Report from the EU H2020 Research Project Ps2Share:
Participation, Privacy, and Power in the Sharing Economy

# European Perspectives on Participation in the Sharing Economy

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# 1. Introduction: Participation in the Sharing Economy

Recent analyses have indicated a rising share of Europeans participating in the sharing economy (Eurobarometer, 2016). However, few studies have delved deeply into the distinctions between those participating in the sharing economy and those abstaining. Also, little is known about the distinctions between those participating in either a provider or a consumer capacity. This report will provide empirical findings on participation and non-participation in the European sharing economy based on a large-scale survey of citizens in twelve European countries. We base our analysis on a model of the 'sharing divide' derived from previous research on sharing behaviors (Andreotti, Anselmi, Eichhorn, Hoffmann, & Micheli, 2017) as well as digital divide research (Van Dijk, 2005).

Our research is motivated by the assumption that the burgeoning and increasingly professionalized sharing economy (Belk, 2014; Eckhardt & Bardhi, 2015) may provide chances for those participating in it – in terms of social interaction, social capital, and trust, but also in terms of profits from slack resources and new opportunities for generating income. Yet, it may also pose challenges as those participating may enjoy benefits unavailable to non-participants. Also, benefits may be quite unevenly distributed among those participating in different capacities.

By analyzing levels of familiarity and awareness, we focus on four distinct types of sharing (non-)participants: consumers, providers, aware non-users, and non-aware non-users. We analyze motives for sharing participation, opportunity (i.e., Internet access and use), and capabilities (more specifically: sharing self-efficacy). We highlight the rationales of those not participating in the sharing economy and analyze outcomes for active participants.

This report is part of a European Union Horizon 2020 Research Project on the sharing economy: Ps2Share 'Participation, Privacy, and Power in the Sharing Economy' (www.ps2share.eu). We aim to foster better awareness of the consequences which the sharing economy has on the way people behave, think, interact, and socialize across Europe. Our overarching objective is to identify key challenges of the sharing economy and improve Europe's digital services through providing recommendations to Europe's institutions. For the purpose of this research project, we define sharing as 'a reciprocal exchange process, whereby individuals share their personal goods with others for use through a digital platform.'

The initial stage of this Research Project involved a set of three literature reviews of the state of research on three core topics in relation to the sharing economy: participation (Andreotti et al., 2017), privacy (Ranzini, Etter, Lutz, & Vermeulen, 2017), and power (Newlands, Lutz, & Fieseler, 2017a). Also focus groups with 'millennial' sharers and non-sharers were conducted in six European countries. The third step consisted of a large-scale survey of citizens of twelve European countries, the results of which are to be found in the Appendix below, and in the sister reports on privacy in the sharing economy (Ranzini, Etter, & Vermeulen, 2017) and power in the sharing economy (Newlands, Lutz, & Fieseler, 2017b).

The structure of this report follows a theoretical model developed based on a previous literature review of research on the sharing economy (Andreotti et al., 2017 – see Figure 1).

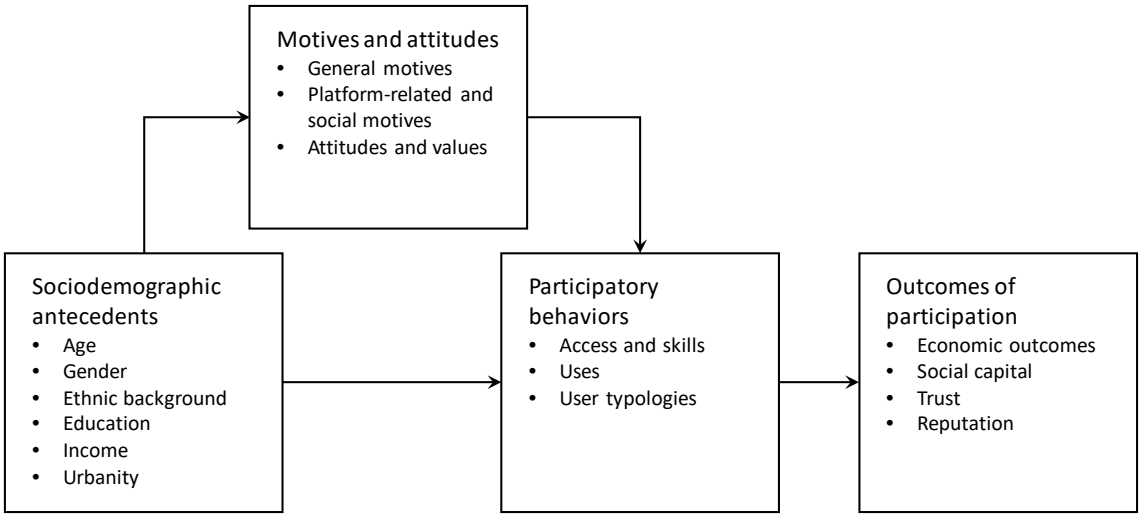



***Figure 1:*** *Analytical framework*

We assume that a number of sociodemographic antecedents affect participation in the sharing economy, such as age, gender, education, or income. These variables may directly influence participatory behaviors, but may also affect relevant antecedents. Based on Van Dijk (2005), we analyze user motivation, access (here: Internet use frequency and access), and skills (here: sharing self-efficacy) as antecedents of sharing (or non-sharing). We then differentiate reasons for non-participation given by non-users of various levels of awareness of the sharing economy. Finally, we analyze non-economic and economic outcomes for those who do participate in the sharing economy. Based on this framework, we provide a differentiated understanding both of participation and non-participation in the European sharing economy.

# 2. Participation and Non-Participation in the Sharing Economy

**Short summary**

In this section, we address the core question of this report: What is the level of participation in the sharing economy among the surveyed European population? We find that a majority of respondents are not engaged in the sharing economy. Only 18.7% report having consumed sharing services in the past, while 9.1% say they have offered a good or service as a provider. This is a slight increase compared to earlier surveys (Eurobarometer, 2016). Among non-participants, the largest share (62.5%) has heard of sharing services, but has not used any themselves. Among the twelve surveyed countries, France and the UK show the highest share of sharing participants. However, while the UK has a large share of consumers, France features the highest proportion of sharing providers.

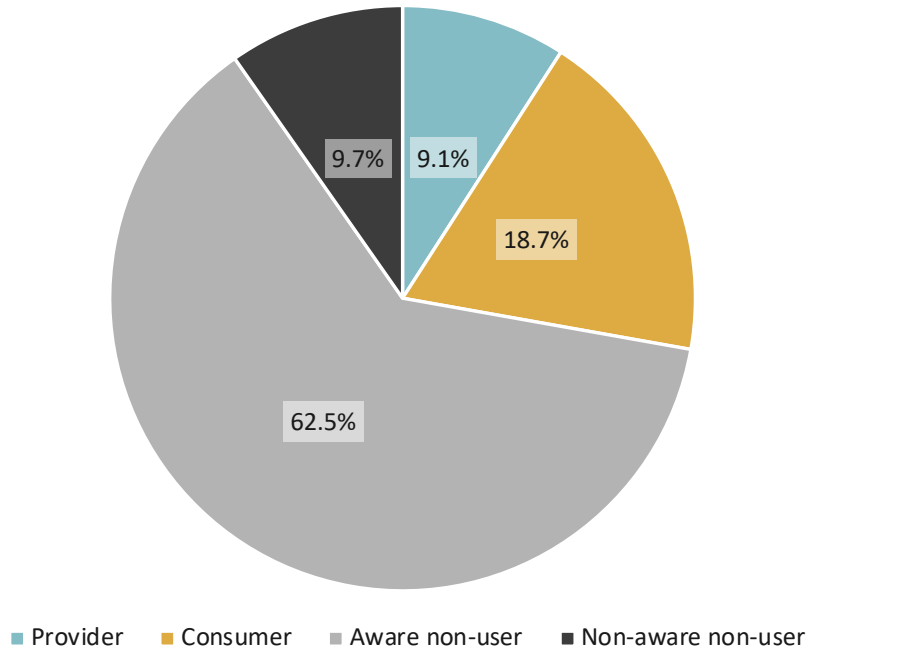
We find that sharing participation is most common among young, well-educated, and higher income Europeans (cf., PwC, 2016; ING, 2015; Deloitte, 2015). While awareness of the sharing economy is widespread among older respondents, they choose not to engage in it. Lower-educated respondents do provide some sharing services, but levels of consumption rise rapidly with rising educational attainment. We find a similar structure when comparing income categories (for this purpose, the sample was divided into quartiles). While lower-income Europeans do engage as providers, higher-income Europeans are notably more engaged as consumers.

Given their relatively high education- and income-levels, it is unsurprising that sharing consumers feature the highest levels of Internet skills, followed by providers. The older and lower-educated non-participants, in turn, feature lower Internet skill-levels. While we don't find a gender divide in terms of consumption of sharing services, men do tend to be more engaged in the sharing economy as providers.

When differentiating sharing services (in particular: car-, home-, food-, goods- and finance-sharing), it becomes apparent that the European sharing economy is largely comprised of car- and home-sharing. The other three services show much lower overall levels of participation. Also, they are much less known among non-participants, who largely know of car- and home-sharing. The prominent status of car- and home-sharing is mirrored in the composition of non-participants: those not aware of car- and home-sharing feature lower levels of education and Internet skills.

We find that the five analyzed sharing service types also differ somewhat in their composition of participants. While consuming home-sharing services is more common among higher-income individuals, the same doesn't hold for car-sharing, which is quite equally common across income quartiles. Providers of the less well-known goods- or finance-sharing services tend to be particularly young. Also, both services are skewed towards male participants, in terms of providers as well as consumers (cf., Schor et al., 2016). Possibly, younger male Europeans are more ready to experiment with smaller, unfamiliar services.

**Majority of Europeans are familiar with the sharing economy – but are not participating**

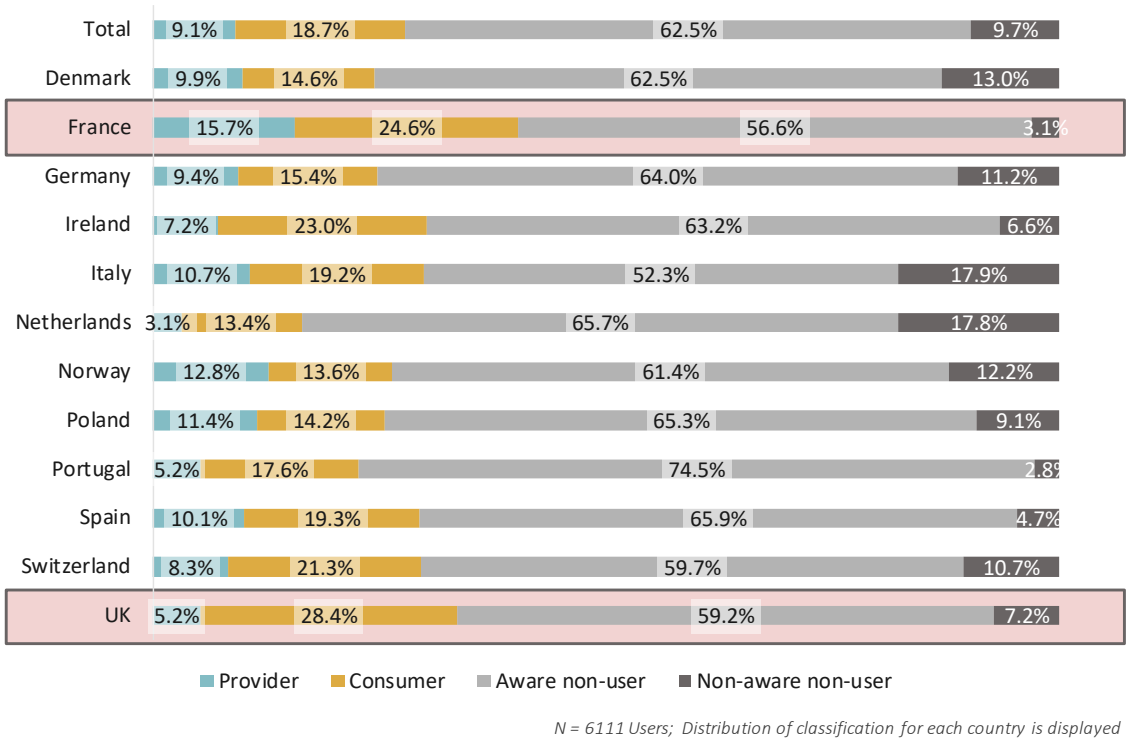



*N = 6111 Users and Non-Users (categorized as Providers, Consumers, Aware and Non-aware non-users)*

*Figure 2: Sharing participation; total sample*

Overall, we find that 9.1% of surveyed Europeans have provided something on a digital sharing platform (of which many have also consumed sharing services). 18.7% of respondents have only consumed sharing services. 62.5% have heard of, but never used any sharing services. A further 9.7% isn't even aware of sharing services. Therefore, participation in the sharing economy is still a minority phenomenon – both in terms of active and passive participation.

**France and the UK are the leaders in sharing participation**

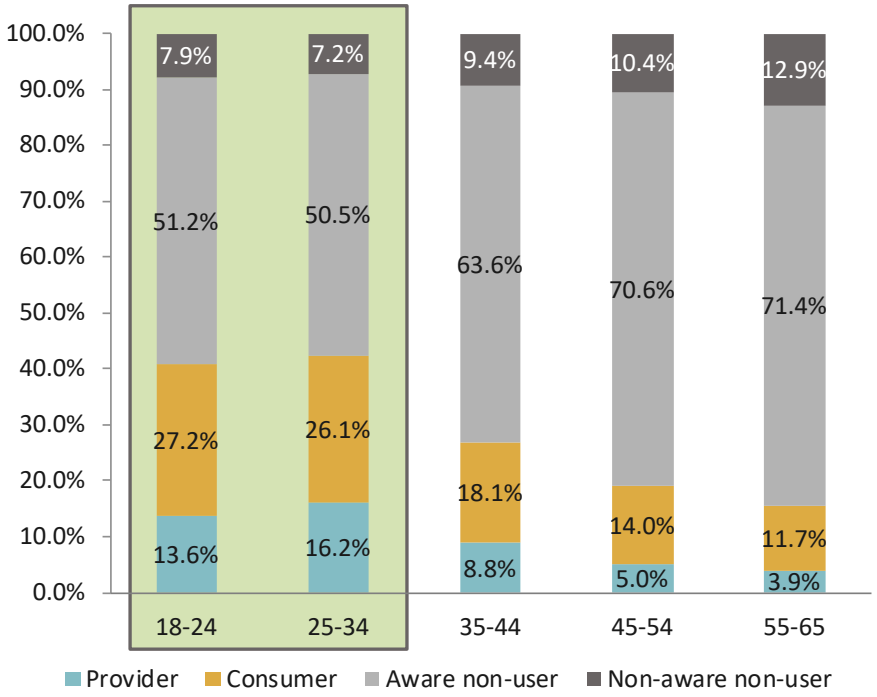



*N = 6111 Users; Distribution of classification for each country is displayed*

***Figure 3:*** *Sharing participation by country*

Comparing the countries included within the sample, we find that awareness of the sharing economy is relatively low in Italy and the Netherlands, followed by Denmark and Norway. Reversely, France and the UK report the highest levels of sharing participation. There are, however, some notable differences with consumptive participation being particularly high in UK (28.4%), but the provision of sharing services is far more common in France (15.7% - vs. only 5.2% in UK). The lowest share of sharing participation is found in the Netherlands with only 3.1% providers and 13.4% consumers.

**25-34 year olds are the most engaged in the sharing economy**

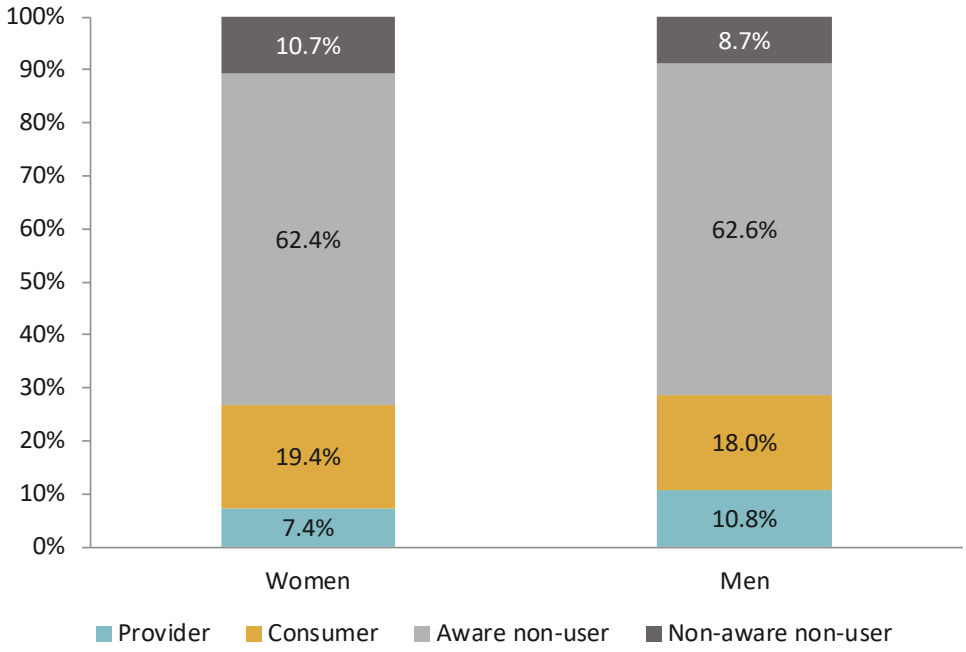



*N = 6111; Distribution of Provider, Consumer, Non-Users (Aware and Unaware) in different age groups is displayed*

***Figure 4:*** *Sharing participation by age group*

Sharing is a relatively "young" phenomenon, with a peak in the age group between 25 and 34 years of age. Here, 16.2% of the sample have provided a sharing service. Sharing consumption is the most common in the youngest age cohort (18-24 years). Here, 27.2% have consumed sharing services. Above 45 years of age, participants tend to be slightly less aware of the sharing economy. More notably, they abstain from participating in the sharing economy despite being aware of it.

**Male Europeans participate in the sharing economy slightly more than female Europeans**

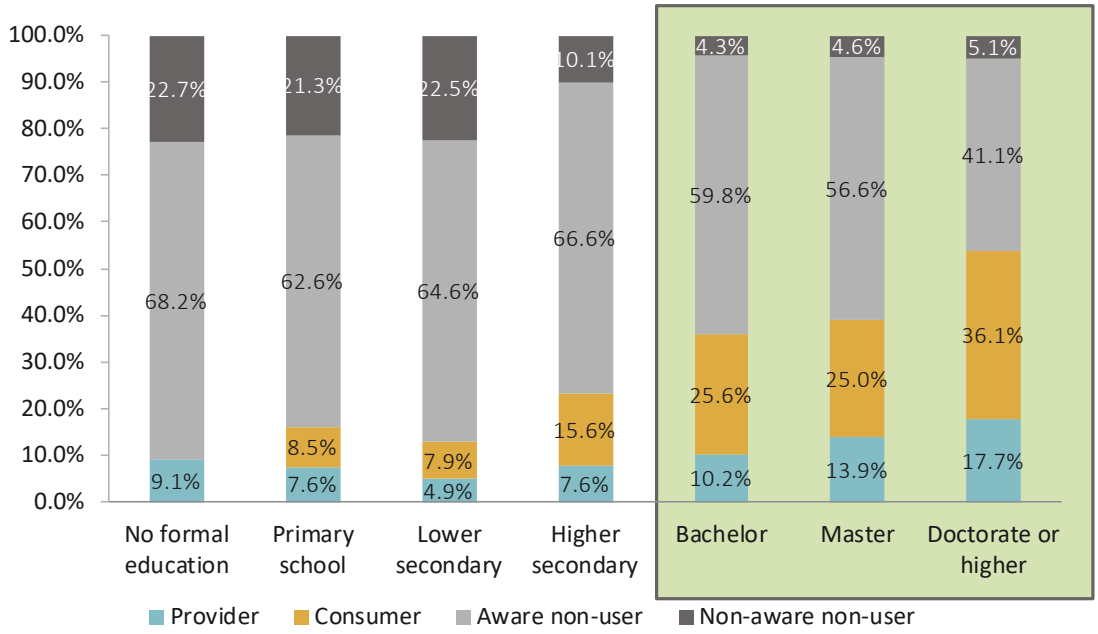



*N = 6111; Distribution of Provider, Consumer, Non-Users (Aware and Unaware) between men and women is displayed*

***Figure 5:*** *Sharing participation by gender*

Providing is more common among male European respondents (10.8% vs. 7.4%). However, f male respondents consume sharing services a bit more frequently (19.4% vs. 18%). This indicates a slightly gendered imbalance in sharing participation.

**Sharing participation is strongly related to education**

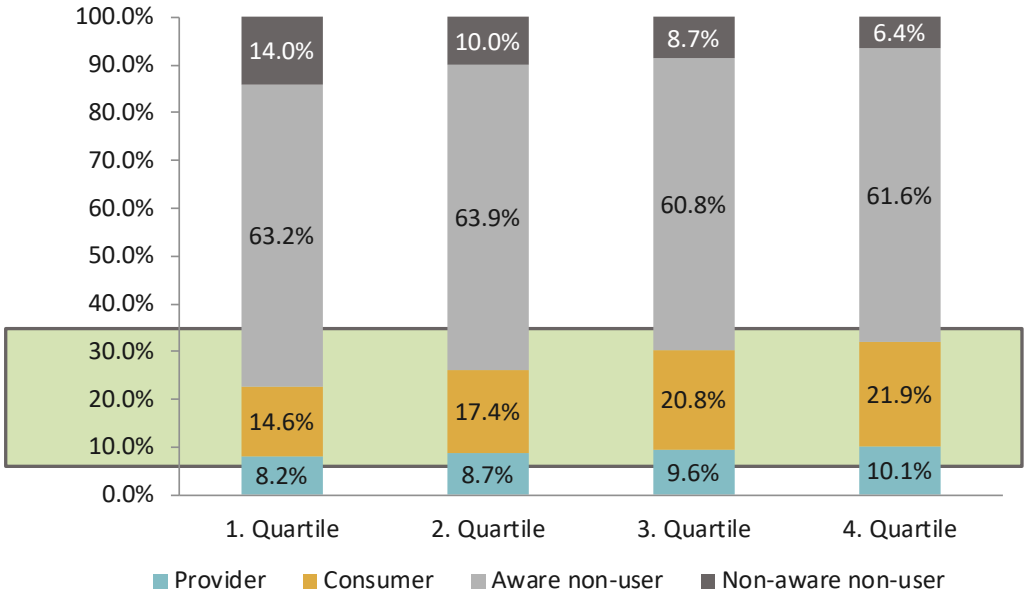



*N = 6111; Distribution of Provider, Consumer, Non-Users (Aware and Unaware) in different levels of education is displayed*

***Figure 6:*** *Sharing participation by education level*

Sharing participation is strongly related to educational attainment. Lower educated participants are much more likely to be unaware of sharing services. This result is found despite providing survey participants a detailed explanation of the sharing economy and service examples. Among those with a doctorate or higher, only a minority of 46.2% have not yet participated in the sharing economy. This paints a picture of quite an elite audience for sharing services.

