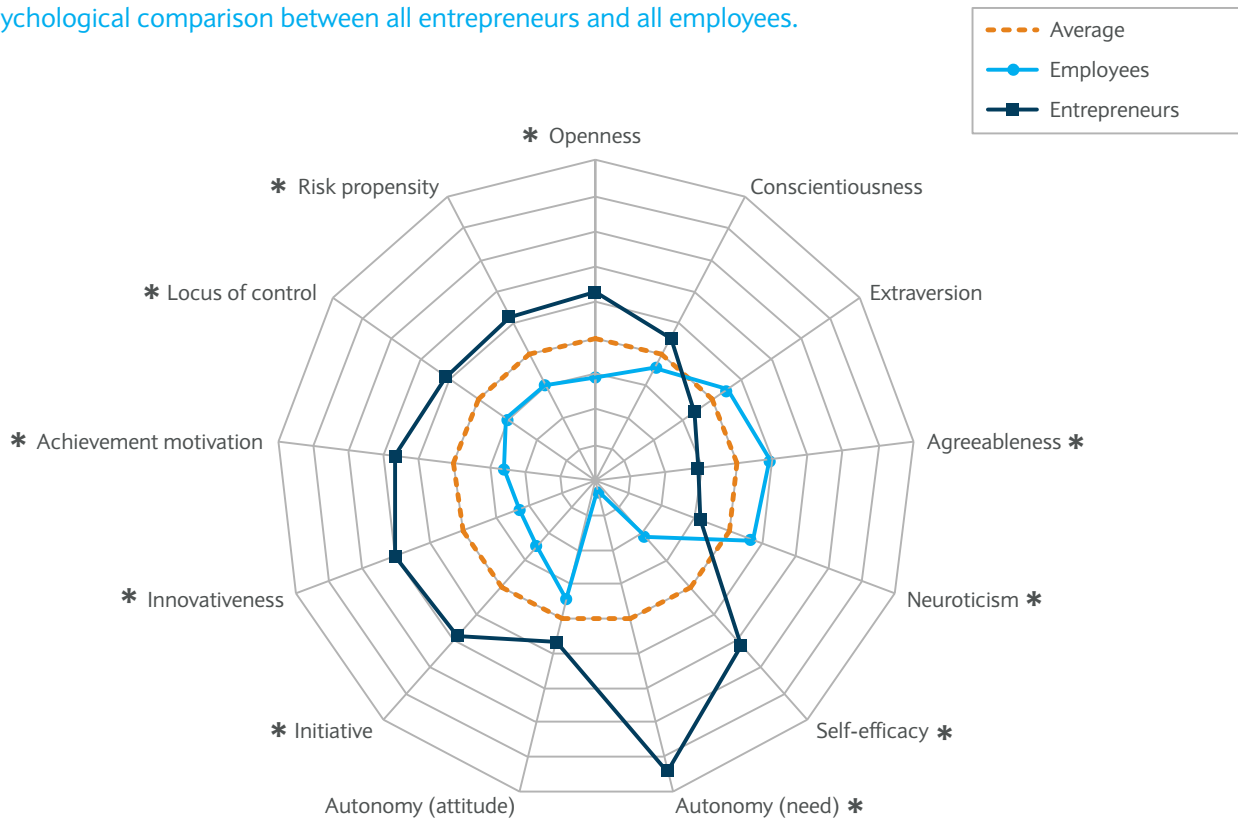
4. Migrant entrepreneurs are more conservative or traditional. They also have a lesser need for independence and attach less importance to influencing the objectives of their work. Migrants:
 - a. Are behind one in seven UK companies and create 14% of all SME jobs.
 - b. Have a similar psychological profile to national entrepreneurs but tend to be more conservative with a lesser need for personal autonomy.
 - c. Are more likely to believe in luck or fate, and act spontaneously as a result.
 - d. Perceive income and financial stability as more significant barriers to business creation than nationals.
5. Entrepreneurs aged 50+ scored as highly as their younger counterparts on the scales of risk propensity, innovation, initiative, self-efficacy, attitudes towards autonomy and need for autonomy. 50+ entrepreneurs:
 - a. View 'freedom to make decisions' as the main incentive for starting a business, with 70% citing this reason compared to just over half of those aged under 50.
 - b. Exhibit the same propensity for risk, innovation, initiative, self-efficacy and autonomy as younger entrepreneurs, but are more motivated by the prospect of personal success.
 - c. Are more liberal, artistic and well-organised, and score above average for extraversion. This paints a picture of open, outgoing and conscientious leaders.
6. US entrepreneurs are the most innovative, proactive and driven by the prospect of personal achievement. They score highly on several other traits as well. Entrepreneurs in the UK tend to be more extraverted than those in other countries studied, while German entrepreneurs are the most competitive and the most emotionally stable. Participants who started their own business in Singapore tended to score higher in agreeableness (defined as trust, empathy, tolerance, and kindness), but lower in conscientiousness (defined as being organised, self-controlled, punctual, and achievement oriented, but not controlling). This means they are more willing to work in a team and spontaneous than average.

Part I: Psychological profile of today's entrepreneur

“Data-driven psychometrics has debunked the myth of the CEO superhero. Entrepreneurs do differ from employees, but as a group, they are still incredibly diverse and often misunderstood.”

Vesselin Popov, Development Strategist, The Psychometrics Centre, University of Cambridge

Psychological comparison between all entrepreneurs and all employees.



The stereotypical entrepreneur often represented in the media is someone who takes risks, has clear financial goals and is very competitive, creative and single minded. However, as with any stereotype, there are misconceptions.

The results demonstrated that entrepreneurs are slightly more introverted than traditional employees, they are not particularly well organised nor are they very spontaneous.³ Entrepreneurs score only slightly above average on conscientiousness, a finding that largely conflicts with some of the entrepreneur personas portrayed by the media.

This challenges the notion of a 'traditional' entrepreneur and could offer encouragement to aspiring individuals who do not fit the stereotypes.

While a great degree of psychological diversity was observed among entrepreneurs, they were still distinguishable as a group from employees in a number of ways.

Entrepreneurs scored well above average in all nine of the constructs identified as being relevant to business creation. The top three traits that most distinguished entrepreneurs from employees were:

- i) Need for autonomy;
- ii) Self-efficacy; and
- iii) Achievement motivation.

High scores in these traits are characterised by a range of behaviours, including a desire to influence the objectives of one's work, the ability to stick to one's aims and accomplish goals, and a drive to go above and beyond one's peers and surroundings in pursuit of success. Such behaviours could, in light of this research, provide indicative evidence of entrepreneurial potential.

