European Startup Monitor

2016

ESM EUROPEAN STARTUP MONITOR

Initiator

German Startups Association

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Greetings from the European Commission Vice-President for the Digital Single Market

A key part in building the Digital Single Market is to help and promote Europe's startups. Startups are vital to our economy, job market, and digital future. They are drivers of European innovation. No one creates more opportunities for employment than startups and other young companies; they provide around 50% of all new jobs. Data-gathering international research initiatives, such as the European Startup Monitor (ESM), are extremely useful. They give unique and authentic insight into emerging startup ecosystems, providing detailed information and regular updates of their basic characteristics under one comparable methodology. All of this helps startups as they seek to link together in networks, join ecosystems across Europe and find partners and investors. The ESM also assists policymakers and regulators in knowing exactly how to support startups in the best and most appropriate ways. Startups have an ambition to grow and want to spread across borders easily. Along with finding profitable, repeatable business models, their primary goal is to scale up. Of course, launching a new company with a new idea is one thing, but helping it to grow in a competitive marketplace is another. As the ESM's research makes it clear, startups face many problems, including sales/customer acquisition, product development, growth and raising capital. We also know that they find it difficult to recruit and retain the right talent.

All in all, there are too many restrictions and barriers for innovative entrepreneurs. The markets for capital and talent are fragmented across the European Union – as are regulatory regimes. This makes it hard to scale up across borders, whether one is setting up a company from another EU country or from outside the EU. The Digital Single Market strategy addresses many of these problems as well as other unnecessary digital barriers that startups face in their growth process. It aims to reduce obstacles so that startups have more freedom to innovate and scale up in Europe while operating across the EU's borders within the international market. This is part of the need for better regulation for the digital age—we need rules that are "fit for purpose" to promote the start and scale-up of digital businesses. For startups, the future is now.

Andrus Ansip – European Commission Vice-President for the Digital Single Market

OVERVIEW

The 2nd European Startup Monitor (ESM) represents:

2,515 startups
6,340 founders
23,774 employees.

It has three goals: To present the development and significance of startups and identify research gaps. To outline economic initiatives that will strengthen the national and regional startup ecosystems of Europe. To cultivate enthusiasm for entrepreneurship in society.

Startups are defined by three characteristics: Startups are younger than 10 years. Startups feature (highly) innovative technologies and/or business models. Startups have (strive for) significant employee and/or sales growth.

Facts from the 2nd European Startup Monitor

Age of startups

The ESM startups are on average 2.4 years old.

The digital economy

Founding businesses as part of the digital economy is again highly attractive.

Interna-tionalisation of startups

77.7% of the ESM startups are planning (further) internationalisation.

Female founders

The percentage of female startup founders is 14.8%.

Employment of startups

The ESM startups employ on average 12.0 employees (incl. founders).

European startups create jobs

The ESM startups are planning to hire another 5.8 new employees in the near future.

ESM startups have raised around € 2.0 billion

The ESM startups have already raised around € 2 billion in external capital (statistical projection).

ESM startups plan to raise another € 2.7 billion

Startups plan to raise additional € 2.7 billion in external capital in the following 12 months.

Business satisfaction and positive atmosphere

More than 90% of the ESM startups rate their present business situation as good or satisfying.

Growth in development

More than 70% of the startups are expecting a more favourable development in the following year.

European startup challenges

The biggest challenges that European startups are facing include sales and/or customer acquisition, product development and growth.

Introducing 7 European startup ecosystems

Cyprus

Cyprus is an amazing place for any startup to be at during the first stages of its lifecycle. It is supported by a liberal economy and is recording among the highest growth rates in Europe. The government is strongly committed to action and is guided by its National Policy Statement for Entrepreneurship which offers competitive startup and investment incentives. Other benefits of Cyprus are its low income tax rate, affordable cost of living (making startups five times cheaper to operate) and high percentage of foreigners and multi-linguals. It is an ideal place to expand into international markets, especially the Russian- and Arabic-speaking markets.

As a services hotspot with strong shipping, tourism and financial services industries, Cyprus provides a great pilot market for startups. This allows MVP testing to be lean and mean while allowing funding to carry a company further. The country's thriving startup ecosystem is dynamic, friendly and supportive, developing under the umbrella of Startup Cyprus. With its meetups, hackathons, startup events, accelerators, the Business Angels Network and the Founder Institute global accelerator, Cyprus is shaping up to be an important part of the European startup ecosystem.

Stavriana Kofteros - Startup Cyprus

Hungary

Hungary has a prominent startup ecosystem. New state-funded capital programs, worth a total of €550 million, will open in the next five years. This initiative will provide funding for startups in all stages of their lives. The relationship between Hungary's regulators and the startup world is strengthening, with results such as a new angel tax break and a Digital Welfare Program. Regulation tailored to the aims of Industry 4.0 is in the making; this will allow startups to be more integrated. Initiatives, both top-down and bottom-up, are being born all over the country. In the last year, eight accelerators have launched in the countryside and three in Budapest, together with half a dozen new co-working offices. The entrepreneurial spirit in Hungary is among the lowest in the EU, but has increased in recent years thanks to three huge startup successes (i.e. Prezi, Ustream and LogmeIn)

that involve young talents. The Hungarians have a great digital skillset, and their weak entrepreneurial skills can be developed through new programs.

Gergely Böszörményi Nagy - Design Terminal

Ireland

Ireland has a vibrant startup ecosystem with some fantastic stories and successes. The country's innate creativity has led to a culture of innovation, with five of the top 10 World's Most Innovative Companies (according to Forbes) now operating out of Ireland. There is an interest and an appetite for progress in Ireland's startup scene and as such Ireland is fast becoming a launch pad to global success. A rapidly growing startup ecosystem has resulted in Ireland being regularly ranked among Europe's most entrepreneurial countries (Source: The Global Entrepreneurship and Development Institute). Ireland is perfectly located at the heart of the trading world, and has a strong pool of talent and a proven track record in attracting multinationals as well as high growth companies. Each geographical region plays to the strengths of its area when attracting startups and multinationals. Ireland has developed several vibrant hubs and world class accelerators in fintech, medtech, IOT and software, including Dublin, a bustling tech hub, and Galway, which is home to a vast array of biotech and medtech companies.

Tom Watts - Startup Ireland

Poland

According to the Polish Startup Report 2016, there are around 2,700 startups in Poland. Most of them operate using a B2B model and are founded by young teams of mostly 25- to 35-year-olds. Polish startups are among the youngest in Europe, having existed, on average, for less than two years. Exactly half of Polish startups are financed exclusively from their own resources, but there is also a high share of funding from external sources, especially EU funds, VCs, business angels and Polish public funds (i.e. the National Centre for Research and Development and the Polish Agency for Industry Development). Quite a few tech projects originating in Poland have become well-known beyond their local market (i.e. Estimote, Growbots, UX Pin and Doc Planner). The most important startup centres in Poland are Warsaw (27%) and Krakow (11%). Warsaw startups are more business-oriented while Krakow's are more technology-centred. There are many large-scale meetings regarding the status of Poland's startup ecosystem, such as Aula Polska, Hive53, Startup Stage and OpenReaktor. That is why almost half of Polish startups recieve contacts and insights about business development from participation

in competitions and events (e.g. hackathons and Startup Weekend). The community of startups in Poland is still growing strong thanks to the improved and supportive entrepreneur-oriented legislative framework that the country is building.

Magdalena Beauchamp - Startup Poland

Portugal

Some international media coverage is comparing Lisbon to San Francisco or Berlin, considering it as one of the best cities to visit in Europe. According to Paddy Cosgrove, the Web Summit CEO, "Lisbon is like Berlin 5 years ago, but with southern Europe climate". The fact is you have an amazing quality of life here and low costs of living - which is really helpful when you're building your own company. The truth is, in recent years, Portugal has developed a significant number of world-class startups and programs that are key to this progress. The Web Summit coming to Lisbon is proof that the city is increasingly well-positioned on the international level. Beta-i believes this can be the year in which the ecosystem matures and cements its position. The bulk of Portuguese scaleups (17, 42% of the total) are located in Lisbon, were it's easier to get access to venture capital. The companies based in the capital city raised about 60% of the total money made available to Portuguese scale-ups.

Ricardo Marvão - Beta-i

Slovenia

Slovenia has a relatively young but extremely dynamic and rapidly developing startup ecosystem. National startup celebrities, such as Outfit7, Celtra, Zemanta and Databox, have carried the voice of the country's extreme entrepreneurial talents, with their excellent engineering and field knowledge, as far as Silicon Valley. The Ljubljana-based ABC Accelerator has a branch in San Jose in addition to its office in Munich and domicile in Ljubljana. Alongside ABC Accelerator, other private programmes, such as CEED Slovenia, Coinvest and the Business Angels of Slovenia club, have also contributed to the quick growth of the ecosystem and the growing number of global successes of Slovenian startups. Entrepreneurship infrastructure and consulting are excellently managed by Slovenian innovative environment subjects— university incubators, regional entrepreneurship incubators and technology parks that work under the auspices of the public agency SPIRIT. The gap of equity financing is the largest in the early seed stages of startups. When it comes to financing, the Slovene Enterprise Fund joins in with its products during these times. It offers startups products P2, SK75 and SK200, which jointly provide up to €329,000 of seed capital per company,

including an intense advisory, educational and mentoring supporting programme. Public programmes are planned and coordinated by the Ministry of Economic Development and Technology. The implementation and promotion of these public programmes is done by the Start:up Slovenia Initiative, which is an active connector and promotor of all public and private stakeholders in the Slovenian startup ecosystem. With the activities listed above, in addition to its membership in the European Startup Network, Start:up Slovenia and its partners are attempting to put Slovenia on the map of established startup hubs. They have watched happily as this achievement comes closer!

Matej Rus - Start:up Slovenia

Switzerland

Switzerland has developed a more mature startup ecosystem in recent years. Several initiatives have been created around the country's economic poles, including its major cities, universities and polytechnic schools. For example, several new accelerators (e.g. Kickstart Accelerator, Fintech Fusion, Swiss Startup Factory, Society3 and MassChallenge), associations (e.g. Swiss Fintech Startups) and investor groups have formed in the last two years with the goal of supporting startups in their early stages. This improved the ecosystem, pushing young Swiss entrepreneurs to start their own ventures and attracting foreign entrepreneurs to Switzerland. One major initiative called ZurichDigital2025 is joining forces with corporations, mid-sized enterprises, startups, investors and politicians to improve conditions for startups. This initiative engages with a number of topics, including political and legal frameworks, education, talent hiring and fundraising. More than 30 well-known corporations are supporting the initiative and aiming to work more closely with startups. Recently, the initiative decided to extend its operations to the entire country, and it is now called "Switzerland Digital". Until the end of 2016, the Swiss Startup Association will be integrated into the Switzerland Digital Initiative under the name "Startup Charter", and its activities will gain momentum thanks to shared resources.

Nicolas Bürer -
Swiss Startup Association

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Motivation

Startups are important economic drivers that create wealth by adding new products or services to the market and creating a significant number of jobs. However, Europe is lagging behind the global pace of a new venture creation. The rate of early-stage entrepreneurial activity (TEA) in Europe is only 7.8% of the adult population; this value is considerably higher in North America (13.3%), Asia and Oceania (13.1%) according to the Global Entrepreneurship Monitor 2015/2016 (Kelley, Singer, & Herrington 2016). To keep up with the global market, Europe must foster innovative startups that positively contribute to European economies by creating products, services and jobs. The ESM examines European startups that pursue innovative business models.

It evaluates entrepreneurial activities, motives, and attitudes of entrepreneurs across European and non-European countries that are relevant to the European startup ecosystem.

The ESM explores the role of startups, their growth throughout Europe and the national characteristics that influence entrepreneurial activities. The goals of the ESM are to assess the current situation of startups throughout Europe and selected countries and to identify country-specific differences as well as common challenges. It also explores the future of European startups by noting current trends and developments in the European startup ecosystem. Overall, the ESM aims to identify factors that are crucial in fostering entrepreneurial activities throughout the European startup ecosystem. The study may also encourage communication between the respective players (e.g. European entrepreneurs, politicians and established firms). Furthermore, the ESM 2016 puts a special focus on the internal structures and processes of startups in order to gain meaningful insights into what makes startups special. This will foster the cultural and societal understanding and acceptance of entrepreneurship across Europe. Finally, due to the wide range and increasing number of startups included in the ESM, we are able to draw a full-scale picture of the European startup ecosystem and derive valuable implications for both theory and practice. However, there is still room for improvement in the coming years, and this study cannot be fully representative of all European startups.

Definition of Startups

Based on the concept introduced in the first ESM (2015), startups in this study are defined by three characteristics:

1. Startups are younger than 10 years

2. Startups feature (highly) innovative technologies and/or business models

3. Startups have (strive for) signifcant employee and/or sales growth

A venture qualifies to be included in the ESM when the first of the three characteristics above is met, along with one or both of the other characteristics. This definition clearly differentiates startups from conventional businesses and small to medium-sized enterprises (SMEs) that do not promote innovative products/services or business models that exist primarily to secure the livelihood of the founders without any substantial growth perspective (e.g. a hairdressing business). In contrast to those companies, the ESM conceives startups as "gazelle companies": growing young ventures that are built to create wealth (Aronsson 2004). Although this concept of startups has often been used in the field of the digital economy (which accounts for a major share of startups included in the ESM), we also explicitly include startups from other industries. Industries in which startups flourish include, among others, medicine/biotech and finance/fintech.
The ESM, therefore, provides valuable insights into the European startup ecosystem and into these promising, high-potential new ventures that are built to achieve growth and drive innovation.

Academic framework

The ESM aims to build a solid knowledge base for entrepreneurship research and practice. Therefore, it is based on a common academic framework composed of nine fields of interest, which are comprised up of statements about the startups and the founders themselves.

The first statement, "Statements about you and your startup", includes the following five fields: management/team, market access, finance, processes and product/service. The second, „Statements about the environment", consists of four fields: politics, competition, infrastructure/networks and society/culture. This academic framework is oriented towards established research concepts and knowledge input from the practice partners involved. Furthermore, the experience and existing knowledge base of the previous ESM study have been taken into consideration in the current study´s design. The academic framework is influenced by, among other factors, elements of the ESM 2015 framework derived from the Babson Entrepreneurial Ecosystem Project (BEEP) model, created by Isenberg (2011), and elements of the 3K strategy for supporting innovative startups, created by Kollmann (2015).

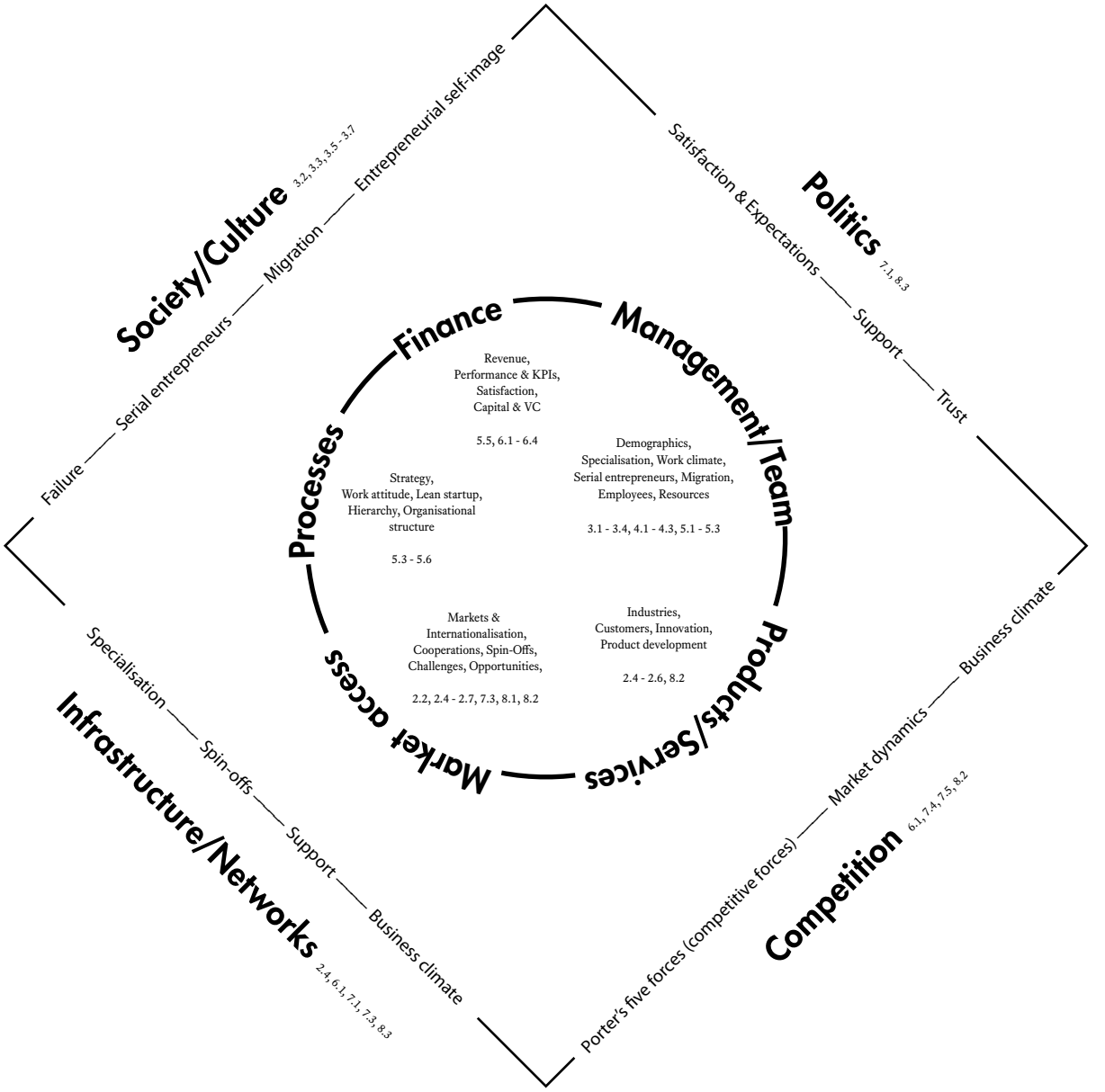
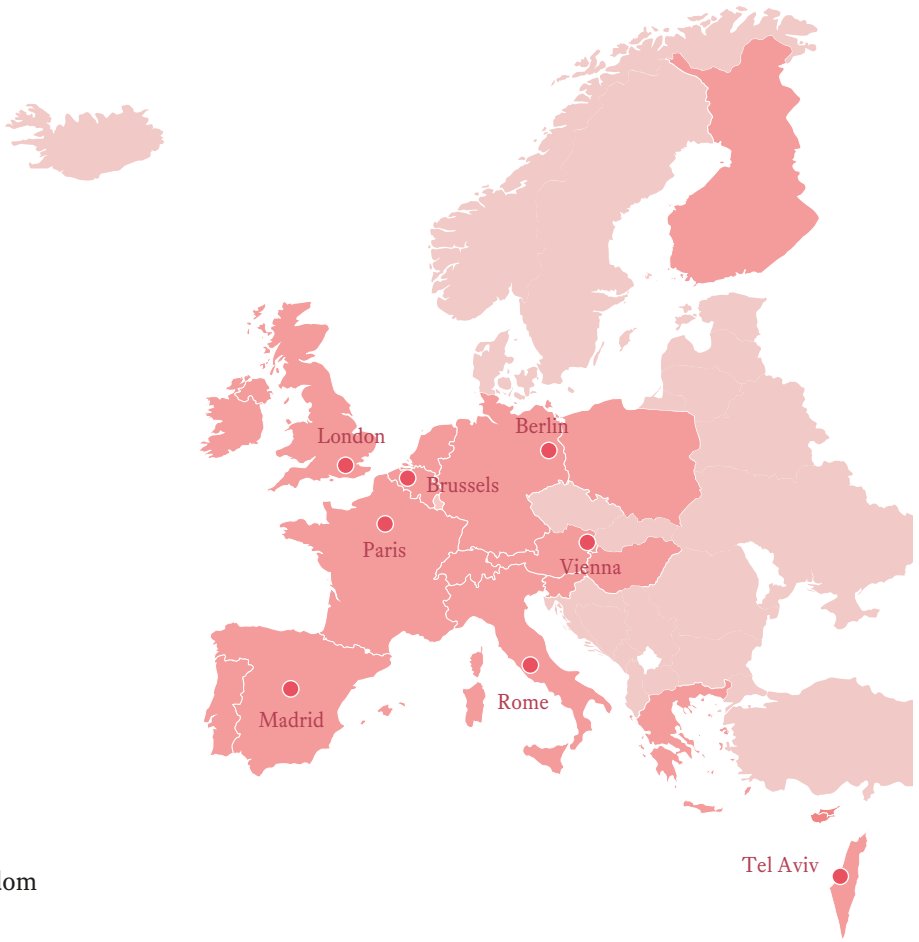


Figure 1 – Academic framework

Basic characteristics of European startups

The European Startup Monitor uses data from 2,515 startups[1] from all 28 European member states and other important countries in the European startup ecosystem (e.g. Israel).

The map (Figure 2) depicts all participating countries (light shading) and all countries for which we are able to make detailed statements due to a sufficient number of respondents (dark shading). This year, we were able to analyse 18 countries (for ESM 2015, we analysed 13 countries[2]) in detail, including Austria, Belgium, Cyprus, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, the Netherlands, Poland, Portugal, Slovenia, Spain, Switzerland and the United Kingdom. Taking the data from both the first ESM and the current ESM into consideration, the following regional startup hotspots emerged: Berlin, Brussels, London, Madrid, Paris, Rome, Tel Aviv and Vienna.



Austria	Israel
Belgium	Italy
Cyprus	Netherlands
Finland	Poland
France	Portugal
Germany	Slovenia
Greece	Spain
Hungary	Switzerland
Ireland	United Kingdom

Figure 2 – Location of startups

Three out of four startups

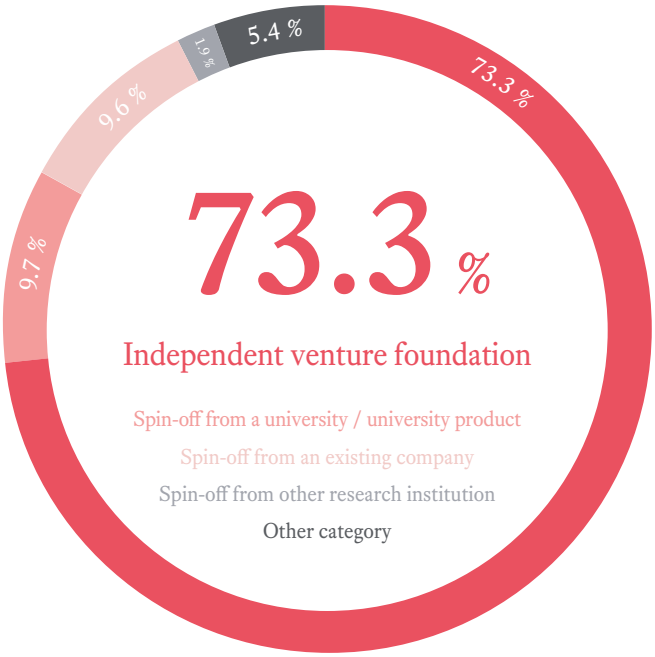


Figure 3 – Type of business Foundation*

are founded independently.

*Values in some figures may vary due to rounding differences.

In order to gain insight on how startups are founded, the respondents were asked to indicate how they formed their startups. The results show that 73.3% (Figure 3) were founded as independent ventures. One out of ten startups was founded as either a spin-off of a university (9.7%) or an existing company (9.6%). The lowest percentages of independent startups can be found in Poland (53.6%) and Spain (53.7%), and the highest is found in Ireland (81.2%). Switzerland has the highest share of university spin-offs (18.1%), and Hungary has the highest share of spin-offs from existing companies (18.2%). The relatively high share of "other" in Spain (36.8%) is also noticeable (Figure 4).

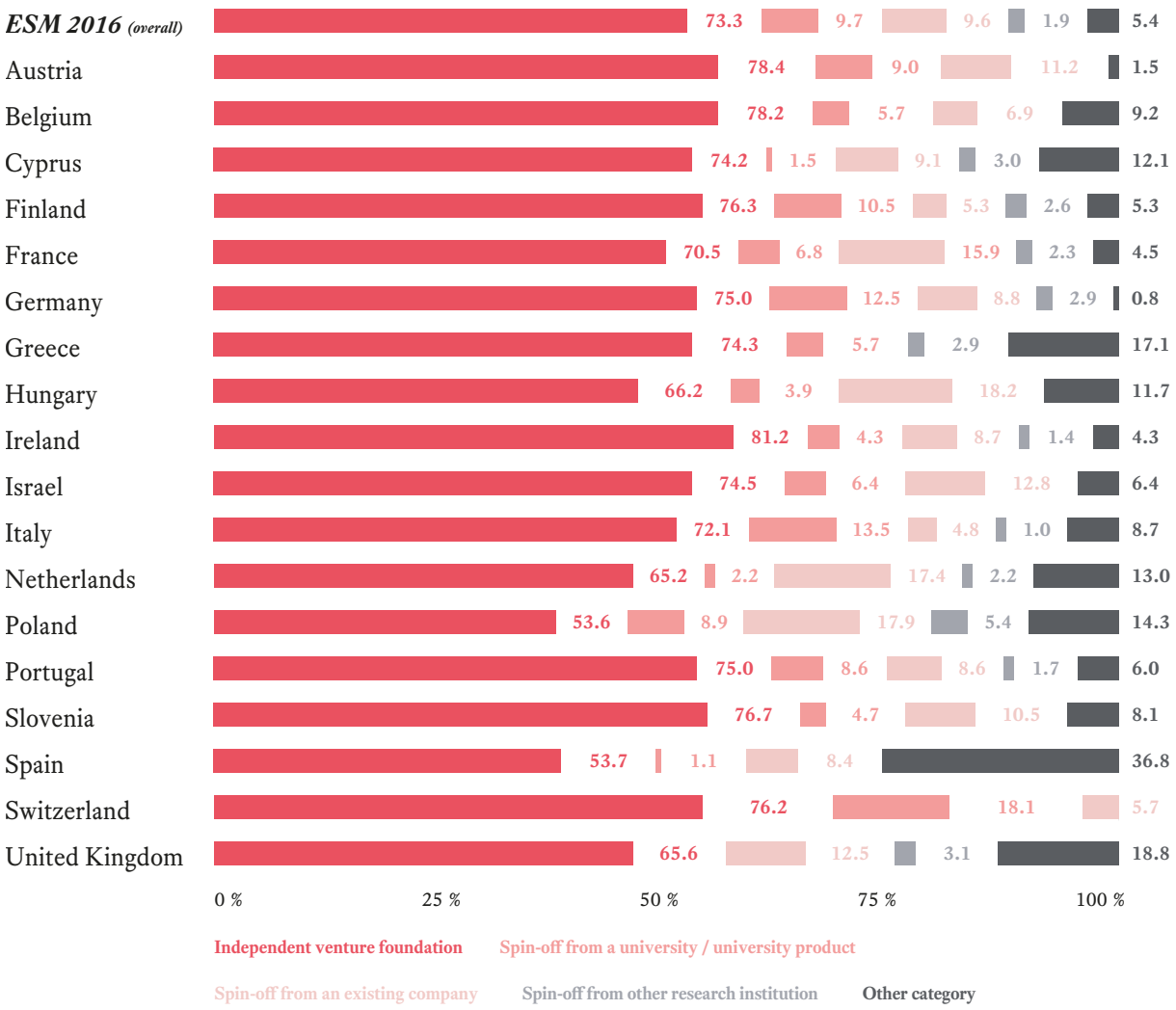


Figure 4 – Type of business foundation

Of the startups covered in the ESM 2016, 77.6% are no older than four years.

The overall age of the ESM 2016 startups was, on average, 2.4 years, and thus was comparable to the last ESM (2.5 years). The oldest startups, on average, came from Finland (3.4 years) followed by Belgium (2.9 years) whereas the startups with the youngest average age were located in Greece (1.3 years) and Poland (1.9 years) (Figure 6).