**Sharing participation increases with income**




*N = 6111; Distribution of Provider, Consumer, Non-Users (Aware and Unaware) in different income levels is displayed*
*Quartiles cut the distribution of income in approximately even quarters*
*(e.g. first quartile represents the lowest 25% of the income distribution)*

*Figure 7: Sharing participation by income quartile*

Analyzing the income distribution of the sample reveals that sharing participation is also more common among higher income Europeans, yet the pattern is less striking than in the case of educational attainment. Even within the fourth income quartile, a majority of 68% does not participate in the sharing economy.

**Non-participation is related to lower online skill-levels**

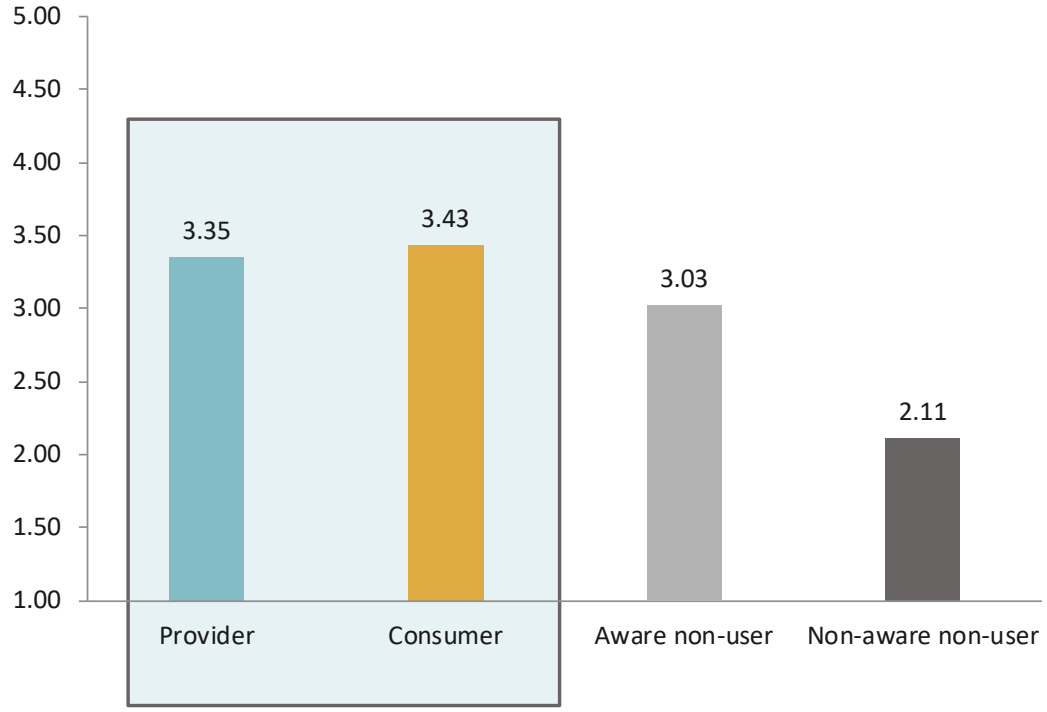



*Figure 8: Sharing participation by Internet skills (Means, scale 1-5)*

Interestingly, while participants in the sharing economy are more skilled Internet users than non-participants, sharing providers do not exhibit higher online skill-levels than sharing consumers.

**Car- and home-sharing services dominate usage of the sharing economy**

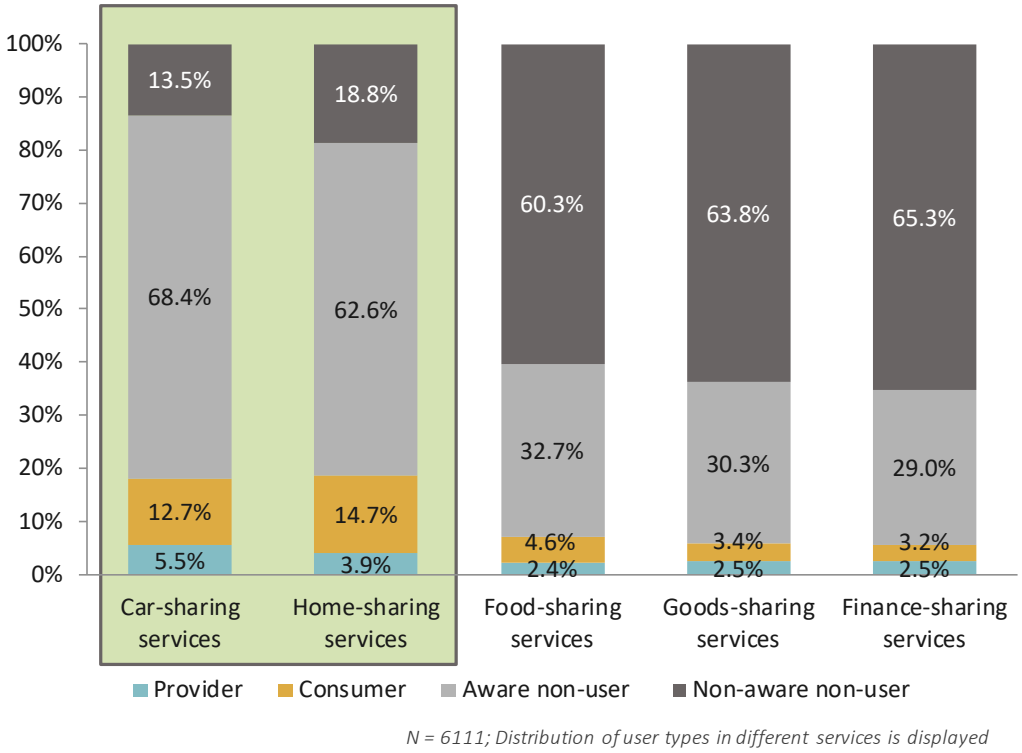



*Figure 9: Sharing participation by service; total sample*

When differentiating for distinct sharing services, it becomes quickly apparent that to European users, the sharing economy is primarily driven by car-sharing and home-sharing services. Food-, goods-, and finance-sharing services are much more unknown. Among car- and home-sharing, the relation of providers to consumers is quite interesting. 5.5% of respondents have provided car-sharing services, whereas 12.7% have consumed them. Only 3.9% of respondents have provided home-sharing services, while 14.7% have consumed them. Accordingly, the proportion of providers to consumers is much smaller in home-sharing compared to car-sharing.

**Car-sharing is the most common in the UK; Home-sharing is the most common in France**

| | *In percent* | Provider | Consumer | Aware Non-User | Non-Aware |
|---|---|---|---|---|---|
| Denmark | Car-sharing | 4.7% | 10.1% | 65.8% | 19.4% |
| | Home-sharing | 5.9% | 12.8% | 58.5% | 22.7% |
| | Food-sharing | 2.8% | 6.1% | 23.3% | 67.8% |
| | Goods-sharing | 3.2% | 4.9% | 23.7% | 68.2% |
| | Finance-sharing | 3.0% | 4.5% | 19.6% | 72.9% |
| France | Car-sharing | 13.4% | 16.1% | 66.8% | 3.7% |
| | Home-sharing | 3.3% | 24.8% | 64.4% | 7.5% |
| | Food-sharing | 1.2% | 1.2% | 26.3% | 71.3% |
| | Goods-sharing | 1.4% | 1.4% | 30.1% | 67.2% |
| | Finance-sharing | 1.2% | 1.4% | 28.3% | 69.2% |
| Germany | Car-sharing | 6.2% | 10.4% | 70.4% | 13.0% |
| | Home-sharing | 3.8% | 8.2% | 70.4% | 17.6% |
| | Food-sharing | 3.4% | 4.2% | 42.4% | 50.0% |
| | Goods-sharing | 2.8% | 2.2% | 41.8% | 53.2% |
| | Finance-sharing | 3.2% | 2.6% | 49.4% | 44.8% |
| Ireland | Car-sharing | 3.0% | 12.6% | 68% | 16.4% |
| | Home-sharing | 5.0% | 19.2% | 65.2% | 10.6% |
| | Food-sharing | 3.0% | 5.6% | 29.2% | 62.2% |
| | Goods-sharing | 2.8% | 3.2% | 22.6% | 71.4% |
| | Finance-sharing | 2.4% | 3.4% | 23.0% | 71.2% |

| | Provider | Consumer | Aware Non-User | Non-Aware |
|---|---|---|---|---|
| Italy | Car-sharing | 6.0% | 12.8% | 61.8% | 19.4% |
| | Home-sharing | 6.2% | 16.5% | 48.9% | 28.4% |
| | Food-sharing | 2.6% | 6.4% | 41.2% | 49.8% |
| | Goods-sharing | 2.8% | 3.8% | 30.6% | 62.8% |
| | Finance-sharing | 2.8% | 4.7% | 28.6% | 63.9% |
| Netherlands | Car-sharing | 1.6% | 4.5% | 67.4% | 26.6% |
| | Home-sharing | 1.4% | 11.6% | 64.3% | 22.7% |
| | Food-sharing | 0.6% | 1.4% | 39.0% | 59.1% |
| | Goods-sharing | 1.6% | 2.1% | 38.8% | 57.6% |
| | Finance-sharing | 0.8% | 1.6% | 21.9% | 75.8% |
| Norway | Car-sharing | 6.8% | 10.4% | 66.0% | 16.8% |
| | Home-sharing | 7.4% | 12.2% | 58.6% | 21.8% |
| | Food-sharing | 4.2% | 7.2% | 31.4% | 57.2% |
| | Goods-sharing | 3.8% | 6.0% | 27.6% | 62.6% |
| | Finance-sharing | 5.8% | 5.2% | 24.2% | 64.8% |
| Poland | Car-sharing | 7.9% | 13.2% | 68.6% | 10.3% |
| | Home-sharing | 2.8% | 7.9% | 52.9% | 36.5% |
| | Food-sharing | 3.0% | 3.7% | 27.2% | 66.1% |
| | Goods-sharing | 3.4% | 3.2% | 26.0% | 67.5% |
| | Finance-sharing | 3.2% | 3.2% | 32.5% | 61.1% |

*Figure 10: Sharing participation by service and country (1/2)*

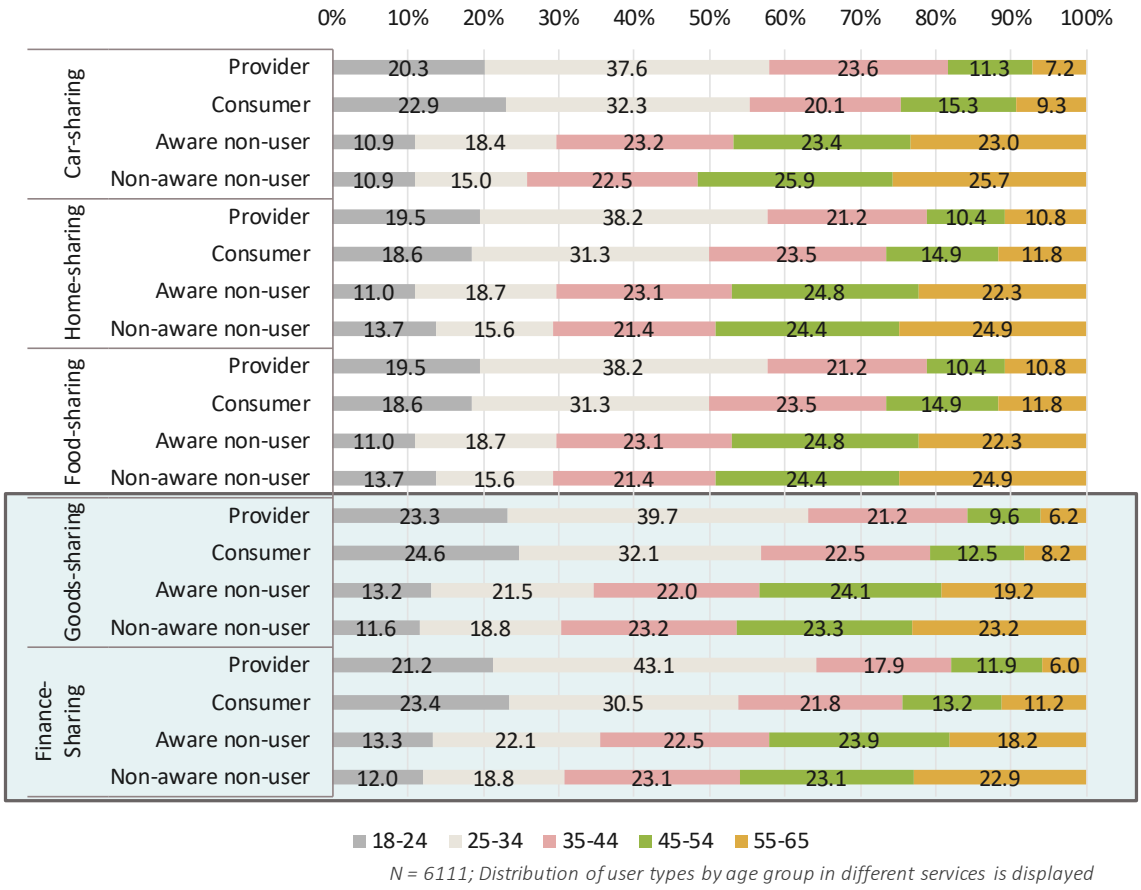
| | | In percent | Provider | Consumer | Aware Non-User | Non-Aware |
|---|---|---|---|---|---|---|
|  | Portugal | Car-sharing | 2.4% | 13.4% | 81.0% | 3.2% |
| | | Home-sharing | 3.2% | 10.8% | 70.9% | 15.2% |
| | | Food-sharing | 1.6% | 2.4% | 37.3% | 58.7% |
| | | Goods-sharing | 1.4% | 1.6% | 35.9% | 61.1% |
| | | Finance-sharing | 1.6% | 1.2% | 29.7% | 67.5% |
|  | Spain | Car-sharing | 8.4% | 12.9% | 72.7% | 6.0% |
| | | Home-sharing | 3.0% | 16.3% | 67.4% | 13.3% |
| | | Food-sharing | 2.2% | 6.0% | 33.7% | 58.1% |
| | | Goods-sharing | 2.1% | 4.3% | 29.4% | 64.2% |
| | | Finance-sharing | 2.1% | 3.7% | 30.1% | 64.0% |
|  | Switzerland | Car-sharing | 3.6% | 14.2% | 65.2% | 17.0% |
| | | Home-sharing | 3.0% | 18.2% | 62.6% | 16.2% |
| | | Food-sharing | 2.6% | 5.1% | 32.0% | 60.3% |
| | | Goods-sharing | 2.2% | 4.0% | 31.4% | 62.5% |
| | | Finance-sharing | 2.2% | 3.8% | 26.1% | 68.0% |
|  | UK | Car-sharing | 1.6% | 22.0% | 66.8% | 9.6% |
| | | Home-sharing | 2.4% | 17.8% | 67.6% | 12.2% |
| | | Food-sharing | 1.6% | 5.6% | 28.8% | 64.0% |
| | | Goods-sharing | 2.4% | 4.0% | 25.6% | 68.0% |
| | | Finance-sharing | 1.6% | 3.4% | 34.6% | 60.4% |

*Figure 11: Sharing participation by service and country (2/2)*

The general pattern of familiarity towards sharing services is very similar throughout Europe. In most countries, car-sharing is the most familiar form of sharing. However, in Switzerland, Ireland, and the Netherlands, home-sharing enjoys wider recognition. Home-sharing is notably little known in Poland. When considering the less well-known services, finance- and goods-sharing are best known in Germany, whereas food-sharing is familiar to a large share of Italians.

In terms of consumption, the French are especially experienced with home-sharing (24.8%), while the British are most familiar with using car-sharing services (22%). In terms of providers, 13.4% of the French participants report having provided car-sharing services and 7.4% of Norwegian participants say they have provided home-sharing services.

**Younger Europeans are more likely to provide sharing services**

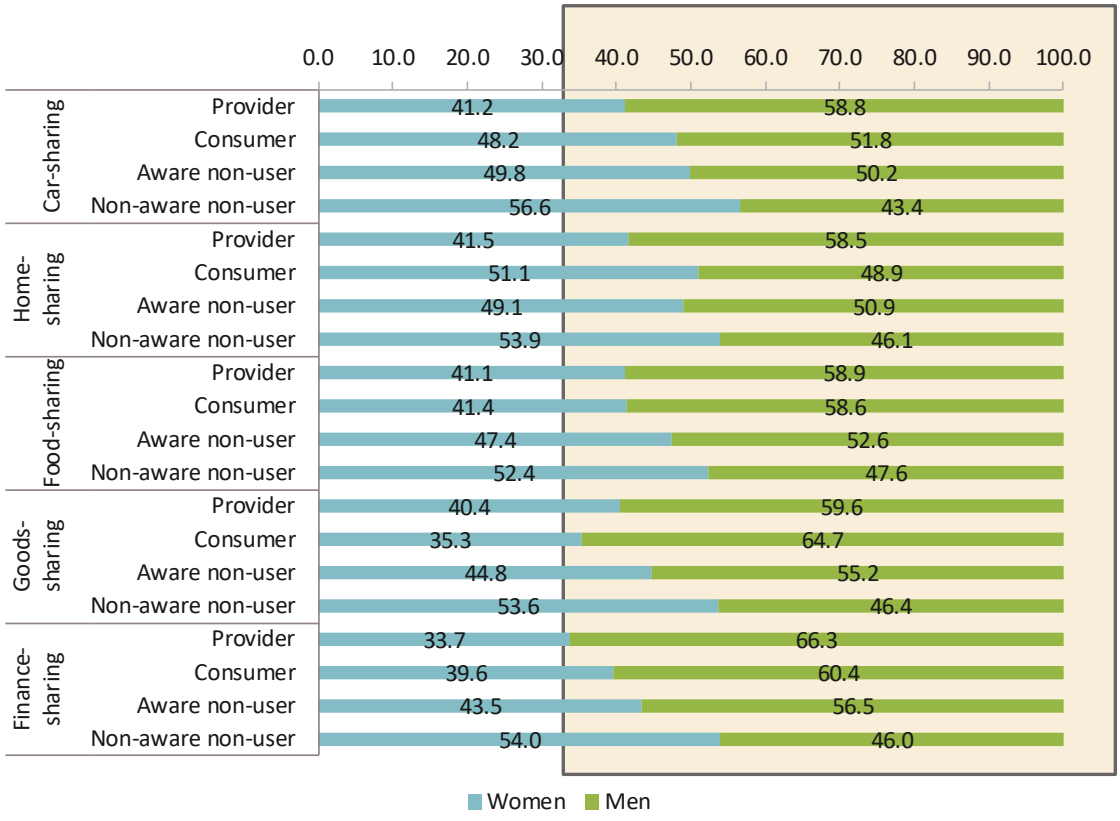



*N = 6111; Distribution of user types by age group in different services is displayed*

***Figure 12:*** *Sharing participation by service and age*

We find that sharing participation – both as a provider and a consumer – is skewed towards younger people. Also, providers of all five analyzed service types are younger, on average, than consumers. Providers of finance- and goods-sharing services are found to be especially young, while consumers of home- and food-sharing are relatively old, on average.

**Men more readily provide sharing services than women**

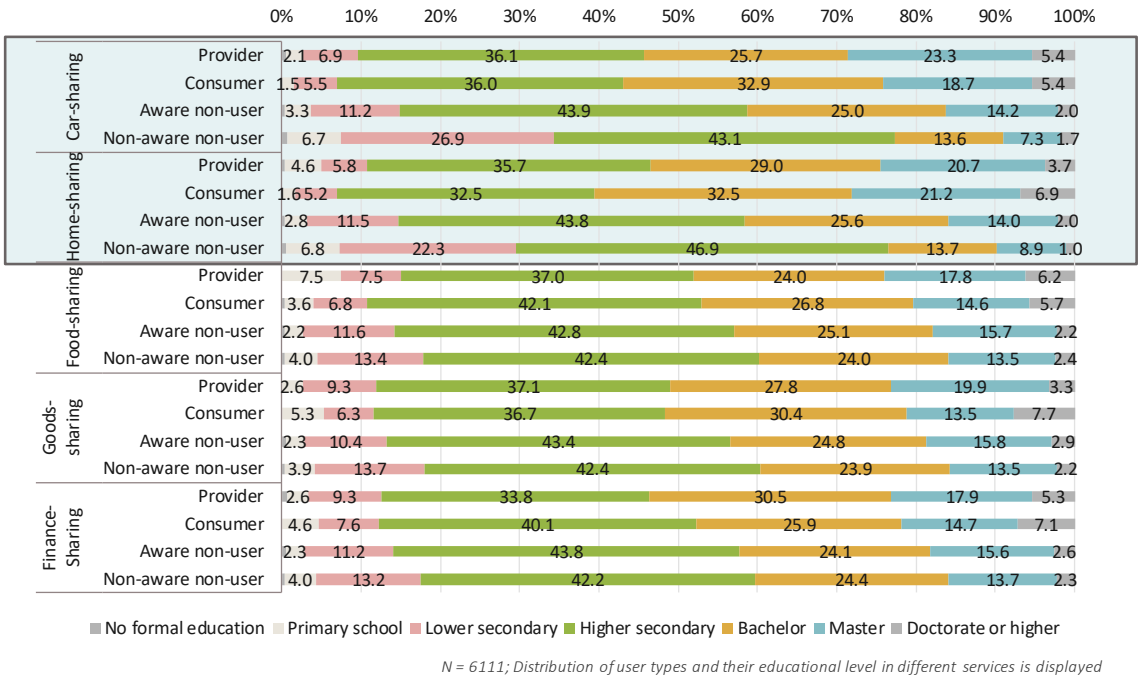



*N = 6111; Ratio of women and men in different services is displayed*

***Figure 13:*** *Sharing participation by service and income quartiles*

Across all five analyzed sharing service types, a majority of providers are male, with finance-sharing being especially male dominated (66.3% percent of providers). For consumers, the proportion of men and women is more balanced. However, goods- (64.7% male) and finance-sharing (60.4% male) are quite male-dominated on the consumer-side as well. Only in the category of non-aware non-users, women are in the majority. This will have to be examined more closely in the context of Internet access and use (see chapter 4)

**Consumers are, on average, somewhat more educated than providers**

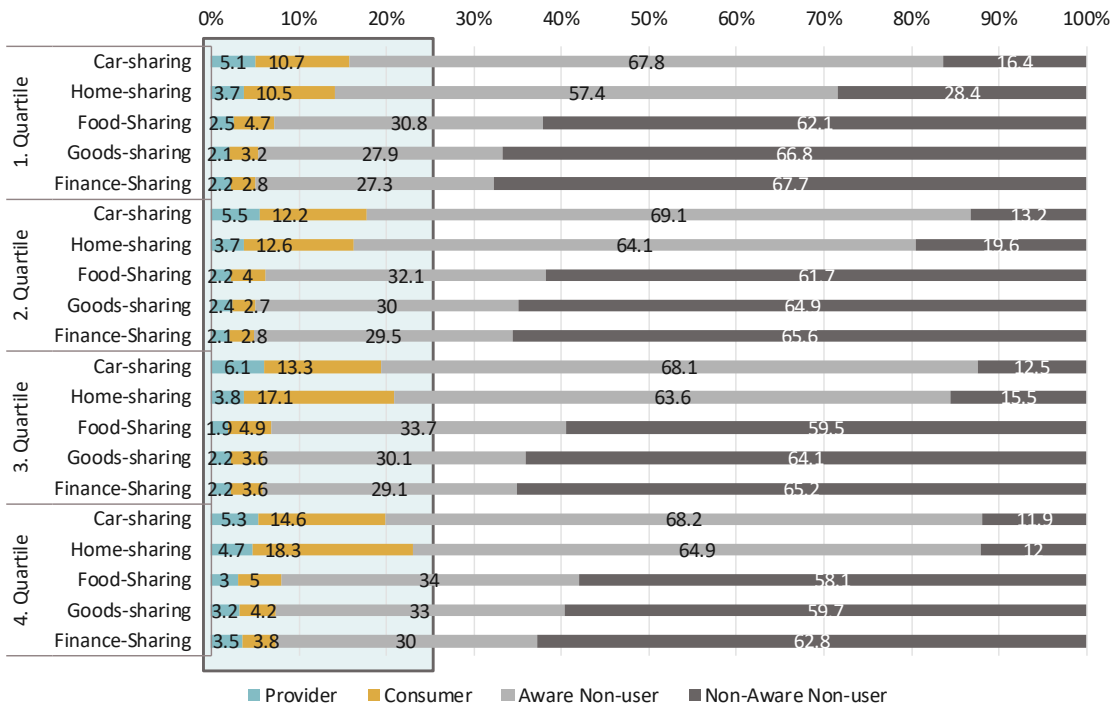



*N = 6111; Distribution of user types and their educational level in different services is displayed*

***Figure 14:*** *Sharing participation by service type and income quartiles*

When analyzing (non-)user type by educational attainment, we find the same pattern for all five analyzed service types. Participants are, on average, more educated than non-participants. Consumers are, again on average, somewhat more educated than providers. As car- and home-sharing services are quite well established in Europe, non-aware non-users of these two services have the lowest average educational background.