³ See Appendix 1

* Denotes statistically significant difference

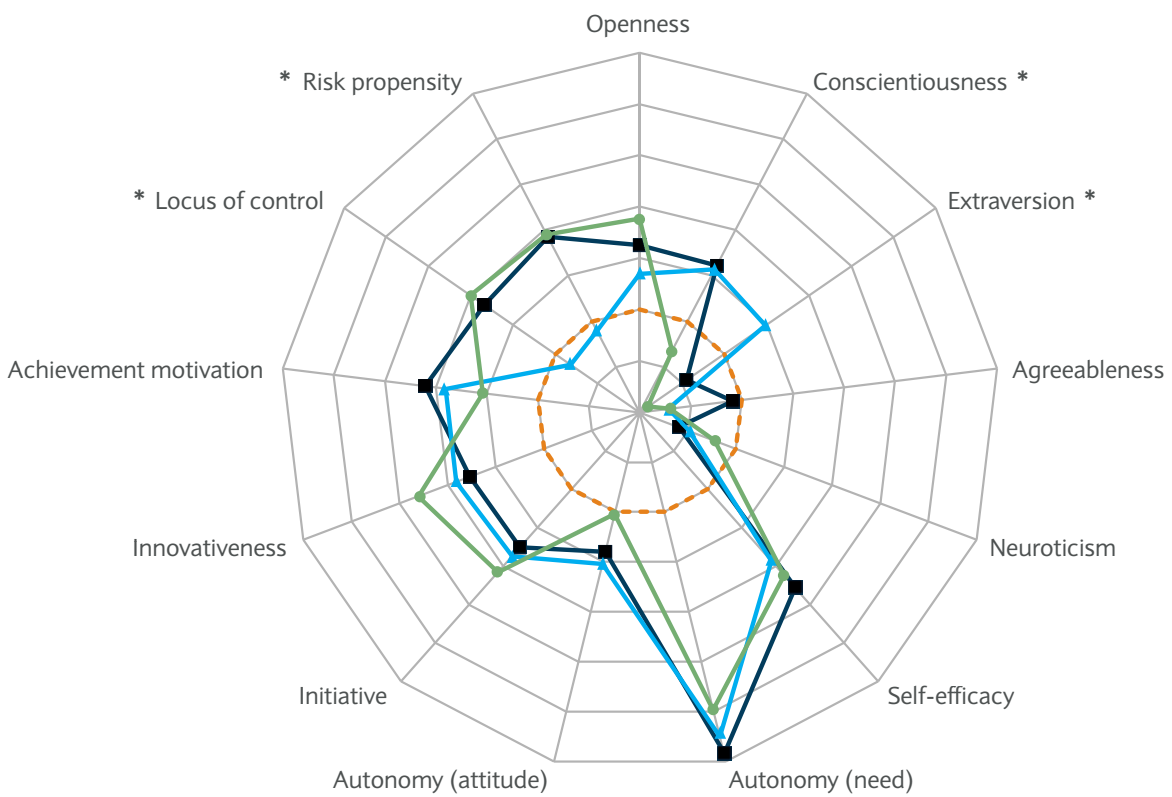
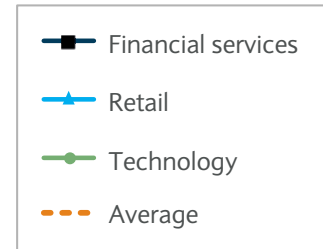
Sector differences

Across finance, retail and technology, entrepreneurs were psychologically distinguishable from employees in a number of ways. The profile of entrepreneurs differed significantly across the sectors, particularly with regard to individual personality traits. For example, technology entrepreneurs were found to be significantly more spontaneous and introverted than average.

Entrepreneurs in financial services scored the highest in agreeableness (defined as trust, empathy, tolerance, and kindness) of the three sectors, but they were still more competitive than average for the whole sample. They were also the most emotionally stable and therefore well-equipped to deal with the high-pressure nature of financial work.

Retail entrepreneurs were the most extraverted of the three sectors. By contrast, entrepreneurs in finance and technology tended to be more contemplative and happy in their own company, scoring significantly below average in extraversion. Retail entrepreneurs were also less likely to take financially risky decisions and were more inclined to believe in fate or luck rather than in their own ability to control external events.

Psychological profiles: sector level comparison



* Denotes statistically significant difference

A global perspective

The environments in which entrepreneurial behaviours manifest are undoubtedly as diverse and multi-dimensional as the behaviours themselves. From educational policies that promote independent thinking to bankruptcy laws that soften the consequences of failure; it is important to provide a supportive environment for individual potential.

“I was brought up in a culture where entrepreneurship is revered and aspired to.”

Jay Patel, CEO, Intros.at

Psychometric data was collected from participants in four mature economies around the world to provide an international perspective on the human aspects of this balancing exercise⁴. This section of the report examines the psychological differences of entrepreneurs from the four different countries and the varying psychological drivers behind business creation in each of them.

In terms of personality traits, entrepreneurs in the UK tended to be more extraverted than those in the other countries, while German entrepreneurs were the most competitive and the most emotionally stable. German entrepreneurs were not found to be any more conscientious than those in the UK or USA.

⁴See Appendix 2

Spotlight on Singapore

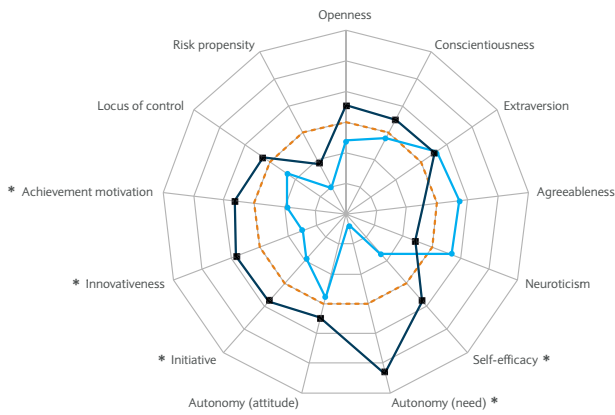
Participants who had started their own business in Singapore tended to score higher in agreeableness but lower in conscientiousness than the other three groups. This indicates that, compared to the average among all participants, Singaporean entrepreneurs enjoy cooperation over competition and are more likely to be spontaneous and flexible rather than well-organised.



Singaporean entrepreneurs differed from Western entrepreneurs in several other respects. They exhibited far lower scores in two of the key entrepreneurial constructs, i) Need for autonomy and ii) Achievement motivation. Compared to Western entrepreneurs, those in Singapore are more willing to work in a team and more spontaneous; they do not find it as important to influence their manner of work; and they do not feel as strongly that they can influence the world around them.

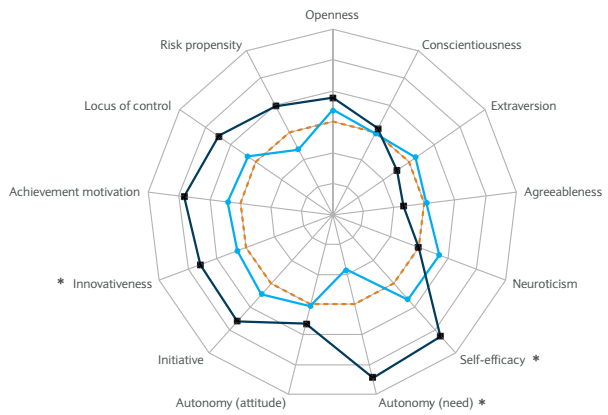
According to the research, Singaporeans were less likely to seek personal success and achievements. These findings are a reminder that there are many possible motivations for starting a business. Globally, entrepreneurs tended to give the same reasons for having started their businesses. However, entrepreneurs in Singapore referred to tax incentives and the availability of credit as reasons for starting a business more frequently than their counterparts in Germany, the USA and the UK.