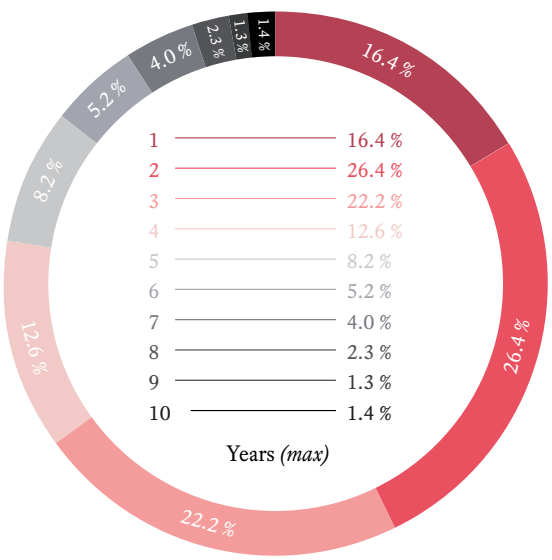


Figure 5 – Age ranges of startups

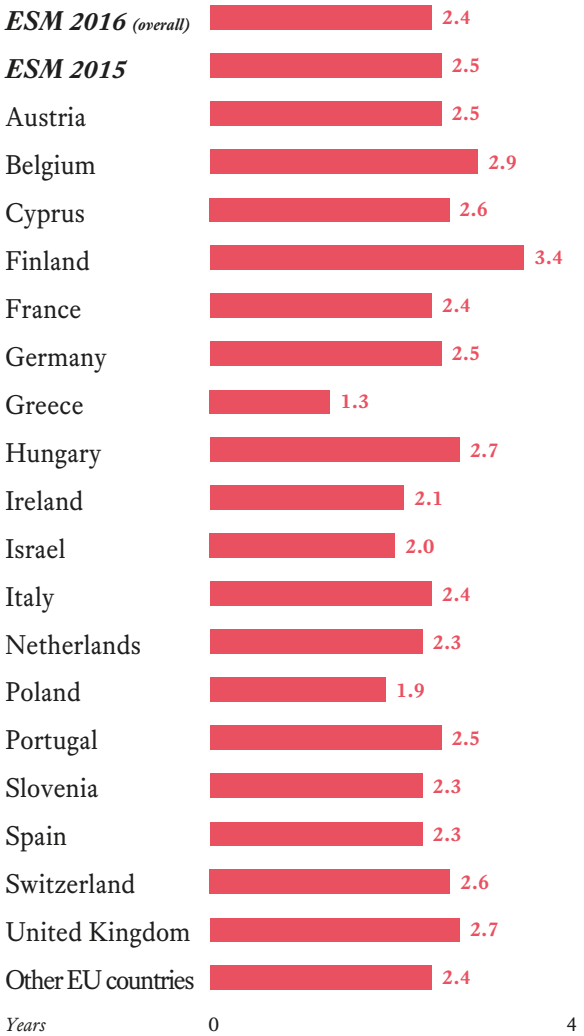


Figure 6 – Average age of Startups

Of the responding founders, 16.4% stated that their startups were no older than one year, and 26.4% stated that their startups were between one and two years old. A further 22.2% of the startups were between two and three years old, and 12.6% were between three and four years old.

Only 22.4% were five years old or older (Figure 5). A noticeable predominance of startups that are less than one year old can be found mainly in Southern European countries: Greece (57.1%), Israel (44.7%), Austria (35.1%) and Cyprus (28.8%).

About half of all ESM startups are currently in the startup stage with first revenue generation.

Startup stages: As demonstrated in Figure 7, the founders were asked to match their startup with its corresponding developmental stage. Of the startups run by the respondents, 22.1% are still in the seed stage, meaning that the founders are in the process of idea generation and have not yet generated any revenue. Similarly to the ESM 2015 results, most startups are in the startup stage (50.7%); they are on the verge of offering a marketable product/service and of generating first revenues and/or customer value. The second strongest category, once again, is the growth stage, which is represented by 23.7%

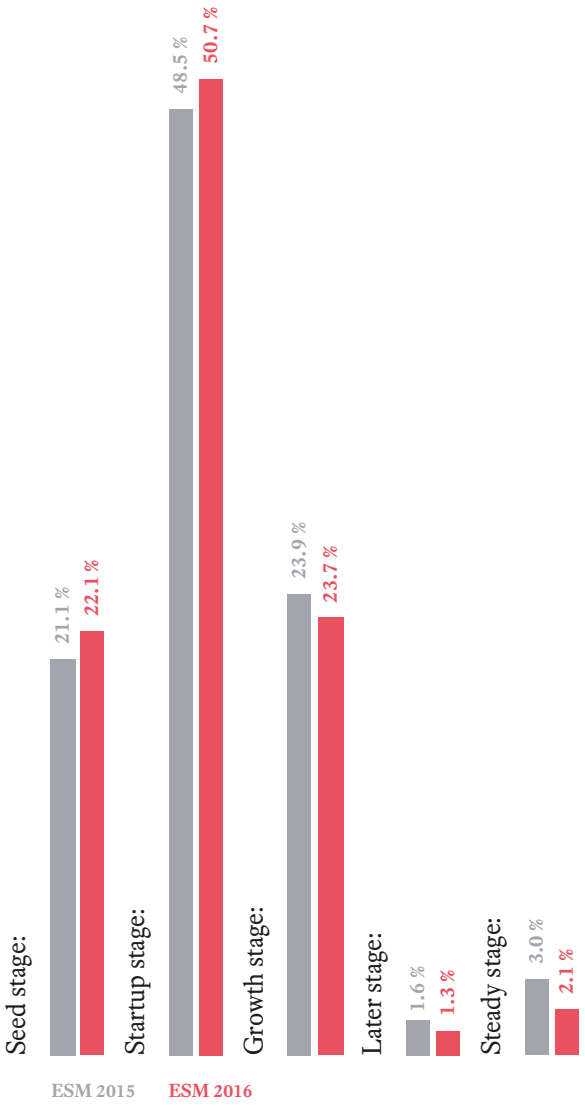


Figure 7 – Startup stages

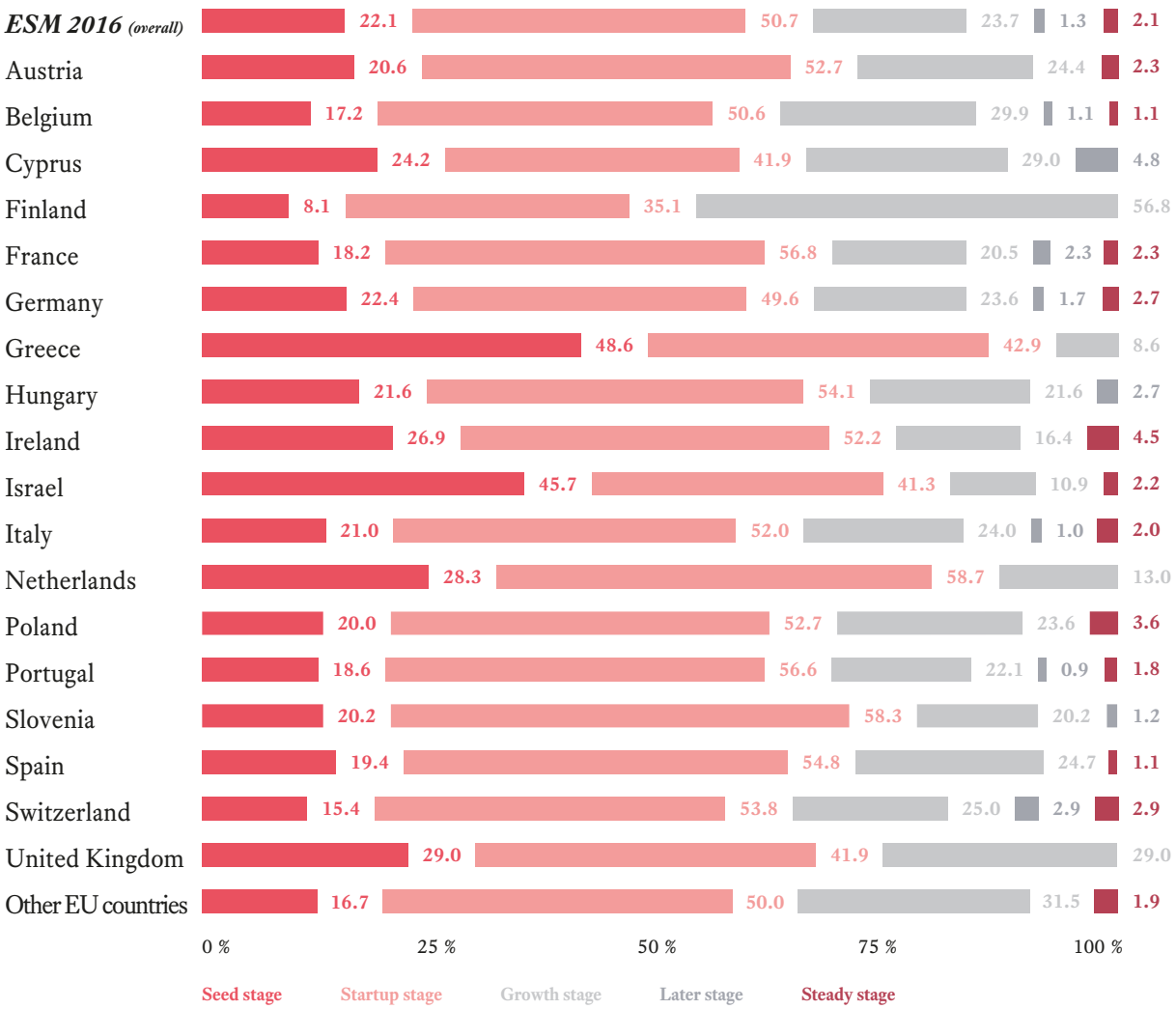
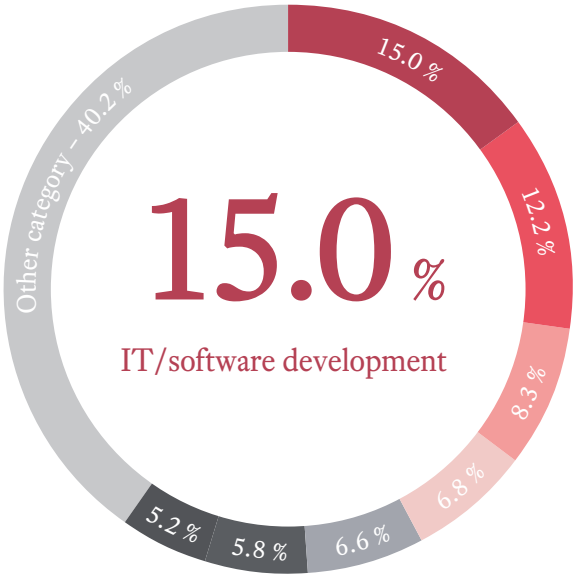


Figure 8 – Current developmental stages of startups

of the startups. These startups have succeeded in creating a marketable product/service and have shown high sales/customer value growth. A small share of the startups (1.3%) has reached the later stage, meaning that these organisations are established players and/or are planning an exit (e.g. through an IPO). Another 2.1% have reached the steady stage, with stagnating or even decreasing growth rates. The highest shares of seed stage startups come from Greece (48.6%) and Israel (45.7%), with the lowest coming from Finland (8.1%), which also has the highest share of growth stage startups (56.8%) (Figure 8).

The importance of the digital economy for Europe is growing.

To provide an overview of the industries in which the startups are operating, the respondents were asked to match their startup to one of eighteen industry categories. The results indicate the relevance of the digital economy for innovative European startups; the digital economy accounts for five of the seven major categories. Most startups stated that their venture belongs to the IT/software development sector (15.0%) followed by software as a service (12.2%) and industrial technology/production/hardware (8.3%) (Figure 9). The most frequent categories on the level of individual countries are IT/software development (8 countries) and software as a service (8 countries).



IT/software development
Software as a Service (SaaS)
Industrial technology/production/hardware
Consumer mobile/web application
E-commerce
Bio-, nano-, and medical technology
Finance/finance technology (FinTech)

Online marketplace (4.9%)
Education (4.8%)
Consulting company/agency (4.6%)
Online service portal (4.2%)
Green technology (4.0%)
Food (3.4%)
Media and creative industries (3.3%)
Games (1.3%)
Offline services (1.3%)
Stationary wholesale and retail (0.6%)
Other (7.9%)

Figure 9 – Categorisation of startup business models and industries

Figure 10 – Most important branch per country

This section distinguishes between customers (through whom revenue is generated) and users (who use the product/ service). Both of these groups are not in the same category.

In total, 53.3% of the ESM startups (mainly) address B2B users with their product/service (Figure 11).

An even higher share of 67.2% of them generate their revenue (mainly) through B2B customers (Figure 11). This means that some products/services with a B2C user focus generate revenue via B2B customers.

The comparison of various countries shows that there are considerable differences regarding the distribution of B2B and B2C users (Figure 12).

While a B2C focus seems to be especially important in the United Kingdom, Switzerland and Spain, countries such as Finland, Belgium and Portugal are very focussed on B2B users.

European startups are likely to operate in the B2B sector.

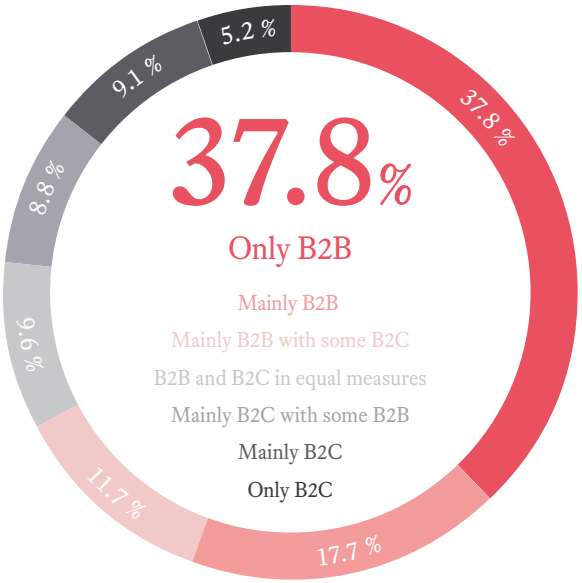


Figure 11 – Customers through which startups generate revenue

Half (53.3%) of their users and two thirds (67.2%) of their customers are (mainly) B2B.

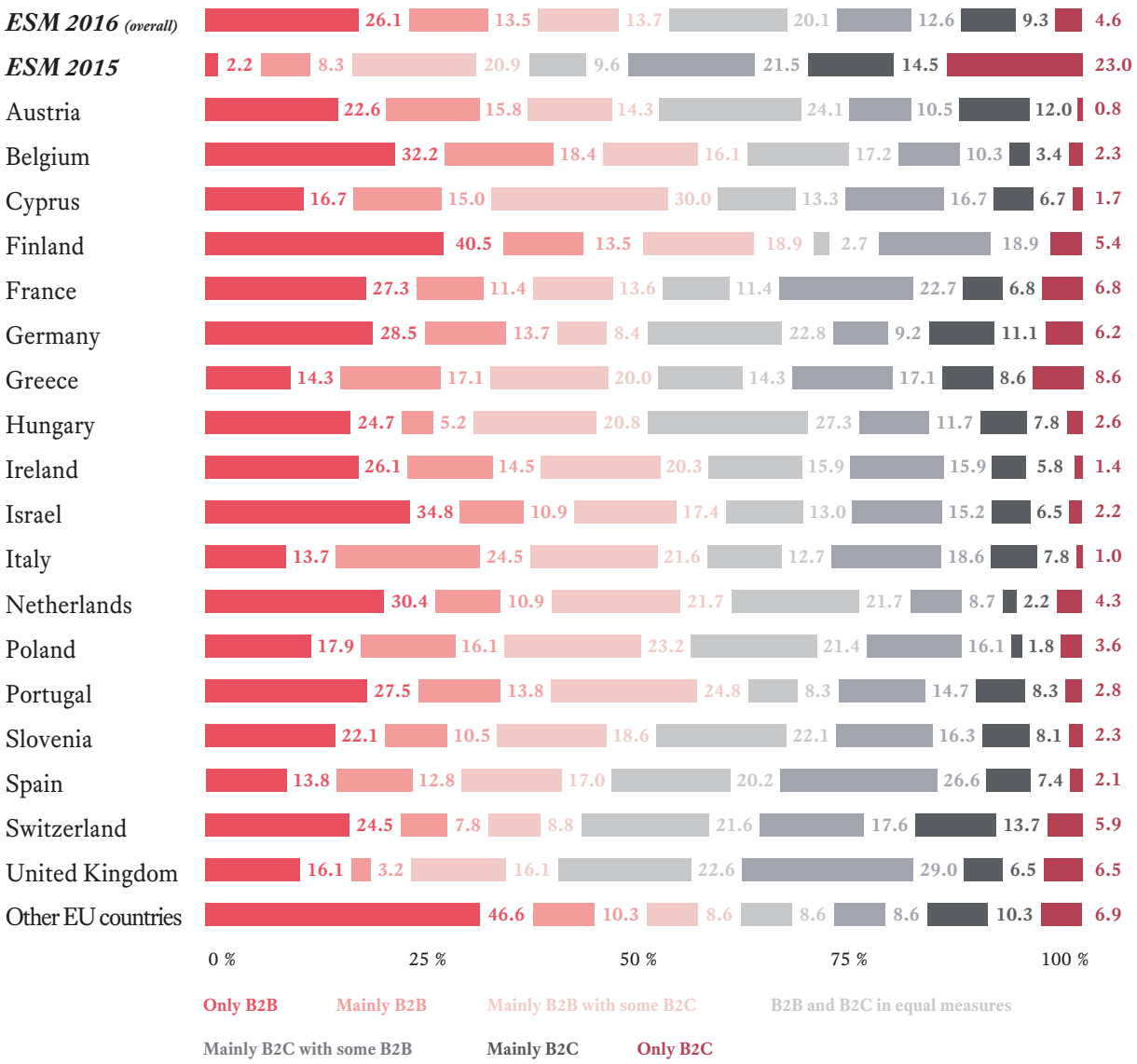


Figure 12 – Users addressed by the ESM startups

Since innovation is inherent to startups by definition, participants were asked to indicate the degree of novelty of their startup in four categories: product, business model, technology and processes. Figure 13 reveals that 51.5% of the startups see their products as an international market innovation, and 42.7% do so in terms of technology. Only 3 out of 10 startups see their business models (27.9%) or processes (28.2%) as representing an international market innovation, and a similarly

high portion see them as either European or regional market innovations. Another notable difference exists regarding the answer "no market innovation", which only 10.5% chose with respect to their own products but about one third chose with respect to their business models (35.3%), technology (30.0%) or processes (33.6%). This makes the product the innovation driver among ESM startups.

Most startups (89.5%) consider their products to be novel in the market. More than half say their products represent an international market innovation.

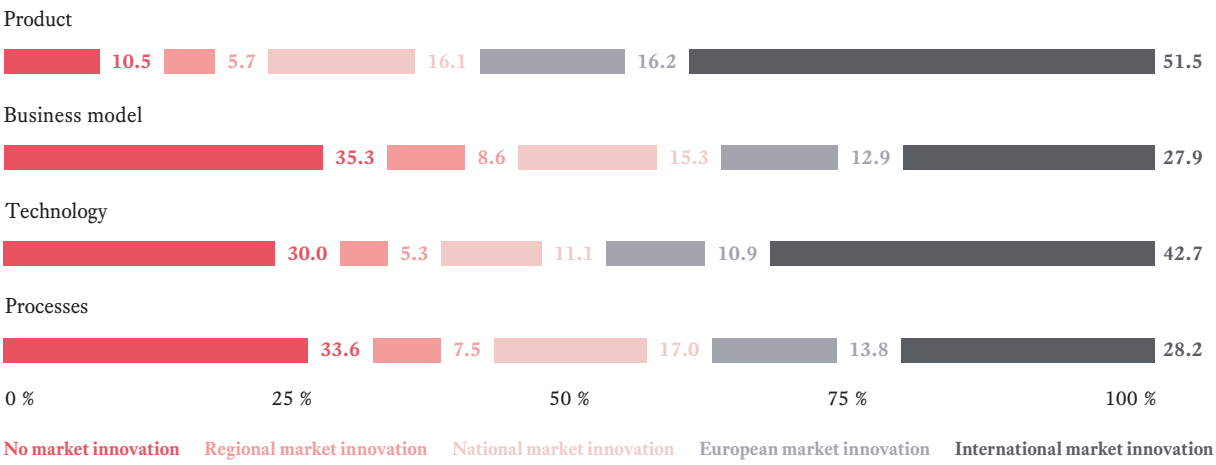


Figure 13 – Innovative Power

Figure 14 – Countries with the highest degree of worldwide innovation

More than half of all startups generate revenue outside their domestic markets.

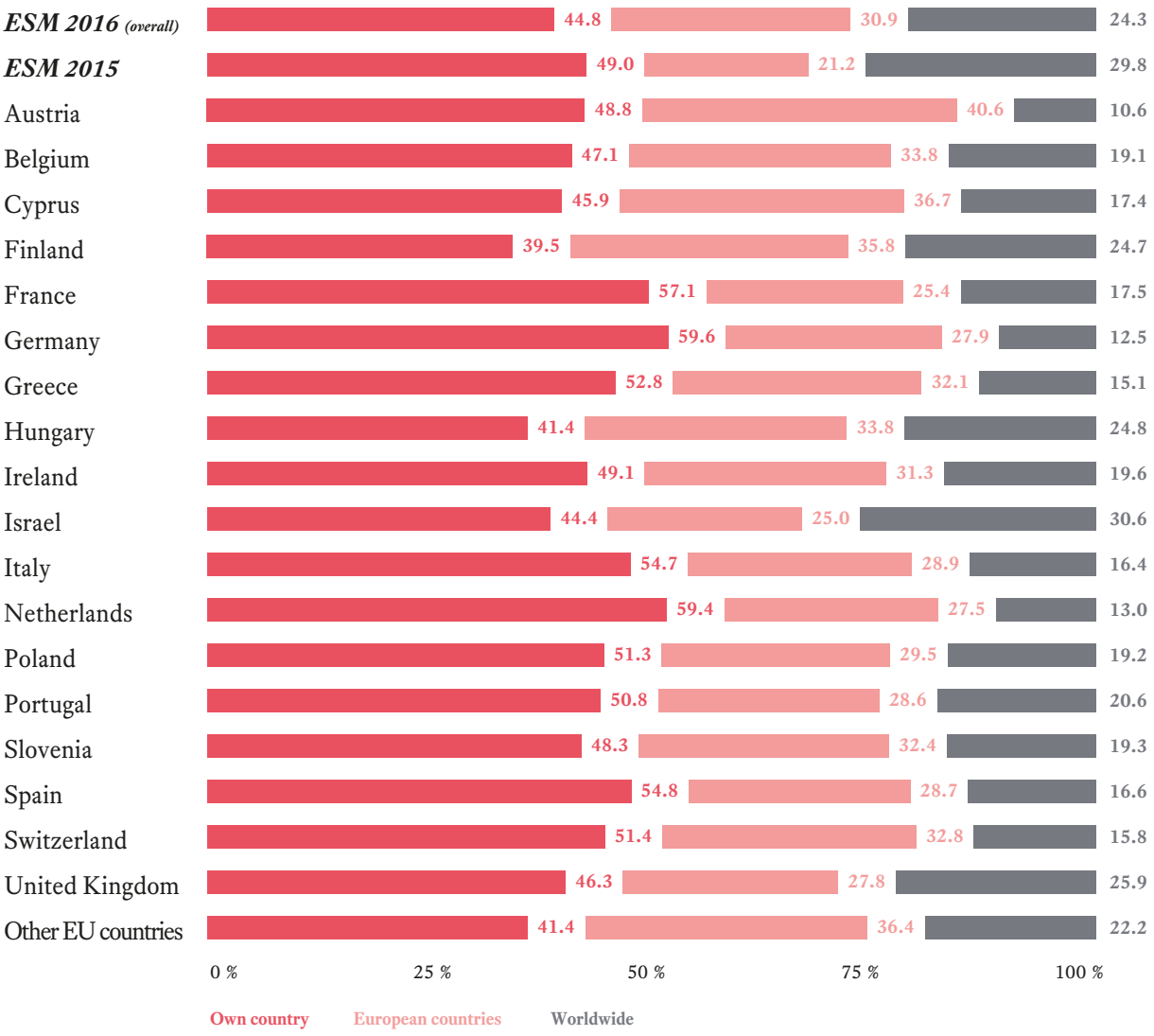


Figure 15 – Current markets in which startups generate revenue

This year, the ESM startups generated 44.8% of their revenue in their home countries (Figure 16). The share of revenue generated in European countries increased to 30.9%, and the share of worldwide revenue decreased to 24.3%. Startups with a stronger focus on the domestic market are located in Germany (59.6%), the Netherlands (59.4%) and France (57.1%), which might be attributable to those countries' relatively large/ strong domestic markets (Figure 15). Startups with a lesser focus on the domestic market are located in Finland (39.5%), Hungary (41.4%) and other EU countries (41.4%). The highest shares of worldwide revenue can be found in Israel (30.6%), the United Kingdom (25.9%), Hungary (24.8%) and Finland (24.7%). Interestingly, Austria is, once again, the country with the greatest focus on the European market (40.6%).

A growing number of startups (almost 8 out of 10) are planning (further) internation-alisation within the next 12 months.

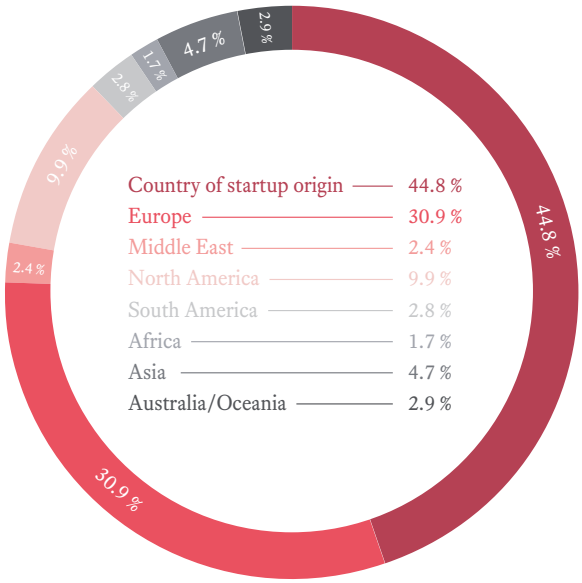


Figure 16 – Current markets in which startups generate revenue

Almost 8 out of 10 startups (77.7%) indicated that they are planning (further) internationalisation within the next 12 months (Figure 18).

47.0% of those who plan to internationalise plan to expand their business activities across European countries. Regarding expansion outside Europe, internationalisation to North America (19.3%) and Asia (10.7%) are the most frequent strategies (Figure 17).

Though there seems to be a tendency towards higher degrees of internationalisation among ESM startups, there are still considerable differences among individual states. For example, startups from countries such as the Netherlands (51.1%), Greece (43.8%) and Italy (44.2%) already have high degrees of internationalisation, and their planned internationalisation is therefore relatively low.

Meanwhile, startups from Germany also have high degrees of current internationalisation (45.9%) but are still planning further internationalisation on a high level (33.7%).