**Income drives participation across all service types**

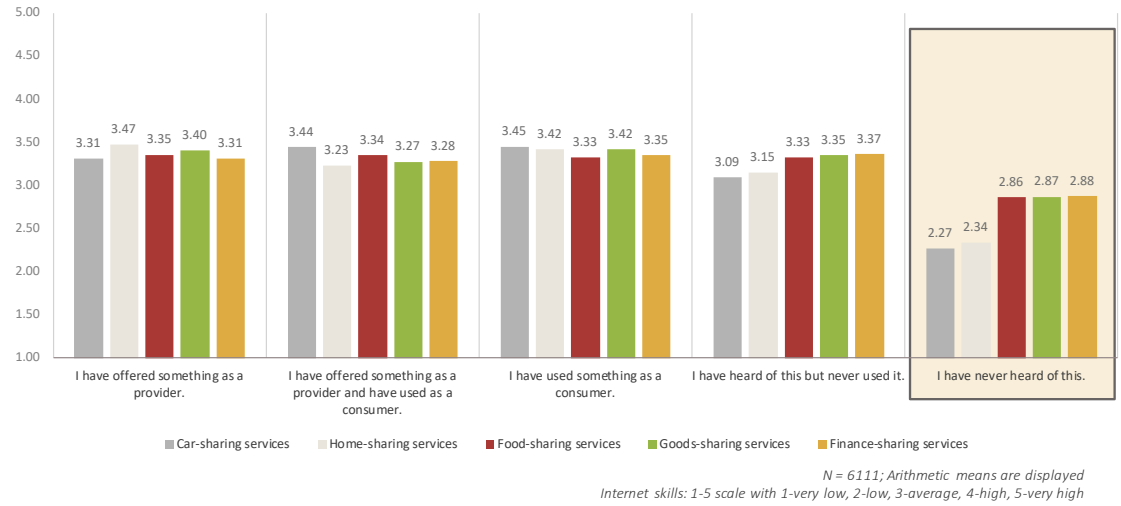



*N = 6043; Distribution of user types by services in different income quartiles is displayed*

***Figure 15:*** *Sharing participation by service type and income quartiles*

As we have seen, both active and passive sharing participation increases with income levels. When examining distinct sharing services, some interesting differentiations emerge. Whereas using home-sharing services is indeed more common among higher-income participants, the difference in terms of car-sharing consumption is much less pronounced. Active home-, food-, goods- and finance-sharing is more common among higher income respondents, but active car-sharing is relatively evenly distributed among the income quartiles.

**Lower skill-levels apparent among non-participants in car- and home-sharing**




*N = 6111; Arithmetic means are displayed*
*Internet skills: 1-5 scale with 1-very low, 2-low, 3-average, 4-high, 5-very high*

***Figure 16:*** *Sharing participation by service and Internet skills (Means, scale 1-5)*

Finally, we find that those who are unaware of any sharing economy services exhibit significantly lower Internet skills. The same holds true for those who have heard of but never used the relatively well-known car- and home-sharing services. For the lesser known services, there is no significant skills-difference between users and aware non-users.

# 3. Sharing Motives among Users and Non-Users

**Short summary**

We analyzed four motives for participation in the sharing economy that are most frequently discussed in the literature: financial benefits, social responsibility, social interaction/meeting people, and fun (cf., Belk, 2014; Bellotti et al., 2015; Bucher, Fieseler & Lutz, 2016; Möhlmann, 2015). We queried participants about their motives for participation and non-participants about which benefits they would expect from using sharing services. For non-aware non-users, we also checked for the functionalities which they assume sharing services could provide.

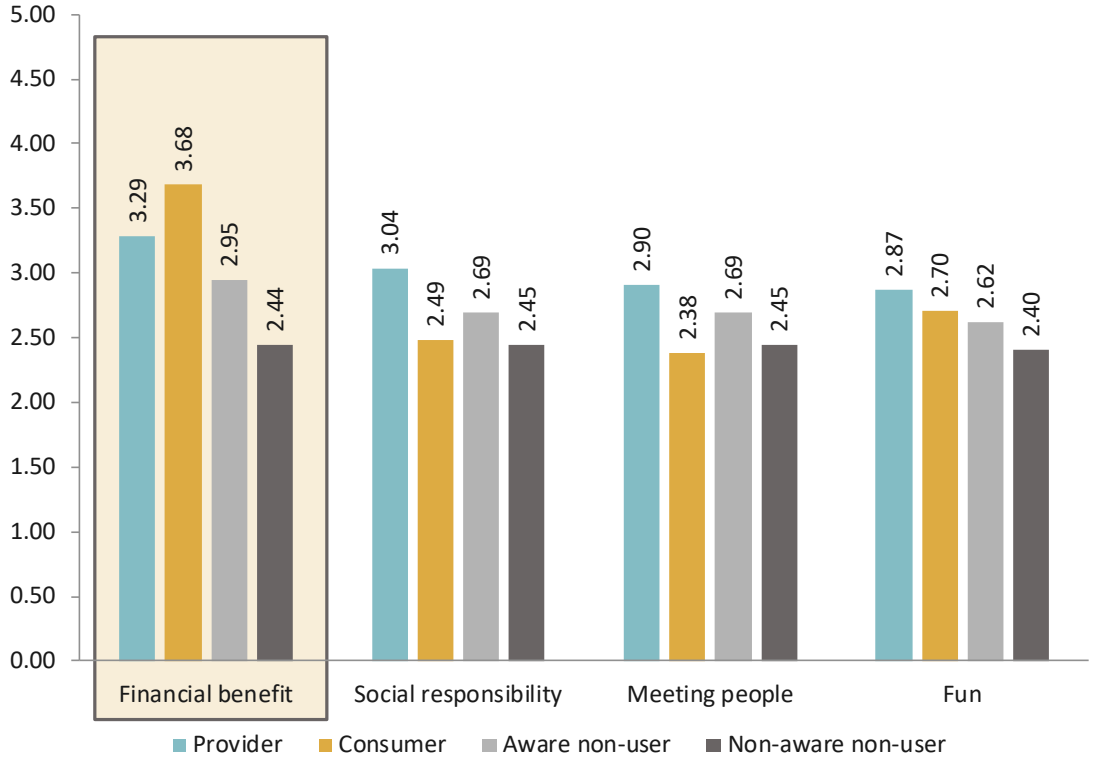
In line with previous research, we find that financial benefits are the most important motivational driver of participation in the sharing economy – both in terms of providing and consuming. However, financial benefits play a much more dominant role for consumers, compared to providers. In brief, consuming sharing services is largely about saving money. Yet, consuming sharing services is also more about fun, when compared to providing them. Therefore, the sharing economy has two quite distinct sets of benefits for providers and to consumers.

When focusing on providers, we find that they estimate financial benefits less highly than consumers do, but conversely, they estimate social responsibility and social interaction significantly higher. Younger providers, under the age of 25, consider financial benefits less relevant than older cohorts. For them, especially, providing is more about meeting people and exercising social responsibility. Older providers, in turn, are more driven by fun. Female providers are geared somewhat more towards social responsibility, while male providers are more interested in meeting people.

Interestingly, we find that providers with higher levels of Internet skills rate all motives more highly than those with lesser skill sets, most notably financial benefits. Possibly, these providers are actually able to garner more income as well as other benefits due to their capabilities. We find a similar pattern among consumers, with lower-skilled consumers rating all four motives lower, and particularly financial benefits. We also find that higher income consumers are especially driven by financial benefits, ranking other motives consistently lower than lower-income consumers do.

Aware non-users consider financial benefits less of a boon of sharing services than actual consumers do. Conversely, they rate social responsibility and social interaction more highly. This could be due to the fact that their image of the sharing economy is largely driven by platforms' marketing efforts and public discourse, rather than first-hand experience. This could render their estimations somewhat naïve. This is especially true for older non-users (as younger ones may have heard more first-hand user accounts). Also, highly educated non-users focus more on societal benefits, while lower educated users rate financial benefits as more important.

**Lower costs drive sharing participation**




*N = 6111; Arithmetic means by user type are displayed*
*Importance of motives: 1-5 scale with 1-not at all, 2-to a small extent, 3-to a moderate extent, 4-to a large extent, 5-very much*

***Figure 17:*** *Sharing motives; total sample (Means, scale 1-5)*

For consumers, the sharing economy is primarily about saving money. Participants were asked to rate the importance of four potential benefits of sharing services on a scale of 1 to 5. Among consumers, financial benefits clearly outrank other benefits, such as fun, social responsibility, or social interaction. In the case of consumers, financial benefits also emerge as the primary motive for participation in the sharing economy, yet other motives rank more closely behind. Also, the priorities differ from consumers, with social responsibility as the second most important motive, followed by meeting people and fun. Aware non-users exhibit the same ranking of motives as providers, but with lower means. Finally, non-aware non-users rank all four potential benefits roughly equally low.

**Income is particularly important for providers in Germany, Denmark, and Ireland**

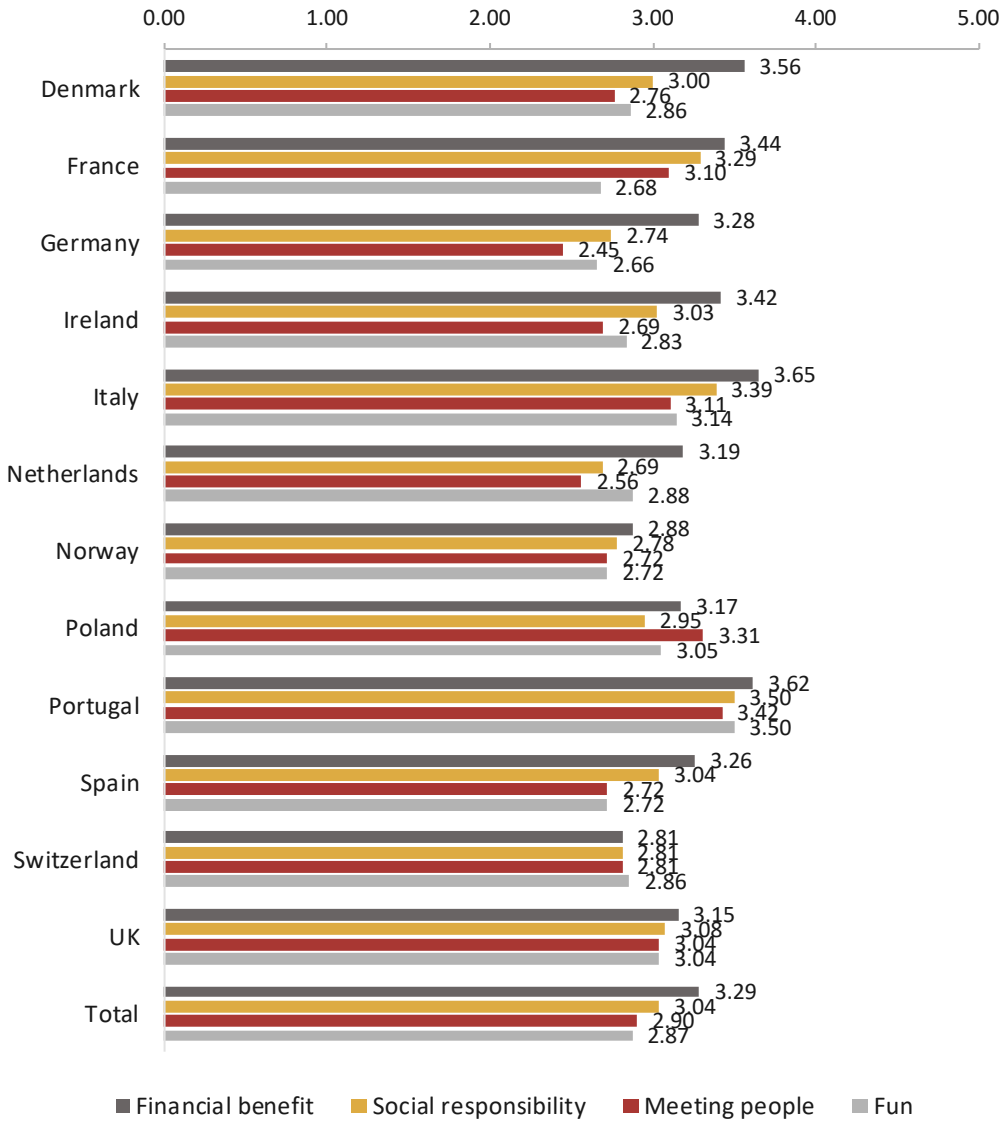
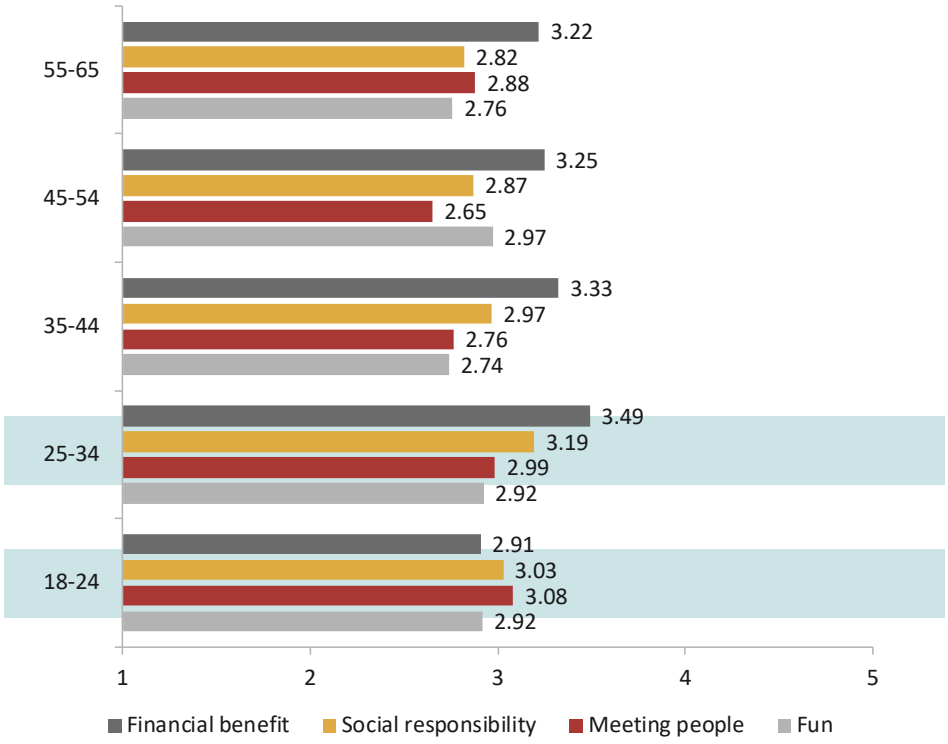



*Figure 18: Sharing motives (providers) by country (means, scale 1-5)*

Looking in depth at providers and comparing the countries represented in the sample, we find that Portuguese, Italian, and French providers rank all potential benefits relatively highly, while Dutch, Norwegian, and Swiss providers expect relatively few benefits. When examining the four surveyed benefits in turn, we find that in a number of countries, financial benefits clearly out-rank other motives – particularly so in Germany, Denmark, and Ireland. In other countries, all four motives are ranked more equally, for example in Switzerland, Portugal, the UK, and Norway.

**Younger providers are more geared towards social motives**

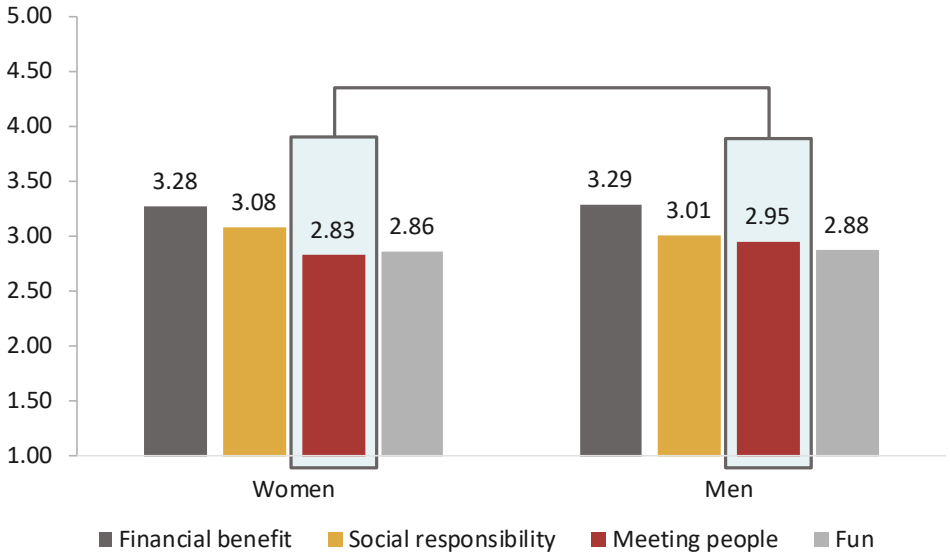



*N = 556; Arithmetic means for providers by age groups are displayed*
*Importance of motives: 1-5 scale with 1-not at all, 2-to a small extent, 3-to a moderate extent, 4-to a large extent, 5-very much*

***Figure 19:*** *Sharing motives (providers) by age group (Means, scale 1-5)*

We find that for the youngest age cohort of providers, between 18 and 24 years of age, financial benefits are in fact not the most important motive for sharing. Rather, meeting people is considered most important, followed by social responsibility and fun. In the next age cohort (25-34 years), financial benefits jump to the top of the motives order. This difference is interesting as we find the largest share of providers in these two age groups, yet their priorities seem to change over time.

**Male providers are more interested in meeting people than female providers.**

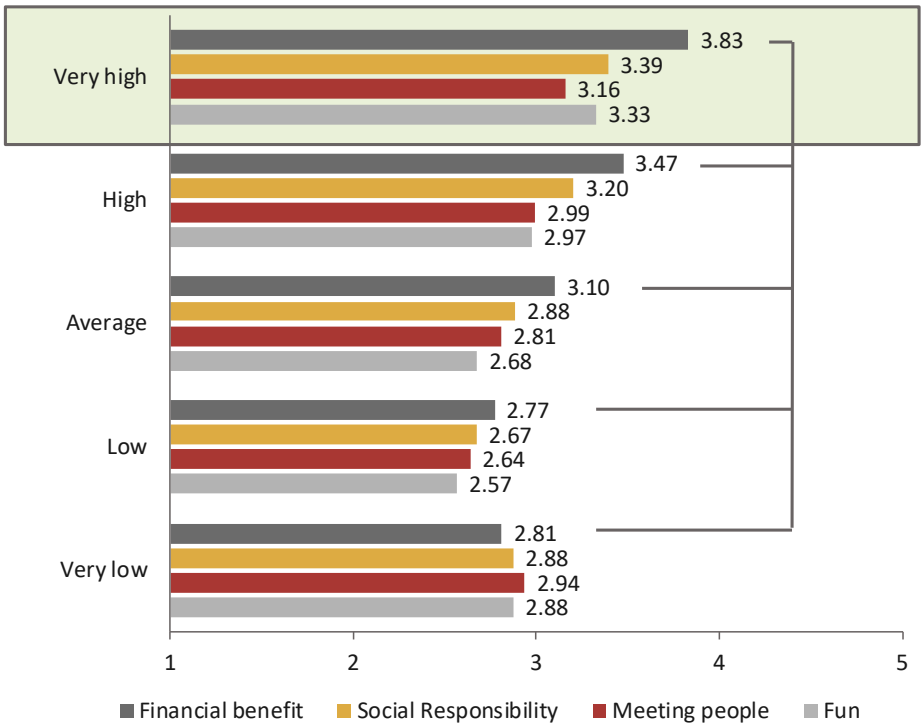



*N = 556; Arithmetic means for providers by gender are displayed*
*Importance of motives: 1-5 scale with 1-not at all, 2-to a small extent, 3-to a moderate extent, 4-to a large extent, 5-very much*

*Figure 20: Sharing motives (providers) by gender (Means, scale 1-5)*

When comparing gender among providers, we find that financial benefits followed by social responsibility are the most important motives for both. Yet, while male providers consider meeting people the third most important motives, this benefit is ranked relatively low by female providers. The latter consider fun a more important motive.