Country level comparisons



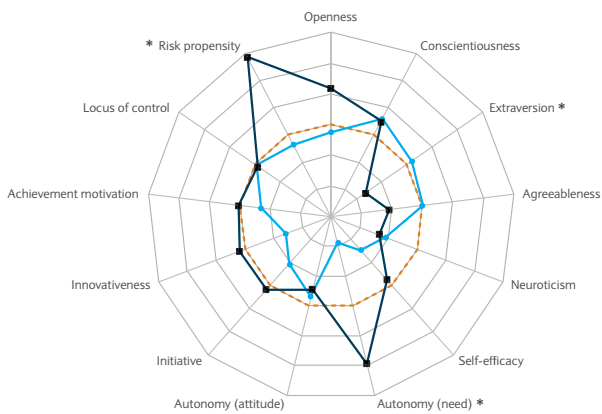
UK entrepreneur:

Extraverted; calm; sticks to goals; needs to set working style; believes in non-prescriptive management; takes initiative; innovative; motivated by personal success; extremely risk averse



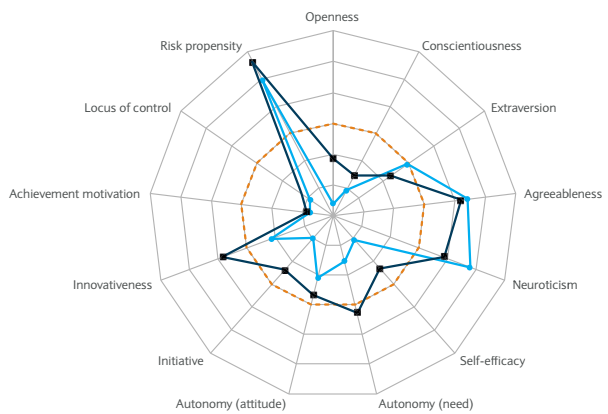
USA entrepreneur:

Introverted; competitive; strong belief in personal autonomy; needs to set working style; believes in non-prescriptive management; takes initiative; highly innovative; motivated by personal success; extremely confident in control of external environment; risk-taker



German entrepreneur:

Artistic; very introverted, competitive and stable; needs personal autonomy at work but also values management; extremely high tolerance of and propensity for financial risk



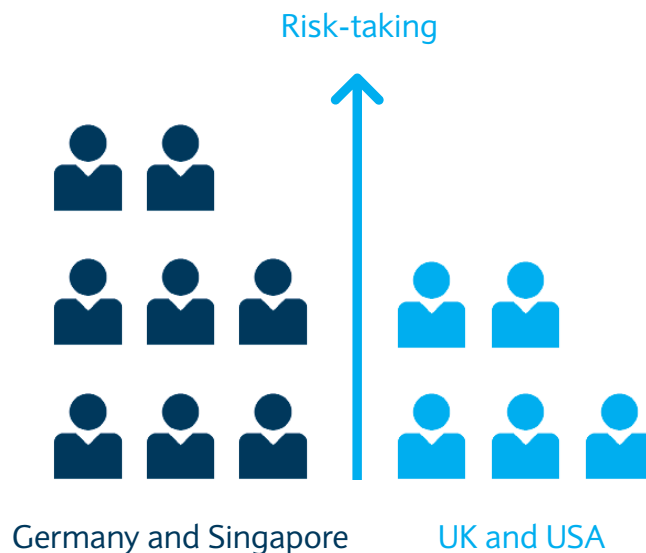
Singaporean entrepreneur:

Very traditional or conservative, cooperative and in touch with emotions; less able to cope with adversity; less concerned with manner of work; less of a self-starter; not motivated by personal success; believes in fate or luck; extremely high tolerance of and propensity for financial risk

* Denotes statistically significant difference

Risks and rewards

The study also revealed geographical variations in the attitudes of entrepreneurs towards financial risk tolerance and decision-making. This was measured on the risk propensity scale using six probability discounting tasks, for example, “Would you rather receive \$9,000 or have a 25% chance of receiving \$10,000?”.



Germany and Singapore both showed a higher propensity for risk-taking among the entrepreneurs surveyed, compared with the UK and USA. One explanation for this might be that business cultures in Singapore and Germany are inherently risk-averse in comparison with the UK and USA. If, for example, it were more difficult to get early-stage venture funding, it would follow that a business-starter in Singapore or Germany would need to have a great deal of self-belief—and therefore a higher tolerance of risk—before taking the leap into self-employment. This could inform how financial institutions manage their relationships with small and medium sized

enterprises in order to recognise the psychological factors at play and assist them in tailoring their products or services accordingly.

This study revealed how easy it is to underestimate the degree to which local conditions impact on the dominant personality traits of entrepreneurs in a region. Creating support networks that nurture and encourage the interplay of psychological traits and cultural forces requires a smarter approach. Cooperation and collaboration between stakeholders will be critical to developing long-term solutions to better suit the needs of entrepreneurs.

Part II: Types of entrepreneurs

This study outlines that there is more than one type of entrepreneurial profile⁵. We examined two of these psychological clusters in greater detail to explore some common misunderstandings:

1. The first type could be seen as the type A entrepreneur profile. In terms of personality, entrepreneurs that fit this profile tend to be artistic, well-organised, highly competitive, and emotionally stable. This BIG5 personality profile⁶ is commonly observed among individuals in a variety of leadership positions. It is notable that these entrepreneurs scored only slightly above average on risk propensity and on attitude towards autonomy. The last of these scales relates to whether participants believe that employees should have autonomy at work (low score) or rather that leaders should be in charge (high score).

Type A is a more robust and coherent cluster than type B. The latter group could be broken down more easily into further constituent profiles, whereas type A entrepreneurs were all very similar to each other. This cluster therefore remained very stable throughout the analysis.

According to our study, Western entrepreneurs were significantly more likely than Singaporeans to fit the type A profile. 53% of USA entrepreneurs and 48% of UK entrepreneurs displayed the rather extreme characteristics associated with that cluster. While these probabilities are high, they also highlight the fact that, in the West, only around half of the entrepreneurs conform to what might be described as the stereotypical business owner profile. German entrepreneurs were slightly more likely to fall in the type B cluster than type A, with 41% matching the latter profile.

The ratio of type A to type B entrepreneurs was more similar across sectors than across countries. Unexpectedly, the proportion of entrepreneurs matching the type B profile was in fact slightly greater than those matching type A. The average entrepreneur was therefore more likely than not to debunk the stereotype. Where it was observed, the type A profile was found to be more



Type A

- Artistic
- Well-organised
- Highly competitive
- Emotionally stable
- Neither extraverted nor introverted



Type B

- Traditional
- Spontaneous
- Team-working
- Emotional or in touch with emotions
- Neither extraverted nor introverted

⁵ See Appendix 3

⁶ See page 28

Two entrepreneur clusters



common in the financial and technology sectors (49% and 48% of entrepreneurs respectively) than in retail (44%).

Lastly, female entrepreneurs were more likely to be type A and male entrepreneurs were more likely to be type B⁷. One reason for this may be that, in today's society, women who start their own businesses tend to not only score above average on the psychological traits examined in this study, but in fact they score significantly above average. In that sense, female entrepreneurs have a more extreme profile. As a result, they are also more likely to be conforming to a stereotyped view of the role.

Despite its stability across the sample, the status and frequency of the type A profile is often exaggerated, particularly by the media.

- The second type of entrepreneur, referred to as type B, was numerically more prevalent in the research sample as type A, but did not display as extreme scores on the psychological traits. 83% of Singaporean entrepreneurs were type B, as were two out of three German entrepreneurs. The split was more equal in the UK and USA. Type B entrepreneurs tend to be more conservative

and traditional, more spontaneous, more focused on team-working, more prone to anxiety and negative emotions, and neither extraverted nor introverted.