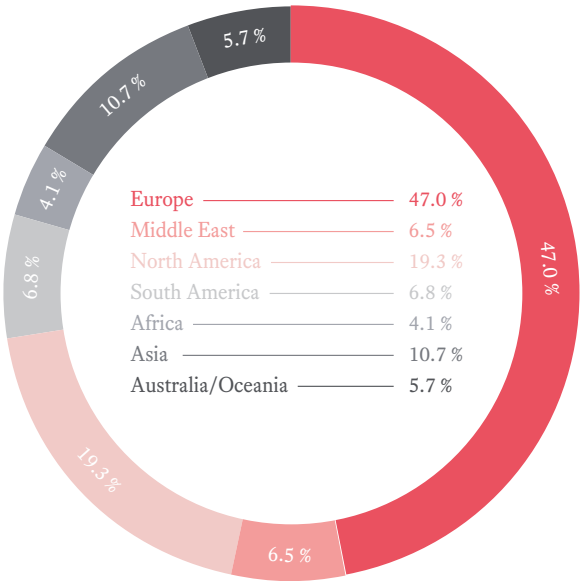


Figure 17 – Target markets for planned internationalisation

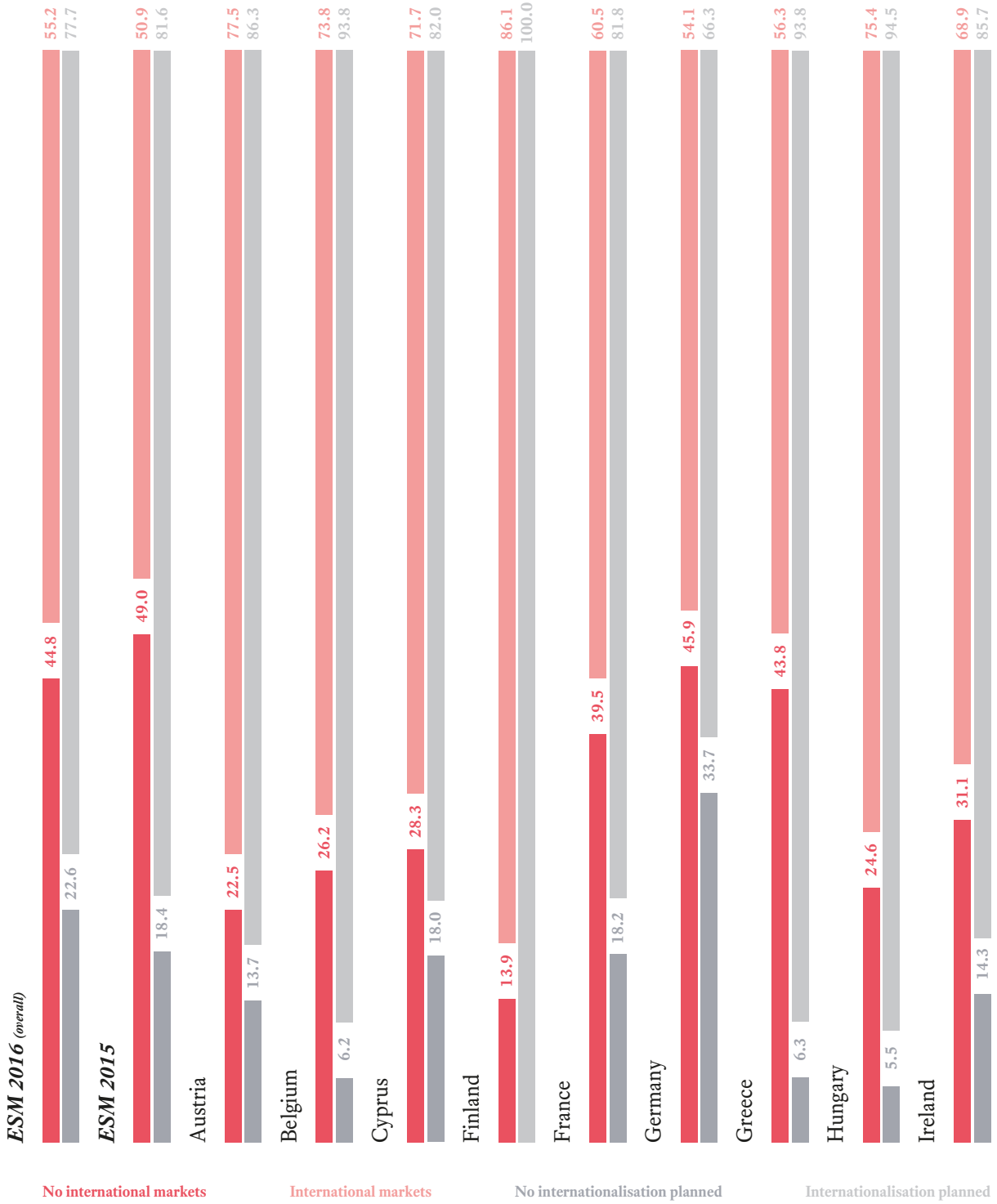


Figure 18 – Current markets and planned internationalisation

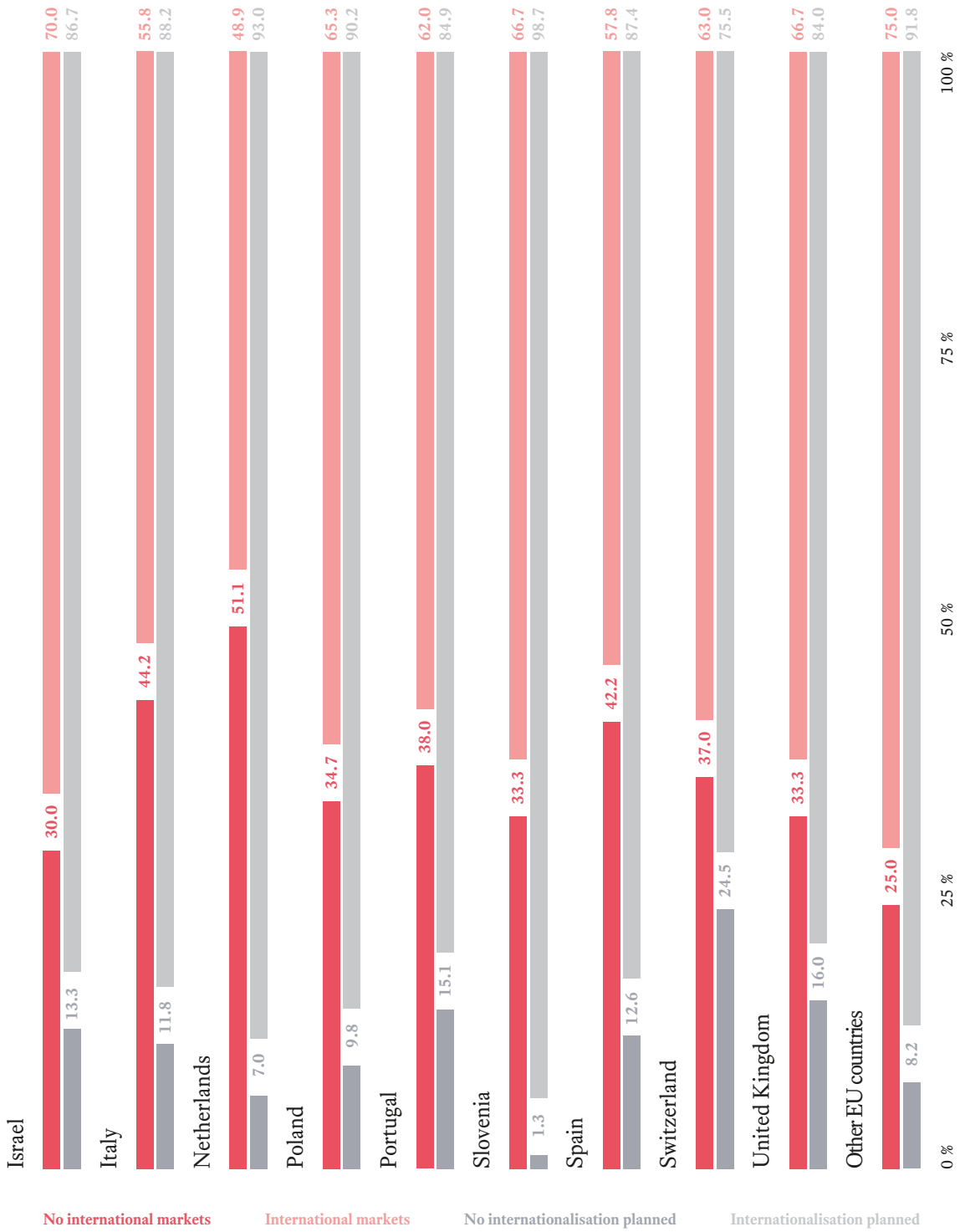


Figure 18 – Current markets and planned internationalisation

Export of products and/or services and partnerships with local companies are the most common internationalisation strategies of startups.

When it comes to internationalisation, startups face serious challenges that they must cope with successfully in order to expand their business activities to other countries. About one third

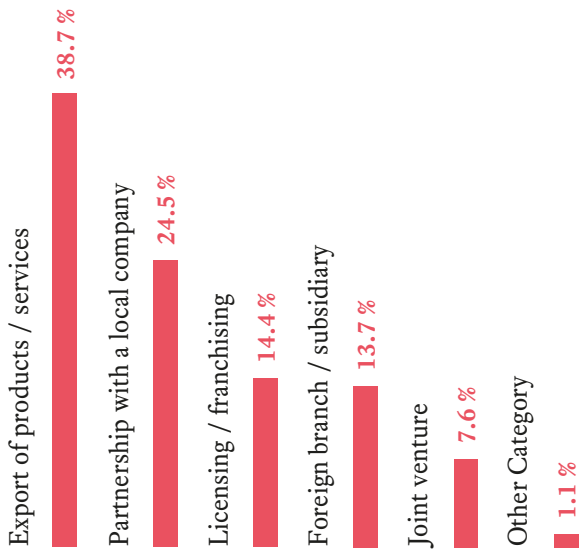


Figure 19 – internationalisation strategies

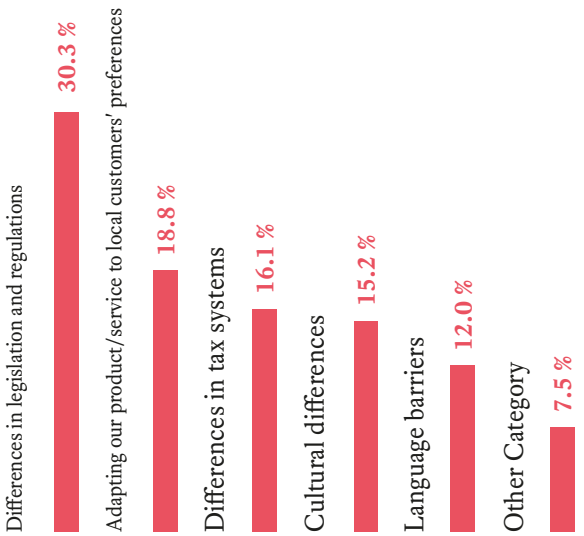


Figure 20 – Internationalisation challenges

(30.3%) of all startup founders said that differences in legislation and regulations are the most challenging issues that they face, followed by adapting their products/services to local customers' preferences (18.8%), differences in tax systems (16.1%) and cultural differences (15.2%). Another 12.0% see language barriers as a substantial challenge (Figure 20). In order to gain a better understanding how startups deal with such a challenging endeavour, the respondents were asked to indicate their internationalisation strategies. Most startups (38.7%) focus on the export of their product/service and 24.5% establish partnerships with local companies to gain market access (Figure 19). Another 14.4% opt for licensing/ franchising, 13.7% open up a foreign branch/ subsidiary and only 7.6% use joint ventures.

Founders and teams

The share of female founders of ESM startups remains constant (14.8%) with considerable differences among countries.

The share of male startup founders in the ESM remains almost constant at 85.2%, while 14.8% are female. However, considerable differences between countries can be observed (Figure 21).

The countries with the highest percentage of female founders are the United Kingdom (33.3%), Greece (28.4%) and Ireland (23.3%), while countries such as Austria (7.1%), Switzerland (10.7%) and Belgium (11.1%) have the lowest percentages of female founders.

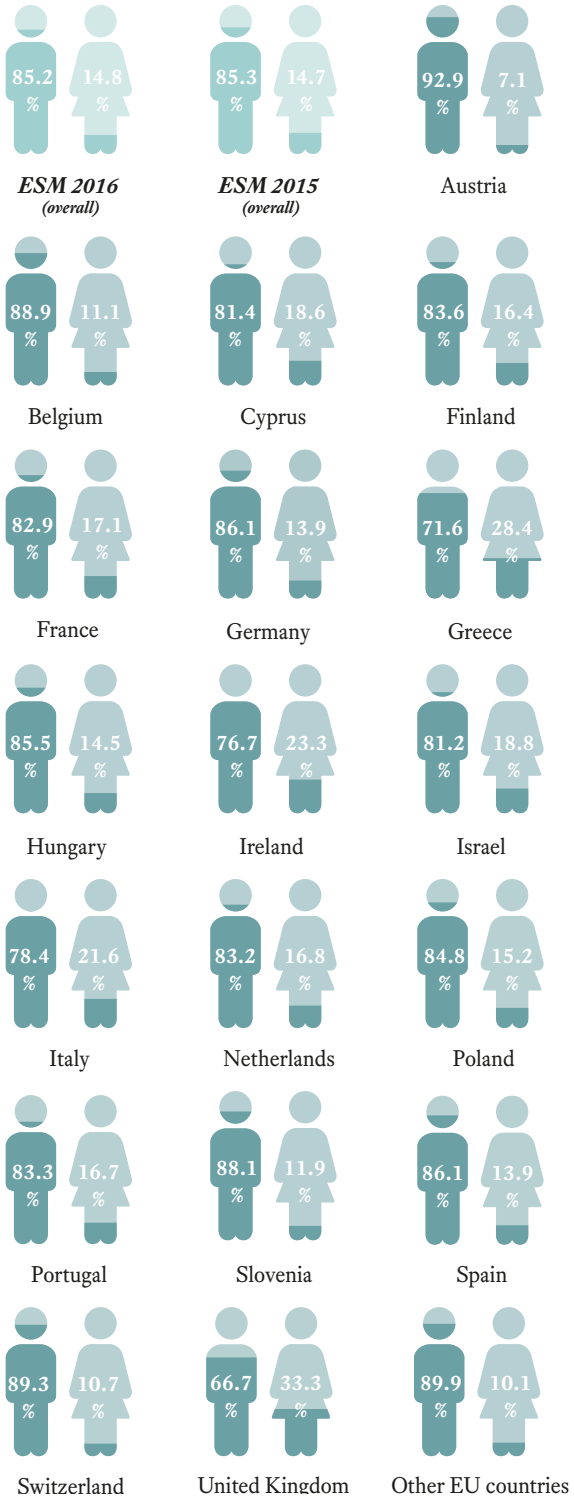


Figure 21 – Gender

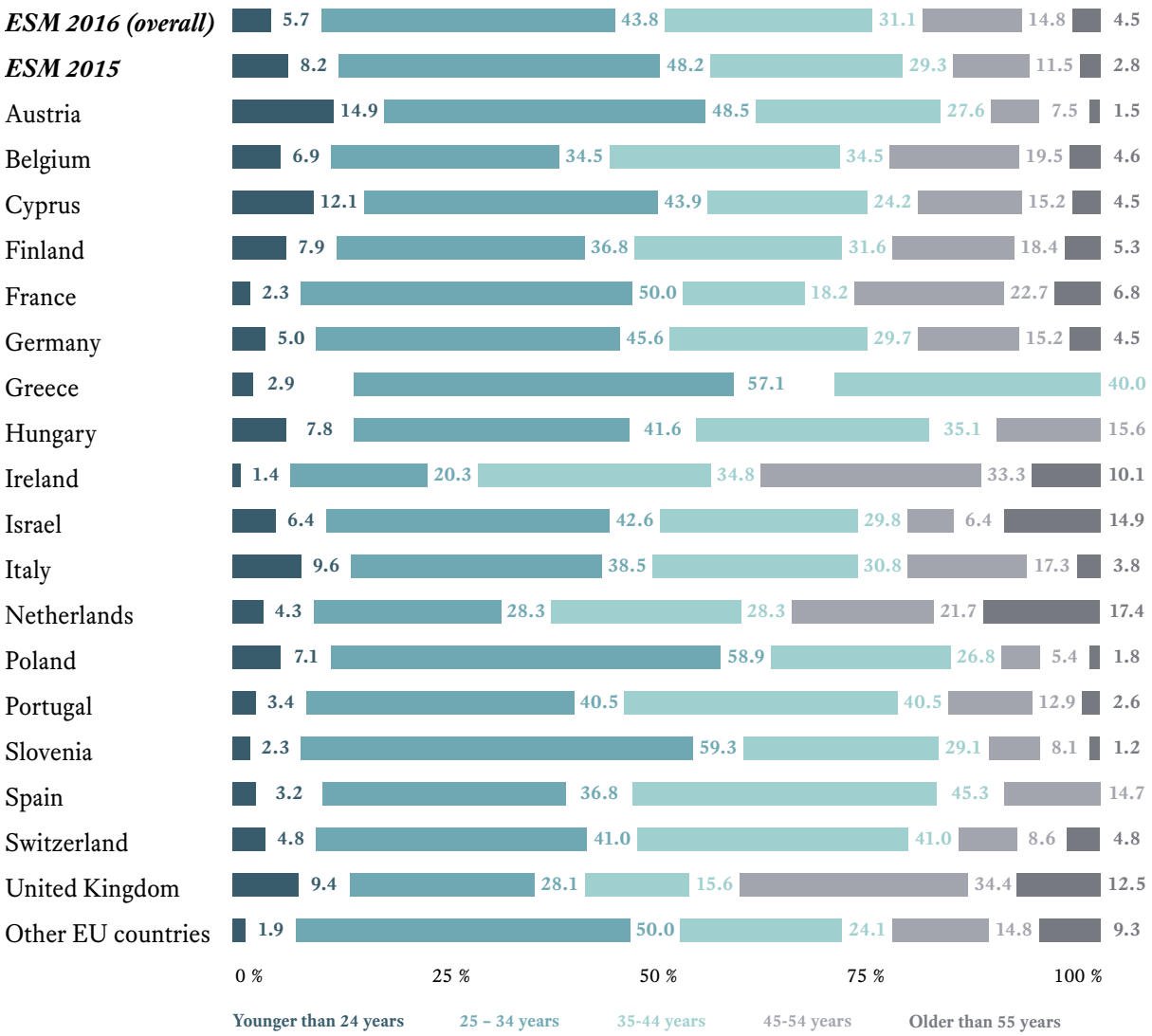


Figure 22 – Age ranges of founders

Men are (on average) three years younger than women when founding their first venture.

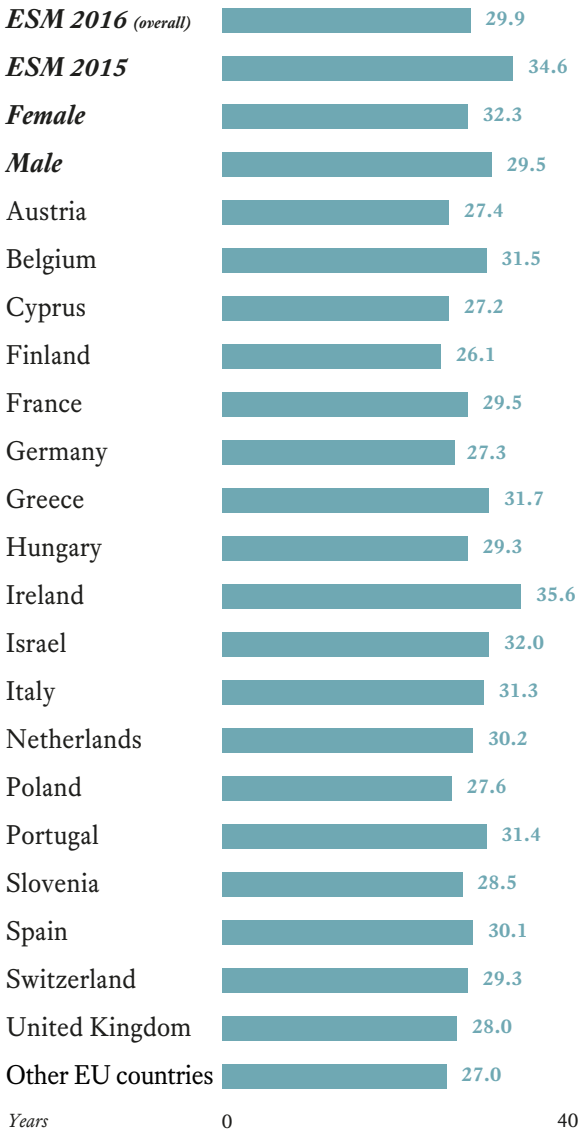


Figure 23 – Average age when first founding a new venture

The respondents of the ESM 2016 were, on average, 36.4 years old, and most of the respondents in this study are still between 25 and 34 years old (43.8%). Compared to last year, the respondents' average age increased by almost two years; this is due to an increase in the group of respondents older than 35.

The youngest respondents were from Austria, Poland and Slovenia. The oldest respondents were from Ireland, the Netherlands and the United Kingdom (Figure 22).

However, even more interesting is the analysis of the ages at which the entrepreneurs founded their first ventures. We see that this year's founders were, on average, younger (29.9 years) than those of the ESM 2015 and that men are likely to be younger than women when founding their first venture.

The youngest entrepreneurs, on average, came from Finland, Cyprus, Austria and Poland while the oldest came from Greece, Israel and Ireland. (Figure 23).

The share of founders from other EU countries increased by 8.6 percentage points to 16.2%

Although the majority of European founders formed their startup in their country of residence (79.0%), the share of founders from other EU countries increased by 8.6 percentage points to 16.2% (Figure 24). While 79.6% of male founders formed their startup in their country of residence, this is only the case for 75.8% of the female founders.

Also, the percentage of female founders from non-EU countries (5.5%) is slightly higher than the percentage of male founders from non-EU countries (4.6%). Surprisingly low rates of founders from the same country were found in Greece (25.0%) and Belgium (33.3%), where most of the founders came from other EU countries.

The highest share of non-EU founders was found in Poland (33.3%) while Germany showed the highest rate of founders who indicated that they are citizens of their startup's home country (92.0%).

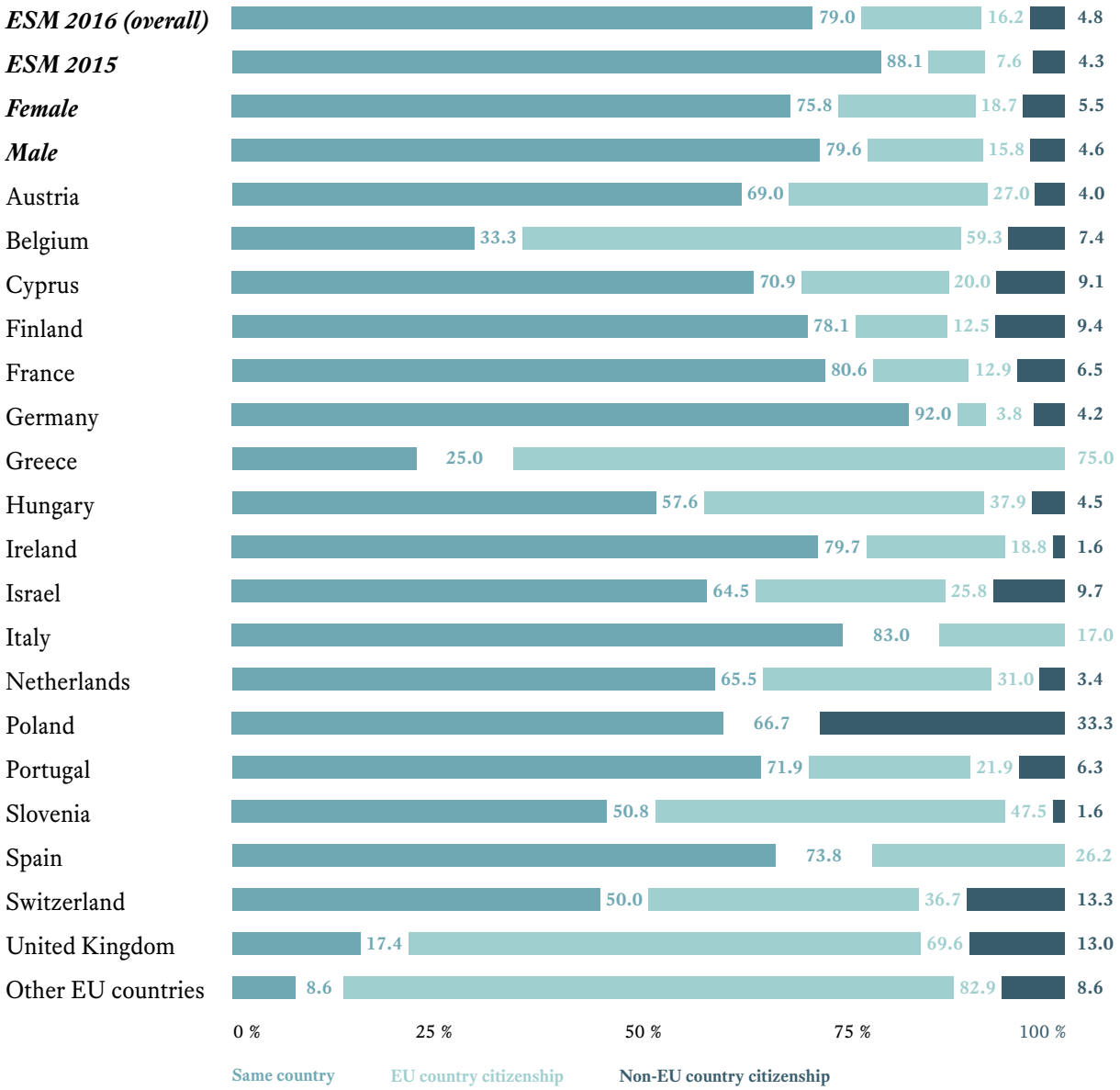


Figure 24 – Citizenship of founders

45.8% of all ESM founders have already founded one or more ventures previously.

For 54.2% of the ESM founders, the current venture is the first startup they have founded. However, a considerable share (45.8%) of ESM founders have already founded one or more previous ventures (Figure 25). In total, 25.0% have already founded one previous venture, 11.4% have founded two previous ventures and about 9%

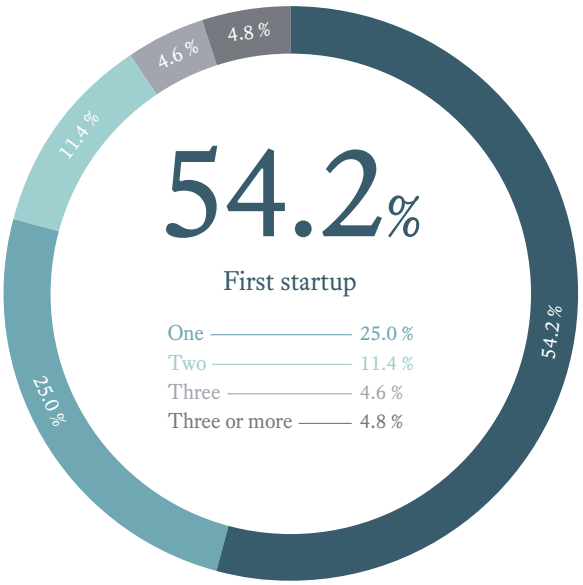


Figure 25 – Number of previously founded startups

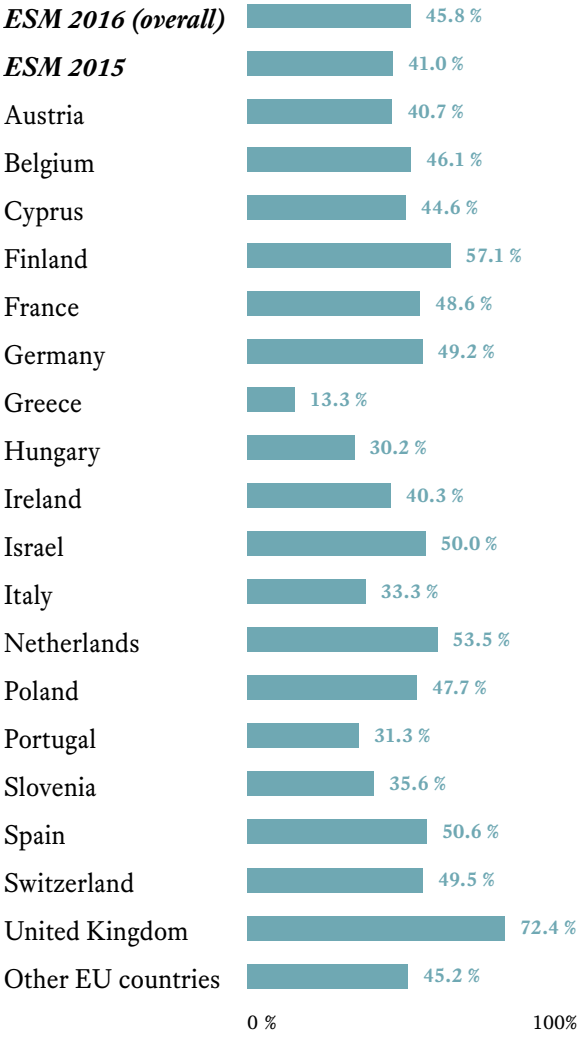


Figure 26 – Share of Serial Founders

have founded three or more previous ventures. The highest proportion of serial founders can be found in the United Kingdom (72.4%), followed by Finland (57.1%) and the Netherlands (53.5%), whereas serial entrepreneurship is the most rare in Greece (13.3%), Hungary (30.2%) and Portugal (31.3%).

Starting a new venture does not necessarily mean that a previous one failed.

Figure 27 – What happened to your last startup?

However, 62% of respondents stated that, if their current startup failed, they would start a new one.

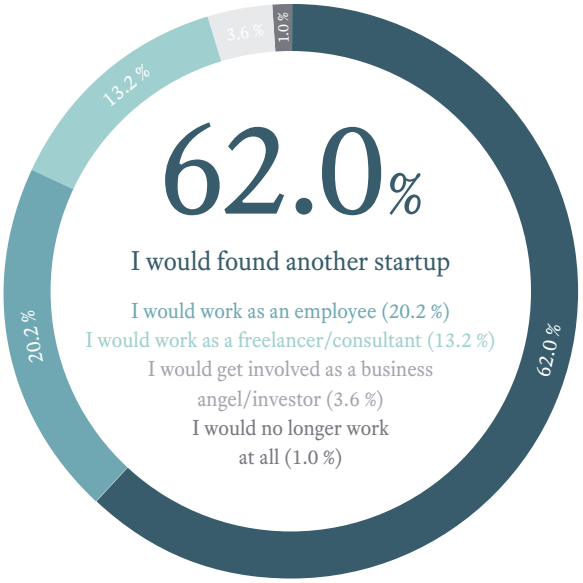


Figure 28 – Future scenarios following potential failure of the current startup

When asked about what happened to their previous ventures, 38.2% responded that they are still a shareholder and that the company still exists as an independent unit (Figure 27). Another fourth (24.0%) indicated that the business' operations were discontinued voluntarily. Others (13.5%) indicated that their last company was sold completely or that the company still exists but they are no longer a shareholder (13.5%). Only 5.9% indicated that the business' operations were discontinued due to insolvency. The tendency towards serial entrepreneurship also becomes clear when asking founders about their future scenarios following the potential failure of their current startups. If their current startups failed, only 20.2% reported that they would work as employees; 62.0 % would found another startup, and 13.2% would work as freelancers/consultants. Another 3.6% would support startups as business angels/investors (Figure 28).

More than three out of four startups were founded by teams.