**Skilled providers are particularly geared towards financial benefits**




*N = 556;, Arithmetic means for providers by Internet skills are displayed*
*Importance of motives: 1-5 scale with 1-not at all, 2-to a small extent, 3-to a moderate extent, 4-to a large extent, 5-very much*
*Internet skills: 1-5 scale with 1-very low, 2-low, 3-average, 4-high, 5-very high*

***Figure 21:*** *Sharing motives (providers) by Internet skills (Means, scale 1-5)*

Looking at the five groups of providers differentiated by Internet skills, we find that very low-skilled providers expect relatively high benefits, while the next more skilled group is more skeptical. From there on, the more skilled the group, the higher ranked the four motives. Of particular interest is the financial benefits-motive. For the lowest-skilled group, this is the least important motive, while for the highest-skilled group, this motive clearly outranks all others. It could be speculated that skilled providers are more capable to actually generate financial benefits from their services.

**Dutch consumers see few social benefits**

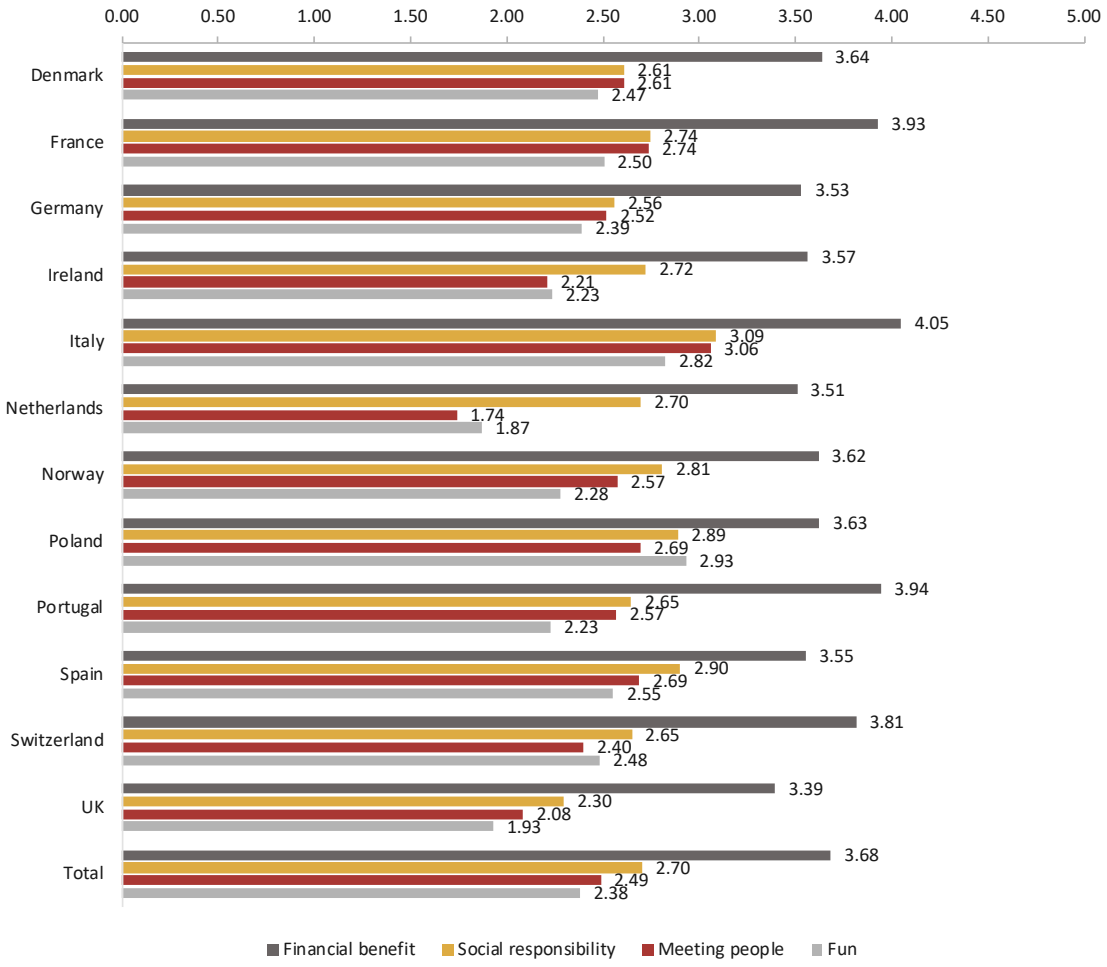
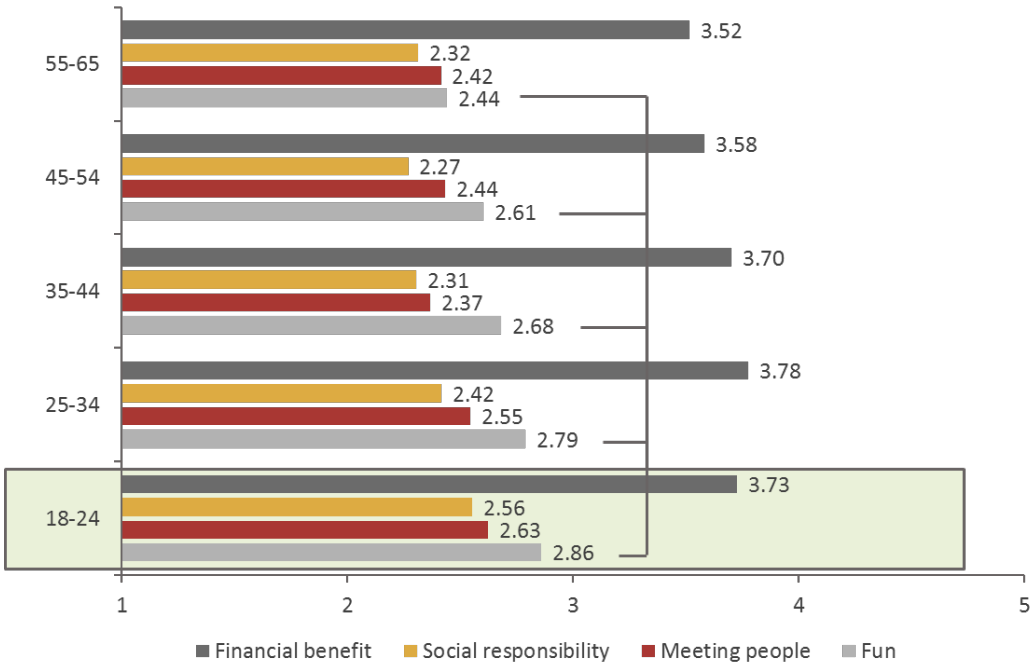



*Figure 22: Sharing motives (consumers) by country (Means, scale 1-5)*

Turning to consumers and comparing countries, we find a more coherent picture. Notably, Dutch consumers are relatively skeptical about the expected benefits from sharing services, particularly in terms of social responsibility and social interaction. Italians on the other hand are more optimistic. However, across all countries, financial benefits clearly outrank all other motives.

**Younger consumers consider sharing to be more fun**

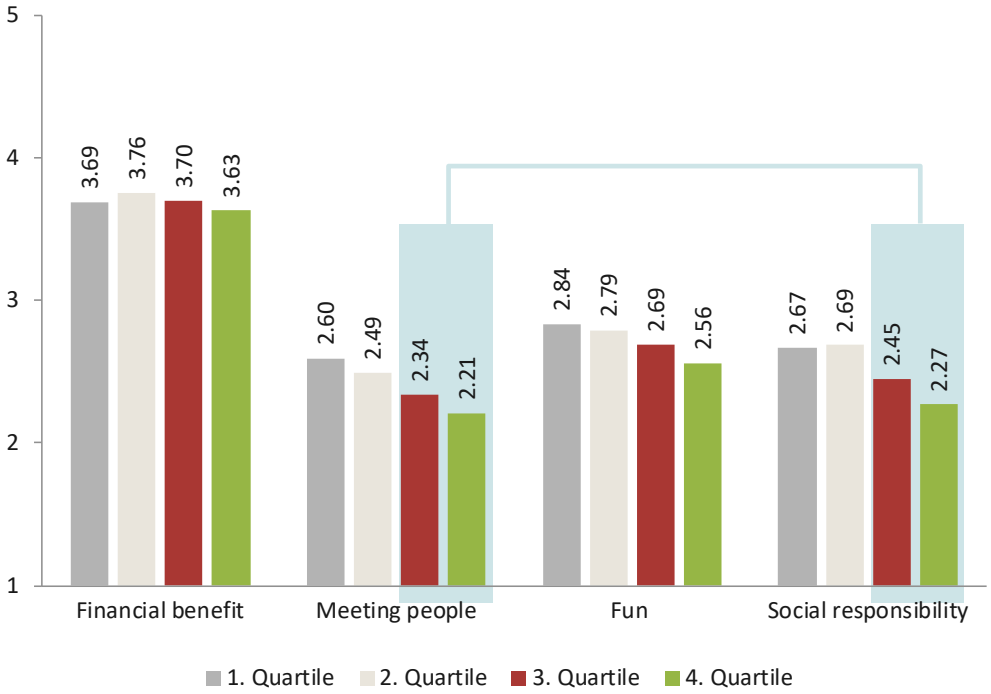



*N = 1143; Arithmetic means for consumers by age group are displayed*
*Importance of motives: 1-5 scale with 1-not at all, 2-to a small extent, 3-to a moderate extent, 4-to a large extent, 5-very much*

***Figure 23:*** *Sharing motives (consumers) by age group (means, scale 1-5)*

For consumers, we also find a more coherent picture across age groups. However, financial benefits become less important with age, as does social responsibility. Most notably, younger consumers consider sharing markedly more fun than older ones. Meeting people is the least important motive for the middle-aged group (35-44 years).

**Social motives are less important for higher-income consumers**

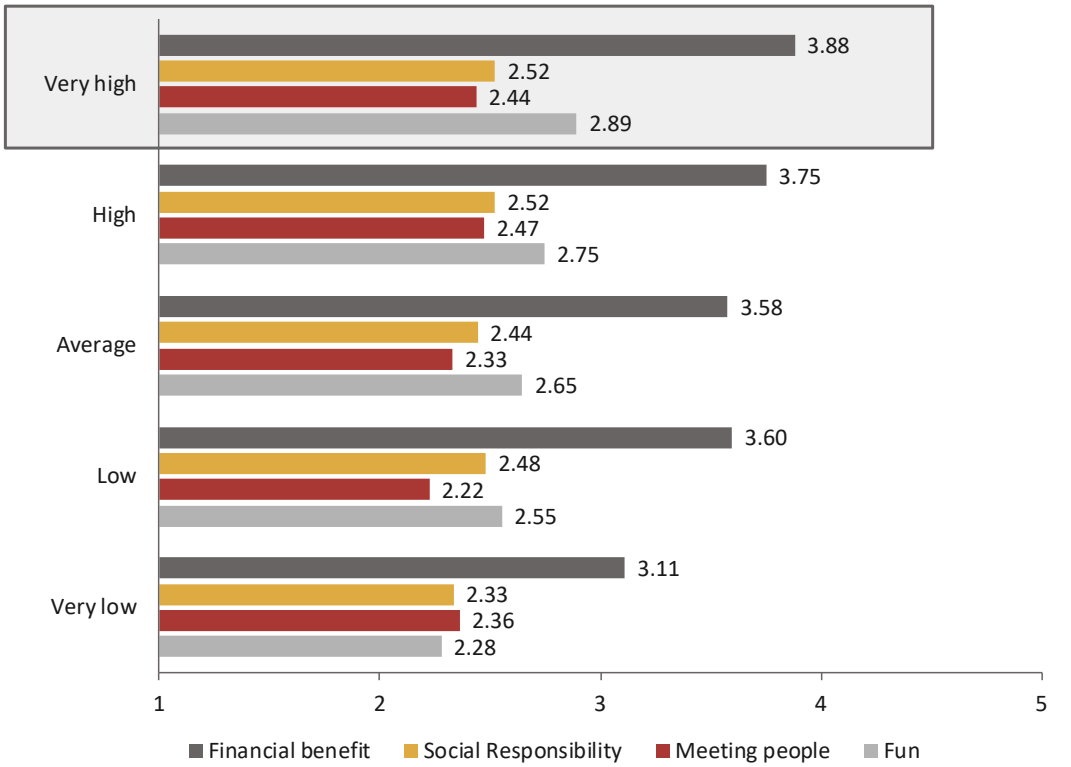



*N = 1143; Arithmetic means for consumers by income quartiles are displayed*
*Importance of motives 1-5 scale with 1-not at all, 2-to a small extent, 3-to a moderate extent, 4-to a large extent, 5-very much*
*Quartiles cut the distribution of income in approximately even quarters*

***Figure 24:*** *Sharing motives (consumers) by income quartiles (Means, scale 1-5)*

Comparing income quartiles among consumers, we find that while financial benefits is a consistently important motive for all, the importance of meeting people, social responsibility, and fun as a sharing motive decreases with rising income. This may indicate that higher income individuals can afford more comfortable or fun alternatives to sharing services.

**Higher-skilled consumers experience sharing as being more fun**




*N =1143; Arithmetic means for consumers by Internet skills are displayed*
*Importance of motives: 1-5 scale with 1-not at all, 2-to a small extent, 3-to a moderate extent, 4-to a large extent, 5-very much*

***Figure 25:*** *Sharing motives (consumers) by Internet skills (Means, scale 1-5)*

Similar to providers, higher-skilled consumers experience more of a financial benefit from sharing. They also consider sharing as being markedly more fun. Differences in social motives (social responsibility and meeting people) are less pronounced between groups of different Internet skills.

**Aware non-users in Spain, Portugal, and the Netherlands assume societal benefits from the sharing economy**

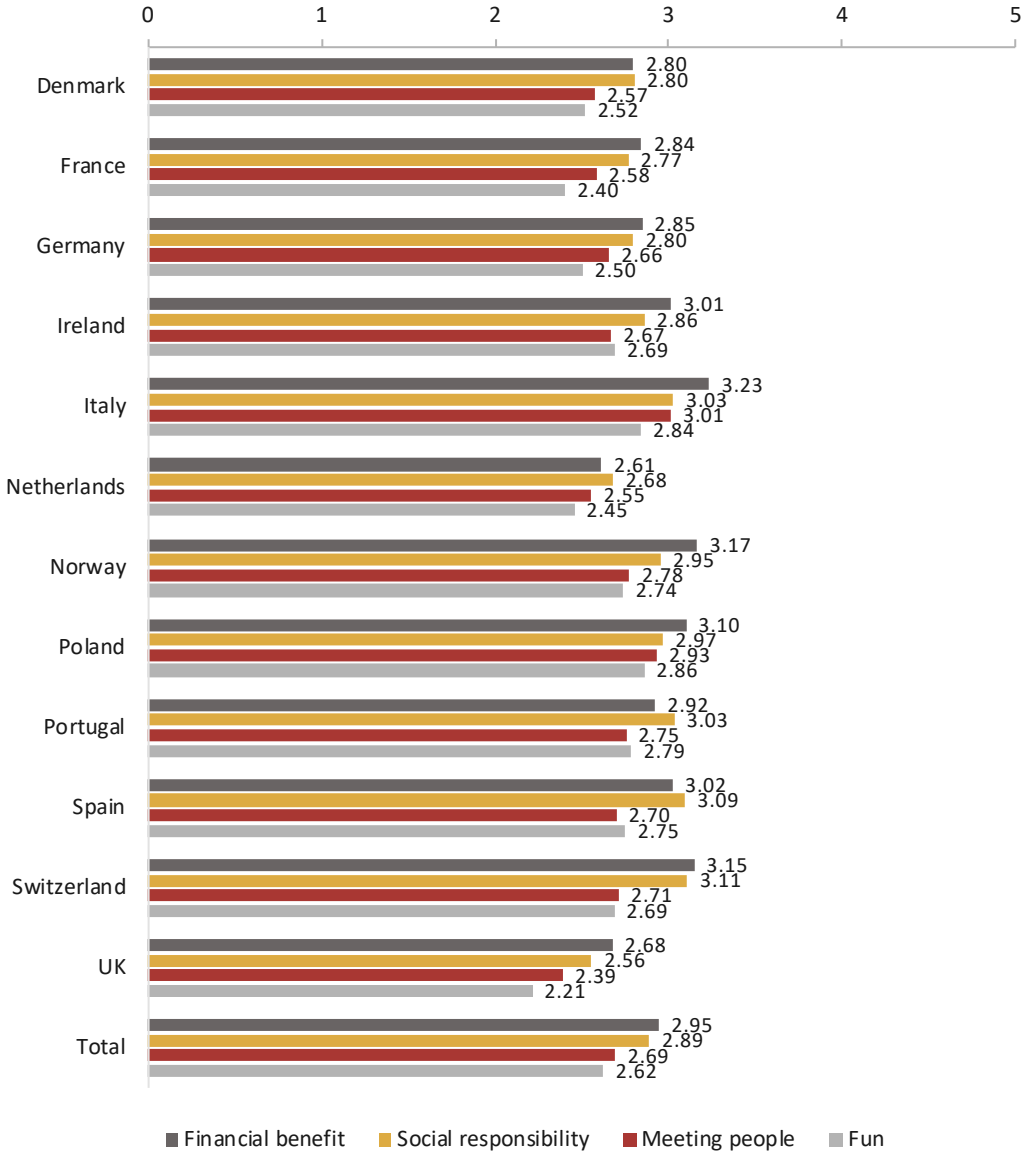
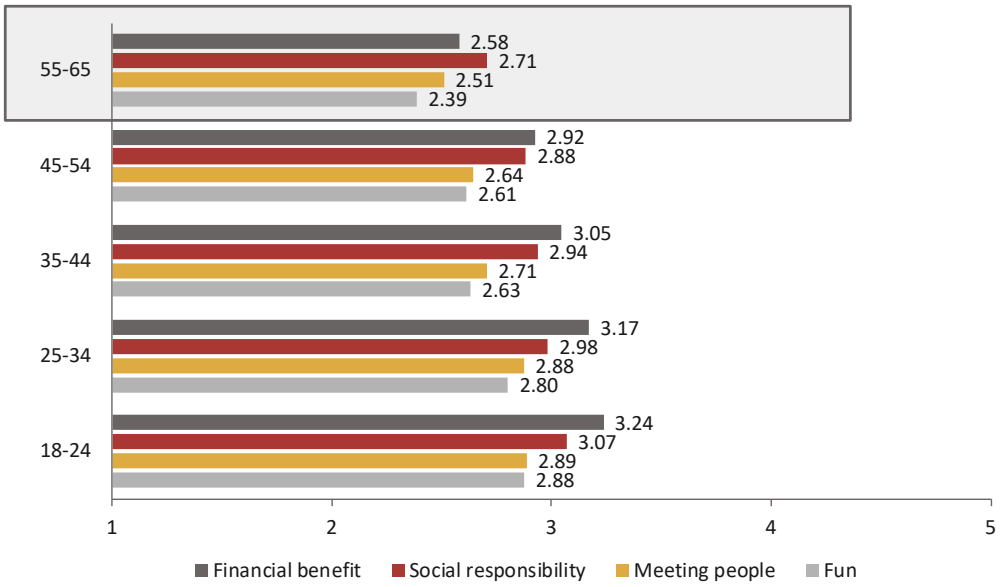



*Figure 26: Sharing motives (aware non-users) by country (Means, scale 1-5)*

Turning to the third group of aware non-users, we again find that Dutch respondents expect few benefits from using sharing platforms. Across countries, aware non-users expect financial benefits and social responsibility benefits above benefits from meeting people or just fun. In Spain, Portugal, and the Netherlands, aware non-users rate social responsibility benefits higher than financial benefits. It is striking, though, that those actually engaged in the sharing economy consider financial benefits so much more important.

**In particular, older aware non-users assume societal benefits from the sharing economy**

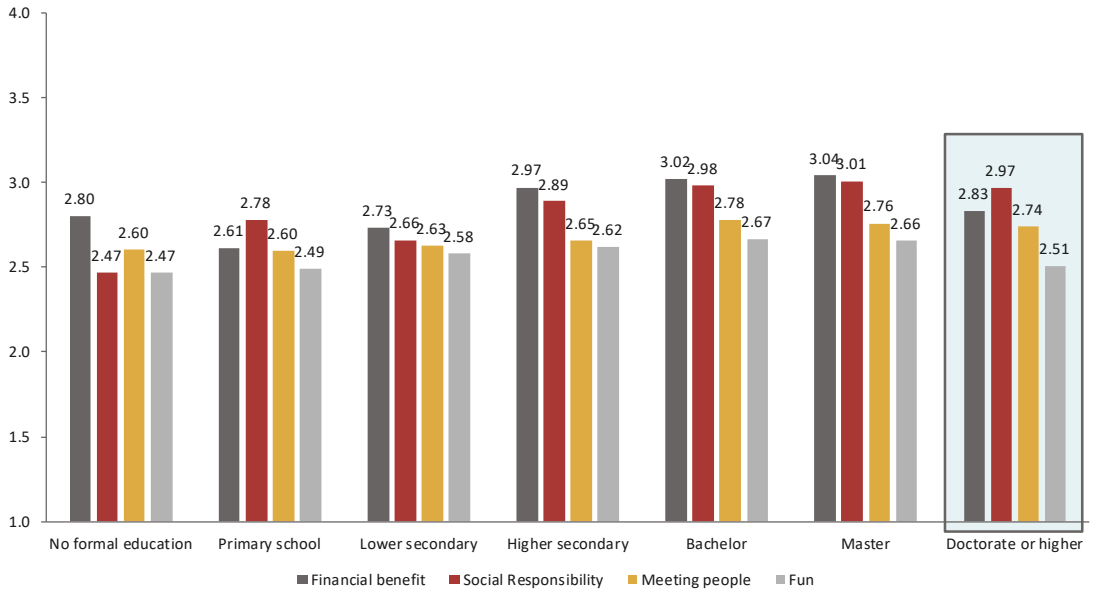



*N = 3818; Arithmetic means for aware non-users by age group are displayed*
*Importance of expected benefits: 1-5 scale with 1-not at all, 2-to a small extent, 3-to a moderate extent, 4-to a large extent, 5-very much*

*Figure 27: Sharing motives (aware non-users) by age group (Means, scale 1-5)*

Looking closer at the group of aware non-users, we find significant differences between age groups, with older users generally expecting fewer benefits. However, while younger users primarily expect financial benefits, older users above 55 years old primarily expect social benefits from engaging in the sharing economy.