Neither group is a perfect stereotype. These findings emphasise the need to understand the psychology of entrepreneurs in greater depth than we do at present and to consider the policy risks of categorising entrepreneurs as one broad group. This is especially evident in light of the different motivating factors cited by the two clusters of entrepreneurs. Type B entrepreneurs cited the freedom to make decisions, the prospect of a higher income, and the importance of securing their intellectual property as primary reasons for starting a business. Whereas type A entrepreneurs cited more immediate reasons for starting a business, such as inheriting a family business and available credit.

Entrepreneurs tend to display certain personality traits, but the psychological significance of their behaviour is varied, as with any group of individuals. Business, education and incentive programmes need to take these differences into account when assessing or seeking to nurture the entrepreneurial potential of individuals.

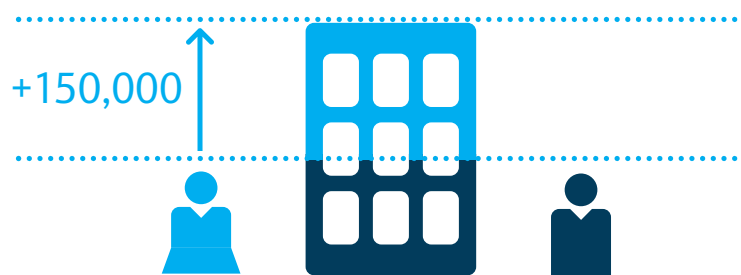
⁷ 53% of women in the business owner sample were type A compared to 45% of men

* Denotes statistically significant difference

Part III: Female entrepreneurs

“If women started businesses at the same rate as men, there would be an extra 150,000 start-ups in the UK each year.”

The Women’s Business Council⁸



Gender and entrepreneurship is a complex issue that has been addressed differently from country to country. However there is no doubt that female entrepreneurs play a crucial role in driving economic growth. Research⁹ reveals that narrowing the gender gap in employment through education and policy could increase global income per person by as much as 20% by 2030. In this study, 41% of the participants were female, providing a large and representative sample to extract and contrast some of the key psychological attributes of male and female entrepreneurs.

Male and female entrepreneurs shared a similar psychometric profile¹⁰. Both groups were highly competitive and emotionally stable compared to employees in the sample, and displayed very similar qualities on all but one of the key entrepreneurial constructs. There were some personality differences, with female entrepreneurs

appearing to be significantly better organised and more outgoing. Women were also found to be slightly more competitive and more emotionally stable than men.

Although this study looked specifically at the psychology behind business creation, it also gave insight into the possible reasons for differences in the way male and female entrepreneurs scale their businesses. Female entrepreneurs, for example, were less likely to take financially risky decisions, so one may expect their growth strategies to be more gradual, focusing on incremental progress rather than riskier decisions with potentially larger rewards. This mirrors findings in another recent study between Barclays and The Centre for Entrepreneurs¹¹, which found female entrepreneurs are more likely to work towards controlled, profitable growth, and avoid 'fool-hardy' risks that may endanger the livelihood of their employees or their own financial situation.

⁸ The Women’s Business Council: Maximising women’s contribution to economic growth - evidence paper https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/85552/evidence1.pdf

⁹ Women Hold Up Half the Sky. Global Economics Paper No: 164. 2013. <http://www.goldmansachs.com/our-thinking/investing-in-women/bios-pdfs/women-half-sky-pdf.pdf>

¹⁰ See Appendix 5

¹¹ Centre for Entrepreneurs. Shattering Stereotypes: Women in Entrepreneurship. April 2015.

http://www.centreforentrepreneurs.org/images/centreforentrepreneurs/Shattering_Stereotypes_Women_in_Entrepreneurship.pdf

Case study: Chantal Coady, Rococo Chocolates

As a student, Chantal Coady spent her weekends working in Harrods chocolate department. Now, 30 years later, the world-famous retailer is among the many customers of her own successful chocolate making company, Rococo Chocolates.

“I’d always loved chocolate, so the Harrods job was kind of a dream come true,” she explains. “The one thing missing was a spark of magic. I wanted selling (and buying) chocolate to be an emotional experience.”

In 1983, with her degree complete and her passion for chocolate reignited, Coady enrolled in a 10-week business course. Months later, she was pitching her plan for a new chocolate making company to a local Barclays bank manager.

“I couldn’t believe it when he agreed to lend me the money for my first shop!” she recalls. “But then he asked me the critical question: how would I secure the loan?”

The answer was the family home in which Coady lived with her mother and sisters – and a risk she still considers the biggest of her career.

“Many people advised me against starting a business and that made me want to do it even more! But knowing if I failed I would let the whole family down meant I didn’t even think about expansion at that stage. I just wanted to make the shop a success.”

That competitive desire to prove the doubters wrong as well as the more gradual and emotional approach to growth have been identified as being characteristic of female entrepreneurs.

“Men tend to be more focused upon a clear path to success regardless of risk,” Coady agrees. “Whereas women are naturally more consensual and cautious. For any entrepreneur, though, their business is like their baby.”

After 32 years, four successful London stores and an OBE for services to chocolate making, Coady describes her own ‘baby’ as all grown up. Yet still her childhood passion burns bright.

In the Caribbean, her work with the Grenada Chocolate Company is creating a thriving microeconomy and getting local people involved in chocolate making from bean to bar. Closer to home, she can regularly be found advising the next generation of entrepreneurs.

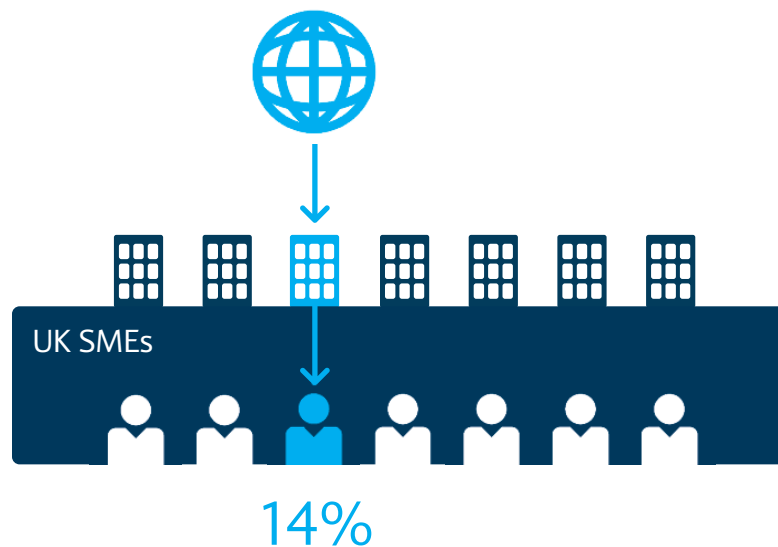
“As an entrepreneur you can roll all your careers into one,” she says. “Of course, it’s hard and there will be mistakes. But by trusting your instincts and ignoring the word ‘can’t’, the ups will outnumber the downs.”

Part IV: Migrant entrepreneurs

Migrant entrepreneurs are behind 1 in 7 UK companies and are responsible for creating 14% of all jobs among Small and Medium Enterprises (SMEs).