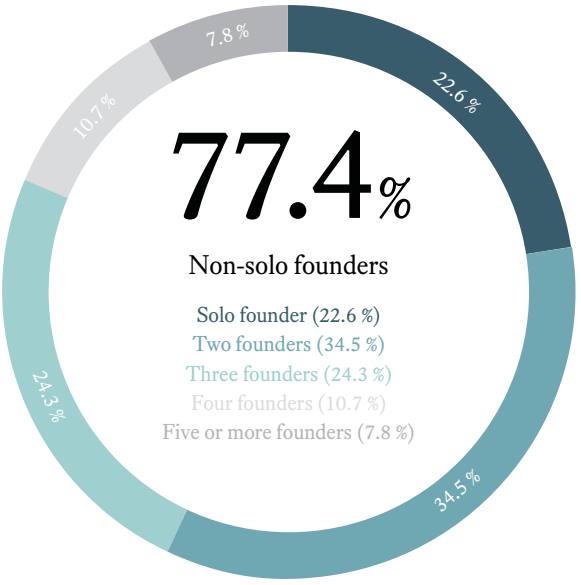


Figure 29 – Team size

About three out of four respondents (77.4%) stated that they founded their startup as a part of a team (Figure 29). More than one third of the teams consisted of two founders (34.5%), and one fourth of the teams consisted of three founders (24.3%). Another 10.7% of respondents indicated that their startup was formed by four founders, and 7.8% said that there were five or more founders. Figure 30 shows that founding a venture in a team seems to be less common in Ireland (62.3%) and the Netherlands (63.0%) but more likely in Greece (94.3%) and Finland (92.1%).

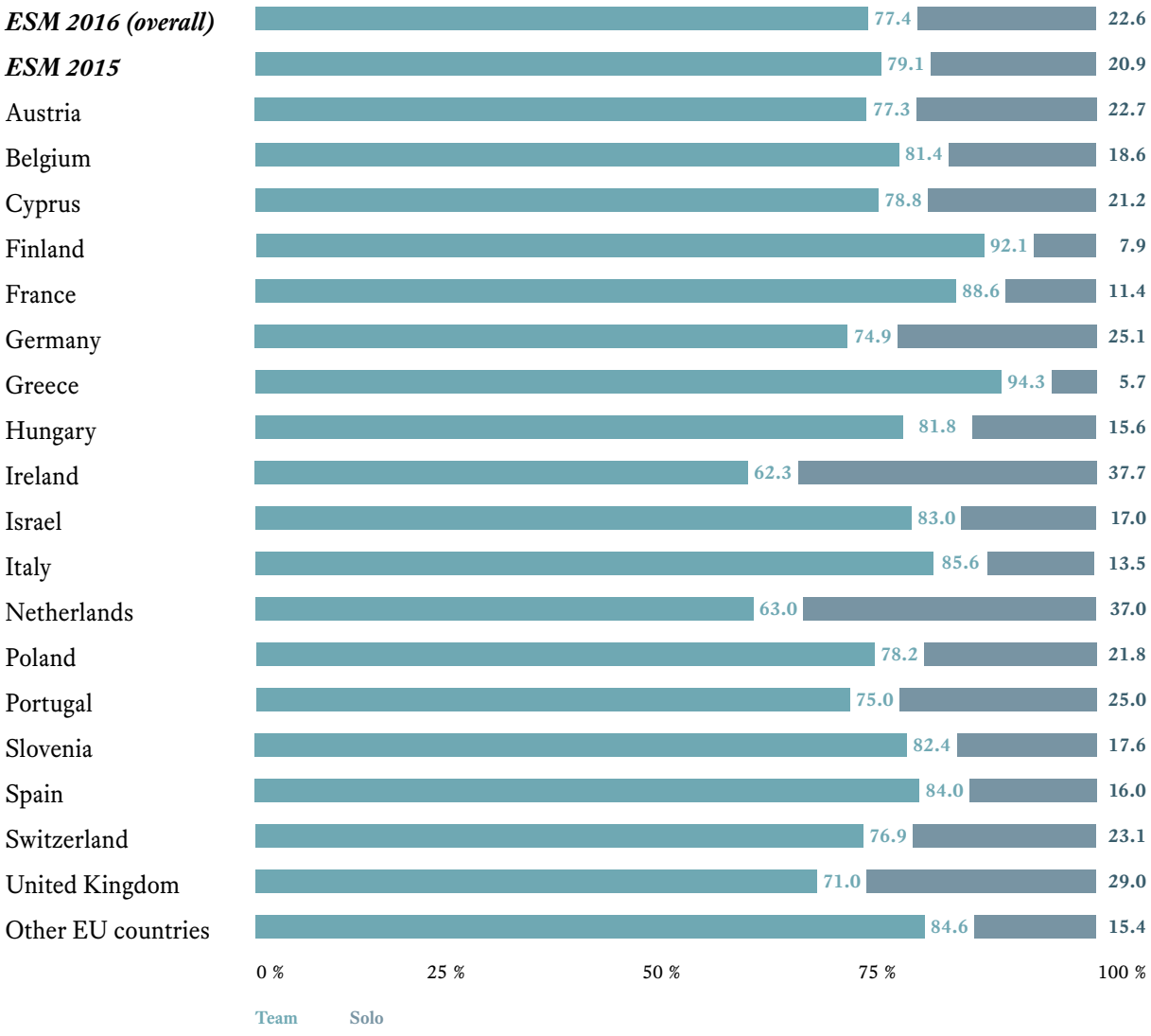


Figure 30 – Startups founded in Team vs. Solo

The founders were also asked to think about the likelihood of various future scenarios for themselves and their startups. The majority (82.4%) of respondents said it is rather/very likely that they will permanently remain in the company (Figure 31). However, 63.1% said it is rather/very likely that they will sell the company within the first 10 years, and 21.7% are optimistic with regard to a potential IPO. Only 12.4% see it as a rather/very likely scenario that their company will close down.

Long-term focus: 82.4% of the ESM founders are planning to remain in their company permanently.

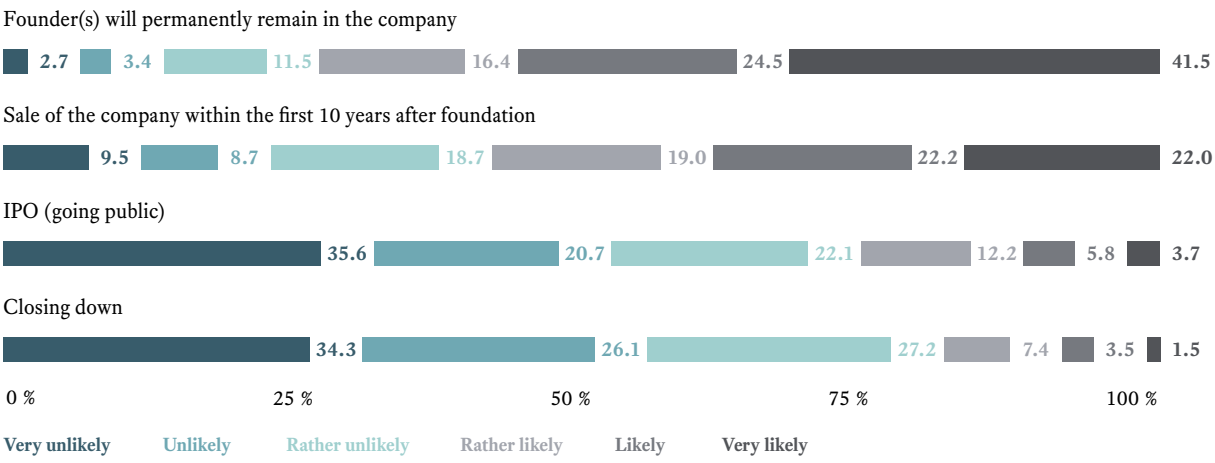


Figure 31 – Likelihood of future scenarios for startups

Founders from Finland, Hungary and the Netherlands have the highest life satisfaction.

The respondents' average life satisfaction score, on a scale of 1 to 10, was 7.3. The most satisfied founders were from Finland (7.9), Hungary (7.8) and the Netherlands (7.8), while the least satisfied founders were from the United Kingdom (6.1), Italy (6.5) and Greece (6.6).

Figure 32 – Life satisfaction

To gain a more detailed insight on how entrepreneurs perceive themselves and their work, participants were asked about their entrepreneurial self-image. The results, shown in Figure 33, reveal that the founders have a positive image of themselves. In total, 94.2% answered that they feel responsible for their employees, and 88.1% said that they work hard and demand the same effort from their employees. Also, 73.2% see freedom as the central driver for their entrepreneurial activities, and 77.5% said that unconventional solutions are important in their startup. A further 62.5% answered that they place importance on ecological and sustainable development, and 68.5% said that they support social engagement. However, less than half of the founders (44.1%) indicated that they are also politically committed to the interests of their startup.

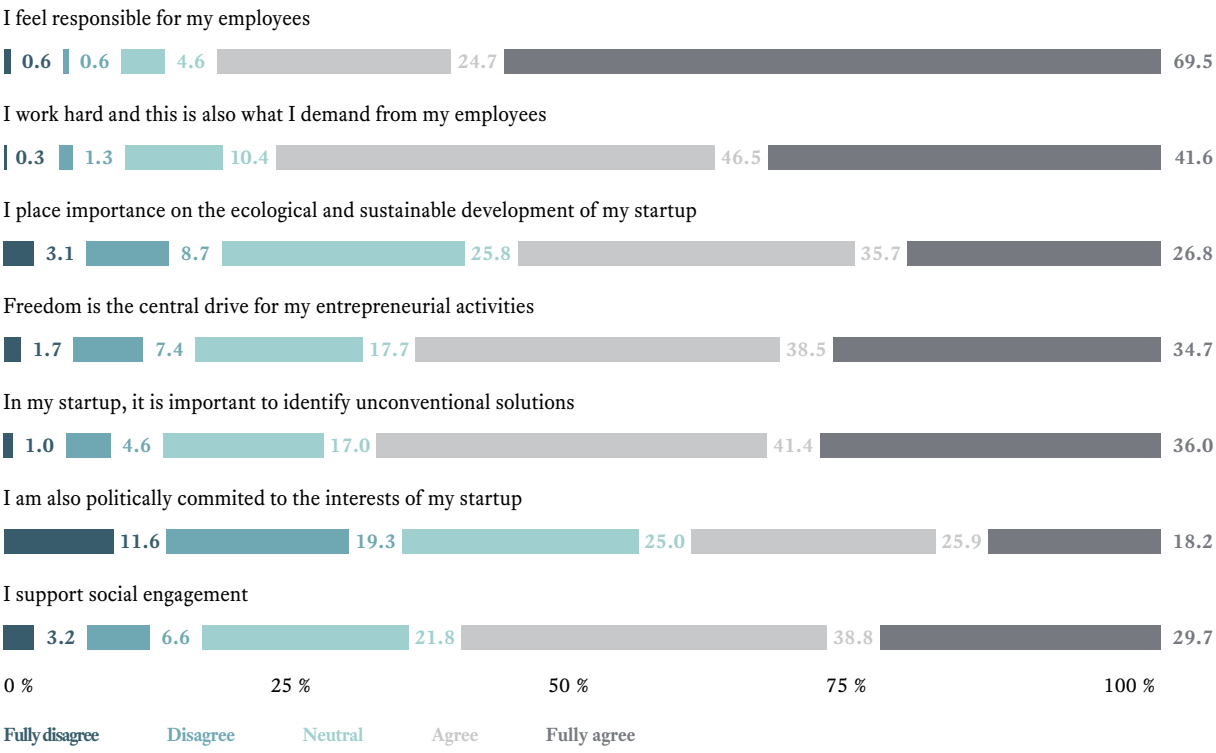
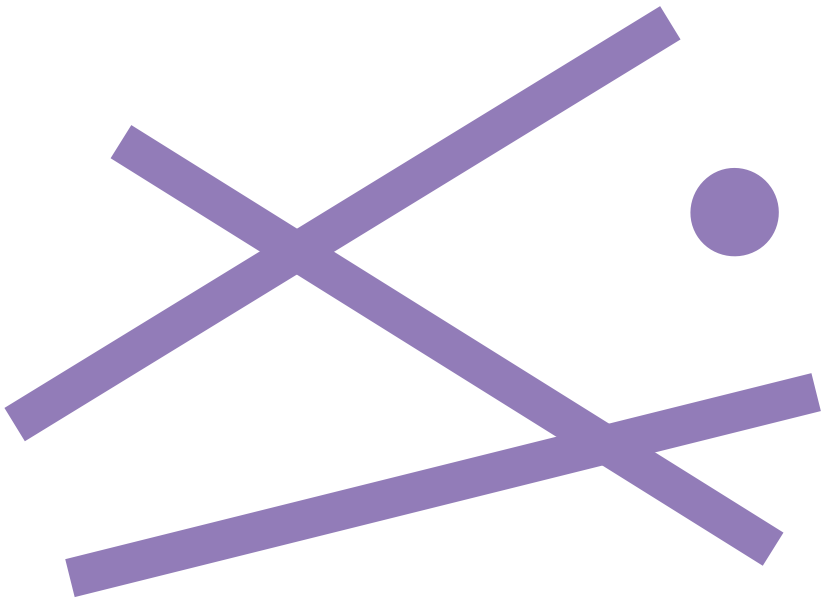


Figure 33 – Entrepreneur self-image

Employment



ESM startups are job engines and create 12 jobs on average.

Growth in terms of employees is one of the defining characteristics of an ESM startup, and although the ESM 2016 startups are, on average, only 2.4 years old, they already employ an average of 12 people (9.5 employees plus 2.5 founders) (Figure 35).

The highest employment effects can be found among Northern and Central European countries: in Switzerland (13.5 + 2.6), Finland (12.8 + 3.1), Germany (11.9 + 2.5) and France (11.1 + 2.8).

The lowest effects on employment can be found mainly among Southern European countries and countries that struggled after the 2008 financial crisis, such as Greece (2.6 + 2.9), Israel (3.2 + 2.5), Ireland (4.0 + 1.9) and Italy (3.5 + 3.1). These results are in line with the previous findings in the ESM 2015 study (Kollmann/Stöckmann/Kensbock/Linstaedt

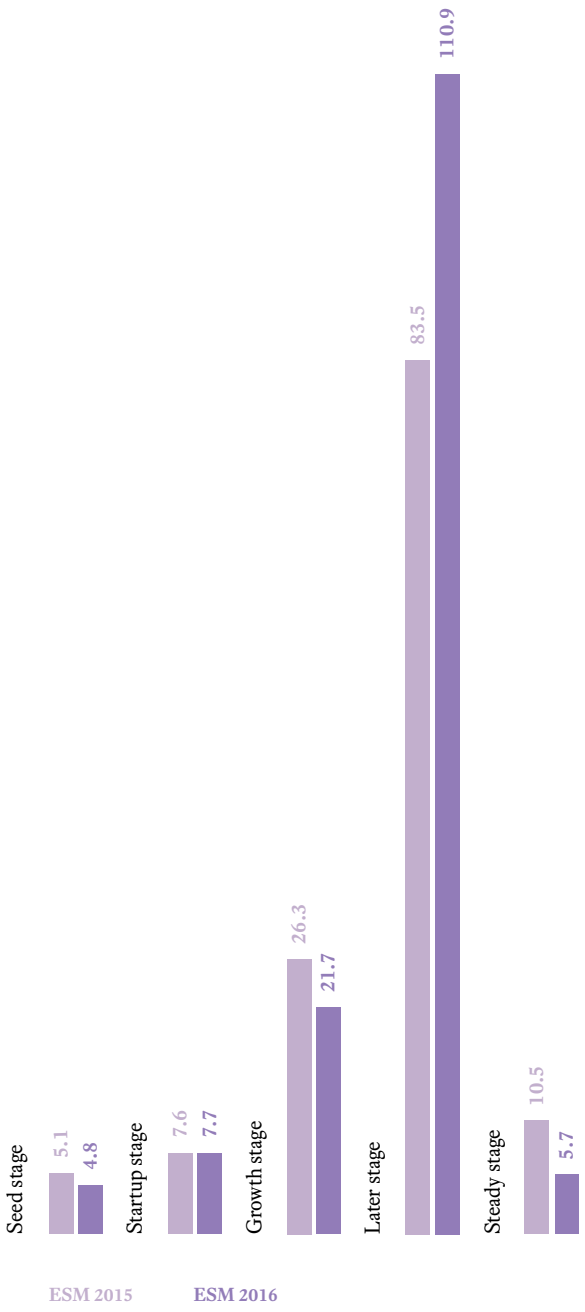


Figure 34 – Current average number of employees per startup phase

2015, p. 43). The impact of startups as job engines becomes even more evident when the different startup phases are taken into account.
While startups during the early seed stage already create 4.8 jobs on average (Figure 34), they create 7.7 jobs during the startup stage. During the growth stage, this effect increases to 21.7 jobs, and startups in the later stage create 110.9 jobs.

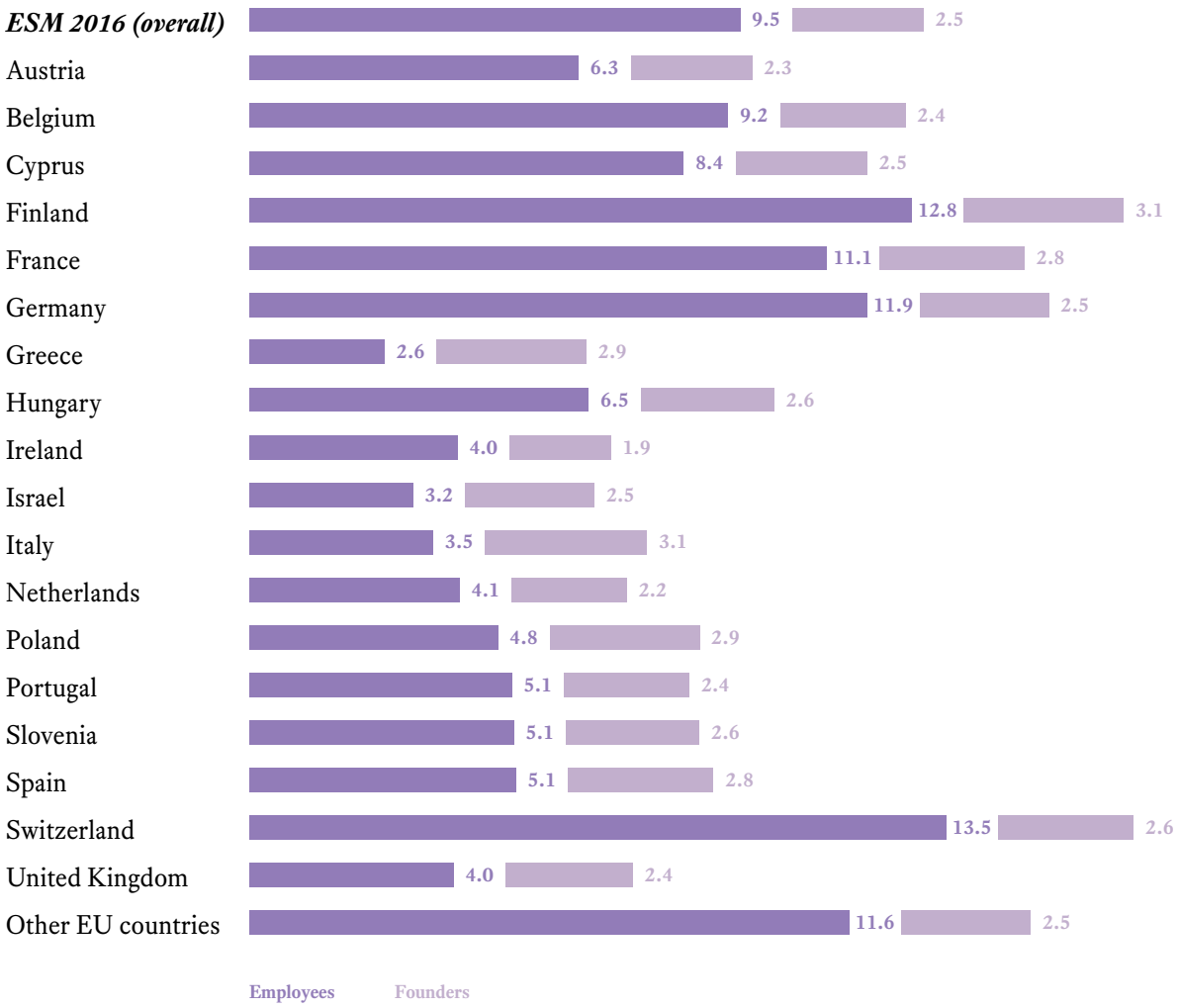


Figure 35 – Average number of employees and founders

The recent streams of immigration from outside and inside Europe have shown that freedom of movement is an important issue across the region.

Hence, the founders were asked to indicate the citizenships of their employees. The results show that startups employ a noticeable share of employees from outside their home country (29.1% of startup employees): 18.7% of all ESM employees are from other EU countries, and 10.5% are from non-EU countries (Figure 36).

Interestingly, there are also noticeable differences among countries. Swiss startups recruit more than half of their workforce from outside Switzerland (53.2% from other EU countries and 4.9% from non-EU countries). This is followed by the United Kingdom, where an equal portion comes from both other EU countries and non-EU

International workforce: almost one third of the startups' employees are international.

countries (22.0% each). Other countries in which startups employ large numbers of foreign workers include Ireland, Cyprus and Germany. The least international workforce can be found among Polish (4.8%), Hungarian (7.3%) and Greek (10.7%) startups.

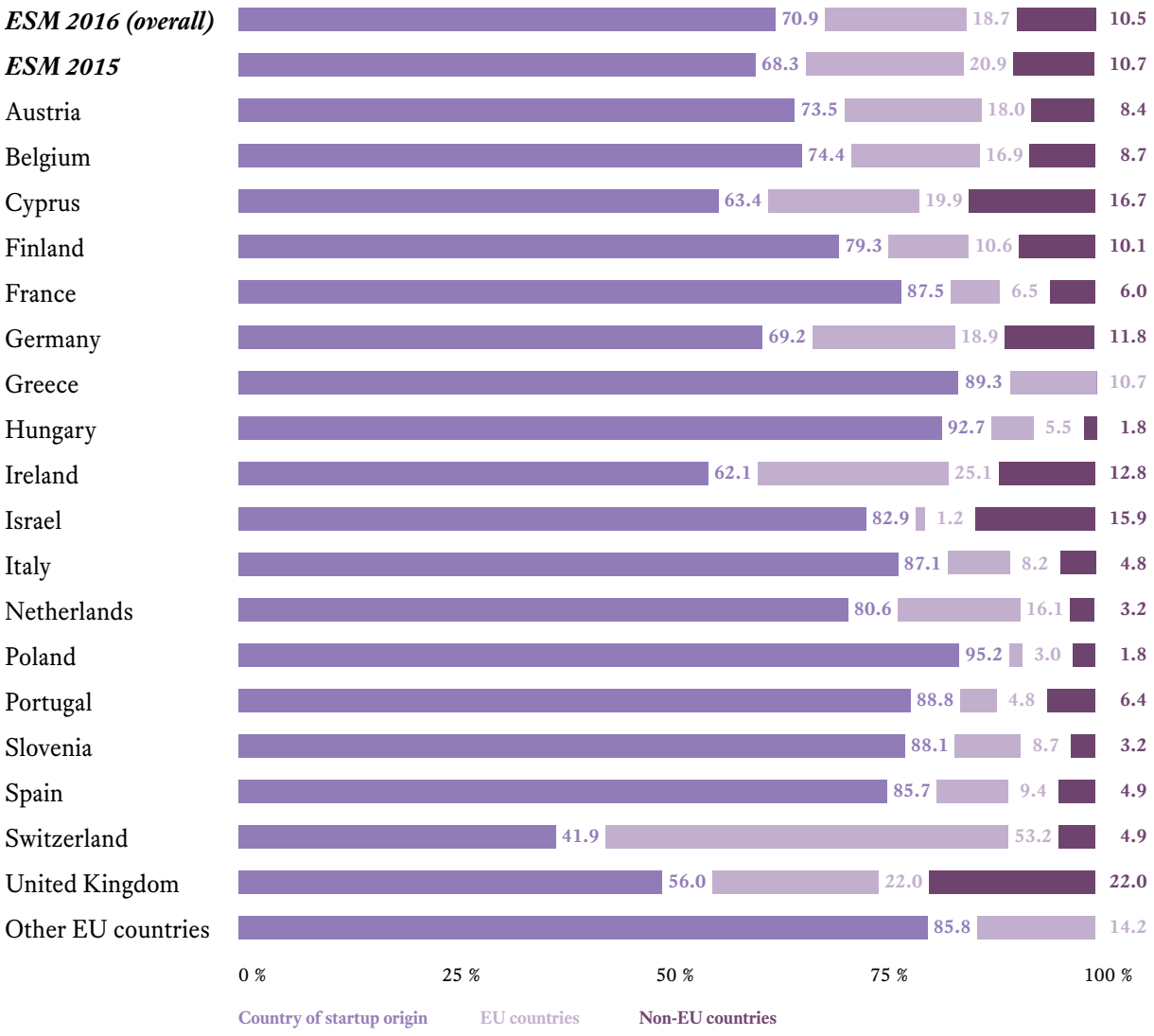


Figure 36 – Citizenship of employees

Positive outlook: ESM startups plan to recruit 5.8 employees within the next 12 months.

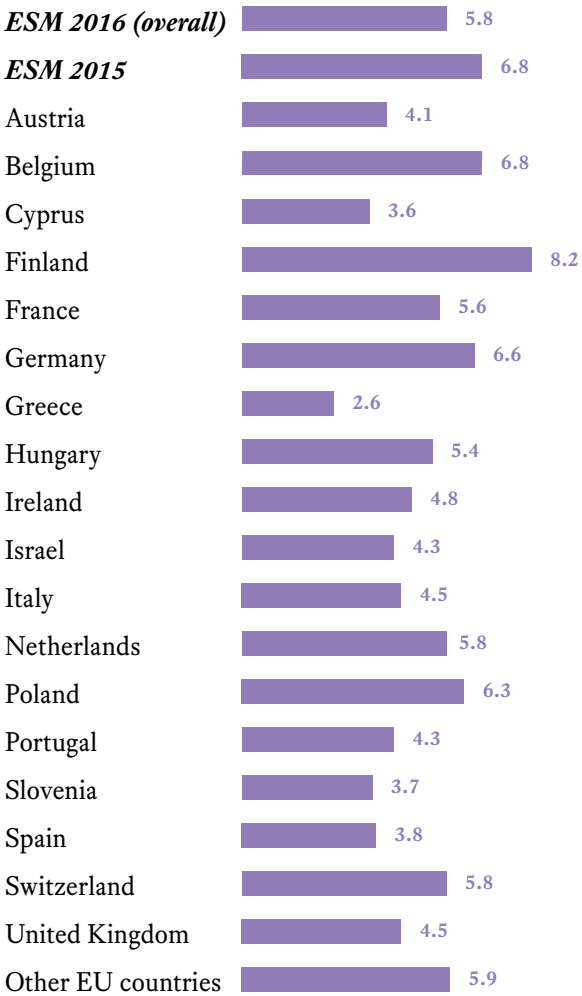


Figure 37 – Planned recruitments (average number of new employees)

In accordance with the ESM definition of a startup, participants indicated their growth perspective in terms of their planned recruitment of new employees. The startups plan to recruit 5.8 persons on average, which is one person less than the year before (Figure 37). Interestingly, the findings differ partially from the current employment situation described in 4.1. In some countries where startups already employ large numbers of workers, the startups are still planning on relatively high levels of recruitment; this is occurring in, for example, Finland (+8.2 employees) and Germany (+6.6 employees). However, in some countries where startups currently employ relatively few people, the startups are obviously planning for strong growth within the next 12 months; such countries include, for example, Poland (+6.3 employees) and the Netherlands (+5.8 employees). Notably, despite their low current employment level, Greece's startups are planning the least recruitment (+ 2.6 employees).

Internal processes

More than half of all startups share responsibilities by having two or more managing directors.

The ESM 2016 puts a special focus on the internal structures and processes of startups in order to gain meaningful insights on what makes startups special.

The first question referred to the number of managing directors (Figure 38). More than half of the respondents (50.7%) indicated that they share the responsibilities of management in their startup by having two or more managing directors. One third (33.7%) answered that they have two managing directors, 11.8% have three managing directors and 5.3% have four or more managing directors.

Figure 38 – Number of managing directors

Participants were also asked whether their startups' managing directors are male or female. Overall, 17.0% of directors are female (Figure 39). Interestingly, this share varied among countries with no clear pattern. The highest shares of female directors were found in the United Kingdom (33.8%), Spain/Greece (both 27.6%) and Ireland (24.3%) while the lowest shares were found in Austria (9.9%), Poland (12.8%) and Switzerland (13.2%).