**Lower-educated aware non-users see less of a societal benefit from the sharing economy**

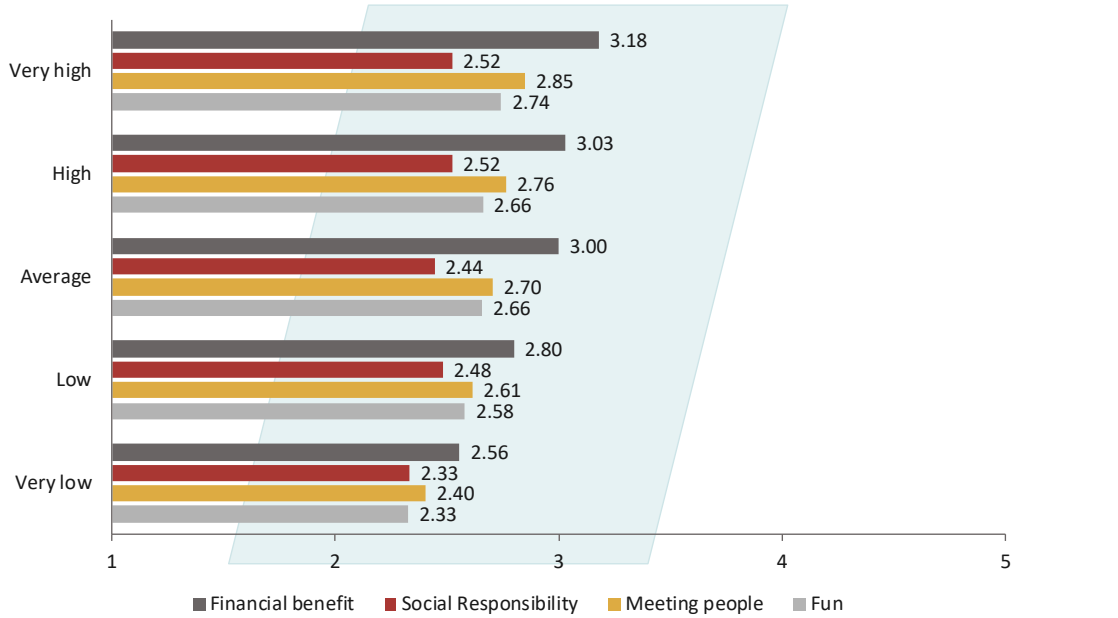



*N = 3818; Arithmetic means for aware non-users by education are displayed*
*Importance of expected benefits: 1-5 scale with 1-not at all, 2-to a small extent, 3-to a moderate extent, 4-to a large extent, 5-very much*

***Figure 28:*** *Sharing motives (aware non-users) by education (Means, scale 1-5)*

When looking at the educational attainment of aware non-users, we find that users with a doctorate or higher, as well as those with only primary school completion, rank social responsibility benefits higher than financial benefits. Those with no formal degree primarily expect financial benefits, followed by benefits from meeting people.

**Higher-skilled aware non-users generally expect more benefits from sharing**

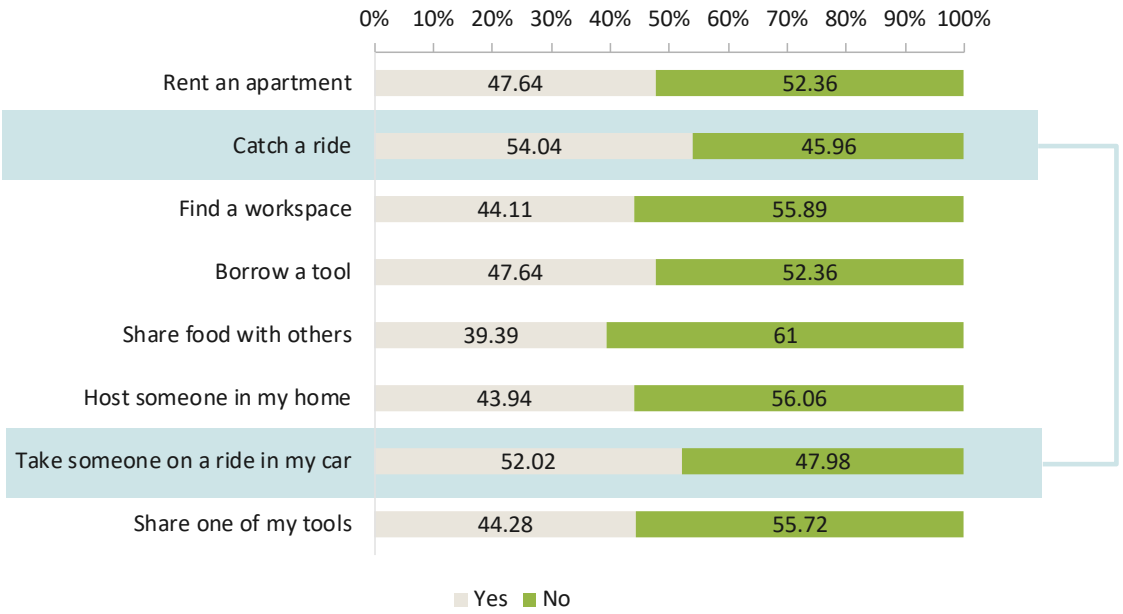



*N = 3818; Arithmetic means for aware non-users by Internet skills are displayed*
*Importance of expected benefits: 1-5 scale with 1-not at all, 2-to a small extent, 3-to a moderate extent, 4-to a large extent, 5-very much*

***Figure 29:*** *Sharing motives (aware non-users) by Internet skills (Means, scale 1-5)*

In line with producers' and consumers' motives, aware non-users expect more benefits the higher their level of Internet skills is. This holds true for all four surveyed benefits.

**Non-users mostly associate the sharing economy with ride-sharing**

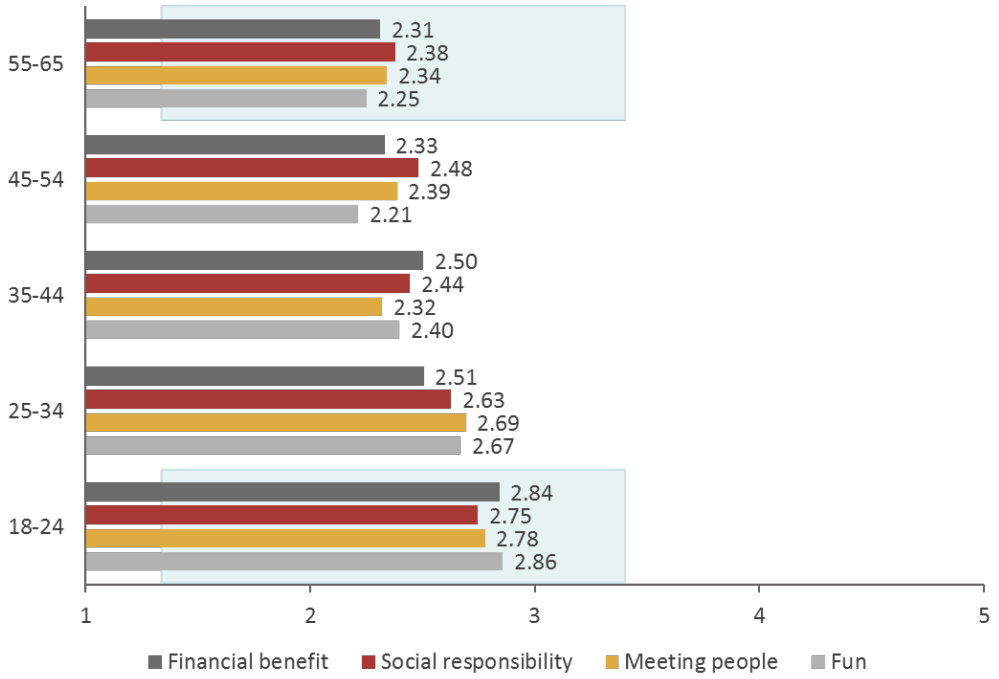



*N = 594, Non-aware non-users*
*Sample question: ‚What do you think sharing platforms can be used for?'*

***Figure 30:*** *Functionality awareness (non-aware non-users)*

Asked about what functionalities they believe sharing platforms could be used for, non-aware non-users mostly think of car sharing – both providing and consuming. Very few can imagine food sharing services, but a majority also does not think that sharing services can be used for home-sharing. Overall, though, about 40% of non-aware non-users estimate the functionalities of the sharing economy correctly.

**Older non-aware non-users also assume more social benefits from the sharing economy**




*N = 594; Arithmetic means for non-aware non-users by age group are displayed*
*Importance of expected benefits: 1-5 scale with 1-not at all, 2-to a small extent, 3-to a moderate extent, 4-to a large extent, 5-very much*

***Figure 31:*** *Sharing motives (non-aware non-users) by age group (Means, scale 1-5)*

Based on this estimation, non-aware non-users were asked to rate the expected benefits from sharing. The only significant difference in terms of the sociodemographics of non-aware non-users was between age groups. Younger non-aware non-users generally expected higher levels of benefits. Also, while younger representatives of this group primarily expect fun and financial benefits, older respondents focused more on social responsibility and benefits from meeting people.

# 4. Internet Access as a Precondition for Sharing Participation

**Short summary**

An initial look at characteristics of participants vs. non-participants in the sharing economy calls to mind some well-established findings in digital divide research. In fact, online sharing platforms fundamentally rely upon Europeans' access to and use of Internet services. Therefore, we analyzed participants' Internet use frequency and choice of access devices and compared patterns between participants and non-participants in the sharing-economy.

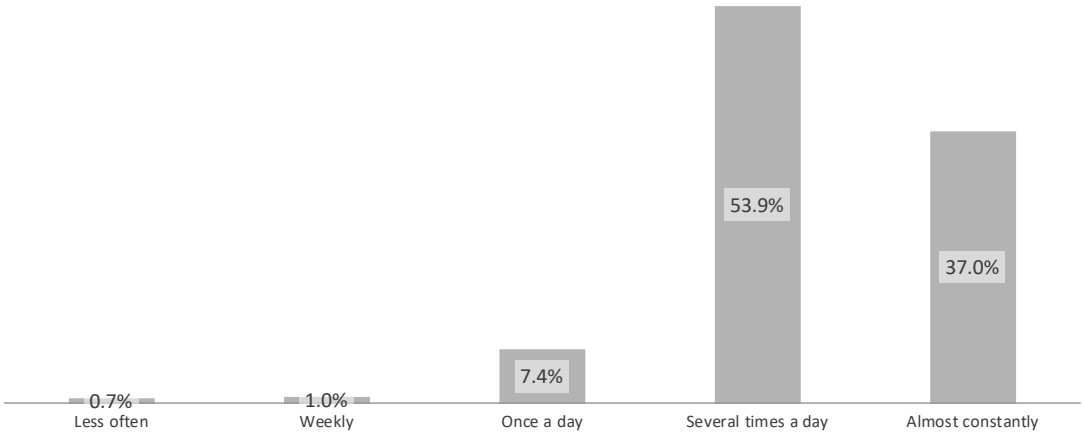
Overall, we find that daily Internet use is well established in the surveyed European countries (90.9%). However, daily – and especially constant – Internet use is much more common among providers and consumers of sharing services than among non-users. Non-aware non-users use the Internet less frequently than all other groups, while providers have the largest share of "always-on" Internet users. Accordingly, participation in the sharing economy is clearly linked to Internet use. Given these findings, it is interesting to note that our data reveal a number of divides: an age divide, a gender divide, an educational divide, an income divide and a skills divide.

In other words: Younger, well-educated, higher income, male, and highly skilled individuals use the Internet most frequently. Unsurprisingly, this also characterizes participants in the sharing economy.

We also analyzed the use of various access devices, given that many sharing services are location-based and some explicitly require mobile access. We do find that smartphones are the most frequently used access device across the sampled European countries, followed by laptops and then desktop PCs. In fact, we confirm that smartphone use most clearly distinguishes participants from non-participants in the sharing economy, with consumers being slightly more avid users than providers.

Smartphone use is, again, especially frequent among younger, well-educated, higher income, and highly skilled Europeans. Interestingly, though, women are more avid smartphone (and tablet) users than men. Therefore, the gender divide may be less pronounced for location-based services.

**Daily Internet use is the norm throughout Europe**

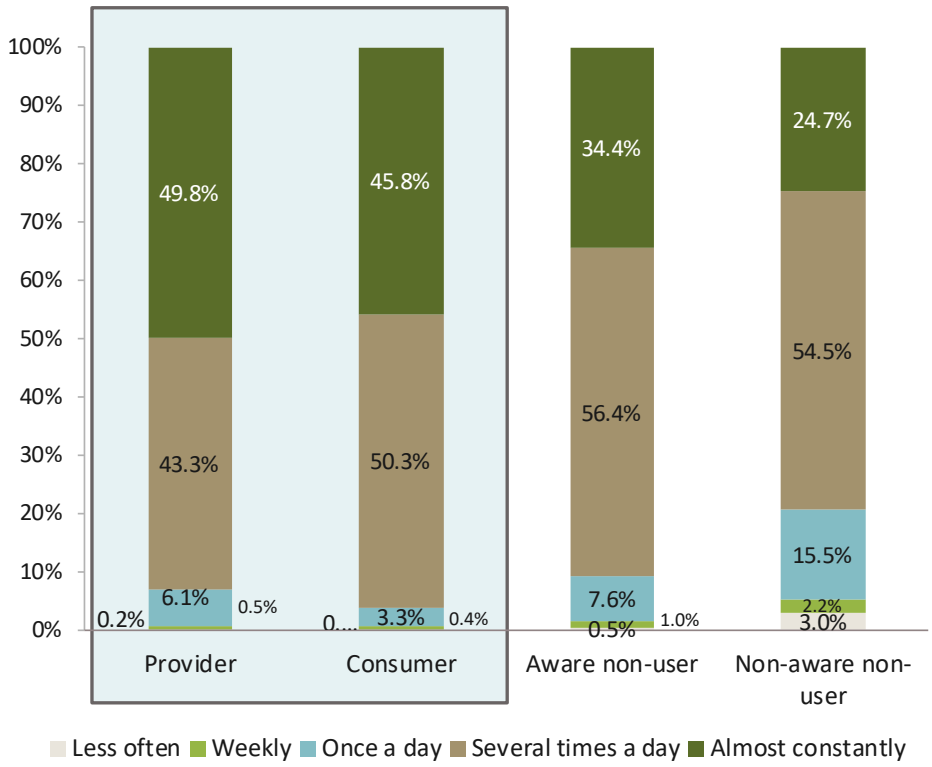



*N = 6111; Percentages*
*Internet use frequency: 1-5 scale with 1-less often, 2-weekly, 3-once a day, 4-several times a day, 5-almost constantly*

*Figure 32: Internet use frequency total sample*

Only 1.7% of the surveyed sample uses the Internet less frequently than at least once a day. 53.9% report using the Internet several times a day and 37% even describe their Internet use as being constantly online. This bodes well for the sharing economy, as Europeans should find it easy to access service platforms.

**Sharing economy users are more avid Internet users than sharing economy non-users**

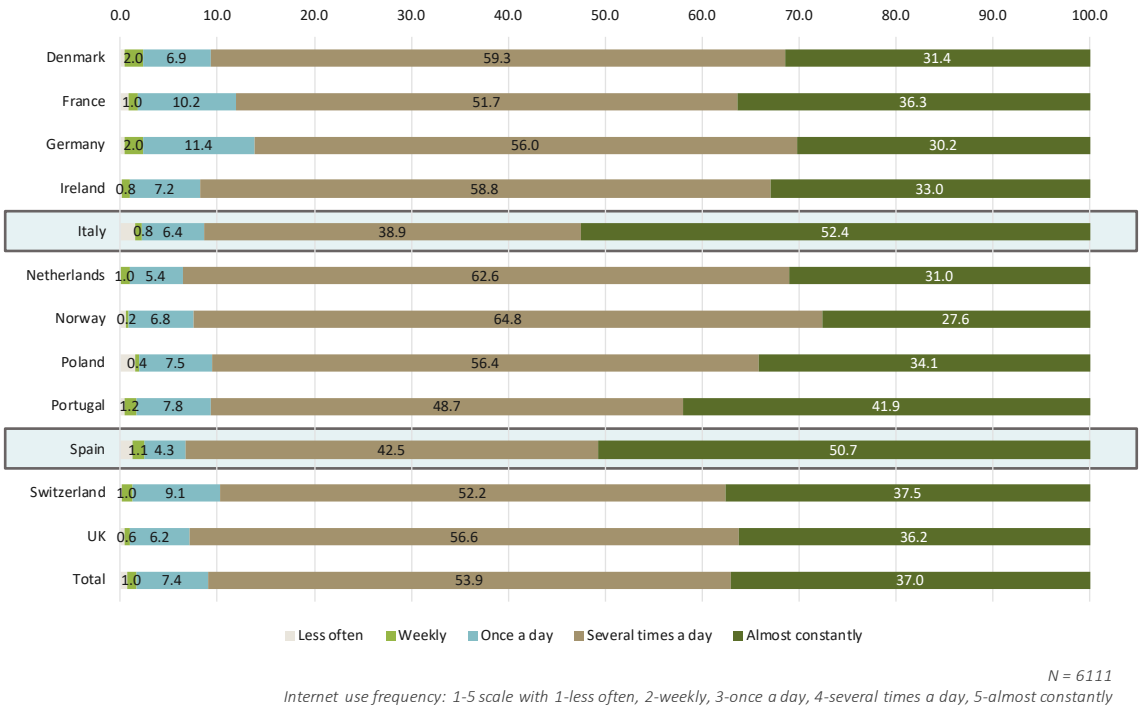



*N = 6111*
*(Providers: 556; Consumers: 1143; Aware non-users: 3818; Non-aware non-users: 594)*

***Figure 33:*** *Internet use frequency by user group*

When looking at the Internet use frequency of the four types of (non-)participants in the sharing economy, we find that participants use the Internet more frequently than non-participants. Accordingly, it is of interest to examine sharing participation in the context of the digital divide. We also find that providers have the largest share of "always on" Internet users. To shed more light on the antecedents of Internet use, the next charts will map out sociodemographic differences in Internet use frequency.

**“Always on” Internet users are particularly common in Italy and Spain**



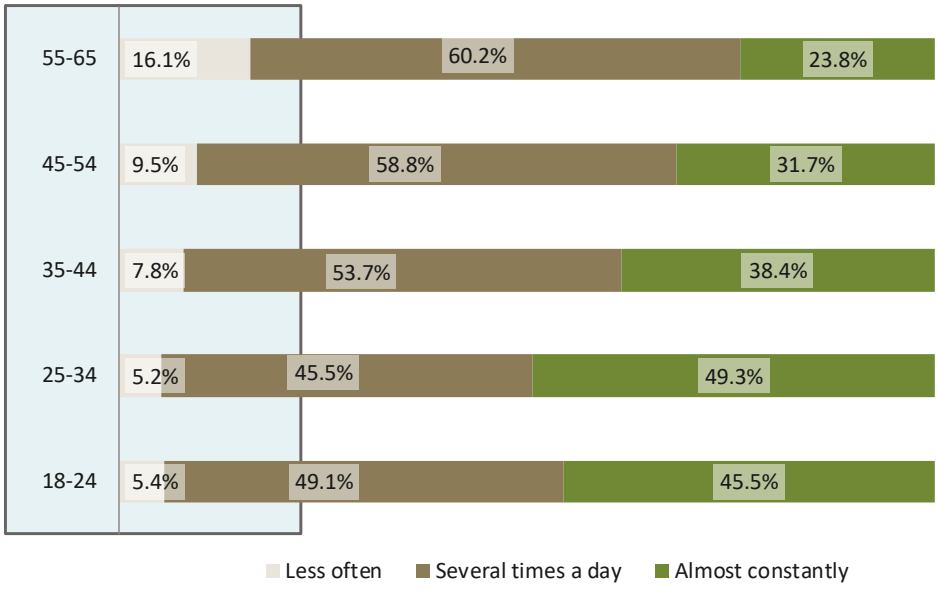

*N = 6111*

*Internet use frequency: 1-5 scale with 1-less often, 2-weekly, 3-once a day, 4-several times a day, 5-almost constantly*

***Figure 34:*** *Internet use frequency by country*

Notably, a majority of participants from Spain and Portugal describe their Internet use as being always online. The lowest national percentage of participants falling into that category comes from Germany, with only 30.2% considering themselves constant Internet users. Analogously, the largest national share of participants using the Internet less frequently then several times a day is also from Germany (13.8%). While daily Internet use is not a precondition for access to the sharing economy, this may still indicate a less hospitable environment to these digital services.

**The age divide persists among Europeans**

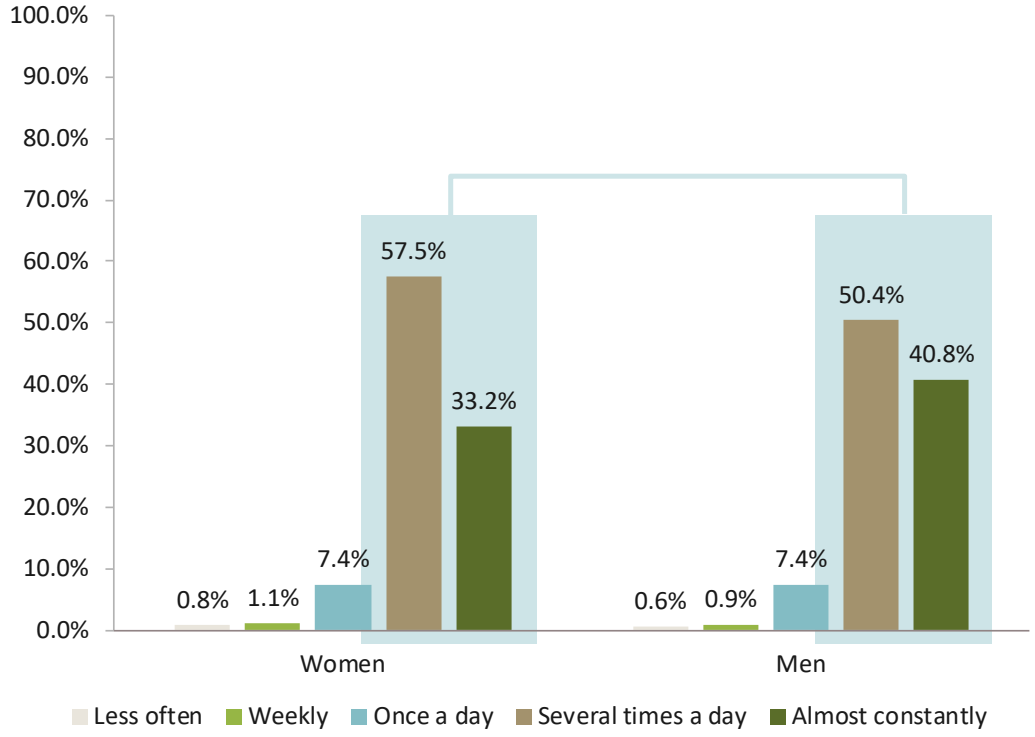



*N = 6111; reduced scale*
*Original Internet use frequency: 1-5 scale with 1-less often, 2-weekly, 3-once a day, 4-several times a day, 5-almost constantly*

*Figure 35: Internet use frequency by age group*

When differentiating age groups, it is unsurprising that older age groups use the Internet less frequently than younger cohorts, particularly for those above 55 years of age. Yet, even in this age group, 84% report using the Internet more than once a day. Interestingly, the largest proportion of "always on" users are not found in the youngest cohort, but among those users between 25 and 34 years of age.