Centre for Entrepreneurs¹²

¹² Centre for Entrepreneurs. <http://www.creatingourjobs.org/data/MigrantEntrepreneursWEB.pdf>



Migrant entrepreneurs play an important role in driving national economies, accounting for 20% of job creation in the countries surveyed. They are often multilingual, highly educated and able to draw on a diverse set of experiences. They also fulfil skills requirements that are in short supply in countries like the UK. According to recent analysis by the Centre for Entrepreneurs¹³, migrant entrepreneurs are behind one in seven UK companies and create 14% of all jobs among Small and Medium Enterprises (SMEs). Their prevalence was also evident in this research study, in which 181 of the 2,007 participants surveyed were migrants.

High-growth companies often look for locations that give them access to a diverse and global talent pool. Flexible labour markets are needed to attract people with a variety of skills and experience, many of whom may relocate their

business to the UK, or choose the UK as a destination to start their business. This has clear implications for policymakers in terms of both creating business investment and attracting talent.

¹³ Centre for Entrepreneurs. Migrant Entrepreneurs: Building Our Businesses Creating Our Jobs. 2014
<http://www.creatingourjobs.org/data/MigrantEntrepreneursWEB.pdf>

“Some people want to be entrepreneurs; some people have to be entrepreneurs.”

Dr David Stillwell, Deputy Director of the Psychometrics Centre,
University of Cambridge

The study analysed the individual differences between entrepreneurs who were born in the country where they started their business (nationals) and those who were born elsewhere (migrants).

It was found that the psychological profiles of migrant and national entrepreneurs were extremely similar, with both scoring highly in most of the scales associated with having an ‘enterprising’ profile. There were some differences, with migrants in the sample being more on the conservative and spontaneous side compared to the average. By contrast, nationals were more likely to be artistic and conscientious. Migrant entrepreneurs also had a lesser need for personal autonomy, and were more likely to believe in luck or fate than in their power to influence their external environment¹⁴.

In light of the World Economic Forum 2015 report¹⁵, the differences observed between the two groups on the need for autonomy and locus of control scales may be a manifestation of the wider political and economic landscape, where migrants may have greater difficulty entering traditional employment than nationals. Some of those surveyed may therefore have become ‘necessity entrepreneurs’, driven to start their businesses by circumstances beyond their control, rather than by any strong desire for personal autonomy.

Migrants perceived income and financial stability as being more significant barriers to business creation compared to nationals, though these considerations were among the top three barriers overall – with fear of failure top for both groups. This is despite the finding in Barclays’ wealth insights study, ‘If at first you don’t succeed’, that most entrepreneurs cite failure as a valuable learning opportunity.

One cannot assume that migrant entrepreneurs are any less driven by the psychological constructs explored in this research (on which they still score above average). Both groups also express similar attitudes towards workplace autonomy, preferring managerial influence over a flat structure.

The entrepreneurial ecosystem can only thrive if it takes account of the value of migrants as drivers of entrepreneurship. Migrant entrepreneurs require an environment that makes them feel valued, included and empowered. These findings hint at some of the challenges that this may entail. Understanding the subtle psychological differences between these groups and looking closer at the specific challenges faced by migrant entrepreneurs will be instrumental in unlocking their potential to contribute further to economic development.

¹⁴ See Appendix 4

¹⁵ World Economic Forum and Global Entrepreneurship Monitor. Leveraging Entrepreneurial Ambition and Innovation: A Global Perspective on Entrepreneurship, Competitiveness and Development. 2015
http://www3.weforum.org/docs/WEFUSA_EntrepreneurialInnovation_Report.pdf

Case study: Jay Patel, Intros.at

Jay Patel was born to have his own business. His father did. His uncles did. And throughout his childhood in Africa, it was instilled in him to follow his ambitions and control his destiny.

“I was brought up in a culture where entrepreneurship is revered and aspired to,” he explains. “My relatives set up their own companies, so you could say I was always going to give it a try!”

However, after moving to the USA and completing an MSc in biotechnology, Patel began working life as an IBM consultant. Yet even then, his innate entrepreneurial spirit bubbled beneath the surface.

“As a student, I remember thinking it would be great to get directions on the move,” he recalls. “I started developing something but this was 2003 when phones didn’t have the same data and GPS capabilities, so I shelved it. When the mobile map industry exploded, I was kicking myself!”

Aged 26, Patel left the USA and migrated to London, spending a short time working for Google before beginning an MBA at London Business School and partnering with Lorenzo Caffarri to set up uBiCabs, a taxi booking app business.

Unfortunately, the arrival of industry giants Hailo and Uber saw the company ultimately outgunned, but by then Patel’s entrepreneurial instincts were fully re-awakened. As his first two business ideas would suggest, Jay believes using technology to automate manual tasks is an easy way to improve one’s life. One problem he recognised was related to networking at conferences.

“I used to Google attendees’ names at conferences to work out who to speak to,” Patel says.

Lastminute.com’s Brent Hoberman shared this frustration and thought that an automated process could work to solve the problem at his Founder’s Forum events, so Jay was hired to make this a reality and start a company.

The result was Intros.at, a mobile platform that gives users suggestions of people to network with based on their social media profile. Already, Patel has completed the business’s first investment round and is preparing to take it to market.

It is a rapid rise he puts down to the backing of Hoberman and the unstinting support of his family. But it would also not have been possible without his own willingness to make swift decisions and take calculated risks.

“As a migrant, you’re more likely to be spontaneous and take risks because it often requires that kind of mind-set to relocate to a new country in the first place,” he insists. “Besides, as a start-up, moving fast is your biggest advantage over larger competitors. You have to make the most of it.”

Part V: Senior entrepreneurs

“Seniors are less concerned with financial fears and seem to be more intrinsically motivated by their need for achievement and the freedom to make their own decisions.”

Vesselin Popov, Development Strategist, The Psychometrics Centre, University of Cambridge



Age 50+

Principal drivers

- Freedom to make decisions
- Achievement motivation
- Confidence in skills
- Belief in control

People over the age of 50 represent enormous entrepreneurial potential. They are able to draw on decades of practical employment experience and first-hand exposure to changing industries. They are also excellent candidates for mentoring less experienced entrepreneurs as well as leading new ventures of their own.

The average age of participants in our research sample was 43, with an age range of 18-70. The results shed light on the unique characteristics of senior entrepreneurs, 70% of whom cited the freedom to make their own decisions as a primary reason for starting their business, compared to just over half of entrepreneurs under 50.

Senior entrepreneurs had the same scores as younger entrepreneurs on the scales of risk propensity, innovation, initiative, self-efficacy, attitudes towards autonomy and need for autonomy¹⁶. This suggests that those over 50 could still be very well suited to the entrepreneurial lifestyle. While this group may have gone into business for more specialised reasons, it is clear that one's raw entrepreneurial potential continues into later life.

Significant differences were nevertheless observed between the under 50 and over 50 age groups in five of the psychological constructs. Senior entrepreneurs were more liberal and artistic, more likely to be well-organised and also scored above average on extraversion. The older generation more closely resemble the 'type A' personality discussed in this report¹⁷, coming across as more open, conscientious and outgoing leaders.

Senior entrepreneurs were also more likely to have an internal locus of control, meaning that they believe events in their life result primarily from their own actions. This could translate into greater confidence in one's actions and is a quality that has been found in this research to correlate strongly with business creation. The same is true for achievement motivation, as the over 50s scored higher than young entrepreneurs and thus put a greater weight on the prospect of personal success to motivate their behaviour.