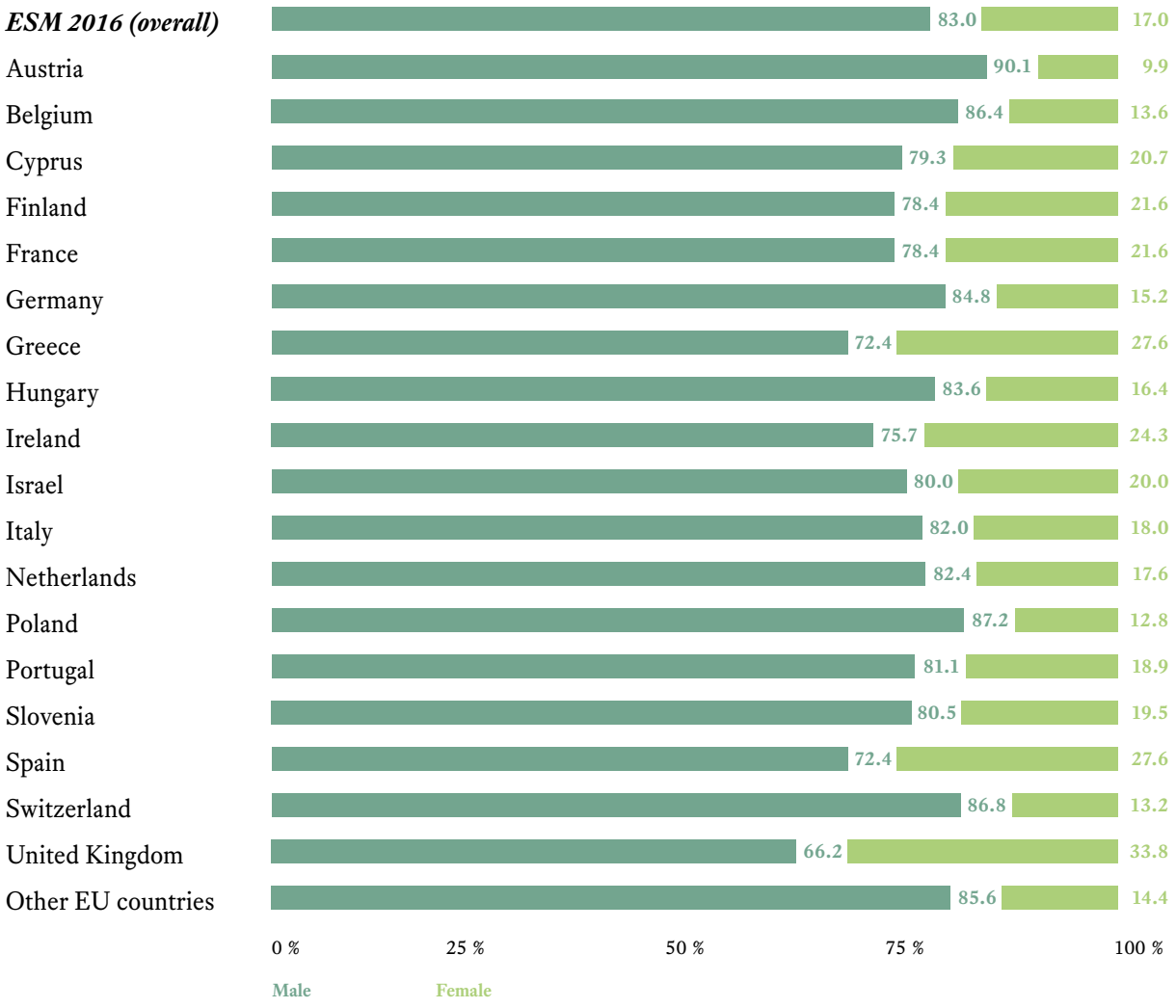


Figure 39 – Percentage of male and female managing directors

Figure 40 – Number of hierarchy levels
(Only startups with 5 or more employees are included.)

In contrast to large enterprises, startups are often considered more flexible and agile due to their low levels of hierarchy and bureaucracy (Kollmann 2016b). Indeed, Figure 40 shows that flat hierarchies with no more than three levels dominate the startup landscape (96.0%). One third (34.0%) of all startups have only one

hierarchy level in place, 41.6% have two levels and 20.5% have three levels. Only 4.0% have more than four levels.

The majority of startups have clearly defined responsibilities and structures but do not write them down in job descriptions or organigrams.

Further important factors that distinguish startups from large enterprises are their internal structures and processes, which are the focus of the following questions. Participants were asked how their startups are structured and organised. The majority (83.2%) rather/fully agreed that their leadership team has clearly defined responsibilities, and 74.4% reported having clearly defined organisational structures. While 88.7% said that their employees have clearly defined tasks, only 53.9% rather/fully agreed that their employees have fixed job descriptions. In only 40.1% of all startups are employees' responsibilities documented in an organigram (Figure 41).

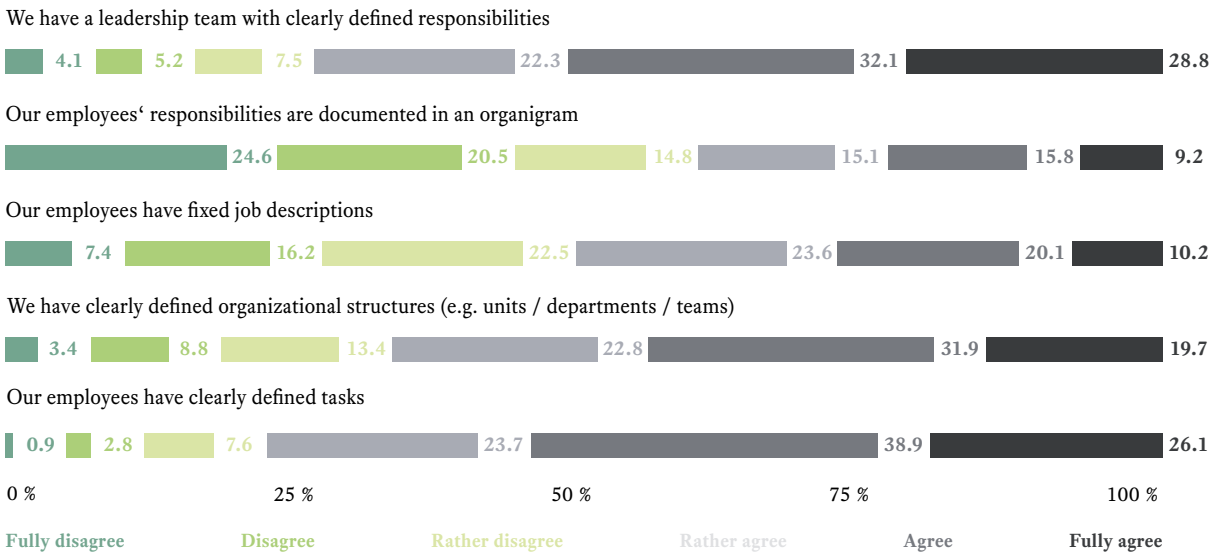


Figure 41 – Internal structure

Creative space: 90% of all startups offer their employees opportunities for an informal exchange of ideas.

With regard to their working style, 90.6% of startups offer their employees opportunities to exchange ideas on an informal level, and only 34.4% limit discussion of operative issues to within individual teams or units (Figure 42). More than half of all startups (56.4%) also allow their employees to make (operative) decisions autonomously, even if they do not have an executive function. Strategic decisions are still exclusively made by the management and directors in 68.0% of startups, but this does not mean that the founders and managers no longer work operatively anymore and merely delegate their tasks; the latter arrangement was indicated by only 17.0% of participants.

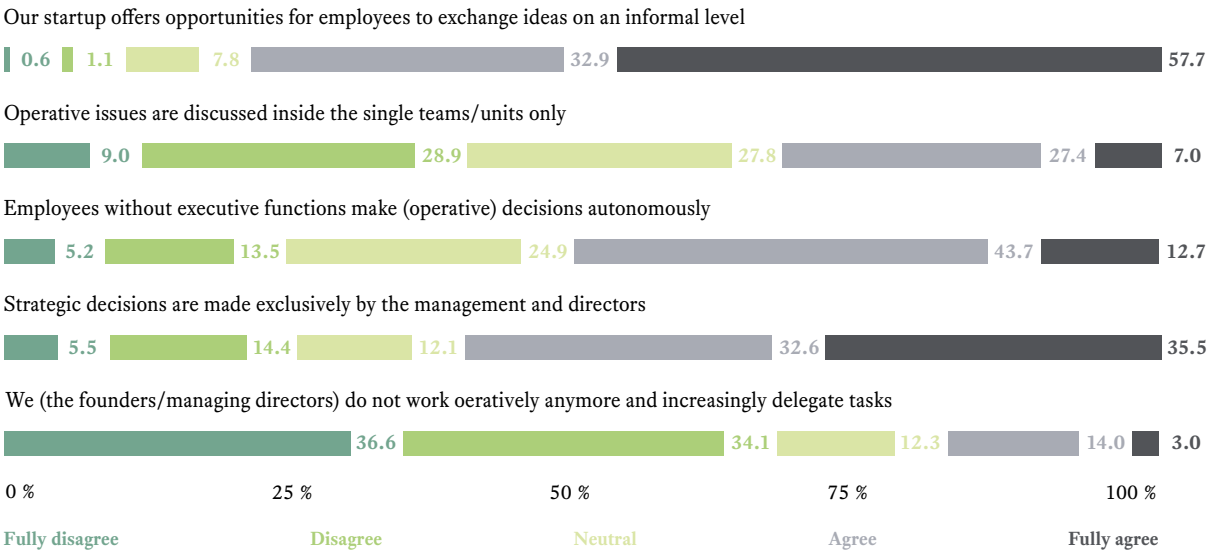


Figure 42 – Working style

KPIs, such as revenue growth, profitability and position relative to competitors, are important for most startups, but satisfaction with these KPIs lags behind.

Although startups are, by definition, in an early venture stage, they may need formal (financial and non-financial) control mechanisms, such as KPIs, in order to ensure sustainable growth. In this vein, Figure 43 shows that a large share (87.7%) of all startups agree or fully agree that revenue growth is important to them, but only 29.2% said that they are satisfied with their revenue growth. A slightly lower share (78.0%) fully agreed that profitability is important to them, but only 27.1% are satisfied with this KPI. A startup's position relative to competitors seems to be similarly important (74.1%), and startups are also more often satisfied with their position relative to competitors (54.1%).

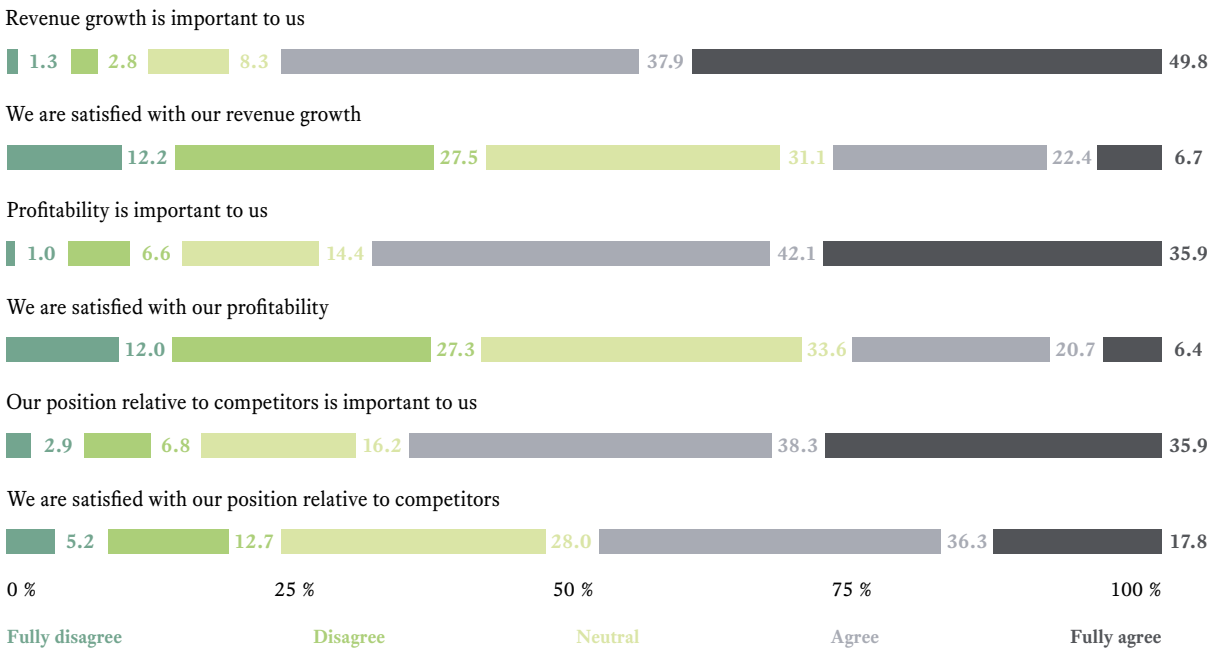


Figure 43 – Importance of and satisfaction with KPIs

FIGURE 44 compares the satisfaction of startups from different countries with their KPIs. In terms of revenue growth, French startups were most satisfied (42.1%), followed by Swiss (39.0%) and Cyprian (37.0%) startups. Least satisfied with their revenue growth were startups from Poland (8.0%) and Spain (8.5%). With regard to their profitability, the most satisfied startups were from France (36.8%) and Italy (36.8%) whereas the least satisfied were from Spain (12.8%) and Greece (16.0%). In general, the picture becomes more positive when looking at respondents' satisfaction with their positions relative to competitors.

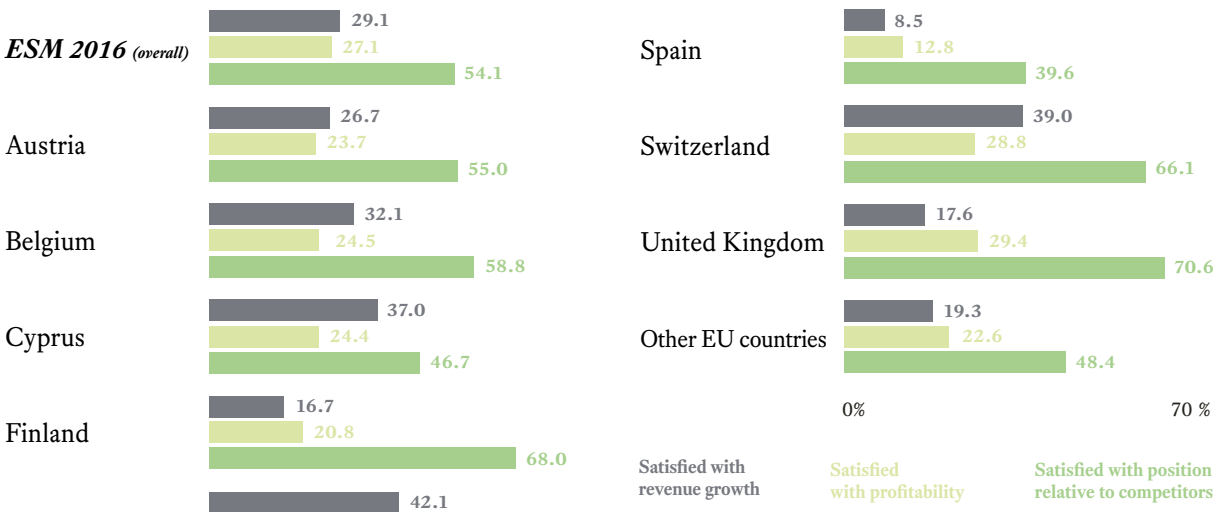


FIGURE 44 – SATISFACTION WITH KPIS

The most satisfied startups in this category were from the United Kingdom (70.6%), Finland (68.0%) and Switzerland (66.1%). The least satisfied startups came, once again, from Spain (39.6%) and Poland (40.0%).

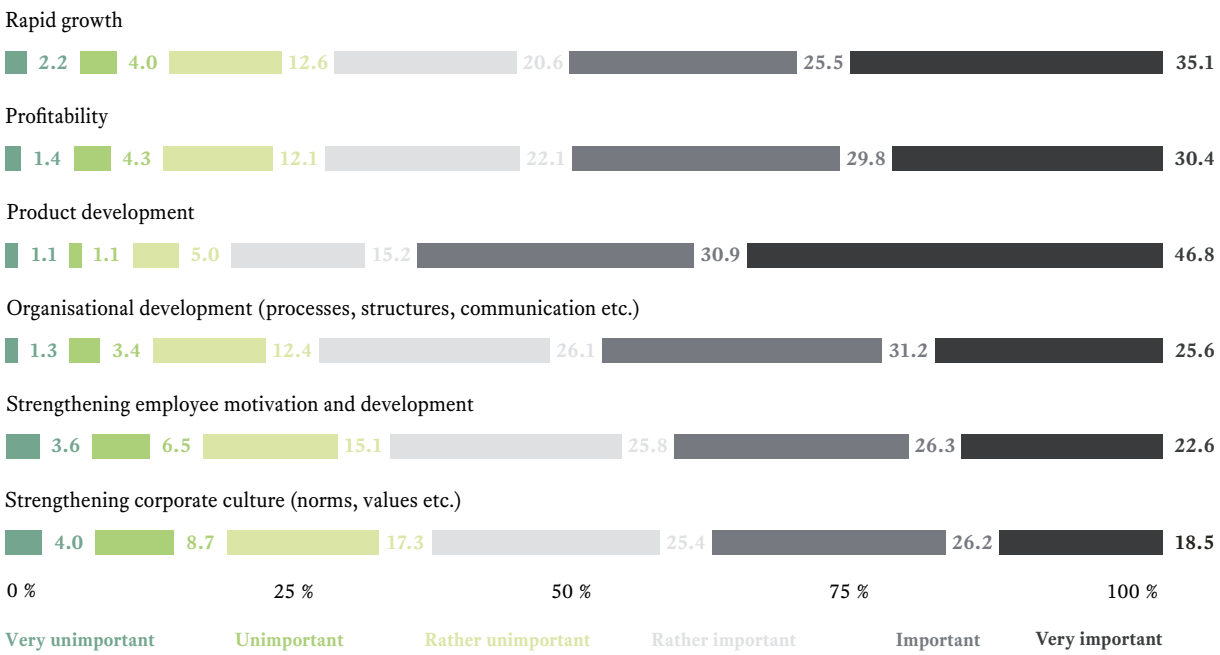


Figure 45 – Most important strategies

The strategy of ESM startups is mainly driven by market-related and financial goals.

Since startups do not have much retrospective financial data available, their valuation is often based on expectations and future cash flows. Therefore, the strategy of a startup plays an important role in the development of the venture. The most important strategic field for startups is product development, which 92.9% indicated as rather to very important (as seen in Figure 45). Interestingly, this is followed by the two strategic financial aims of profitability (82.2%) and rapid growth (81.1%). However, non-financial aims, such as organisational development in terms of processes, structures, communication etc., seem to be of similar importance (82.9%). Slightly

less important for startups are both the strengthening of employee motivation and development (74.7%) as well as the strengthening of corporate culture (70.1%).

The comparison of ESM countries (Figure 46) shows a pretty clear pattern for the exposed relevance of product development, which is the top strategic aim of startups in almost all countries. Profitability, organisational development and rapid growth share the second and third places. It is notable that the strengthening of employee motivation is the second most important answer in Slovenia and the third most important answer in Cyprus, Spain and Switzerland.

Figure 46 – Strategic Importance

Ireland

Product development
78.6 %
Rapid growth
63.6 %
Profitability
62.5 %

Poland

Product development
80.5 %
Profitability
78.0 %
Rapid growth
73.2 %

Switzerland

Product development
77.0 %
Rapid growth
76.0 %
Employee motivation and development
49.3 %

Israel

Product development
73.3 %
Organisational development
60.0 %
Rapid growth / Profitability
50.0 %

Portugal

Product development
79.1 %
Profitability
77.6 %
Rapid growth
73.3 %

United Kingdom

Product development
58.3 %
Corporate culture
58.3 %
Organisational development
54.2 %

Italy

Product development
76.8 %
Organisational development
72.5 %
Profitability
67.1 %

Slovenia

Product development
83.9 %
Employee motivation and development
73.8 %
Organisational development
67.7 %

Netherlands

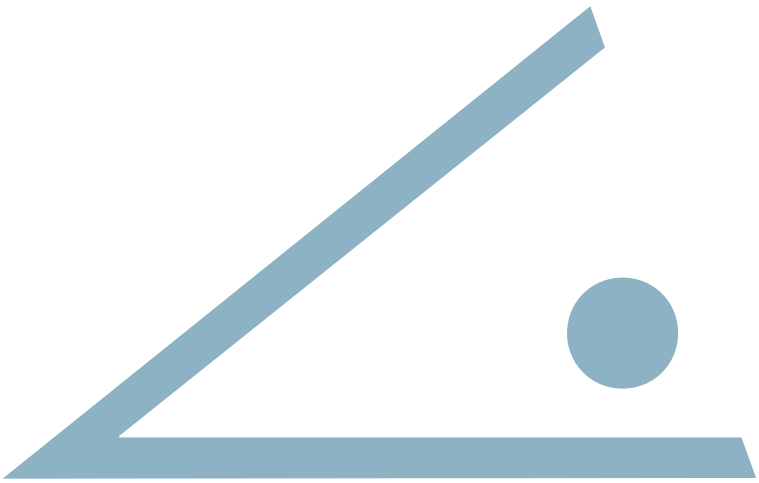
Product development
72.7 %
Organisational development
66.7 %
Rapid growth
57.6 %

Spain

Product development
77.3 %
Rapid growth
64.2 %
Profitability / Employee motivation
51.5 %

Figure 46 – Strategic Importance

Economic situation



ESM startups are positive about the business climate of today and tomorrow.

Following the IFO Business Climate Index, the participants were asked to indicate their business' situation in the present and predict its likely situation six months from now (Figure 47). Overall, 39.8% rated the present business situation as good, 50.5% as satisfying and only 9.7% as bad. The outlook for the future business situation was even more positive; it was rated more favourable by 71.8%, consistent with the present situation by 25.1% and less favourable by only 3.1%.

When looking at the different ESM countries, the present business situation was rated best (good) in the United Kingdom (66.7%) and Switzerland (50.0%). Although it was not very common overall for respondents to rate their situation as bad, 14.0% of Slovenian startups did report such a rating. In terms of the future business situation, the most optimistic outlooks (more favourable) came from the Netherlands (92.6%) and from France (87.5%). The most pessimistic outlooks (less favourable) came from Italy (11.9%) and Spain (8.9%).

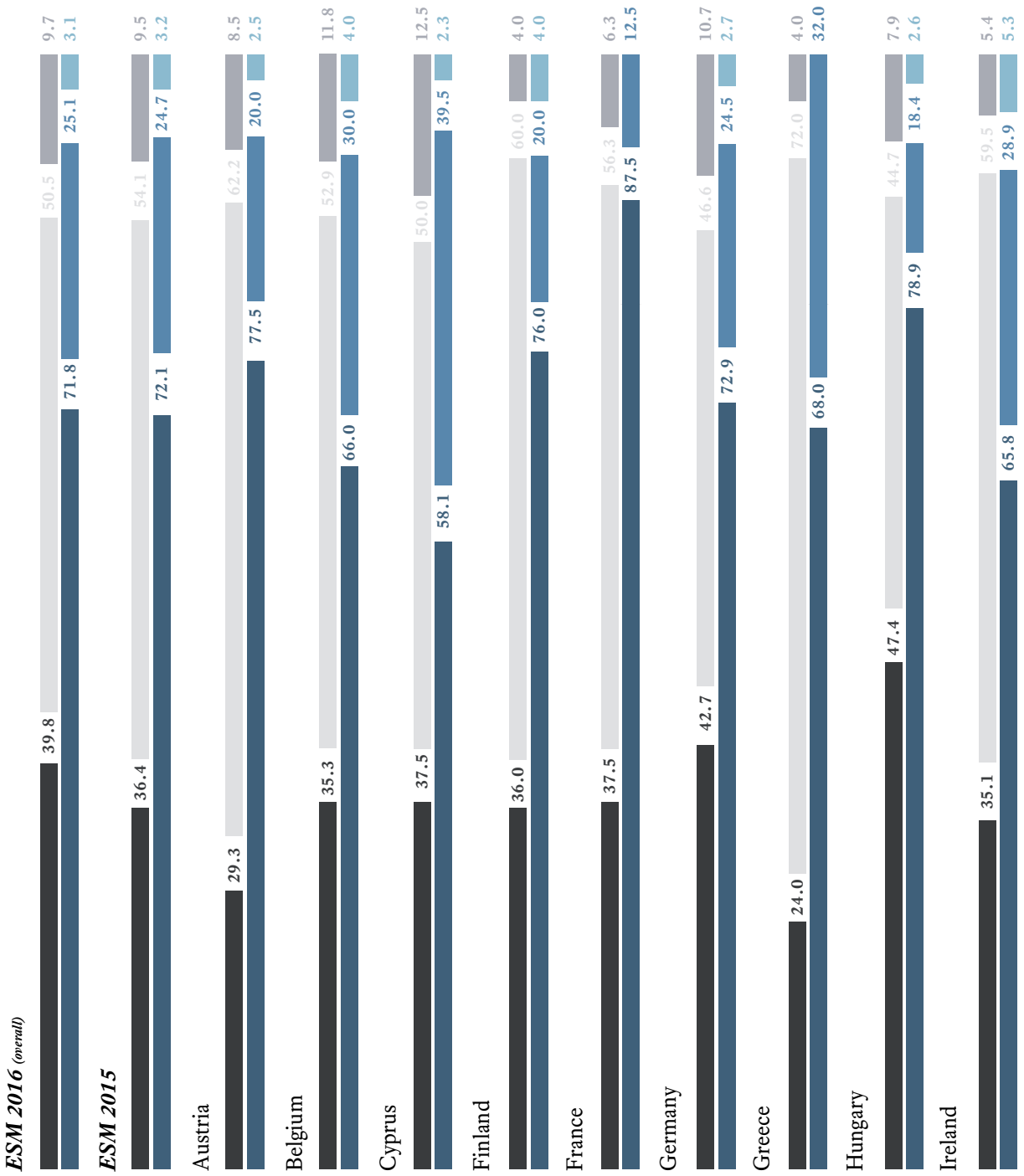


Figure 47 – Present and future business situation

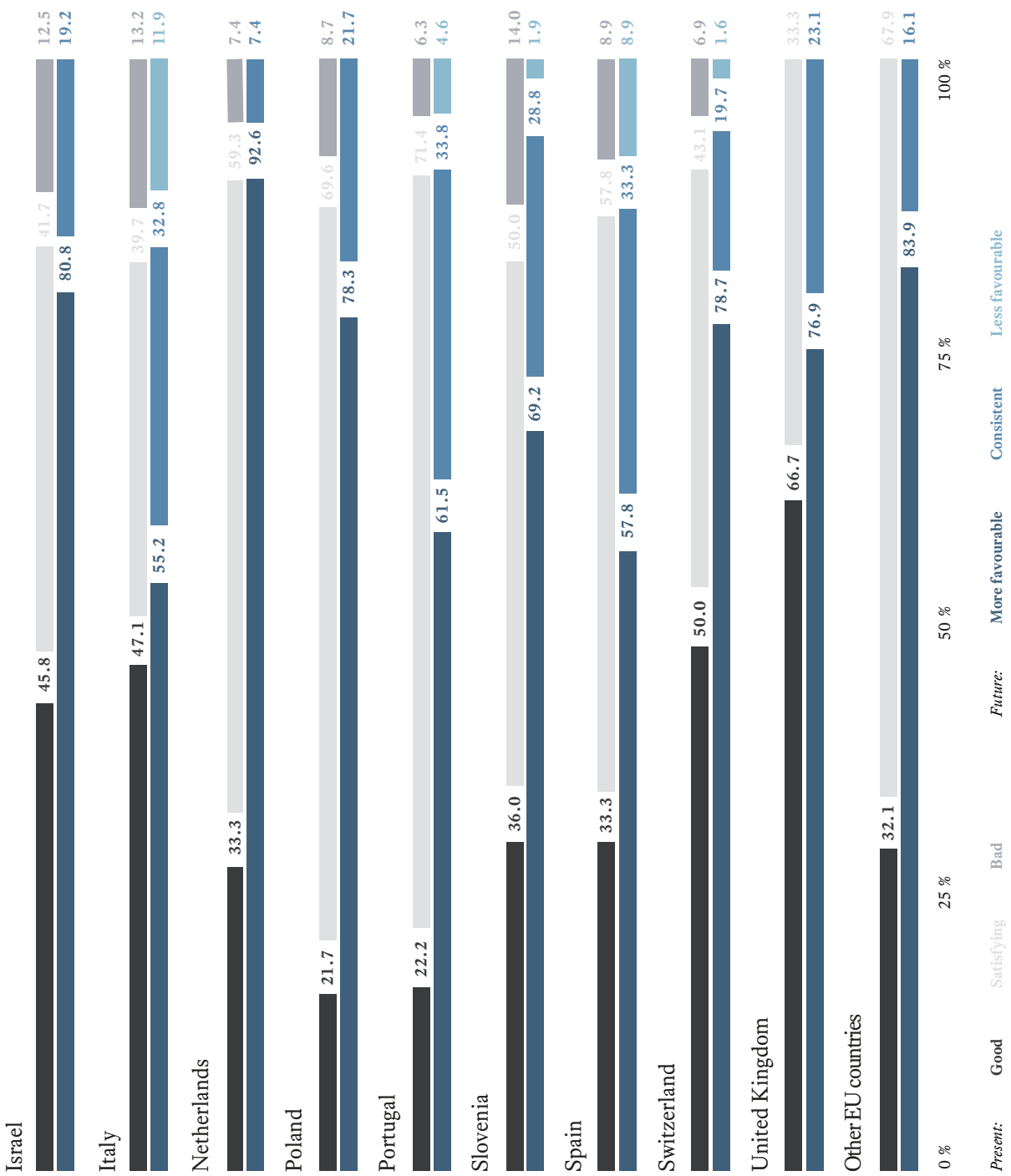


Figure 47 – Present and future business situation

Almost 2 out of 10 ESM Startups already earned € 500,000 or more in revenue in the last fiscal year.