**Slight gender divide in terms of access frequency**




*N = 6111*

*Internet use frequency: 1-5 scale with 1-less often, 2-weekly, 3-once a day, 4-several times a day, 5-almost constantly*

***Figure 36:*** *Internet use frequency by gender*

Our survey reveals a gender divide in Internet use, although only on a very high level. Male respondents report being "always on" slightly more frequently than female respondents (40.8% vs. 33.2%). However, similarly few representatives of both gender report using the Internet less frequently than daily.

**Education is still a major factor in Internet use**

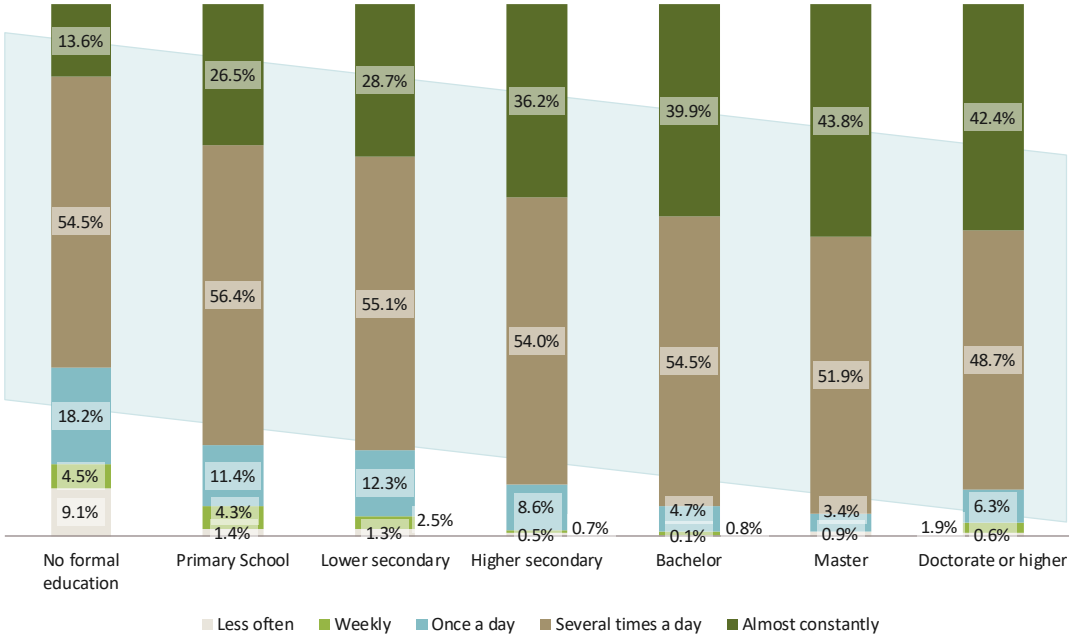
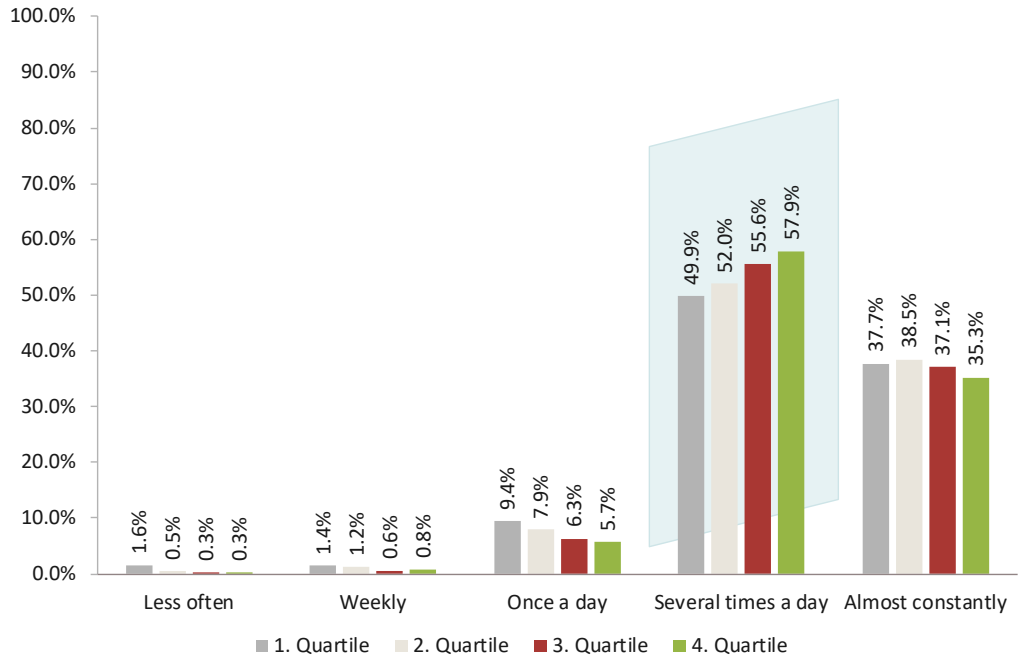



*Figure 37: Internet use frequency by education*

Within the sampled population, Internet use frequency still notably increases with educational attainment. In particular, the "always on" segment of the population rises from only 13.6% among those without a formal education to 43.8% among those with a Master's degree.

**Income is still a major factor in Internet use**

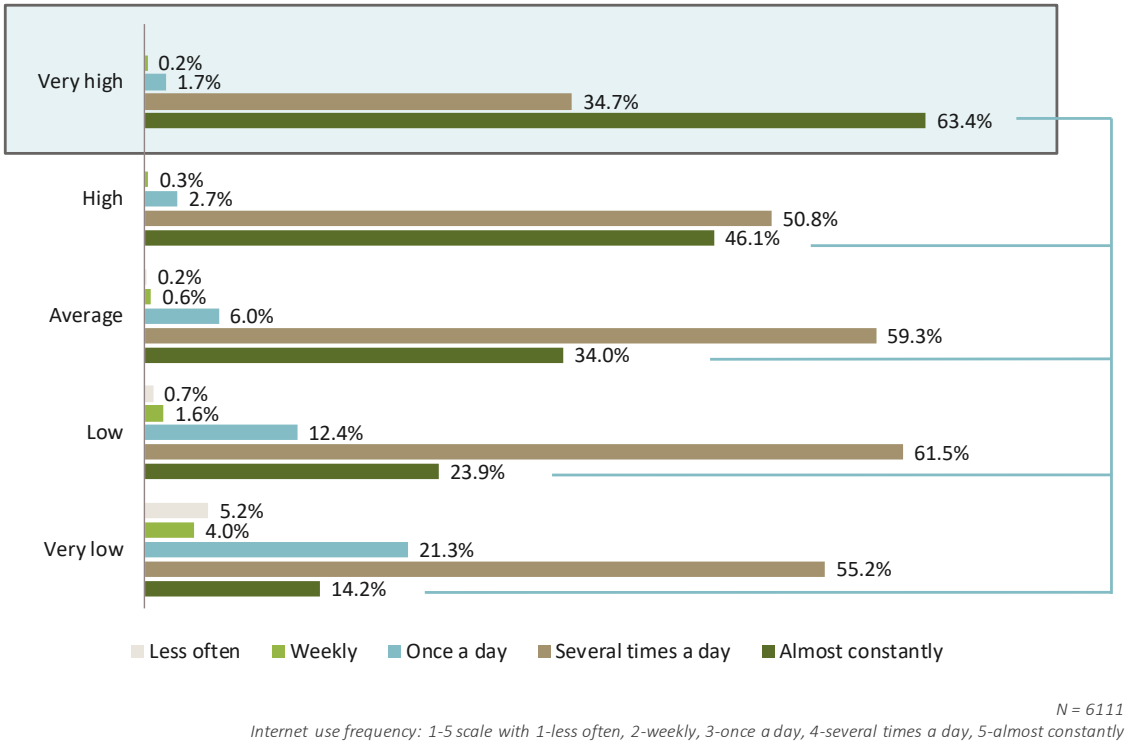



*N = 6111*
*Internet use frequency: 1-5 scale with 1-less often, 2-weekly, 3-once a day, 4-several times a day, 5-almost constantly*
*Quartiles cut the distribution of income in approximately even quarters*

*Figure 38: Internet use frequency by income*

Looking at the income distribution within the sample, it is notable that Internet use frequency increases up to the "always on" category of frequency. Lower income participants more often report Internet use frequencies of "once a day". However, constant Internet use is most common in the second income quartile.

**Internet skills are closely related to use frequency**



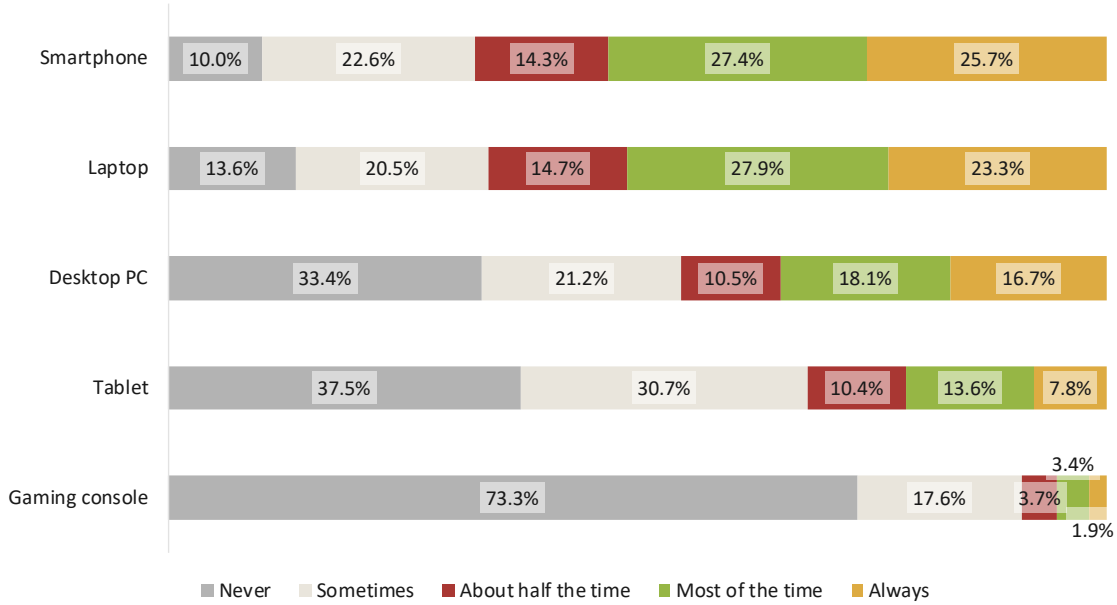

*N = 6111*

*Internet use frequency: 1-5 scale with 1-less often, 2-weekly, 3-once a day, 4-several times a day, 5-almost constantly*

***Figure 39:*** *Internet use frequency by skills*

Our analysis confirms the existence of the "skills gap" among Internet users. The higher the reported level of Internet skills, the more likely users are to be "always on". Of course, causalities are difficult to gage in this context, as more frequent Internet use may bolster use skills, which in turn may render Internet use more comfortable and convenient.

**Smartphones are the most frequently used Internet access device**

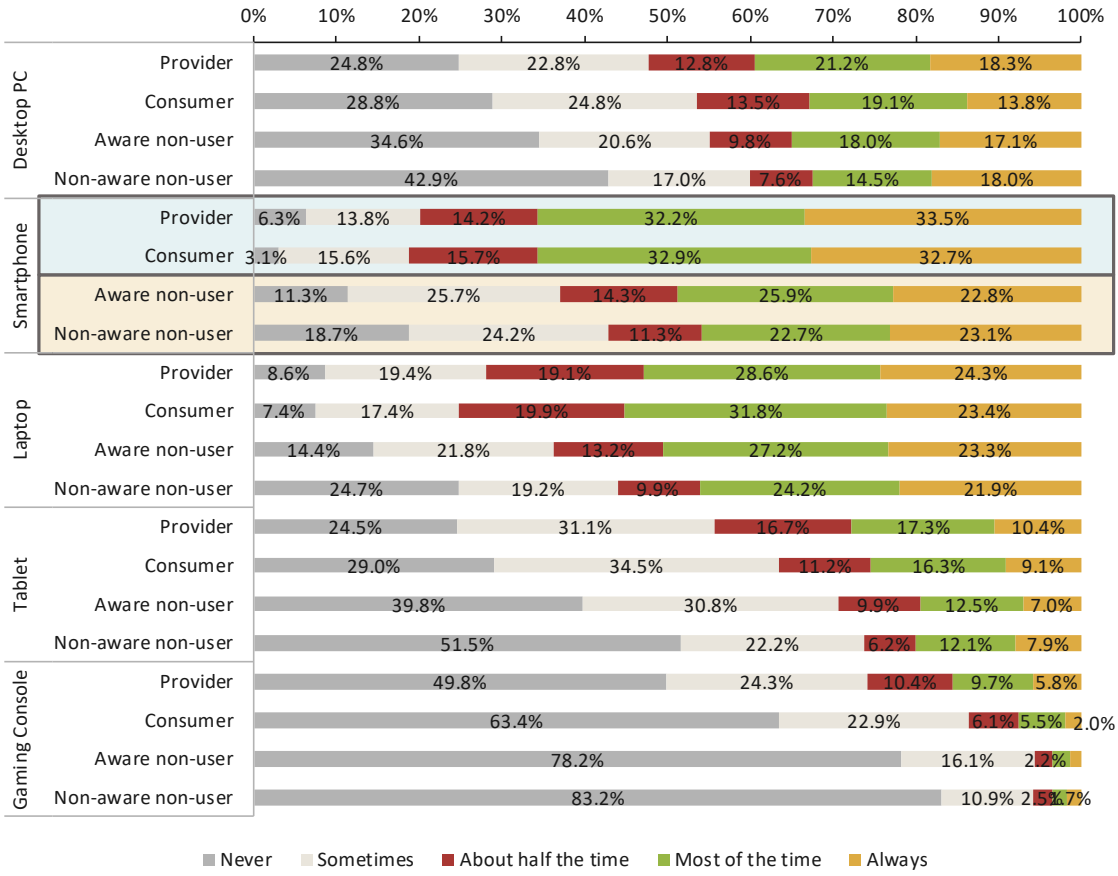



*N = 6111*
*Internet use frequency: 1-5 scale with 1-less often, 2-weekly, 3-once a day, 4-several times a day, 5-almost constantly*
*Quartiles cut the distribution of income in approximately even quarters*

*Figure 40: Access device total sample*

Our survey confirms the rapid rise and tremendous importance of mobile Internet use in Europe. Participants report using smartphones most frequently to access the Internet, followed by laptops and desktop PCs. Tablets are relatively widely used, with only 37.5% reporting never using them. However they are less frequently used to access the Internet than desktop PCs. Gaming consoles are only used for Internet access by 26.7% of the sample.

**Smartphone use distinguishes participants and non-participants**




*N = 6111*

*Access device use: 1-5 scale with 1-never, 2-sometimes, 3-about half the time, 4-most of the time, 5-always*

***Figure 41:*** *Access device by user type*

Examining the use of access devices among the four identified types of (non-)participants, we find that providers and consumers are generally more avid users of access devices than non-users. This difference is particularly pronounced in the case of smartphone use. Providers also lead the field in use of tablets, while consumers are ahead of the other user types when it comes to use of laptops. Providers also use gaming consoles markedly more frequently then both consumers or non-users. Only in case of desktop PCs is the difference between the four groups not very pronounced. Given these differences, the following charts will delve deeper into the socio-demographic antecedents of access device use.

**Similar use patterns of device use throughout Europe**

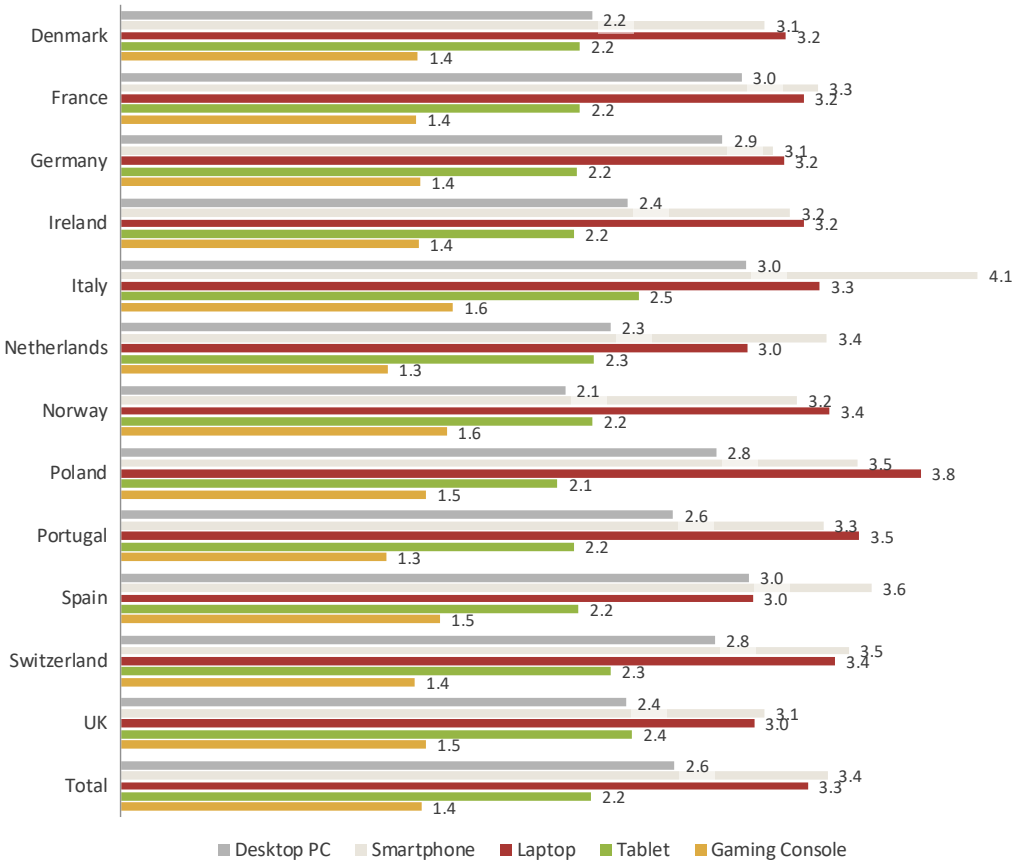
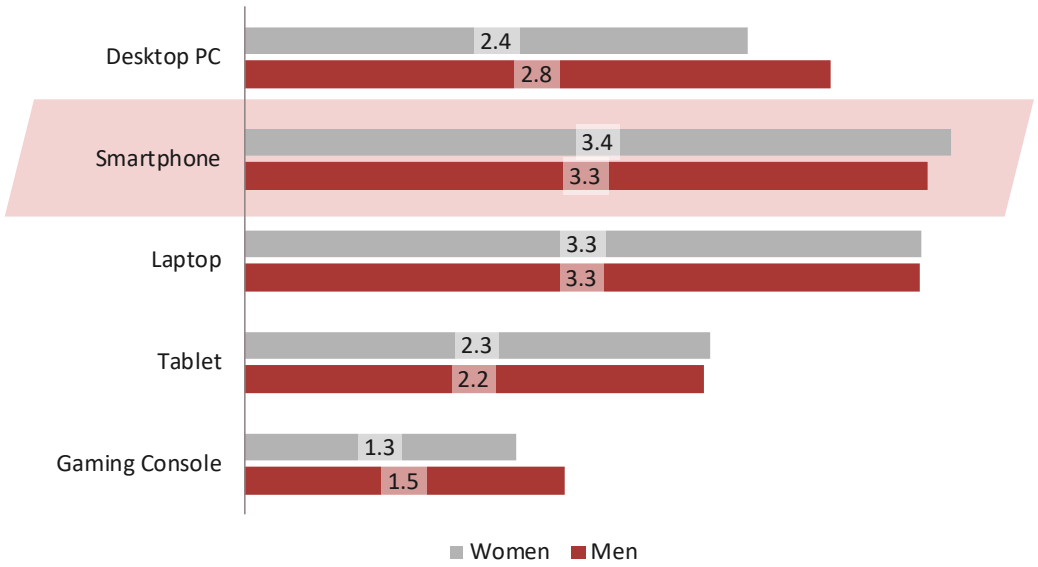



*Figure 42: Access device by country*

The use of the various access devices is relatively similarly distributed throughout Europe, with few exceptions. For example, Italians particularly frequently report using smartphones and tablets for Internet access, while laptops are particularly popular in Poland.

**Women are more avid smartphone users than men**

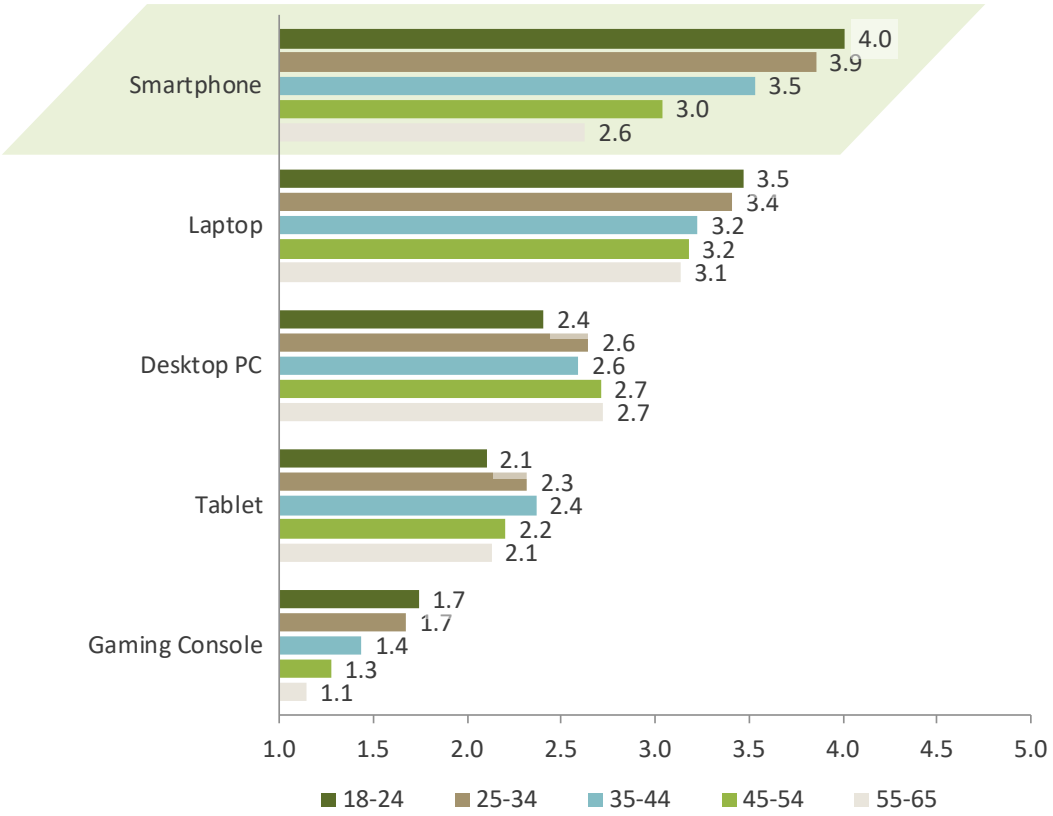



*N = 6111; Arithmetic means by gender are displayed*
*Access device use: 1-5 scale with 1-never, 2-sometimes, 3-about half the time, 4-most of the time, 5-always*

***Figure 43:*** *Access device by gender*

Comparing the gendered use of access devices, it turns out that men tend to access the Internet more frequently through desktop PCs and gaming consoles whereas women prefer smartphones and tablets. The latter finding may be of particular interest to sharing platforms offering location-based services. The popularity of desktop PCs among male participants may be related to workforce participation effects in certain countries.