Senior entrepreneurs consistently cited 'freedom to make own decisions' and 'confidence in one's skills' as important reasons for starting a business. The data showed these drivers were not as influential in motivating the next generation to engage in entrepreneurial training programmes, or to seek out extra-curricular exposure to the business world. Given that university students who received entrepreneurship education tend to start businesses over two years earlier than those who had not (0.7 years after graduation compared to 2.8)¹⁸, the potential for accelerating small business growth through networks of all ages is evident.

This suggests that there is a clear opportunity to tap into the senior pool of entrepreneurs, both to grow entrepreneurship and to motivate and help younger, aspiring entrepreneurs.

¹⁶ See Appendix 6

¹⁷ See page 12

¹⁸ Report on the results of public consultation on The Entrepreneurship 2020 Action Plan. 2012.

http://ec.europa.eu/enterprise/policies/sme/files/entrepreneurship-2020/final-report-pub-cons-entr2020-ap_en.pdf

Case study: Jeffrey Kofman, Trint

For 30 years, Jeffrey Kofman was a broadcast journalist, foreign correspondent and war correspondent, reporting on major events all around the world including the Iraq War, the Arab Spring, Hurricane Katrina and the Chile mine rescue. But at the age of 54, he put away his microphone and began a new career as an entrepreneur.

“The job had become more about the Middletons than the Middle East,” he recalls. “I needed a new challenge to re-energise me and take me out of my comfort zone.”

That challenge arrived with the birth of Trint, his own web-based service that automatically converts audio and video content into a format that users can search, verify, correct, select, edit and export without the need to transcribe it.

It is a product borne of Kofman’s deep knowledge of life on journalism’s front line, manually transcribing thousands of hours of interviews over his long career.

Kofman thinks of himself as an accidental entrepreneur. The seed for Trint was planted through a chance meeting of a team of skilled developers at the Mozilla Innovation Festival (Mozfest) in London just over a year ago.

There he met technology developer Mark Boas who had been working on a software project for literacy and libraries. Kofman was astonished by the innovation and asked Boas if it could work with automated speech-to-text and editing software. In late 2014 Trint was born (it’s a word Kofman invented – combining ‘transcription’ and ‘interview’).

“To succeed, any tech start-up needs four things: domain knowledge; market access; great developers; and business skills,” Kofman continues. “My reporting experience gave me the industry understanding, contacts and credibility to sell Trint to investors and customers. But to genuinely revolutionise the industry I needed technology expertise too. That’s why teaming up with Mark was crucial. I have had to learn the business skills as we go, that’s been the biggest challenge.”

Together with two other developers, Kofman and Boas began building Trint in late 2014 with the aim of turning it into a commercially viable business.

“We are based in a terrific co-work space with other entrepreneurs,” Kofman says. “We all learn from each other and can exchange advice on everything from investor opportunities to tax regulations.”

It is a far cry from his former life as an employee for large companies with job security, sick pay and employment benefits. Yet with extraversion, organisation and creativity identified among the classic traits of older entrepreneurs, he has been surprised to find some similarities between his old life and his new.

“Journalism is a creative career that requires focus and calmness in some of the most challenging situations imaginable,” he adds. “That’s definitely helped prepare me for the highs and lows of being an entrepreneur. I’ve also been able to call on my old sense of hustle. After all, just like when you’re covering a breaking news story, the business world is all about getting there first!”

Conclusions

A single research project could never claim to be definitive, but this study revealed some very interesting results.

First, it demands recognition that entrepreneurs do not fall under the homogeneous group that is sometimes represented in the media. Indeed, certain characteristics that we have found associated with some entrepreneurs – risk aversion and low extraversion, for example – actively counter the stereotype.

Second, the report throws up an interesting question that should be looked at further in the context of creating a thriving entrepreneurial ecosystem. Does a certain ‘type’ of person become an entrepreneur, no matter what – or does the political and regulatory landscape of a particular country determine the type of person who will succeed as an entrepreneur? Could we all be entrepreneurs, given the right environment? And what is the right environment to encourage the entrepreneurs most likely to succeed?

Finally, it suggests that there are many ways in which the entrepreneurial ecosystem could be improved. Access to mentor networks, leadership and management skills training and improved access and understanding of business finance could all have a role to play.

Creating a thriving entrepreneurial ecosystem requires support from policymakers, local government initiatives, businesses and academia working together. To do this they must understand who today’s entrepreneurs are. This study is a first step towards breaking down stereotypes and artificial constructs about what it takes to be an entrepreneur.

Research objective

Barclays and the University of Cambridge Psychometrics Centre embarked on an original research study to provide a scientifically valid account of the psychological profiles of individuals who start companies and of those who do not. This report refers to these two groups as entrepreneurs and employees respectively.

Barclays and Cambridge sought to explore:

- The psychological profile of today's entrepreneurs compared with employees
- The individual psychological differences within entrepreneurial communities
- The cultural and demographic factors influencing entrepreneurship in mature economies, specifically; Germany, Singapore, UK, and USA

Research design

The University of Cambridge Psychometrics Centre designed an assessment that incorporated questions on 13 independent psychological scales, each identified as being relevant to business creation on the basis of prior academic literature.

Responses to the 77-item test were collected from 2,007 participants in Germany, Singapore, UK, and USA. These countries were selected for a variety of reasons. They are all mature economies in which the indicators of entrepreneurship are clearly recognisable. Their respective regulatory and cultural environments differ greatly, enabling interesting points of discussion to compare and contrast.

In each country, the study focused on three sectors of the economy – technology, retail and finance – chosen to represent a variety of disciplines and individuals, and assessed both the profiles of people who had started their own business and of those who had not. The breakdown of the sample is as follows: 922 entrepreneurs, 1097 employees, of which 821 are female, 1198 male, and 181 migrants. Geographically, 33% of participants are from the USA, 32.5% are based in the UK, 22.5% are from Germany, and 12% live in Singapore.

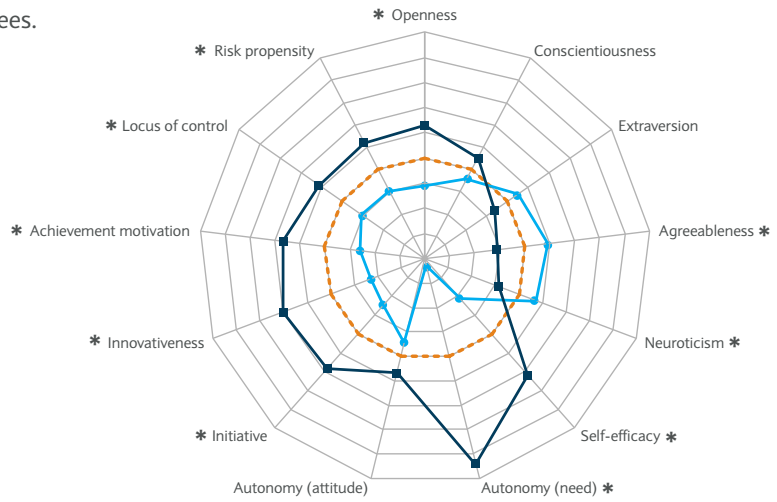
In order to give the study deeper insight into entrepreneurial behaviours and reveal any misconceptions, the research also collected information at an individual level on the key enablers and barriers to entrepreneurship. Respondents were asked to rank the top three most influential factors from two lists – one list contained reasons for having started one's own business, and the other, a list of the challenges faced. By contrast, employees were asked why they had not started their own business and what might drive them to do so in the future. This section of the test provided further insight into the wider context surrounding entrepreneurial behaviours and revealed several misconceptions from both entrepreneurs and employees.