Figure 48 shows the ESM startups' annual revenue in the last fiscal year. (Excluded from this figure are the 21.0% of participants who reported that their startups had no revenue yet.) More than one fourth (28.6%) said that they had earned between € 1 and € 25,000 in revenue. A smaller number (12.3%) said they had earned between € 25,000 and € 50,000 in revenue, and 18.8% had earned between € 50,000 and € 150,000. Revenue between € 150,000 and € 500,000 was indicated by 20.5%, and 19.8% reported

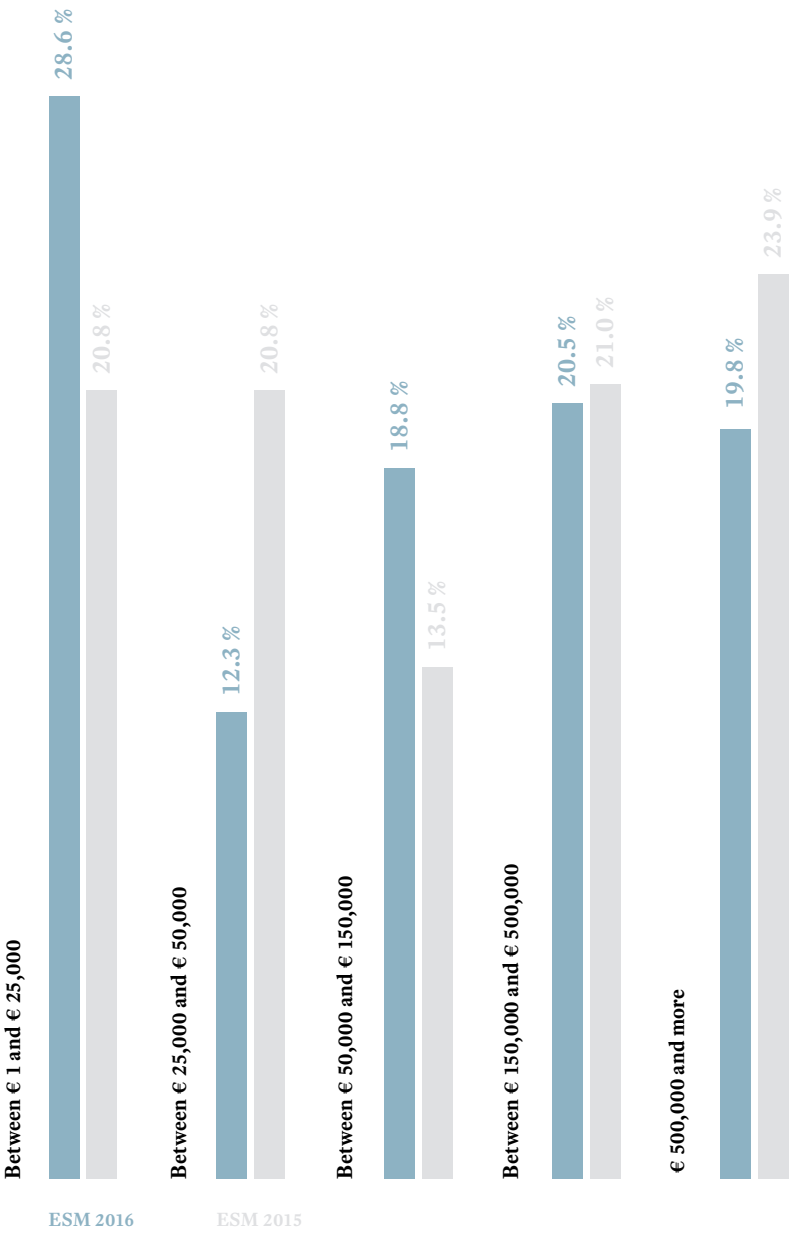


Figure 48 – Annual revenue in the last fiscal year

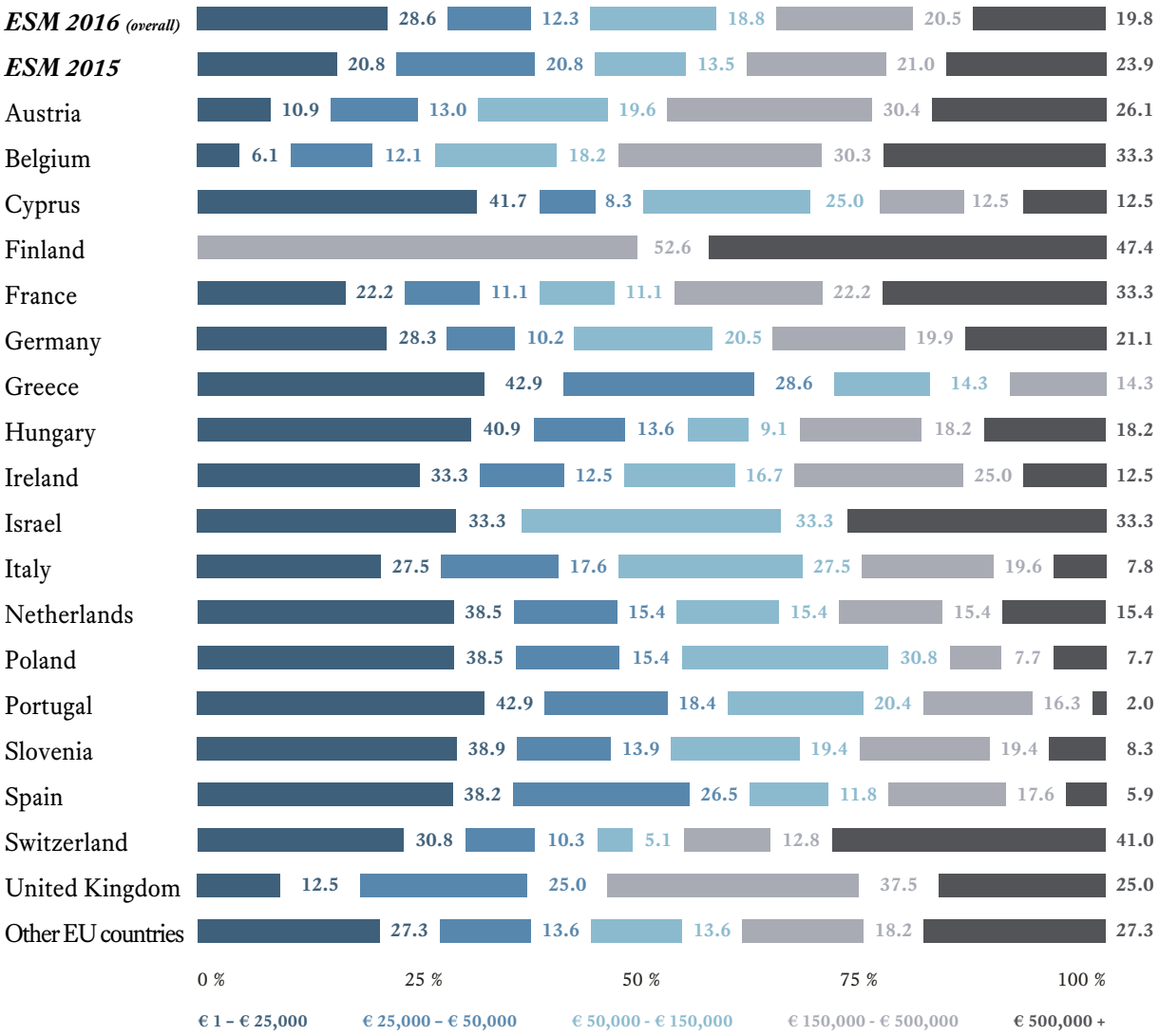


Figure 49 – Annual revenue in the last fiscal year

€ 500,000 and more. However, there are considerable differences among the ESM countries as depicted in Figure 49. Although the comparison among groups has only limited explanatory power, it is notable that the startups with the highest revenues mainly came from Northern and Central Europe (e.g. Belgium, Finland and Switzerland) and the ones with the lowest revenues mainly came from Southern Europe (e.g. Cyprus, Greece and Portugal).

Informal sources of financing – savings/family and friends – are important for startups.

The ESM startups' various sources of financing are shown in Figure 50. The most frequent source (84.5%) is savings of the founders. The second most frequent source is family and friends, with 29.6%, and the third most frequent is governmental subsidies/ funding, with 26.5%. The capital of business angels is used by 23.8%. Further notable sources of financing included internal financing/bootstrapping (18.6%), venture capital (18.1%), incubators/company builders/ accelerators (16.2%) and bank loans (14.4%).

Figure 51 lists the top three countries for each source of financing. Interestingly, the portion of startups funded by founders' savings is 96.8% in Switzerland. Family and friends are also important in Switzerland (57.1%) as well as Israel (41.7%) and Greece (38.5%). In contrast, startups from Finland have high shares of formalised financing, e.g. business angels (56.0%), venture capital (44.0%), incubators/ company builders/accelerators (76.0%) and bank loans (32.0%), combined with a high share of bootstrapping (52.0%).

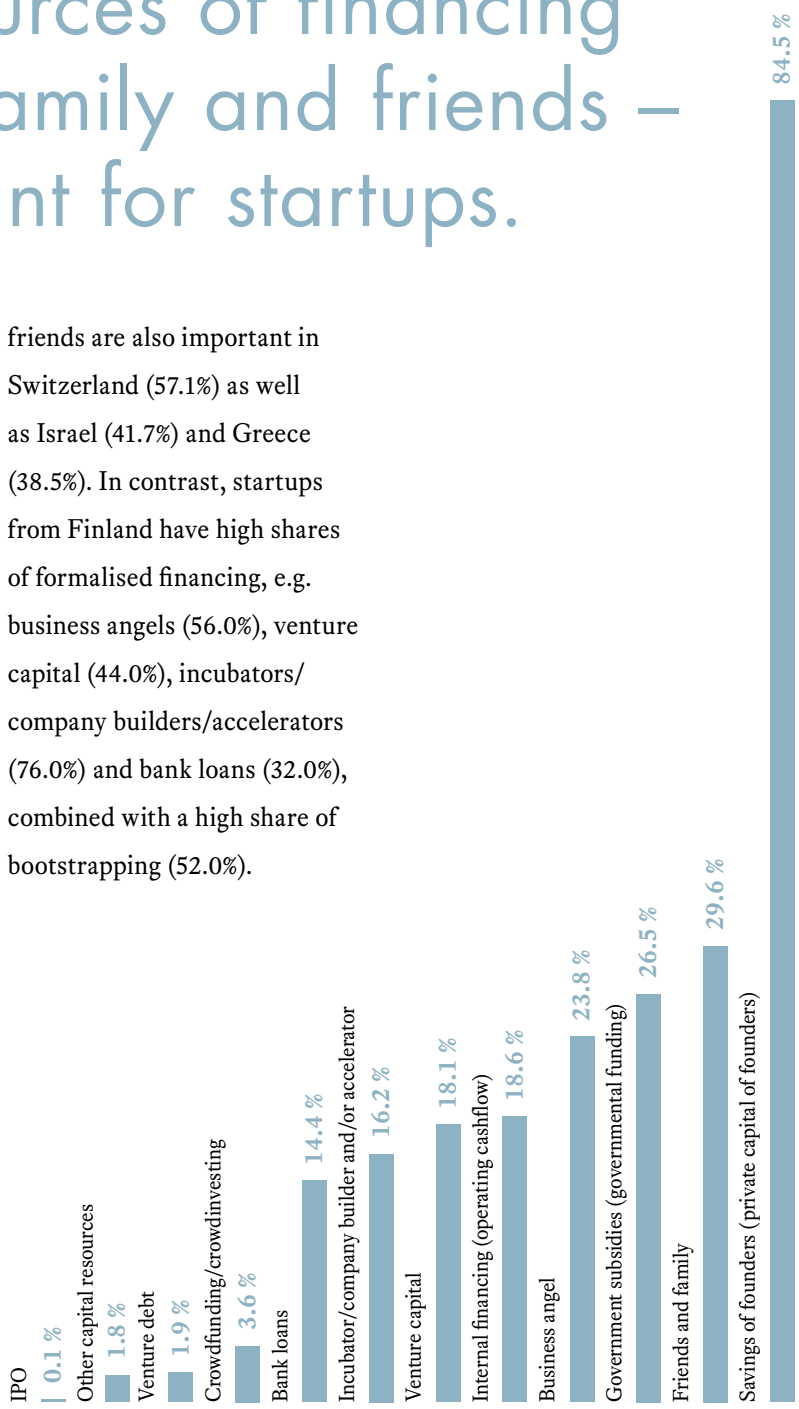


Figure 50 – Sources of financing

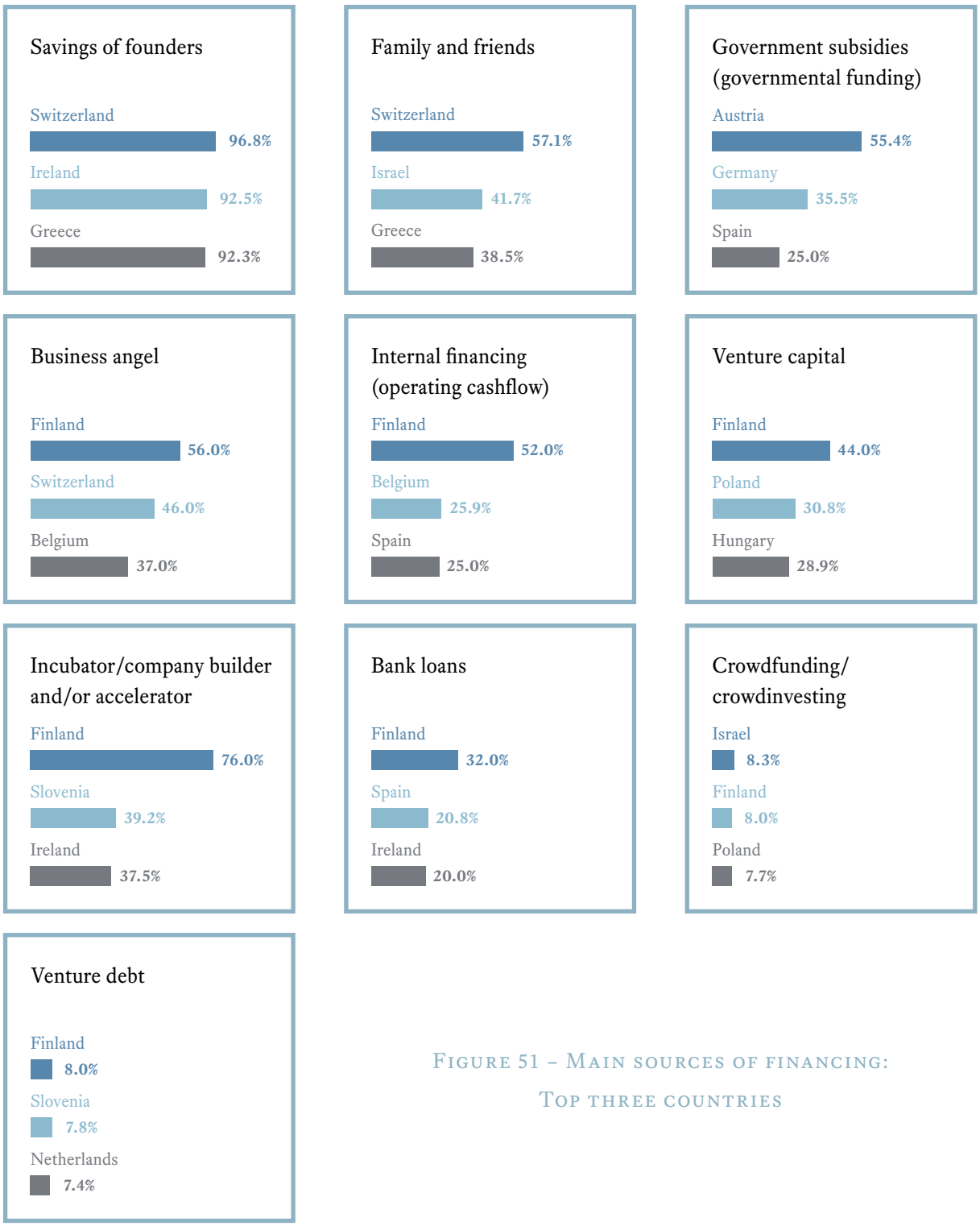


Figure 51 – Main sources of financing: Top three countries

More than half of the founders in the United Kingdom (58.8%) exclusively used their own savings to finance their startup.

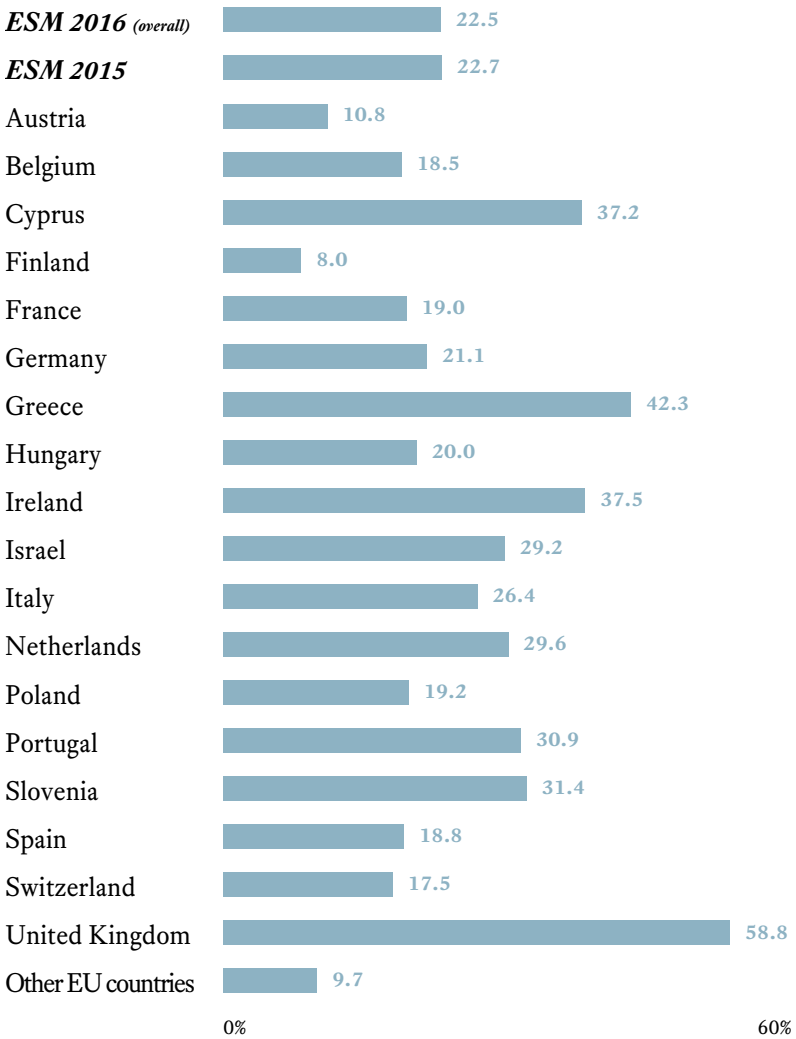


Figure 52 – Share of Founders' savings as startups' only source of financing

Since savings are the most frequent source of startup financing among the ESM participants, Figure 52 shows the share of startups that were exclusively financed with the founders' savings. The overall ESM share remained almost stable at 22.5%.

Founders from the United Kingdom are most likely (58.8%) to use their own savings as the only source of financing, followed by Greece (42.3%), Ireland (37.5%) and Cyprus (37.2%). Finnish (8.0%) and Austrian (10.8%) founders were least likely to use only their own savings.

Startups have already raised a projected €1,992,077,630 of external capital to date.

On average, 68.1 of ESM startups have already received external capital. This share ranges from 41.7% in Israel and 52.4% in Cyprus to 85.7% in France and 95.7% in Finland (Figure 53). Figure 54 shows the distribution of external capital received for the ESM overall and for the individual ESM countries. On average, 24.8% of startups have received between € 1 and € 25,000 to date; 11.7% have received between € 25,000 and € 50,000; and 21.1% have received between € 50,000 and € 150,000. Another 26.6% of startups have received between € 150,000 and € 1 million, and 15.7% have received more than € 1 million. In the inter-country comparison, notable differences can be seen. For example, the United Kingdom (60.0%), Cyprus (50.0%) and Hungary (40.0%) have relatively high shares of startups, with external capital between € 1 and € 25,000, whereas countries such as Finland and France have relatively high shares of capital (over € 1 million).

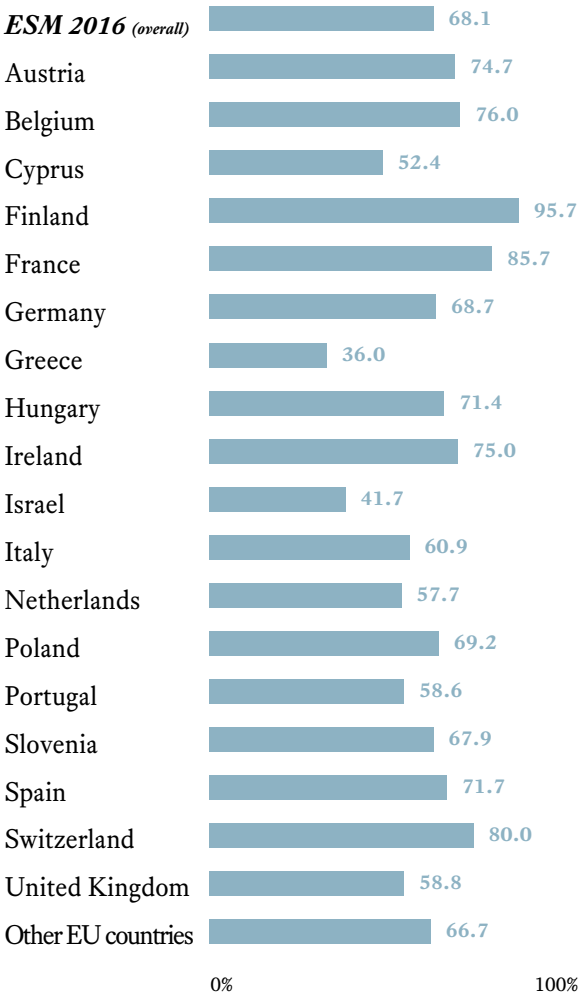


Figure 53 – Share of Startups that have already received external capital

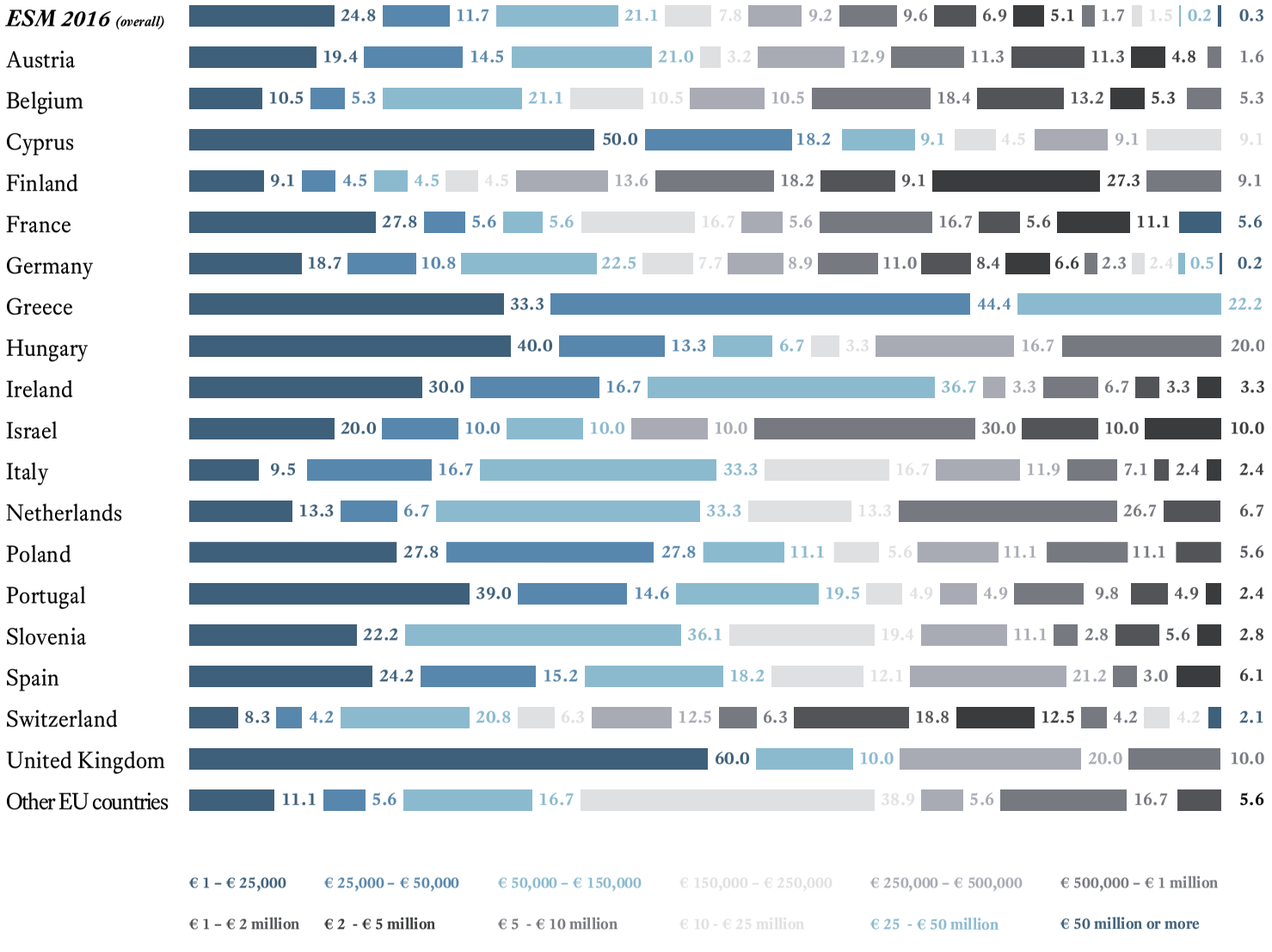


Figure 54 – External capital raised to date

ESM startups plan to raise an additional € 2,736,668,944 in external capital (projection).

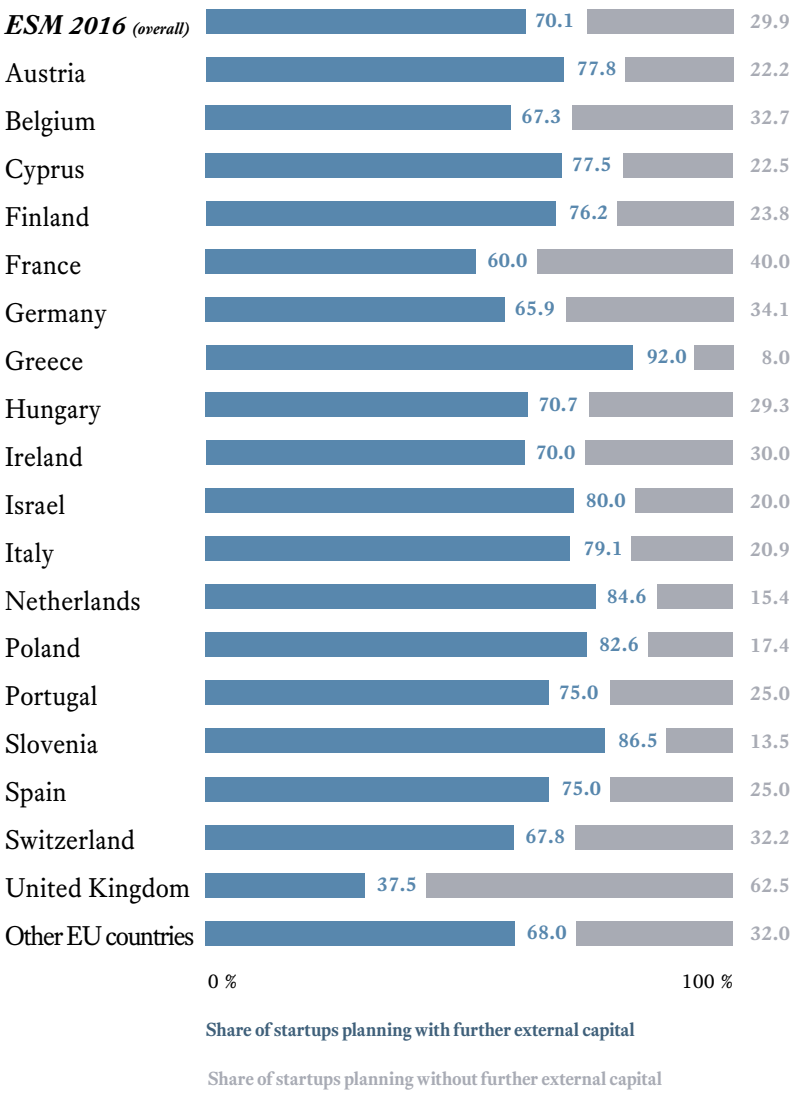


Figure 55 – Planned raising of capital within the next 12 months

Figure 55 shows that 70.1% of all ESM startups plan to raise additional external capital within the next 12 months. The highest percentage of startups that seek to raise external capital can be found in Greece (92.0%), Slovenia (86.5%) and the Netherlands (84.6%). There are also countries with substantially lower shares of startups that plan to raise external capital, such as France (60.0%) and the United Kingdom (37.5%). Figure 56 shows that the amount of demanded capital differs between the ESM countries. While, on average, 75.3% of the startups plan to raise a maximum of €1 million, one out of four startups already plan to raise more than €1 million. The countries with the greatest need for seed financing of up to € 25,000 are Greece (26.1%), Cyprus (22.6%) and Portgual (21.6%). The countries with the greatest need for financing rounds of over €1 million are mainly from Northern and Central European countries, such as Finland (56.3%) or Belgium (51.5%).