**Younger users prefer smartphones**

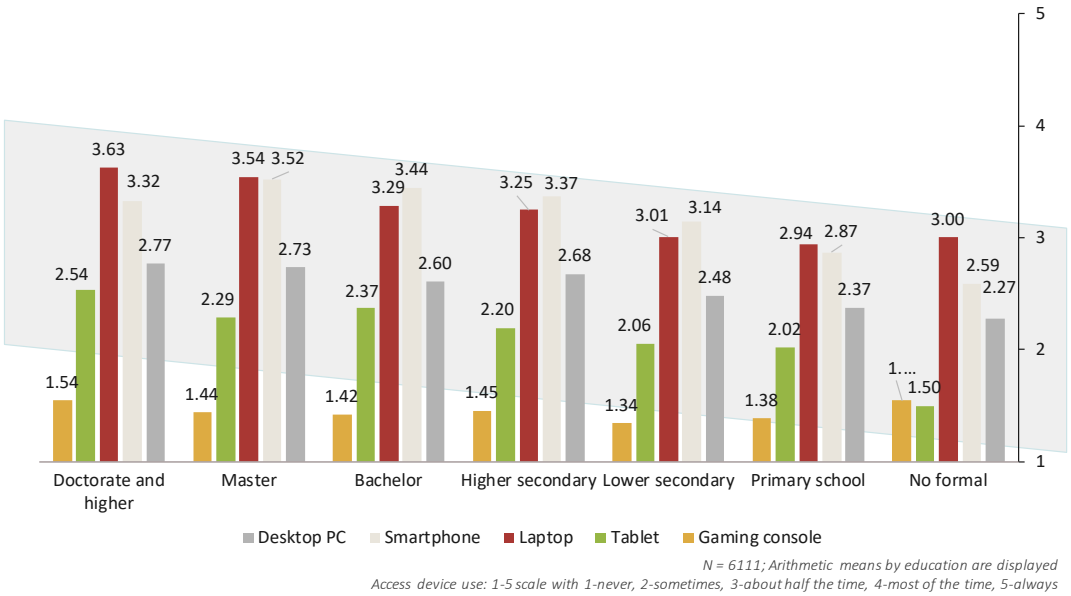



*N = 6111; Arithmetic means by age groups are displayed*
*Access device use: 1-5 scale with 1-never, 2-sometimes, 3-about half the time, 4-most of the time, 5-always*

*Figure 44: Access device by age group*

While, in general, younger participants use access devices more frequently, this pattern does not hold for desktop PCs and tablets. This may be due to the use of desktop PCs in a work context and the relatively high cost of tablets. Desktop PCs are particularly popular among participants 45 years and older, and tablets are most popular for the age groups between 25 and 44 years of age.

**Mobile Internet access is related to educational attainment**

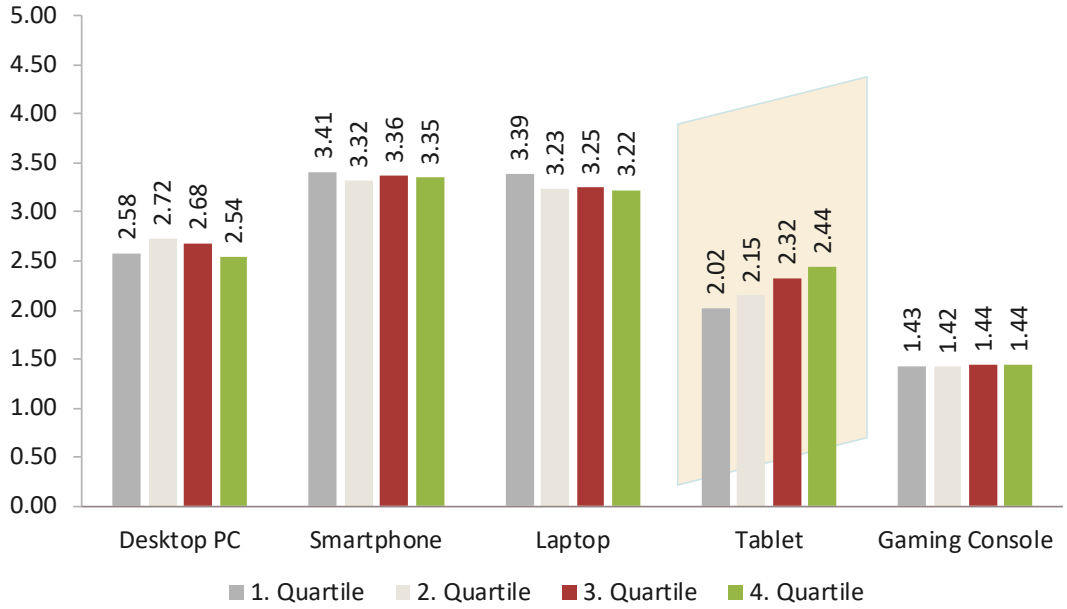



*N = 6111; Arithmetic means by education are displayed*
*Access device use: 1-5 scale with 1-never, 2-sometimes, 3-about half the time, 4-most of the time, 5-always*

*Figure 45: Access device by education*

It is notable that both laptop and tablet usage increases with educational attainment. Generally, this pattern also holds for smartphones and desktop PCs, but is somewhat less pronounced. Gaming consoles, instead, are most popular among those without a formal degree.

**Tablet use is related to income**

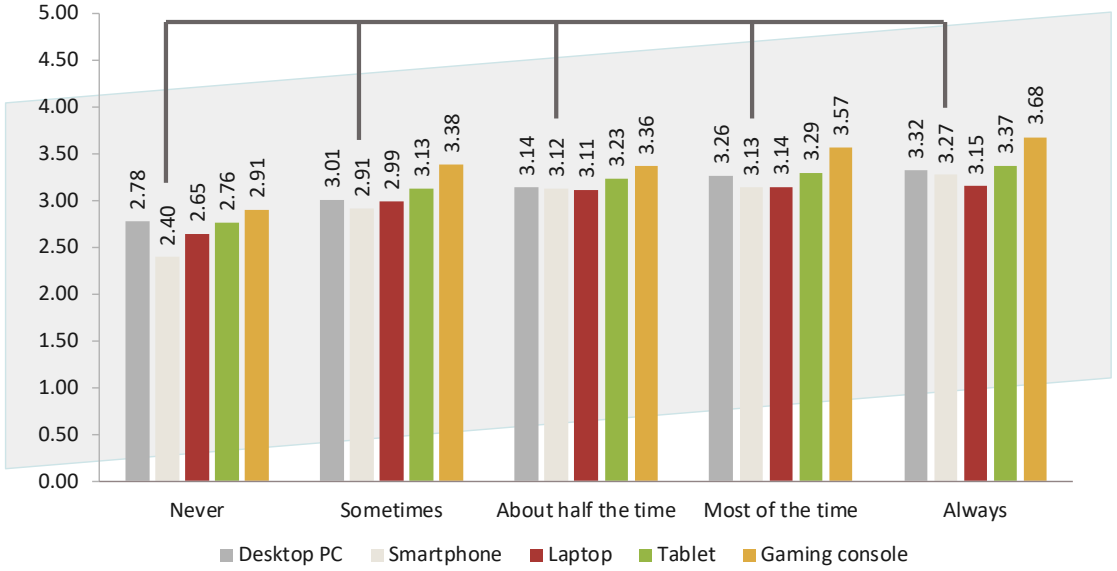



*N = 6111; Arithmetic means by income quartiles are displayed*
*Access device use: 1-5 scale with 1-never, 2-sometimes, 3-about half the time, 4-most of the time, 5-always*
*Quartiles cut the distribution of income in approximately even quarters*

*Figure 46: Access device by income*

When taking the income distribution into consideration, tablets again appear as relatively costly access devices, particularly popular among higher-income participants. Smartphones and Laptops, instead, find more avid use among lower-income participants.

**Smartphone and gaming console usage requires Internet-skills**




*N = 6111; Arithmetic means by Internet skills are displayed*
*Access device use: 1-5 scale with 1-never, 2-sometimes, 3-about half the time, 4-most of the time, 5-always*
*Internet skills: 1-5 scale with 1-very low, 2-low, 3-average, 4-high, 5-very high*

*Figure 47: Access device by skills*

For all access devices, we find more intensive use among participants with higher Internet skills. This relationship is particularly pronounced for smartphones and gaming consoles. The former, again, may be of particular interest to location-based sharing services.

# 5. Sharing Self-Efficacy of Non-Users

**Short summary**

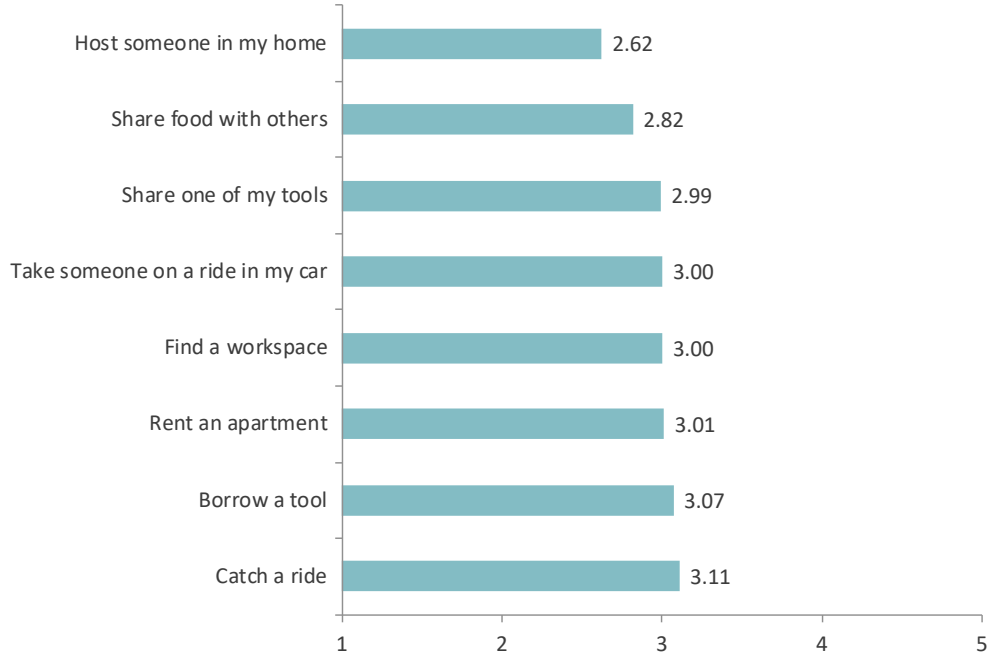
Previous analyses have repeatedly shown the importance of Internet skills for active participation in the digital economy (cf., Hargittai, 2002; Van Dijk, 2005). However, these findings have not yet been applied to sharing services. Aside from motivation and opportunity, Europeans need the necessary skills to successfully participate in the sharing economy. Therefore, we have surveyed respondents on their self-efficacy in terms of sharing. In other words: their confidence in successfully navigating sharing platforms. Here, we focus on non-participants since a lack of confidence in their skill sets may constitute an important obstacle to participation.

We find that aware non-users are more confident in their skills than non-aware non-users. Interestingly, while actual participation in the sharing economy focuses primarily on car- and home-sharing, non-participants focus more on tasks such as borrowing a tool or finding a workspace. Unsurprisingly, non-participants are more confident in their ability to consume sharing services than to provide them.

While self-efficacy doesn't significantly vary among non-aware non-users, we find that among non-participants who are aware of the sharing economy, sharing self-efficacy is related to general Internet skills, with higher educated individuals showing more of both. Higher-income aware non-users generally also show higher levels of sharing self-efficacy.

This reinforces the divides perspective applied to sharing (non-)participation in this report. Sharing self-efficacy is generally low among non-participants and could constitute an obstacle to participation. It is, however, especially weak among the group of non-aware non-users, who are characterized by higher age, lower education, lower income, low Internet skills, and less frequent Internet use.

**Aware non-users are confident that they could consume sharing services**




*N = 3818, aware non-users; Arithmetic means are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*

***Figure 48:*** *Self-efficacy (aware non-users; Means, scale 1-5)*

Aware non-users were asked to judge their own ability to conduct a number of transactions on a sharing platform on a scale from one to five. As can be seen, aware non-users are quite confident in their ability to catch a ride, borrow a tool, or rent an apartment through a sharing platform. They are more skeptical about their ability to provide sharing services, particularly hosting a guest in their home. Some sociodemographic differences in this estimation will be discussed below.

**Non-aware non-users are less confident in their skills, even in terms of consumption**


*N = 594, non-aware non-users, Arithmetic means are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*

***Figure 49:*** *Self-efficacy (non-aware non-users, means, scale 1-5)*

For non-aware non-users, the average scores for their estimated ability to transact on a sharing platform are somewhat lower. Yet, again, consuming a sharing service seems more manageable to non-aware non-users than providing a sharing service. Interestingly, finding a workplace, on average, is seen as easier to handle than borrowing a tool or renting an apartment. We did not find any significant sociodemographic differences for these estimations among non-aware non-users.

**Italian, Danish, and Portuguese aware non-users are relatively confident in their sharing skills**

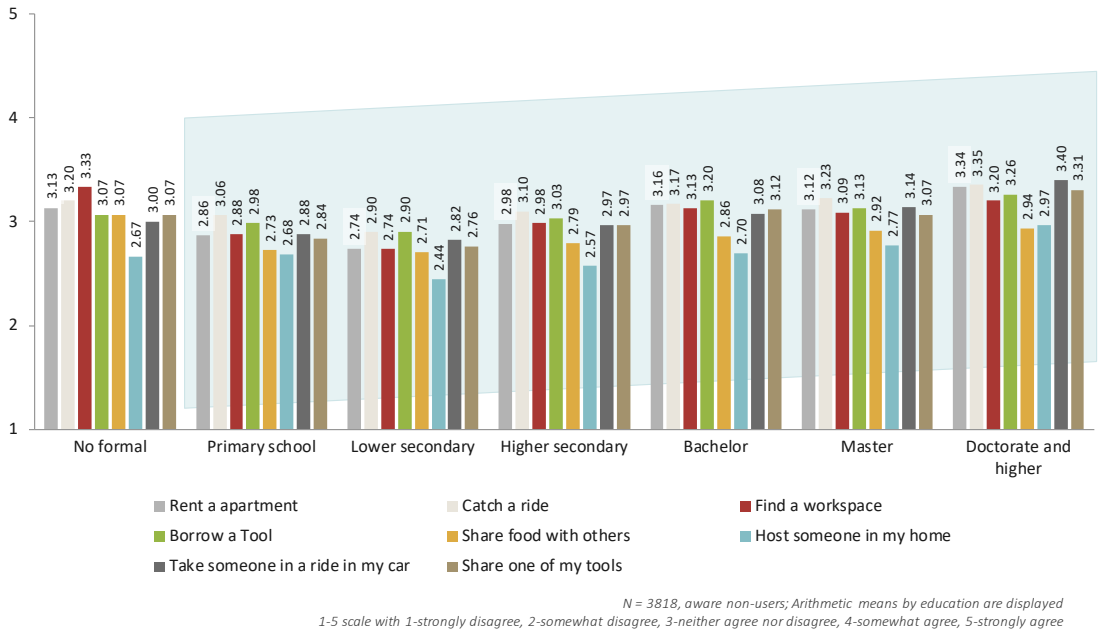
| | Rent a apartment | Catch a ride | Find a workspace | Borrow a tool | Share food with others | Host someone in my home | Take someone in a ride in my car | Share one of my tools |
|---|---|---|---|---|---|---|---|---|
| Denmark | 3.19 | 3.30 | 3.03 | 3.09 | 2.97 | 2.96 | 3.10 | 3.03 |
| France | 2.90 | 3.07 | 2.73 | 3.14 | 2.65 | 2.54 | 3.07 | 3.01 |
| Germany | 2.62 | 3.04 | 2.47 | 2.91 | 2.54 | 2.25 | 2.86 | 2.78 |
| Ireland | 3.30 | 3.08 | 3.19 | 3.10 | 2.82 | 2.88 | 2.85 | 3.03 |
| Italy | 3.18 | 3.20 | 3.20 | 3.03 | 2.87 | 2.69 | 3.16 | 3.10 |
| Netherlands | 2.81 | 2.90 | 2.83 | 3.00 | 2.82 | 2.58 | 2.93 | 2.92 |
| Norway | 3.21 | 3.19 | 2.81 | 3.19 | 2.75 | 2.64 | 3.12 | 3.07 |
| Poland | 2.92 | 3.40 | 3.40 | 3.15 | 3.20 | 2.75 | 3.27 | 3.01 |
| Portugal | 3.26 | 3.16 | 3.39 | 3.21 | 2.96 | 2.68 | 3.04 | 3.17 |
| Spain | 2.97 | 2.91 | 3.13 | 2.99 | 2.75 | 2.37 | 2.92 | 2.94 |
| Switzerland | 2.76 | 3.05 | 2.81 | 3.07 | 2.68 | 2.48 | 2.96 | 3.00 |
| UK | 3.04 | 3.02 | 2.92 | 2.94 | 2.73 | 2.66 | 2.74 | 2.84 |
| **Total** | **3.01** | **3.11** | **3.00** | **3.07** | **2.82** | **2.62** | **3.00** | **2.99** |

*N = 3818, aware non-users; Arithmetic means by country are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*

***Figure 50:*** *Self-efficacy (aware non-users) by country (Means, scale 1-5)*

When comparing aware non-users from the sampled European countries, some significant differences emerge. Overall, aware non-users from Italy, Denmark, and Portugal are somewhat more confident in their skills than those from other countries. There are some differences depending on the skill in question. For example, Portuguese and Norwegian aware non-users are particularly confident in their ability to rent an apartment, while those from Poland and Denmark are most confident in their ability to catch a ride. These differences obviously cannot be explained by actual experiences, as only non-users are included. However, the prevalence of the service in the respective country may affect non-users estimation of their efficacy.

**With the exception of lower-educated individuals, self-efficacy rises with education**

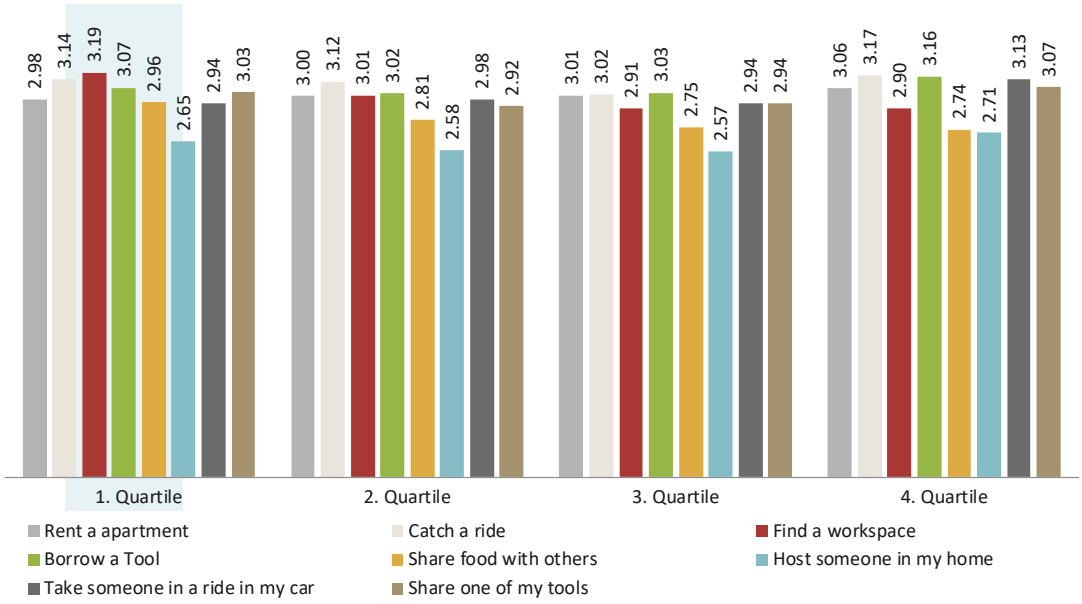



*N = 3818, aware non-users; Arithmetic means by education are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*

***Figure 51:*** *Self-efficacy (aware non-users) by education (means, scale 1-5)*

Among aware non-users, self-efficacy is related to educational attainment – with the exception of those without formal education. These non-users are quite confident in their skills.

**Lower income non-users are confident in their ability to find a workspace or share food**

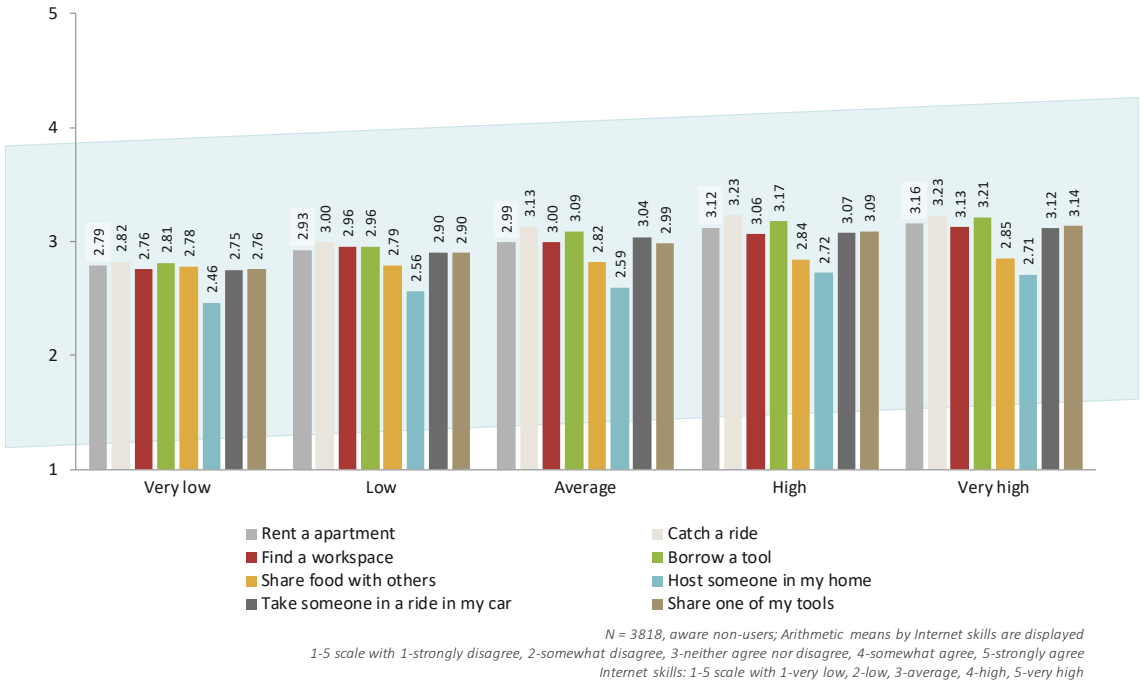



*N = 3818, aware non-users; Arithmetic means by country are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*

***Figure 52:*** *Self-efficacy (aware non-users) by income quartile (Means, scale 1-5)*

When looking at the income distribution, we find some significant differences regarding specific tasks. Interestingly, lower-income aware non-users are the most confident group in their ability to find a workplace or share food, and are quite confident in their ability to borrow a tool through a sharing service. Accordingly, sharing self-efficacy is not positively related to income in general.