Appendix

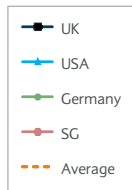
Appendix 1 Psychological comparison between all entrepreneurs and all employees.



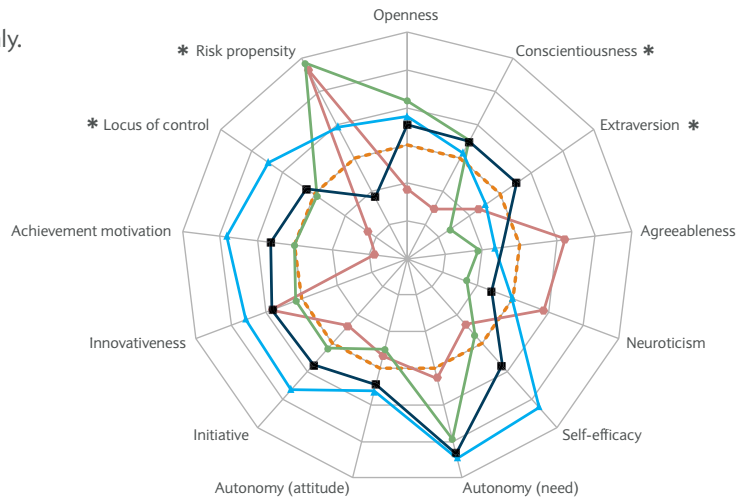
* Cut-off for significance was set at $P < 0.0005$



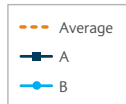
Appendix 2 Country-level psychological comparison of entrepreneurs only.



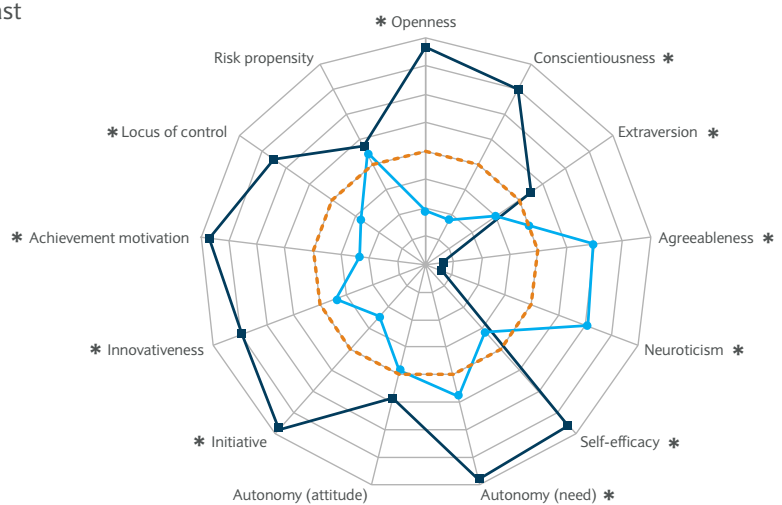
* Cut-off for significance was set at $P < 0.0005$



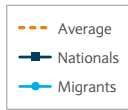
Appendix 3 Cluster analysis showing at least two 'types' of entrepreneur.



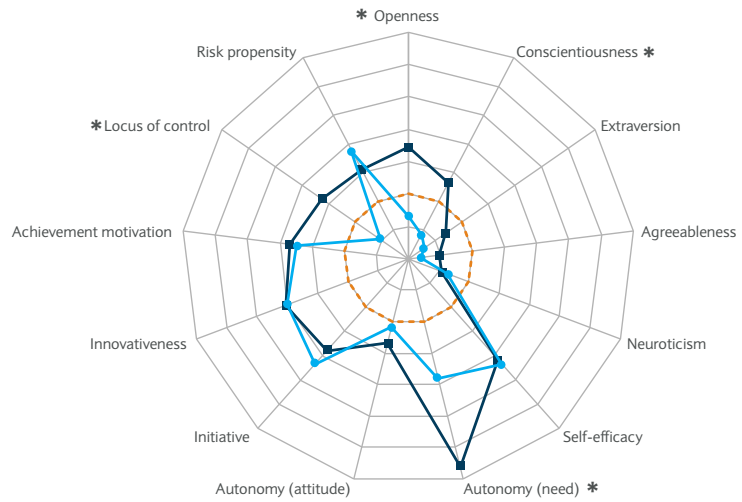
* Cut-off for significance was set at $P < 0.05$



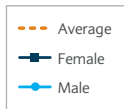
Appendix 4 Psychological comparison of national and migrant entrepreneurs.



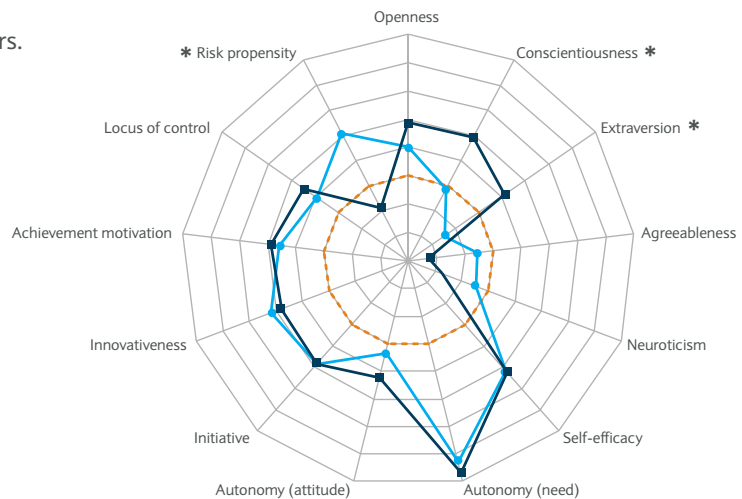
* Cut-off for significance was set at $P < 0.0005$



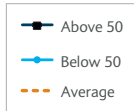
Appendix 5 Psychological comparison of male and female entrepreneurs.



* Cut-off for significance was set at $P < 0.0005$



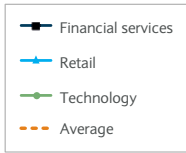
Appendix 6 Psychological comparison of younger and senior entrepreneurs.



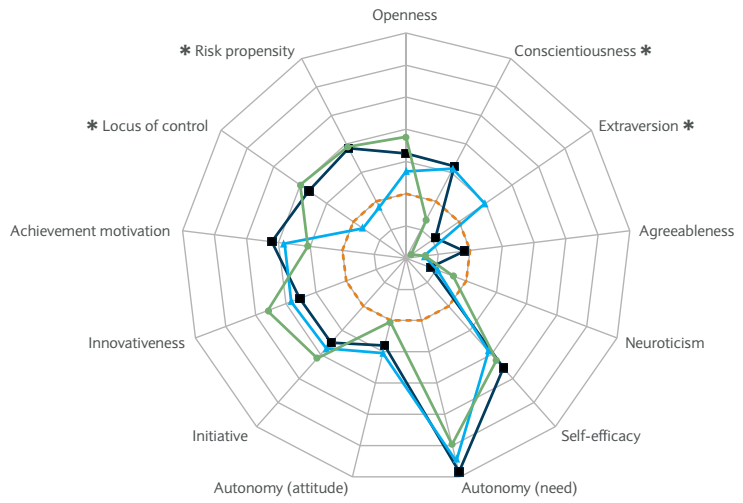
* Cut-off for significance was set at $P < 0.0005$



Appendix 7 Psychological comparison:
sector level comparison



* Cut-off for significance was set at $P < 0.0005$



The Big Five personality traits

The BIG5, or five-factor model of personality, is arguably the most popular and widely used scientific taxonomy for describing individual differences in personality. It is comprised of five independent, non-binary scales, namely Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism. There is no 'correct' score to have on any given trait. BIG5 personality was measured in this study using the Mini-IPIP scale¹⁹, an open-source instrument that uses four items per trait. The Mini-IPIP has been translated into multiple languages and validated across cultures.