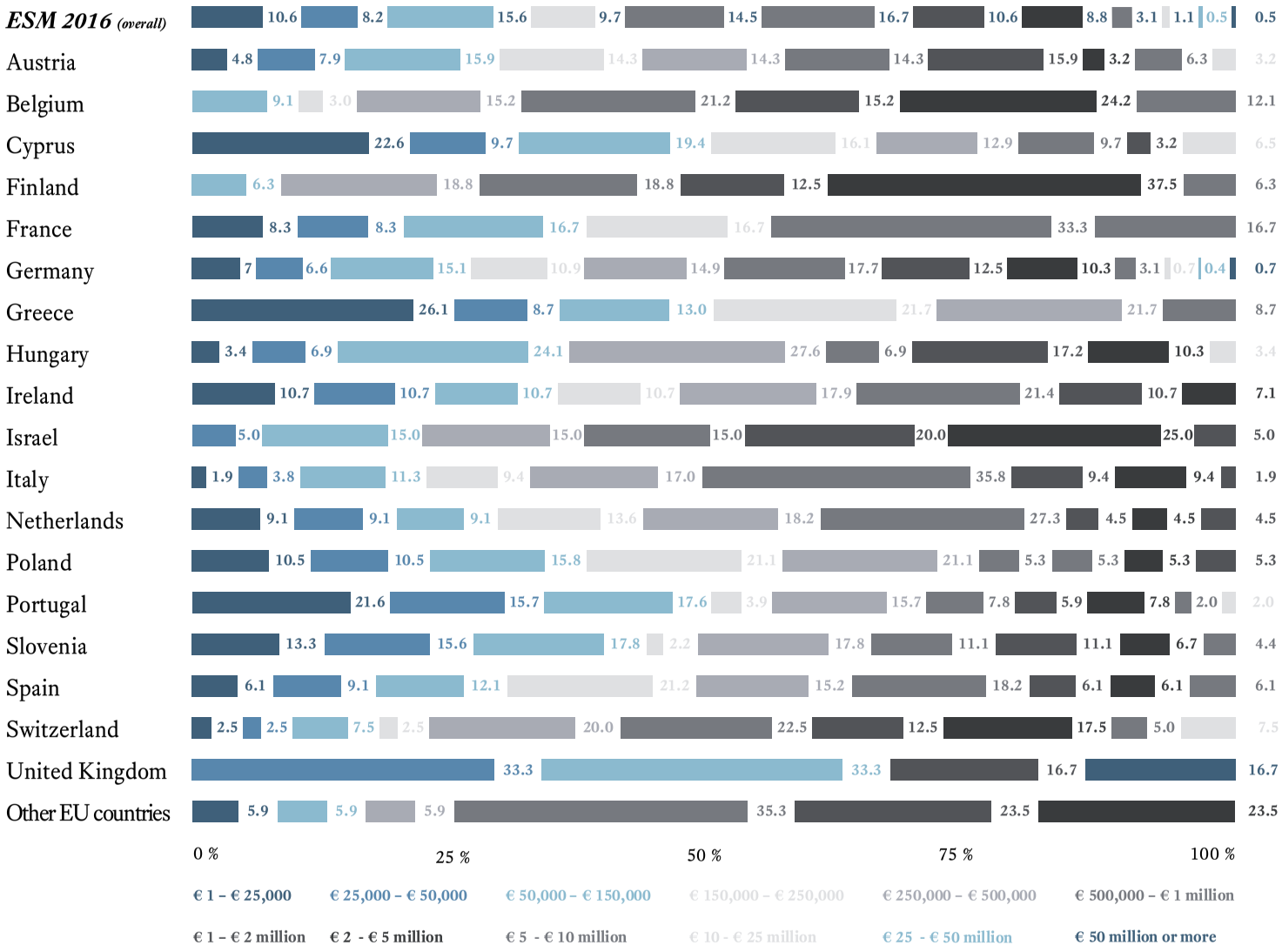
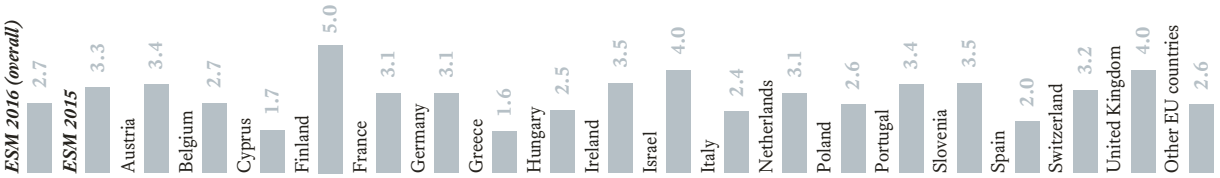


Figure 56 – Planned raising of capital within the next 12 months

The Startup Enviroment

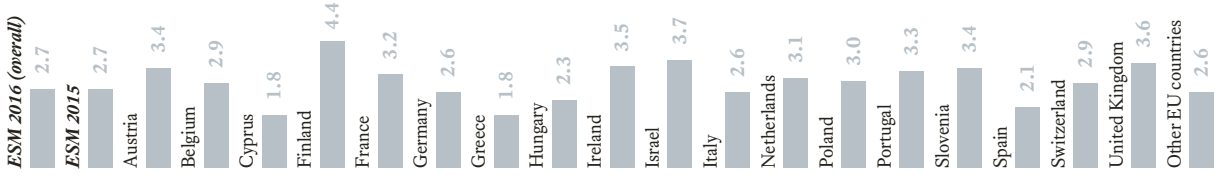
Room for improvement: Politicians' understanding of and support for startups are rated at only 2.7 of 6 points.



Very bad (1) – Very good (6)

Figure 57 – Average evaluation of the national government: Support of the startup ecosystem

In order to derive useful recommendations for potential initiatives on the political level, which help to support the business environment for startups around Europe, the ESM participants were also asked to evaluate their national politicians in terms of support (Figure 57) and understanding of startups (Figure 58) on a scale from very bad (1) to very good (6). On average, the national governments' support for the startups ecosystem was rated worse (2.7) than the year before (3.3). The worst ratings were 1.6 for Greece and 1.7 for Cyprus. The best ratings were 5.0 for Finland and 4.0 for both Israel and the United Kingdom. Regarding the national governments' understanding of startups, this year's rating was, again, 2.7. Here also, the worst ratings came from Greece (1.8) and Cyprus (1.8). The best ratings came from Finland (4.4) and Israel (3.7).



Very bad (1) – Very good (6)

Figure 58 – Average evaluation of national politicians: Understanding the concerns of startups

The European education system is still ranked as mediocre in terms of promoting entrepreneurial thinking and acting.

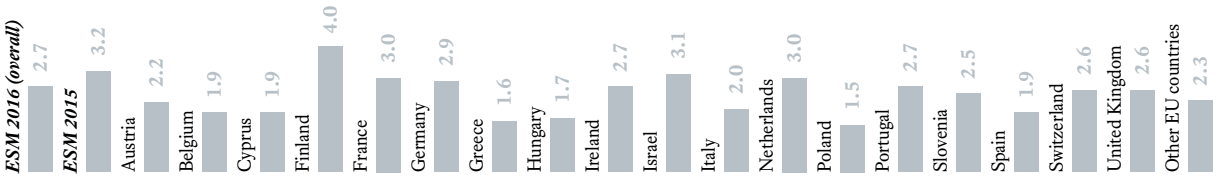


Figure 59 – Average evaluation of universities:
Promoting and communicating entrepreneurial thinking/acting

A good education system is indispensable for a vital entrepreneurship ecosystem. Therefore, participants were asked to evaluate the ability of schools and universities in promoting and communicating entrepreneurial thinking/acting in their respective countries. Universities: The overall ESM rating for universities decreased from 3.2 (2015) to 2.7. Comparing the different ESM countries, we found notable differences. The lowest rated countries were Poland (1.5), Greece (1.6) and Hungary (1.7). Belgium, Cyprus and Spain were each rated 1.9. The highest ratings were found in Finland (4.0), Israel (3.1), France (3.0) and the Netherlands (3.0).
School system: The overall ESM rating for school systems slightly decreased from 2.4 (2015) to 2.2. The inter-country comparison shows values below 2 for Greece (1.5), Cyprus (1.6), Spain (1.6), Hungary (1.8) and Italy (1.9) and values above 3 for Israel (3.3), Finland (3.2), Portugal (3.2), the Netherlands (3.1) and the United

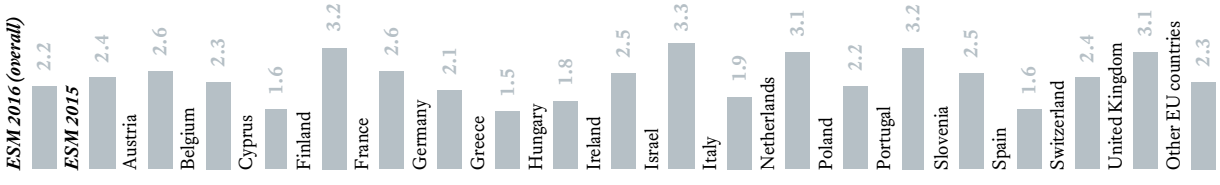


Figure 60 – Average evaluation of the school system:
Promoting and communicating entrepreneurial thinking/acting

Kingdom (3.1). The analysis of both the school and university system shows that the patterns are usually similar for each country. Thus, the good or bad results might be attributable to structural reasons with regard to the overall education system in each respective country.

Finland and Israel are this year's best practice examples for promoting an entrepreneurial environment.

Another important element of a vital entrepreneurship environment is the openness of established companies to cooperate with startups. Similarly to the previous year, the best overall evaluation was given in this category (Figure 61). Although it slightly decreased from last year, established companies received an evaluation of 3.1. Poland, at 1.8, is the only country rated below 2. Established companies in Spain (2.2), Hungary (2.3) and Belgium (2.3) received the lowest evaluations above 2. The highest evaluations were received by established companies from Finland (4.5), Israel (3.9) and France (3.7). This pattern is comparable to those found above in the political and educational evaluations. It can be concluded that Finland and Israel are this year's best practice examples for promoting a favourable environment for startups in terms of politics, education and cooperation of established companies.

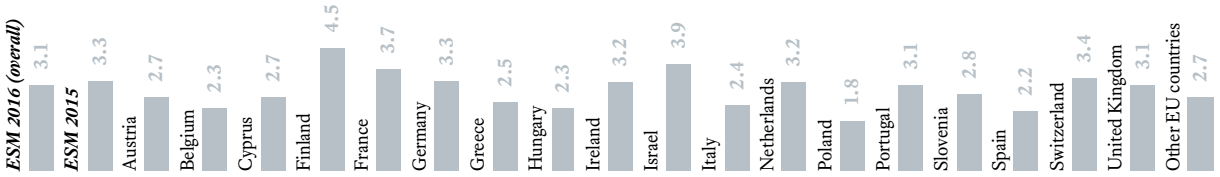


Figure 61 – Average evaluation of traditional companies: Collaboration with startups

Almost three out of four ESM startups participate in cooperative activities with established companies.

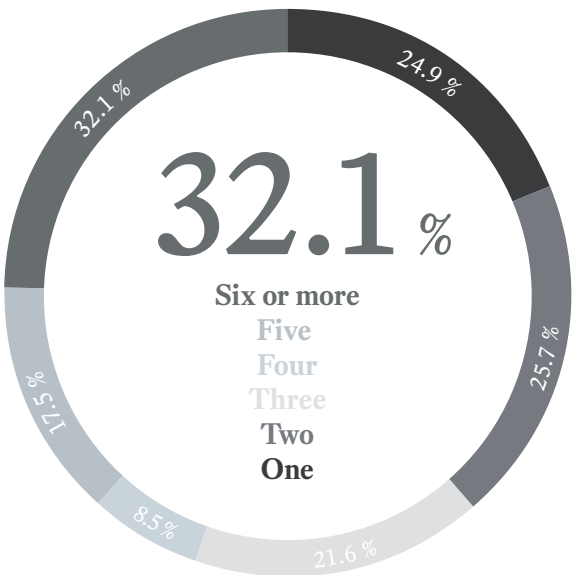


Figure 62 – Number of cooperation partners (established companies)

Despite the qualitative assessment of cooperation between startups and established companies, it is also important to gain an understanding of how many and what type of cooperation startups enter with established companies as well as which goals they pursue in doing so.

ESM-wide, 73.7% of all startups said that they already engage in cooperative activities with established companies (Figure 63). This group's values ranged from, on the high end, 89.2% in Poland and 86.5% in Switzerland, to, on the low end, 58.6% in Greece.

Of those founders who indicated that they have cooperative arrangements in place, about half have one (24.9%) or two (25.7%) partner companies (Figure 62). Of the startups, 21.6% have three partner companies, 8.5% have four, 17.5% have five and 32.1.% have six or more.

Most startups (79.8%) aim to gain access to customers and markets when cooperating with established companies.

Regarding the type of cooperation (Figure 64), 61.2% of founders indicated that they had entered into cooperative marketing activities, and 46.8% had entered into cooperative research and development activities. Framework supply agreements were established by 40.2%, and 21.3% of startups are part of an incubator/accelerator program of an established company.

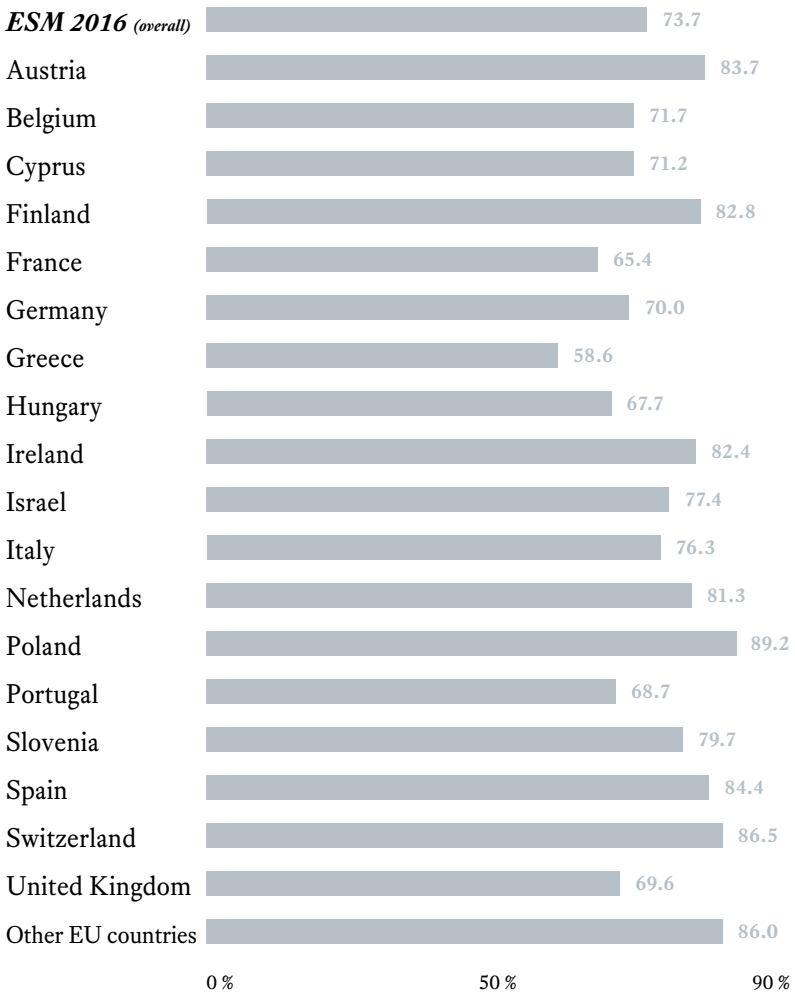


Figure 63 – Percentage of startups cooperating with established companies

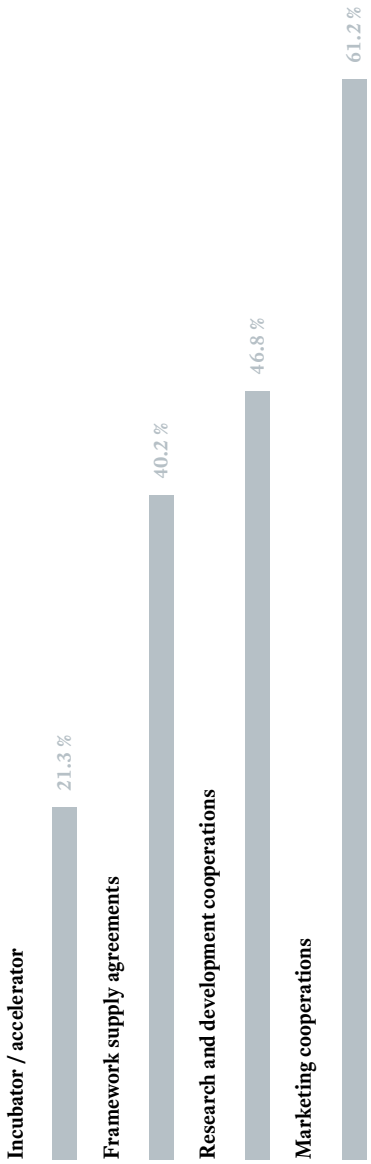


Figure 64 – Type of cooperation with established companies

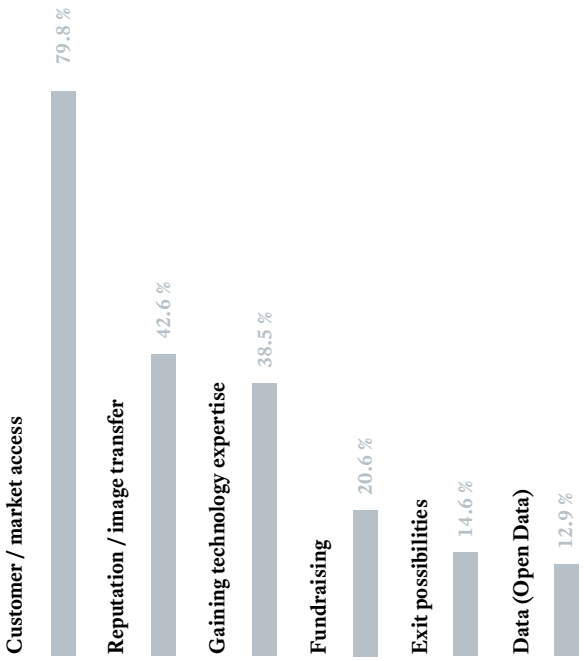


Figure 65 – Goals: Cooperation with established companies

Accordingly, the goal of most startups (79.8%) in their cooperative activities is to gain customer/ market access (Figure 65). A further 42.6% want to enjoy reputation/image transfer, and 38.5% are hoping to gain technology expertise. Financial goals such as fundraising (20.6%) and exit possibilities (14.6%) are only important for a smaller share of startups – as is access to open data (12.9%). Figure 66 shows that, on average, 57.5% of startups have cooperative arrangements with other startups in place. The inter-country volatility, however, is higher than for cooperative activities undertaken with established companies.

The values range from 82.3% in Spain and 72.4% in Finland to 50.0% in France and the Netherlands and a surprisingly low 40.0% in Israel. Of those startups which cooperate with other startups, 26.1% have only one cooperation partner, and 25.2% cooperate with two other startups (Figure 67). Three partners

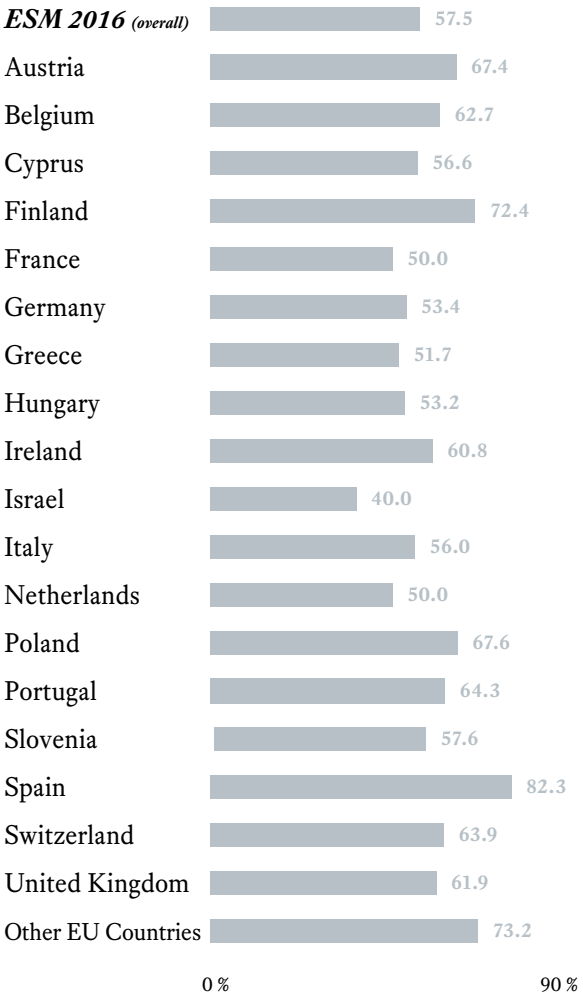


Figure 66 – Percentage of startups in cooperation with other startups

were indicated by 17.1%, 5.7% have four partners, 12.0% have five partners, and 13.9% cooperate with six or more other startups. As shown in Figure 68, the most frequent type of cooperation with other startups is marketing cooperation (65.0%) followed by research and development cooperation (45.3%). Of the startups, 30.3% use co-working spaces or office sharing, and 25.5% have established framework supply agreements with other startups.

Do birds of a feather flock together? Yes, when it comes to cooperative marketing and R&D activities between startups.

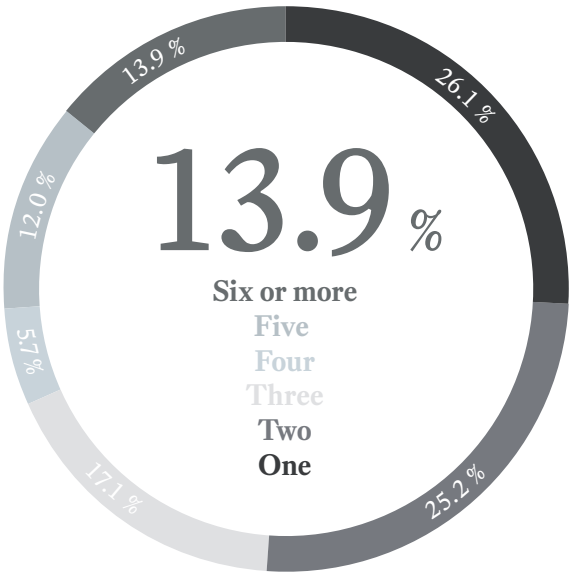


Figure 67 – Number of cooperation partners (other startups)

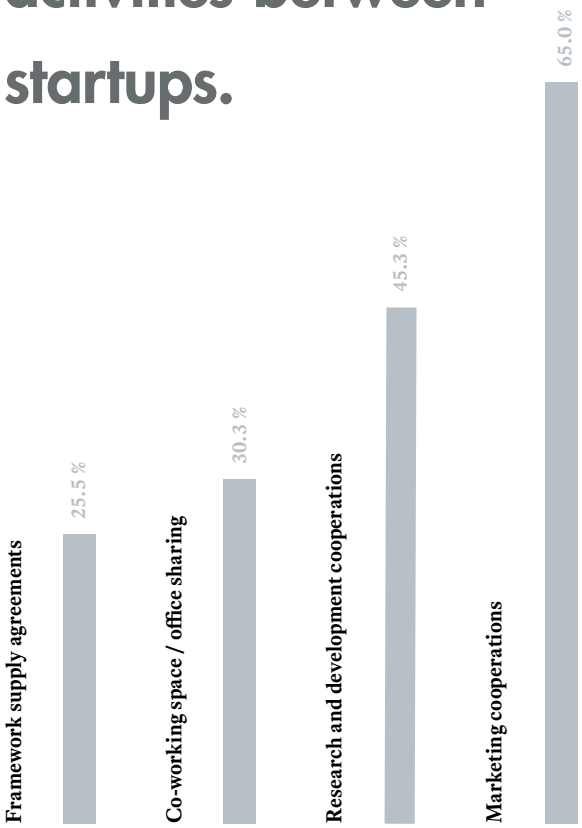


Figure 68 – Type of cooperation with other startups

Seizing the opportunity: The majority of startups sees rich opportunities in their markets/industries.

The ESM startups are, per definition, young and highly innovative growth companies, and it is hence likely that their entrepreneurial endeavours take place in dynamic markets, e.g. the digital economy. Such environments can offer both opportunities and challenges/risks for startups. In order to gain deeper insights into the characteristics of the markets in which the ESM startups are active, participants were asked to assess the respective market dynamics. The analysis depicted in Figure 69 shows that the majority of participants feel positively in terms of their market opportunities; 74.6% agreed that opportunities for product innovation are abundant in their major industry, and a further 80.5% agreed that their markets are rich in profitable opportunities. Less than half of the participants agreed that the technology of their product/service is rapidly changing, and only 34.3% agreed that products/services in their industry are becoming obsolete at a very high rate. Only 25.5% agreed that the demand and preferences of their customers are almost unpredictable.

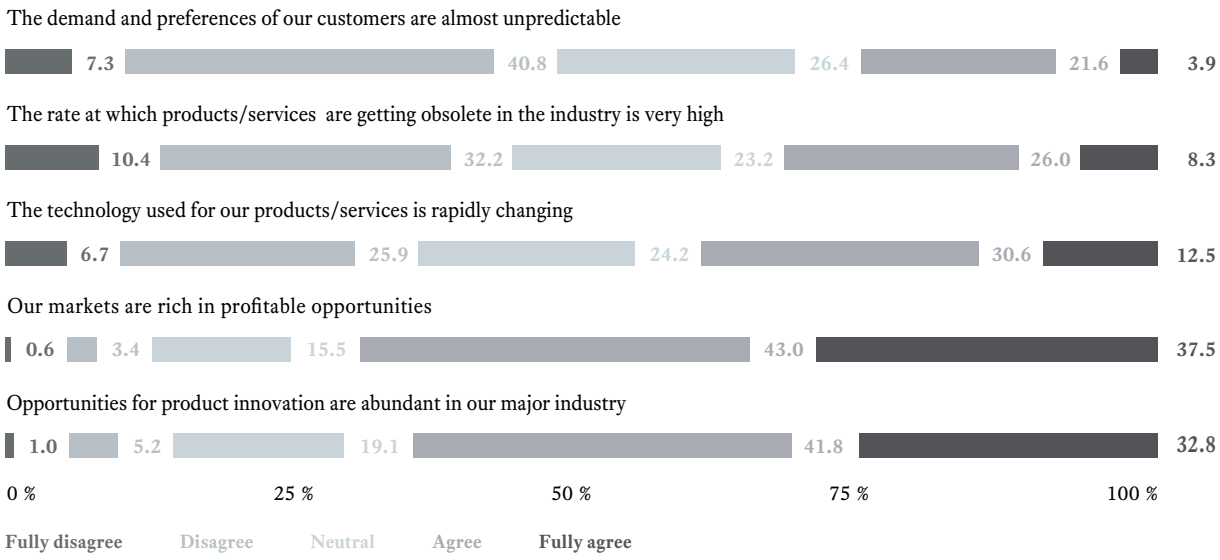


Figure 69 – Market dynamics

ESM startups consider their markets to be rather competitive due to direct/indirect competitors and customers' bargaining power.

In addition to competing with startups, established companies can also compete, directly or indirectly, with startups. Therefore, the participants were also asked about the competitive forces in their markets (Figure 70). Indeed, competition within markets was rated the strongest competitive force facing startups; 62.8% of participants said that it is rather/very high. This is closely followed by the threat of new entrants (60.2%) and the bargaining power of customers (59.0%). In general, the speed of innovation in the market was also rated as rather/very high by 58.0% of participants. The threat of substitute products and the bargaining power of suppliers was, however, rated somewhat lower. In summary, the ESM startups' markets seem to be rather competitive.