Description of traits

Openness - The extent to which people prefer novelty over convention. This scale distinguishes imaginative, creative people from down-to-earth, conventional people. Those scoring high on Openness can be described as intellectually curious, sensitive to beauty, individualistic, imaginative, and unconventional e.g. "I have a vivid imagination". People scoring low on Openness, on the other hand, can be characterised as traditional and conservative, and are likely to prefer the familiar over the unusual e.g. "I am not interested in abstract ideas"

Conscientiousness – The extent to which people prefer an organised as opposed to a flexible approach in life. This scale is concerned with the way in which we control, regulate, and direct our impulses. People scoring high on this trait can be described as organised, reliable, perfectionist, and efficient (e.g. "I get chores done right away"), while people scoring low on this trait are generally characterised as spontaneous, impulsive, careless, absentminded, or disorganised (e.g. "I make a mess of things")

Extraversion – The extent to which people enjoy company or seek excitement and stimulation. This is marked by pronounced engagement with the external world, as opposed to being comfortable with one's own company. People scoring high on Extraversion can be described as energetic, active, talkative, sociable, outgoing, and enthusiastic (e.g. "I am the life of the party"). Contrary to that, people scoring low on Extraversion can be characterised as shy, reserved, quiet, or withdrawn (e.g. "I keep in the background")

Agreeableness – This trait reflects individual differences concerning cooperation and social harmony. It refers to the way people express their opinions and manage relationships. People scoring high on Agreeableness are generally considered as being trusting, soft-hearted, generous, and sympathetic (e.g. "I sympathise with others"). People scoring low on this trait can best be described as competitive, stubborn, self-confident, or aggressive (e.g. "I am not really interested in other people's feelings").

Neuroticism – This trait refers to one's tendency to experience negative emotions, and concerns the way people cope with and respond to life's demands. People scoring high on Neuroticism can be characterised as being anxious, nervous, moody, and worrying (e.g. "I have frequent mood swings"). On the other hand, people scoring low on Neuroticism can be described as emotionally stable, optimistic, and self-confident (e.g. "I seldom feel blue").

Self-efficacy – The way in which an individual perceives their ability to perform novel or difficult tasks, and to cope with hardship. People who score high on this trait believe in their capabilities to organise and execute courses of action required to manage prospective situations. They view challenging problems as tasks to be mastered rather than believing that difficult tasks are beyond their capabilities. People with high scores also recover quickly from setbacks and disappointments, whereas those with lower scores are more likely to lose confidence in their personal abilities. This trait was measured using the General Self-Efficacy Scale (GSE)²⁰, which includes 10 items, such as "It is easy for me to stick to my aims and accomplish my goals"

¹⁹ Donnellan, M.B., Oswald, F.L., Baird, B.M., and Lucas, R.E. (2006). The mini-IPIP scales: Tiny-yet-effective measures of the Big Five factors of personality. *Psychological Assessment*, 18, 192-203.

²⁰ Schwarzer, R., and Jerusalem, M. (1995). Generalised Self-Efficacy scale. In J. Weinman, S. Wright, and M. Johnston, *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35-37). Windsor, UK: NFER-NELSON.

Autonomy (need) – The degree to which one needs independence and freedom to make decisions freely, especially with regard to the individual’s expectations of their workplace. A high score in this trait indicates a greater need for personal autonomy in the context of one’s responsibilities and the manner in which they are fulfilled. An example question on this scale might be “How important is it for you to influence the objectives of your work?”

Autonomy (attitude)²¹ – Attitudes towards the degree to which others need autonomy. This refers to an individual’s broader beliefs about autonomy in the workplace and whether they believe in more directive or hierarchical management (high score) or in a flatter structure where employees have greater freedom (low score). Those with higher scores would tend to agree with the statement that “Individuals and/or teams should rely on senior managers to guide their work”, whereas those with low scores might believe that “Companies should support the efforts of individuals and/or teams that work autonomously”.

Initiative²² – The level to which one’s behaviour at work is indicative of being proactive. People with high scores on this trait are self-starters that overcome barriers to achieve goals. They tend to agree with the statement “Whenever something goes wrong, I search for a solution immediately” and the consequences of such an active approach is usually that the environment is changed by the individual. This is in contrast to a low score, which indicates a more passive approach in which one merely reacts to environmental demands.

Innovativeness²³ – The level to which an individual seeks novelty and complexity and is willing to accept and drive change, especially in the workplace. High scores on this trait might be indicative of someone who aims to introduce new and useful ideas, processes, products or procedures. An example question is “How often do you wonder how things can be improved?”

Achievement motivation²⁴ – The level to which one needs success for self-motivation and strives for personal excellence and recognition, e.g. “Are you satisfied to be no better than most other people at your job?”. Strongly agreeing with this statement would correlate with a low score in this trait.

Locus of control²⁵ – The extent to which an individual believes their actions and behaviour determine the outcomes of external events. A high score indicates an ‘internal’ locus of control, meaning that the individual is confident that they can influence or control their environment (e.g. “I believe that my success depends on ability rather than luck.” A low score on this trait therefore indicates an ‘external’ locus of control (e.g. “I believe in the power of fate”).

Risk propensity²⁶ – The degree to which one is willing to take risks and experience losses. The nature of the items used to measure risk propensity in this study are particularly well suited to investigating individual differences in tolerance of risk in the context of financial decision-making, e.g. “Would you rather receive \$9000 or have 20% chance of receiving \$10,000?” (higher risk propensity) vs. “Would you rather receive \$600 or have 85% chance of receiving \$10,000?” (lower risk propensity).

²¹ Lumpkin, G. T., Cogliser, C. C., and Schneider, D. R. (2009). Understanding and measuring autonomy: An entrepreneurial orientation perspective. *Entrepreneurship Theory and Practice*, 33, 47-69

²² Frese, M., Fay, D., Hilburger, T., Leng, K., and Tag, A. (1979). The concept of personal initiative: Operationalization, reliability and validity in two German samples. *Journal of Occupational and Organizational Psychology*, 70, 139-161.

²³ Adapted from de Jong, J. and den Hartog, D. (2010). Measuring innovative work behaviour. *Creativity and Innovation Management*, 19(1), 23-36.

²⁴ Adapted from Ray, J.J. (1979). A Quick Measure of Achievement Motivation - Validated in Australia and Reliable in Britain and South Africa. *Australian Psychologist*, 14(3), 337-344.

²⁵ Scale included in the International Personality Item Pool (IPIP). Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., et al. (2006). The International Personality Item Pool and the Future of Public-Domain Personality Measures. *Journal of Research in Personality*, 40(1), 84-96.

²⁶ Adapted from Shead, N. W., and Hodgins D. C. (2009). Probability discounting of gains and losses: Implications for risk attitudes and impulsivity. *Journal of the Experimental Analysis of Behavior*, 92(1), 1-16.

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