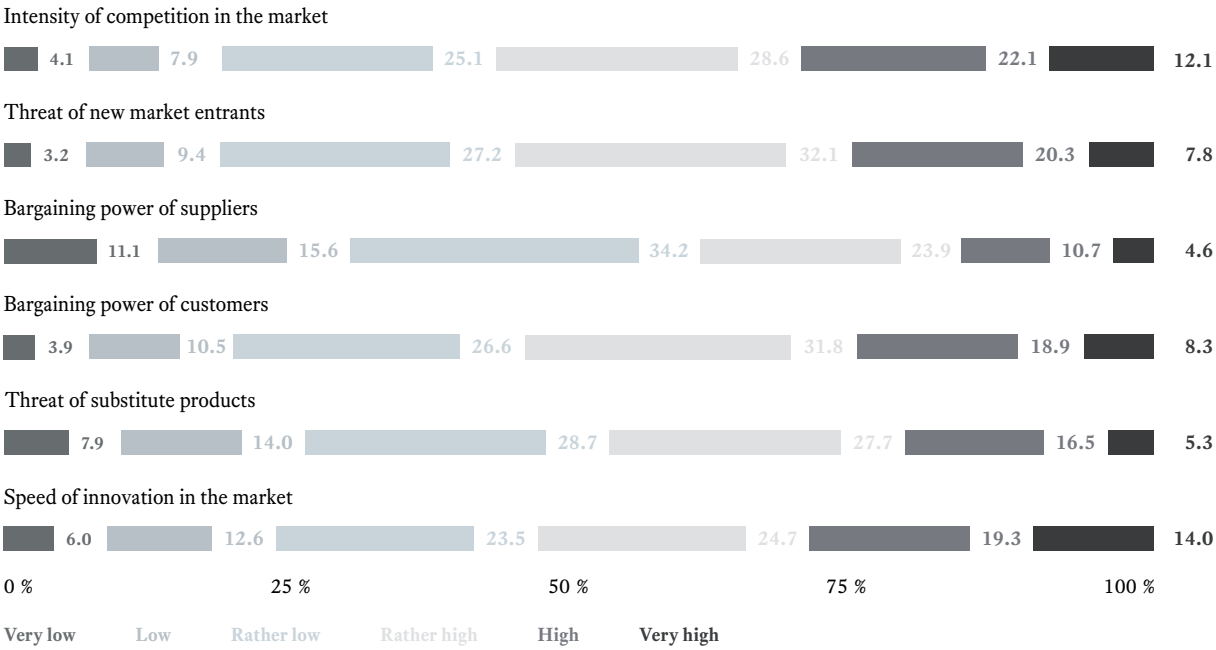
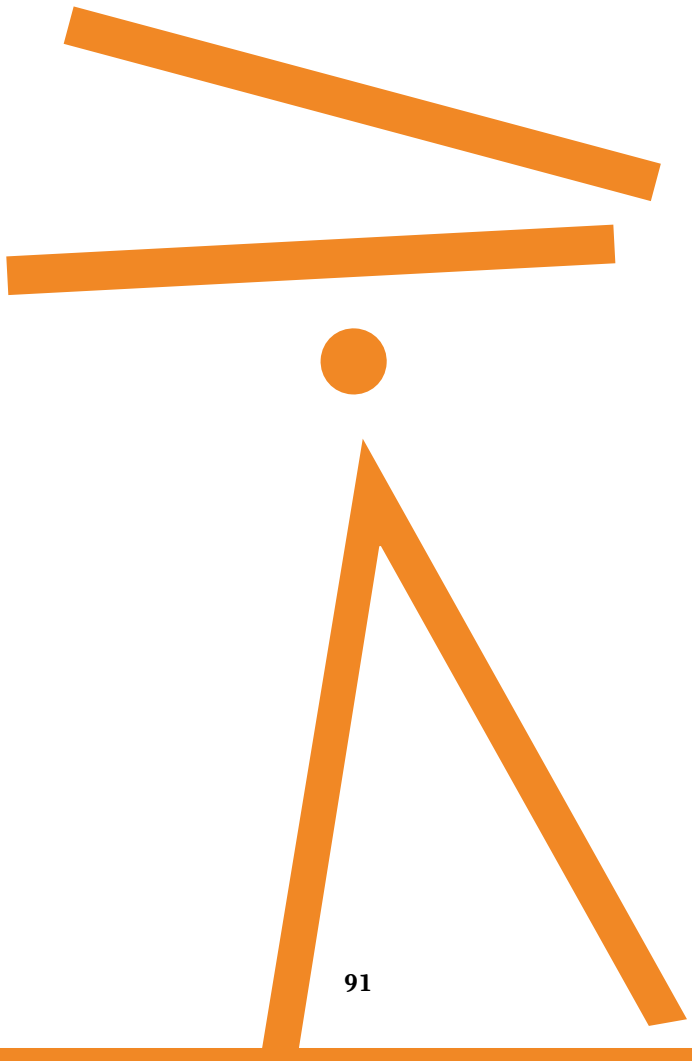


Figure 70 – Competition

Challenges and expectation



Sales and customer acquisition continue to be the biggest challenges startups are facing.

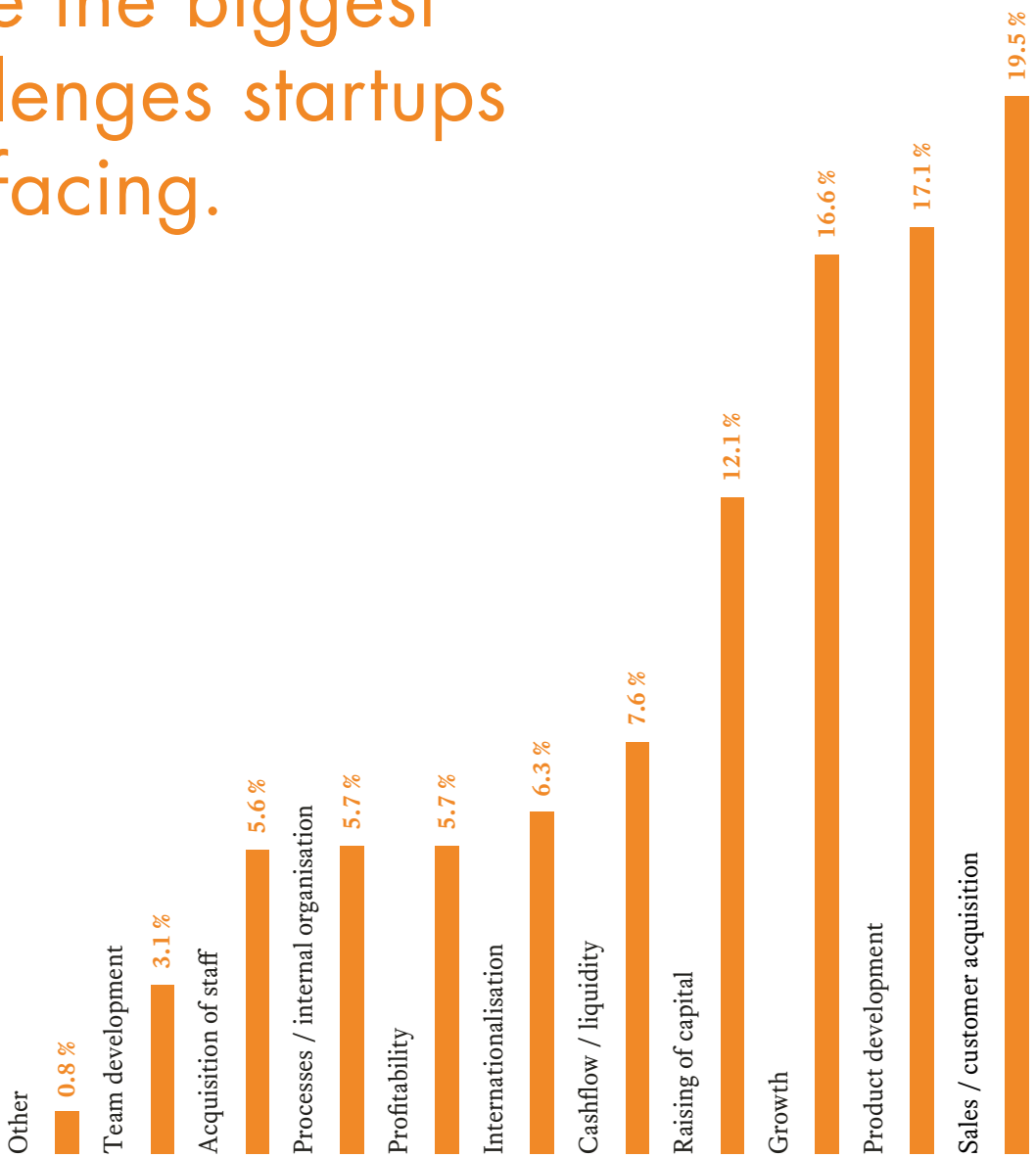


Figure 71 – Current challenges European startups are facing

The ESM also aims to provide insights into the challenges that startups are facing. Participants were therefore asked to indicate the three major challenges currently faced by their startups. Sales and customer acquisition was, once again, the largest challenge, with 19.5%, followed by product development (17.1%) and growth (16.6%). The raising of capital (12.1%) was also a fairly important issue (Figure 71).

The pace of innovation in one third of all startups is behind schedule, but more than 50% of all startups still innovate faster than their competitors.

There are several approaches to supporting startups and firms in bringing their products/services to the market, e.g. lean startup. Although many respondents indicated that product development is still a major challenge for them (see 8.1), 52.1% of the founders said that their product/service was developed and launched faster than those of their major competitors, and 51.0% said that it was completed in less time than is normal in their industry. However, only one third (33.9%) said that it was launched on or ahead of the original schedule (Figure 72).

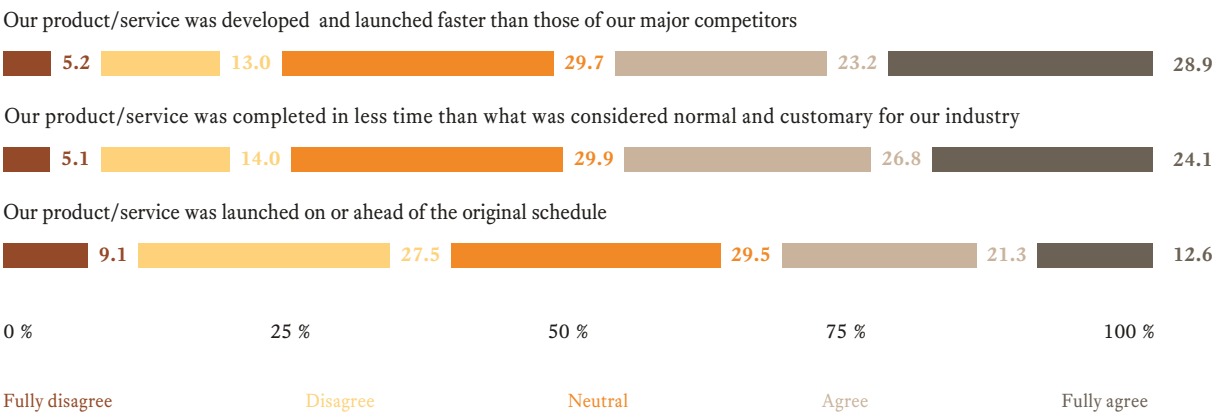


Figure 72 – Pace of innovation

Startups' top three expectations about politics: (1st) reduction/relief of red tape, (2nd) tax relief and (3rd) support with raising capital.

In order to derive implications and recommendations for politicians on both the national and European levels, the participants were asked what they expect from politics. The four major categories used the previous year were replaced by twelve more specific answers (Figure 73). Reduction of regulatory and administrative burden, however, remains the most relevant issue for startups (60.1%). This is followed by expectations of tax reduction/ relief (48.9%) and support with raising capital (33.4%). Further important issues include an improved understanding of the special needs of startups (30.4%), support for venture capital (26.0%) and better support for startup founders (e.g. local support and advice structures) (23.0%).

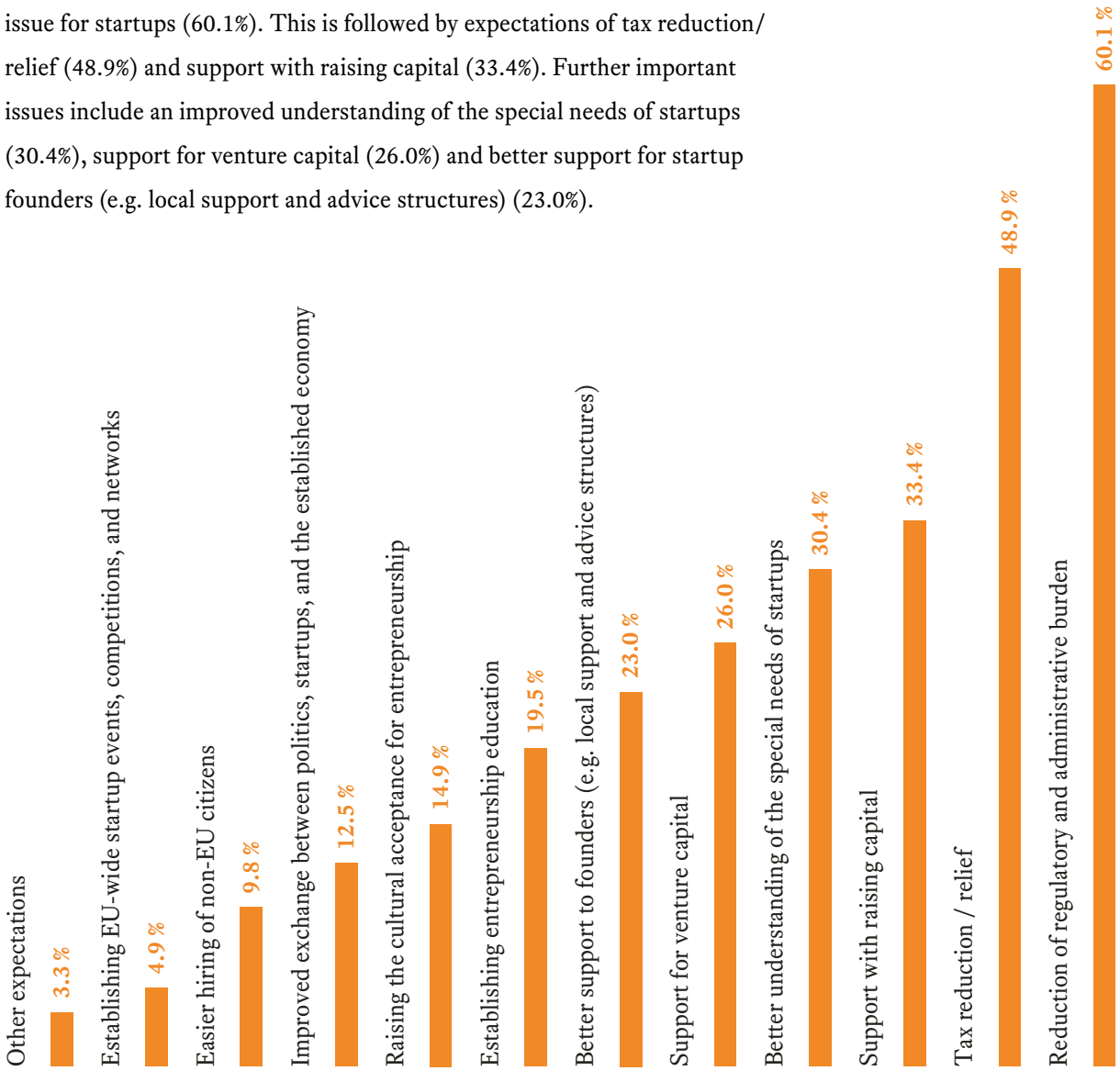


Figure 73 – Expectations about politics

Development of the study and research design

The ESM aims to build a comprehensive data and knowledge base concerning the European startup ecosystem in order to support entrepreneurship research and practice. The first ESM was published in 2015. In 2016, we have been able to enlarge our base of data and thus provide an even broader picture of the European startup ecosystem. Although the ESM cannot be seen as fully representative of the overall startup activities in Europe, it at least constitutes a snapshot. Due to its research design, which is oriented towards scientific standards and therefore high-quality data, and to the many high-quality responses that we received from founders, CEOs and c-level executives, the ESM covers a large number of startups from all over Europe (and other relevant countries) in a meaningful and significant way. In order to ensure the high quality of the ESM data, founders and executives from European startups received a specific survey link via e-mail. This link was sent exclusively to 76 selected network partners. Partners of the European Startup Monitor are inter alia the European Startup Network, national startup associations, incubators, co-working spaces and startup event organisers as well as research institutions with direct reach to founders and extensive knowledge of startups in their ecosystem.

Answering the survey took, on average, 20 minutes. A total of 4,135 participants accessed the online survey. The survey was carried out anonymously so that no conclusions on the activities of individual startups are possible. The survey was available from May 27 to July 1, 2016.

Data was analysed in direct cooperation with the German Startups Association. This also included the definition of criteria for data cleansing. Following the data cleansing process, the scientific analyses were conducted. The data base of the ESM 2016 included a total of 2,515 participants (2015: 2,365).

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This study would have been impossible without the support of our international partners, who displayed their open, entrepreneurial mindset and the international orientation of the startup sector. Travelling across Europe and Israel for the European Startup Monitor, the need for more research on European startups was clear. Many initiatives are currently mapping and monitoring individual startup ecosystems on a national level, but they are often doing so only in their country's language. These initiatives must be brought together so that their results can be compared and benchmarked. The European Startup Monitor has used only the data generated by one multilingual online survey of European founders, and it has used same methodology throughout.

We would like to thank KPMG and Telefónica Germany GmbH for sponsoring and supporting the European Startup Monitor. A special thanks to everyone who was involved in promoting the study, who was open to sharing ideas and networks and who was overall supportive of working together on a voluntary basis. All international partners and universities supported the study pro bono, which would not have been possible in many other sectors. We hope to be able to develop the study further in cooperation with the European ecosystems, making the European Startup Monitor a holistic initiative created by and for founders out of pure enthusiasm for startups and innovation.

Lisa Schreier – Head of Research & International Strategy, German Startups Association


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European Startup Network

As one result of the European Startup Monitor's positive partnership with many European representatives of startups, the German Startups Association has joined with Startup.be (the Belgian Startup Association) to initiate the European Startup Network. Currently, 18 other countries have joined.

We believe that, in order to make rapid legislative adaptation possible, startups must be understood and the relevant areas of improvement need to be clearly identified. This can be done by combining scientific research with practical knowledge and best practice examples from all European startup ecosystems.
The national startup associations have, as part of the European Startup Monitor, proven that they are more than willing to work together, share best practices and leverage their national networks at a European level to coordinate actions and communicate for the benefit of their national startups.

With the intention of connecting the national startup ecosystems across Europe and thus creating a platform for best practice exchange and European policy suggestions made by and for founders, many startup associations have committed and contributed to creating the European Startup Network.

This network will work on three areas:

1. Data analysis to support policy making
2. Facilitate international go-to-market
3. Build strong national startup ecosystems

For more information visit
www.europeanstartups.org
or follow the European Startup Network on Twitter
@StartupEurope

The German Startups Association

The German Startups Associationhas been a representative and voice of startups in Germany since 2012 and is committed to establishing a founder-friendly environment. This is done by engaging decision-makers in politics, developing proposals that encourage a culture of self-employment and reducing the barriers to starting a business. The association promotes innovative entrepreneurship and wants to establish an entrepreneurship mentality in society. The association is initiating events and startups exchanges between different ecosystems, such as Silicon Valley, New York and Tel Aviv to connect founders, startups and their friends with each other as a broad network. The association has more than 650 members, including 500 startups. The association performs research on the startup ecosystems in Germany (the German Startup Monitor) as well as across Europe (the European Startup Monitor). It is an initiative founded by and for founders. It is an initiative founded by and for founders.

Lisa Schreier (M.Sc.) is Head of Research & International Strategy at the German Startups Association. She is responsible for both the German Startup Monitor and the European Startup Monitor and initiated the European Startup Network (ESN). She graduated from ESCP-Europe with a Master of Science in European Management. She has lived, worked and studied in Berlin, Cambridge and New York and has long-term experience in the consulting and governmental sectors. Lisa speaks frequently at national and international trade events and presents the results of studies, the German startup ecosystem and best practices from other European countries and Israel.

Lukas Wiese is Manager for Research & International strategy at the German Startups Association. He is responsible for the community management of the German Startup Monitor and supports the European Startup Monitor and the expansion of the association's international relations. Lukas completed his Bachelor's degree in International Relations in the Netherlands and Mexico and graduated with a Master of Public Policy from the Hertie School of Governance and Bocconi University. He has experience in the governmental sector and in the fields of political communication and interest representation.

German Startups Association

Acadamic lead

The chair of business studies and business informatics, in particular e-business and e-entrepreneurship (netCAMPUS—We start your e-entrepreneurship), is located at the University of Duisburg-Essen and is led by Dr. Tobias Kollmann. The research group develops quality solutions for theoretical and practical issues in the scope of the digital economy. The chair occupies itself with current topics associated with electronic business processes but also fosters interdisciplinary research in the classic research fields of business studies and business informatics. In the field of teaching, the chair pursues a special link between economic and technical areas with a special focus on qualification and startups in e-business. There are two main aims: to contribute and intensify the usage of digital business processes (e-business) and to foster the foundation of startups in the digital economy (e-entrepreneurship).

netCAMPUS
WE START YOUR E-ENTREPRENEURSHIP

Under the flag "netSTART—We start your e-business", Dr. Tobias Kollmann offers a variety of keynote presentations, speeches, seminars and workshops for individuals and companies that consider the digital transformation to be a necessity in their business. The topics cover economic, societal, technological and political aspects of the digital economy, digital innovation and digital transformation. More than 200 companies—from small and medium-sized firms to large corporations—have used this opportunity in the last ten years. Renowned clients include large banks, media and publishing companies, educational institutions and political parties.

netSTART
WE START YOUR E-BUSINESS

Prof. Dr. Tobias Kollmann holds the chair of e-business and e-entrepreneurship at the University of Duisburg-Essen in Germany. Since 1996, he has addressed research questions in the fields of the internet, e-business and e-commerce. As a co-founder of AutoScout24, he is among the pioneers of the German internet economy and electronic marketplaces. He is the author of numerous books and expert practice-based articles in the areas of e-entrepreneurship, e-business and acceptance/marketing in new media. For his research and funding in this area, Dr. Kollmann

has received a special award at the UNESCO Entrepreneurship Awards (Entrepreneurial Thinking and Acting) in 2007. As a business angel, he has supported and financed several startups over the past 15 years and was recognised as Business Angel of the Year by the Business Angels Network Germany e. V. in 2012. Since 2013, Dr. Kollmann has been the chairman of the Young Digital Economy Advisory Board for the German Federal Ministry of Economic Affairs and Energy. In 2014, Germany's largest federal state, North Rhine-Westphalia, appointed him as its representative on issues of the digital economy. Against this background, Dr. Kollmann has become a popular speaker on topics with regard to the digital economy, digital transformation and digital change. According to the journal Business Punk (2nd edition, 2014), he ranks among the 50 most important leaders of the startup scene in Germany.

Dr. Christoph Stöckmann is a post-doctoral researcher ("Akademischer Oberrat") at the University of Duisburg-Essen, Germany, where he is a member of the e-business and e-entrepreneurship research group in the faculty of economics and business administration. He holds a German diploma (MSc equivalent) in business administration and information systems and has received his doctoral degree (after writing a thesis on entrepreneurial management in adolescent ICT companies) from the University of Duisburg-Essen, Germany, in 2009. His professional experience includes project management as well as consulting in entrepreneurial and innovation management in young growth companies and established companies. His research on various aspects of entrepreneurship, innovation and the digital economy has been presented at numerous national and international conferences and in top-tier academic journals such as *Entrepreneurship Theory and Practice (ET&P).*

Simon Hensellek, (M. Sc.) is a research associate and doctoral candidate in the e-business and e-entrepreneurship research group at the Universityof Duisburg-Essen and is a founder in the field of e-business. He studied management and economics with a focus on accounting and innovation management at the Ruhr-University Bochum and Utrecht University School of Economics. In his doctoral thesis, Mr. Hensellek examines entrepreneurial factors and mechanisms in corporate and startup contexts and their implications for innovation and performance. His research has been presented at national and international conferences, such as the ACERE, BCERC and AOM (Best Paper Proceedings 2016). Together with Dr. Tobias Kollmann, he also developed the e-business model generator (www.e-business-generator.de).

Julia Kensbock (M. Sc.) is a research associate and doctoral candidate at the e-business and e-entrepreneurship research group located at the University of Duisburg-Essen. She studied psychology with a focuson industrial and organisational psychology at the universities of Mannheim and Konstanz. Combining the fields of psychology and management in her doctoral thesis, she addresses various psychological factors that have an impact on the behaviour of individuals during entrepreneurial activities and in organisational contexts.

International academic partners

Dr. Rudolf Dömötör (WU Viena) – Director of the Entrepreneurship Center Network (ECN) at the Institute for Entrepreneurship & Innovation. ECN is a joint initiative of six Viennese universities.

Antonio Grilo (Lisbon NOVA University) – Assistant Professor with habilitation of Industrial Engineering and Management at Universidade NOVA de Lisboa. He lectures Entrepreneurship, Information Systems, Decision Models, and Economics Engineering in Doctoral, Master and Undergraduate degrees.

George Kassinis (University of Cyprus) – Associate Professor of Strategy at the Department of Business & Public Administration of the University of Cyprus. His research focuses on the strategic choices organizations make in dynamic environments and the implications of these choices on competitiveness and performance.

Laszlo Kallay, PhD (Corvinus University of Budapest) – Associate Professor at Corvinus University of Bundapest. He has worked in research institutes, public administration, and higher education and has 25 years of experience in economic development with special emphasis on small and medium sized enterprises (SMEs).

Alexis Komselis (ALBA Graduate Business School at the American College of Greece) – Co-founder and director of AHEAD - ALBA Hub for Entrepreneurship and Development at ALBA Graduate Business School. Alexis is an entrepreneurship and family business educator, researcher and practitioner with an expertise in business modelling and family business sustainability. He is currently teaching theoretical and experiential courses for the MSc in Entrepreneurship at ALBA.

Omar Mohout (Antwerp Management School) – former technology entrepreneur, is a widely published technology author, C-level advisor to high growth startups as well as Fortune 500 companies, a columnist and a keynote speaker on technology, marketing and innovation topics at leading conferences like WebTomorrow, Creativity World Forum, Data Science Summit, Hooked Fest, Need4Speed, Revolve! Conference and The Sales Summit.

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Dr. Federico Pablo-Martí (Institute for Economic and Social Analysis at the University of Alcalá) – Professor at the Department of Economics and a research associate for the Institute for Economic and Social Analysis at the University of Alcala (Spain). His main research areas include Entrepreneurship, Regional Economics and Agent Based Simulation. Currently, his focus is on the study of Business Management from the perspective of the Complexity Science.

Universidad de Alcalá

Prof. Dr. Adrian W. Müller (School of Management and Law at the Zurich University of Applied Sciences) – Professor for Innovation Management and Entrepreneurship and Head of the Center for Innovation and Entrepreneurship at Zurich University of Applied Sciences. His main research areas include the different types and aspects of entrepreneurial innovation in startups or corporate startup initiatives. Besides this, Adrian Müller acts as a start-up trainer and faculty board member for "Startup Campus. CTI Entrepreneurship" which is the official startup promotion program of the Swiss state.

Zurich University of Applied Sciences
zh aw School of Management and Law

Miroslav Rebernik, PhD (University of Maribor) – Professor of Entrepreneurship and Business Economics at the University of Maribor, Slovenia. He holds the Entrepreneurship and Business Economics Chair, and is Director of the Institute for Entrepreneurship and Small Business Management at the Faculty of Economics and Business. He is leading research teams for the Slovenian Entrepreneurship Observatory and for GEM Slovenia.

Univerza v Mariboru

Sponsors

KPMG is a network of professional firms with more than 162,000 employees in 155 countries. In Germany, KPMG is one of the leading auditing and advisory firms, with around 9,600 employees at more than 20 locations.

Its services are divided into the following functions: audit, tax and advisory. It has established teams of interdisciplinary specialists for key industries of the economy. These pool the experience of experts around the world and further enhance the quality of the advisory services. KPMG's Smart Start Team has set itself the task of supporting entrepreneurs in getting their businesses up and running. They know the typical challenges that arise in the lifecycle of a startup. Regardless of whether you are just getting a good idea off the ground, looking for investors or already enjoying your first sales, the KPMG team is there to assist you with any business or legal issues.

*Legal services are provided by KPMG Rechtsanwaltsgesellschaft mbH.

Telefónica Deutschland – With 43.4 million mobile connections, Telefónica Deutschland is the market leader among mobile providers in Germany. The company, which has included the E-Plus Group since 1 October 2014, manages a total of 48.6 million customer connections, making it one of the three leading integrated telecommunications providers on the German market. Revenues for the 2015 financial year amounted to 7.89 billion Euros.

Listed on the Frankfurt Stock Exchange since 2012, the company provides mobile and fixed services, including voice, data and value-added services, to private and business customers in Germany. The indirect majority shareholder is the Spanish company Telefónica S.A.—one of the world's largest telecommunications providers.

The company's well-known core brand is O2. As part of its multi-brand strategy, Telefónica Deutschland also maintains numerous second brands, including Blau, BASE, FONIC, netzclub and simyo, as well as partnerships, including those with Ay Yildiz, Tchibo Mobil and Ortel Mobile, which help it reach additional customer groups. Thanks to its successful multi-brand strategy, the company is a leading provider of smartphone tariffs and products.

With its ambition as the leading digital telco in Germany, Telefónica Deutschland aims to give people access to technology and drive social progress through digital products and services.

Find out more about Telefónica Deutschland: www.telefonica.de/home-corporate-en

Endnotes

1 The total sample size of 2,515 participants in the ESM 2016 is described by "n". For particular questions, the sample size can be lower than 2,515.

2 If possible, data from the previous ESM (Kollmann/Stöckmann/Linstaedt/Kensbock 2015) was used for comparison. However, previous data was not available for some questions included in this year's study.

Lottery winnings

Lottery winnings were sponsored by

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