**Sharing self-efficacy rises with Internet skills**




*N = 3818, aware non-users; Arithmetic means by Internet skills are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*
*Internet skills: 1-5 scale with 1-very low, 2-low, 3-average, 4-high, 5-very high*

***Figure 53:*** *Self-efficacy (aware non-users) by skills*

As could be expected, sharing self-efficacy is positively related to Internet skills. So if participants exhibit higher Internet skills in general, they also estimate their ability to use sharing services more confidently.

# 6. Reasons for Non-Participation in the Sharing Economy

**Short summary**

Finally, before turning to the outcomes of participation in the sharing economy, we were interested in the reasons for non-participation given by those who abstain from sharing. Aside from awareness, sociodemographic antecedents, motivation, opportunity, and skills, users may find a number of additional subjective reasons why they would choose not to engage in sharing. Accordingly, we surveyed our sample of European citizens on a large number of potential reasons for non-participation – both in terms of providing and consuming sharing services.

We find that a general dislike for sharing or using other peoples' objects ranks very highly among the reasons given for non-participation, as does resistance to interacting with strangers. Privacy and legal concerns, however, are also pronounced. Thereby, both sharing services as well as regulators could potentially bolster sharing participation by addressing these concerns.

Negative attitudes towards sharing are not very pronounced and rank among the least important reasons given for not participating in the sharing economy.

Non-participants also rarely say that they are excluded from sharing because they lack a necessary requirement (such as a car, space or object to share, an access device or credit card). However, young non-participants give this reason more frequently. These non-participants may therefore grow into participants as soon as they have the necessary requirements.

Higher- educated and income individuals rarely lack access to sharing services or the requirements necessary for participation. Rather they do not need the additional income from sharing or can afford to use other, presumably more comfortable services. The reverse holds for lower-educated and income individuals. Also, lower-educated and -income individuals generally seem more insecure towards the sharing economy. They feel more reluctant to interact with strangers, they are less sure about the potential benefits of sharing, or find the platforms too cumbersome to use. From a platform perspective, this raises the question whether these demographics are worth an extra effort to alleviate concerns and insecurities.

**Privacy concerns and legal concerns are key reasons for not providing on sharing services**

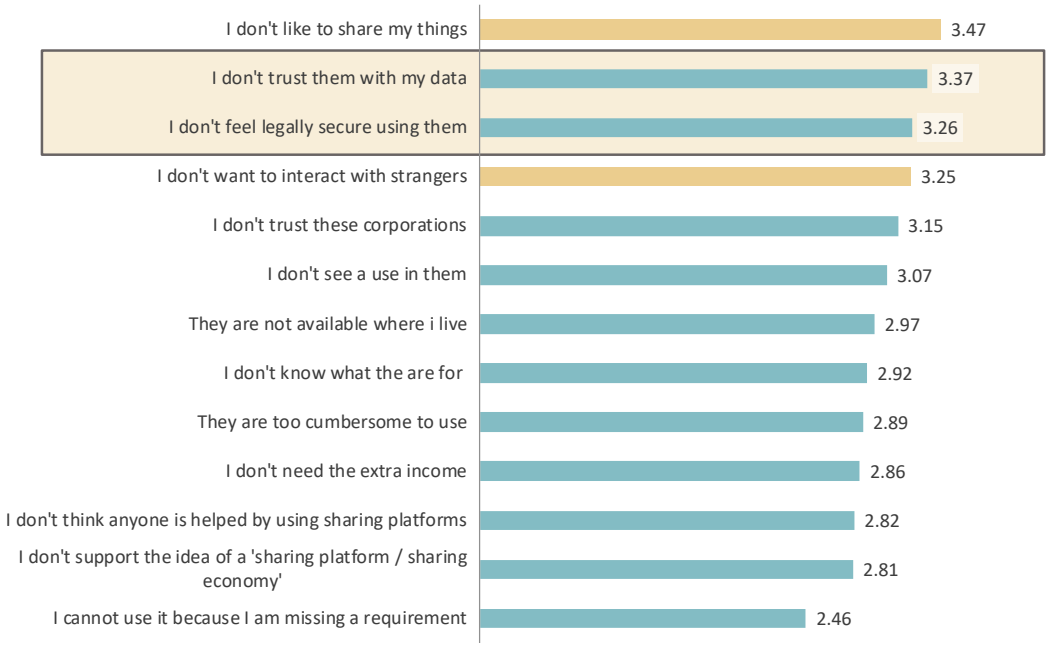



*Figure 54: Reasons for non-participation (providing, Means, scale 1-5)*

The overall most important reason given for not participating in the sharing economy as a provider is an unwillingness to share personal belongings. Aside from that, other reasons for non-participation focus more on the legal and organizational settings of the sharing economy. The second most frequently named obstacle is a lack of trust in platform's privacy settings and legal insecurity. The least important obstacle is a lack of requirements for participation, such as not having a space, object, or car to share. Also, generally negative attitudes towards the sharing economy are not an important obstacle.

## Germans and the Dutch dislike sharing personal belongings

| | I don't see a use in them | I don't know what they are for | I don't trust them with my data | I don't feel legally secure using them | They are not available where I live | They are too cumbersome to use | I cannot use it because I am missing a requirement |
|---|---|---|---|---|---|---|---|
| Denmark | 3.20 | 2.98 | 3.42 | 3.48 | 2.91 | 2.96 | 2.32 |
| France | 3.25 | 3.23 | 3.43 | 3.37 | 2.87 | 2.92 | 2.52 |
| Germany | 3.17 | 2.78 | 3.54 | 3.20 | 3.03 | 3.02 | 2.24 |
| Ireland | 3.16 | 3.11 | 3.59 | 3.48 | 3.20 | 3.01 | 2.47 |
| Italy | 2.76 | 2.50 | 3.16 | 2.96 | 3.05 | 2.57 | 2.29 |
| Netherlands | 3.25 | 2.70 | 3.39 | 3.31 | 2.72 | 2.65 | 2.38 |
| Norway | 3.10 | 3.00 | 3.22 | 3.13 | 3.12 | 2.90 | 2.36 |
| Poland | 2.97 | 2.97 | 3.23 | 3.24 | 3.00 | 2.90 | 2.70 |
| Portugal | 2.94 | 3.04 | 3.29 | 3.15 | 3.01 | 2.79 | 2.77 |
| Spain | 2.85 | 2.85 | 3.40 | 3.30 | 2.95 | 3.01 | 2.60 |
| Switzerland | 3.02 | 2.81 | 3.27 | 3.06 | 2.85 | 2.95 | 2.45 |
| UK | 3.15 | 3.04 | 3.56 | 3.41 | 3.00 | 2.94 | 2.30 |
| **Total** | **3.07** | **2.92** | **3.37** | **3.26** | **2.97** | **2.89** | **2.46** |

| | I don't like to share my things | I don't need the extra income | I don't want to interact with strangers | I don't think anyone is helped by using sharing platforms | I don't trust these corporations | I don't support the idea of a sharing platform/ economy |
|---|---|---|---|---|---|---|
| Denmark | 3.50 | 3.05 | 3.25 | 2.76 | 3.33 | 2.96 |
| France | 3.57 | 2.93 | 3.30 | 2.91 | 3.25 | 2.88 |
| Germany | 3.76 | 2.86 | 3.42 | 2.69 | 3.16 | 2.81 |
| Ireland | 3.38 | 2.72 | 3.37 | 2.83 | 3.44 | 3.00 |
| Italy | 3.35 | 2.65 | 2.59 | 2.54 | 2.90 | 2.74 |
| Netherlands | 3.68 | 3.22 | 3.41 | 3.30 | 2.73 | 2.42 |
| Norway | 3.47 | 2.91 | 3.56 | 2.81 | 3.15 | 2.84 |
| Poland | 3.46 | 2.74 | 3.11 | 3.01 | 3.17 | 2.86 |
| Portugal | 3.17 | 2.52 | 3.05 | 2.77 | 3.03 | 2.78 |
| Spain | 3.54 | 2.99 | 3.32 | 2.79 | 3.28 | 2.84 |
| Switzerland | 3.37 | 2.77 | 3.06 | 2.57 | 2.96 | 2.68 |
| UK | 3.44 | 3.04 | 3.51 | 2.83 | 3.44 | 2.96 |
| **Total** | **3.47** | **2.86** | **3.25** | **2.82** | **3.15** | **2.81** |

***Figure 55:*** *Reasons for non-participation (providing) by country (Means, scale 1-5)*

Comparing countries, we find that a dislike of sharing personal belongings is especially pronounced among German and Dutch participants. Privacy concerns are most widespread in Ireland and the UK, whereas legal insecurity is highest in Denmark and Ireland, but very unimportant in Italy. Portuguese and Polish respondents are most likely to not participate for lack of certain requirements.

**Younger non-users more frequently abstain from sharing against their will**

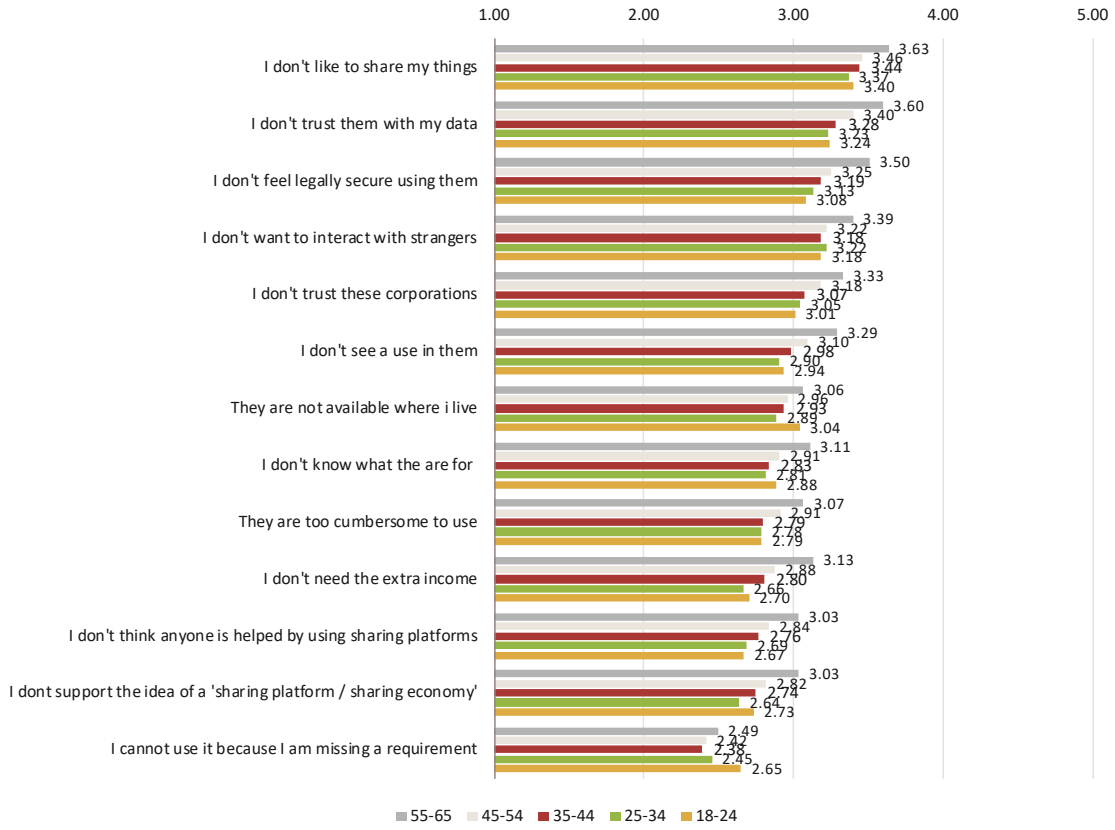



*Figure 56: Reasons for non-participation (providing) by age group (Means, scale 1-5)*

When comparing age groups, we find that priorities in terms of obstacles to participating in the sharing economy as providers are generally similar. However, younger non-participants consider almost all reasons for abstention as less relevant – with one notable exception: younger non-participants are more likely to be excluded from sharing because they lack a necessary requirement, such as a space, car or object to share, or a credit card or access device. Also, lack of availability of sharing services is a more common obstacle among young non-participants compared to middle-aged respondents.

**Higher educated users abstain from sharing because they don't need the income**

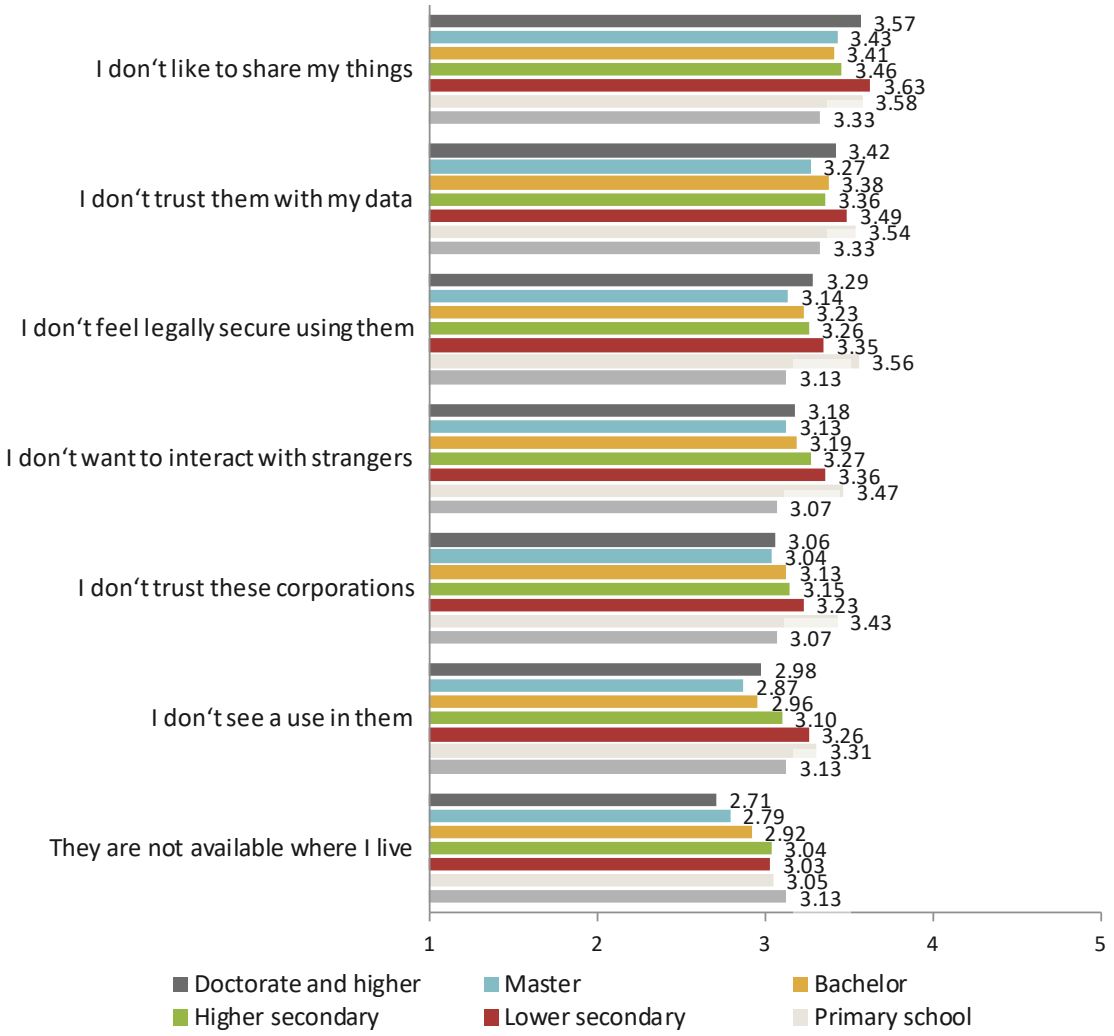



*Figure 57: Reasons for non-participation (providing) by education (Means, scale 1-5, 1/2)*

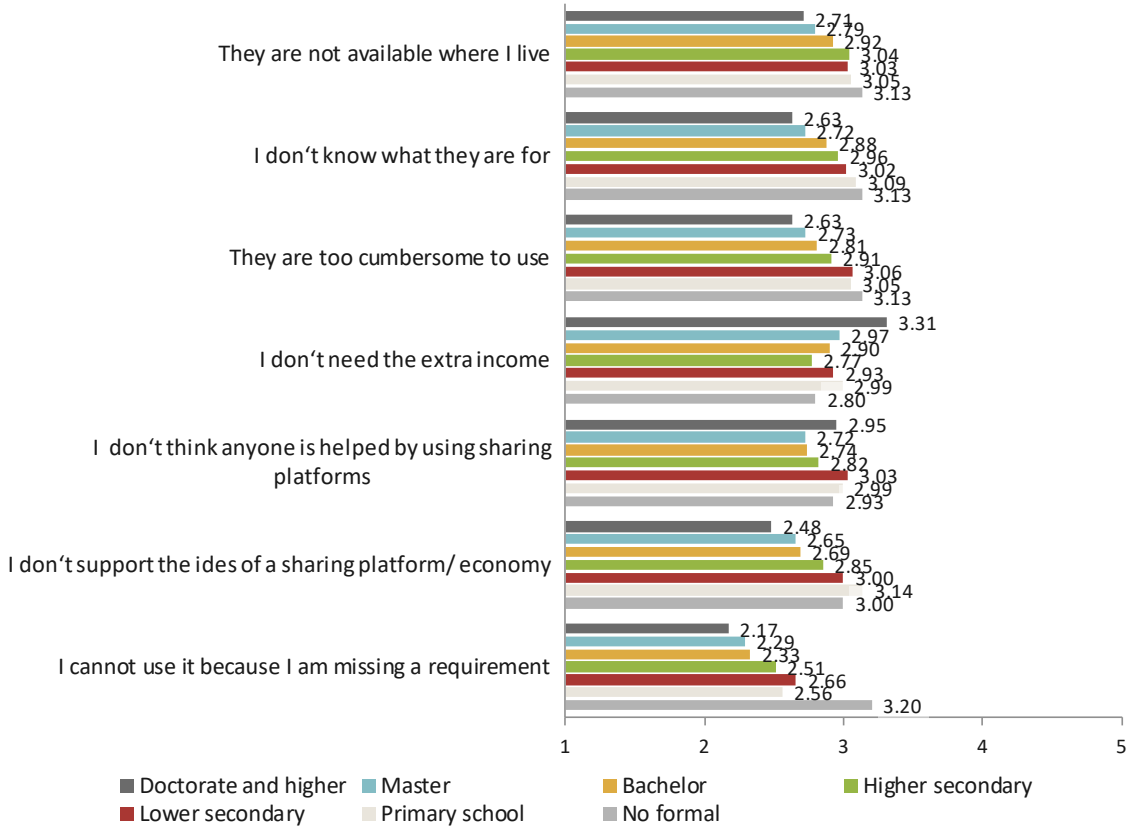



*Figure 58: Reasons for non-participation (providing) by education (Means, scale 1-5, 2/2)*

Some interesting distinctions emerge from comparing reasons for non-participation between participants of various levels of educational attainment. Higher-educated non-participants tend to abstain from providing sharing services because they do not need the additional income. Lower-educated non-participants, instead, do not provide because they are missing requirements, find the service too cumbersome, don't like to interact with strangers, or mistrust service providers. Also, lower-educated respondents can more often be found in areas where sharing services are not available.

**Higher income users do not lack access to the sharing economy**

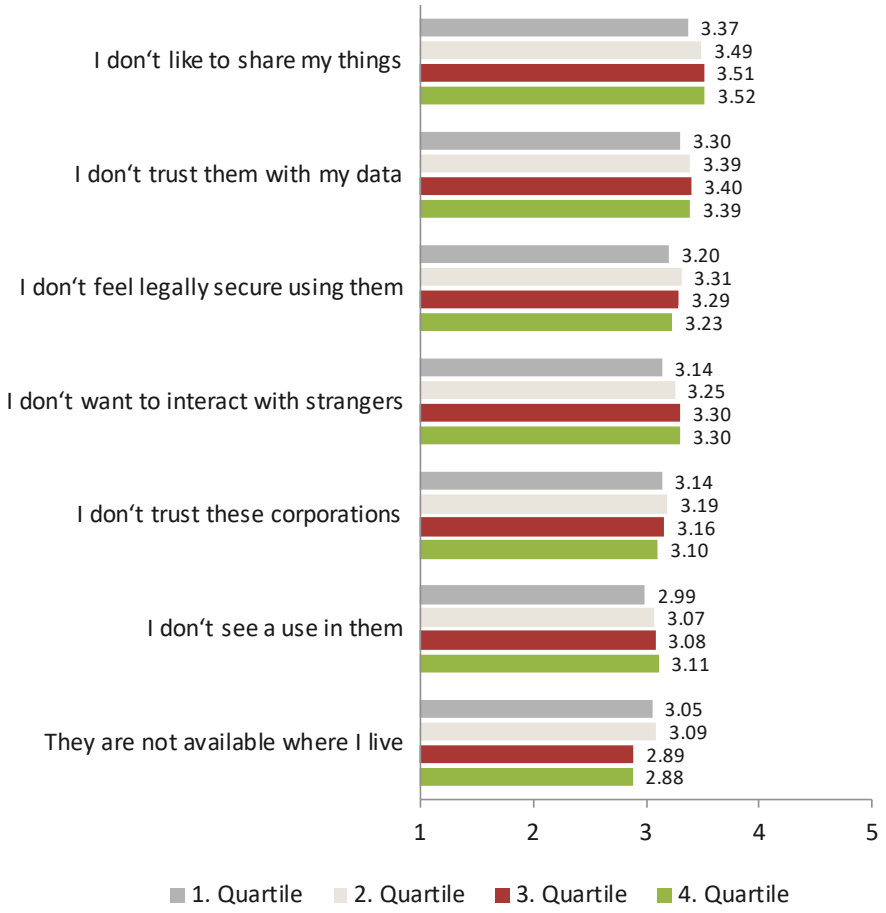



*Figure 59: Reasons for non-participation (providing) by income quartile (Means, scale 1-5, 1/2)*

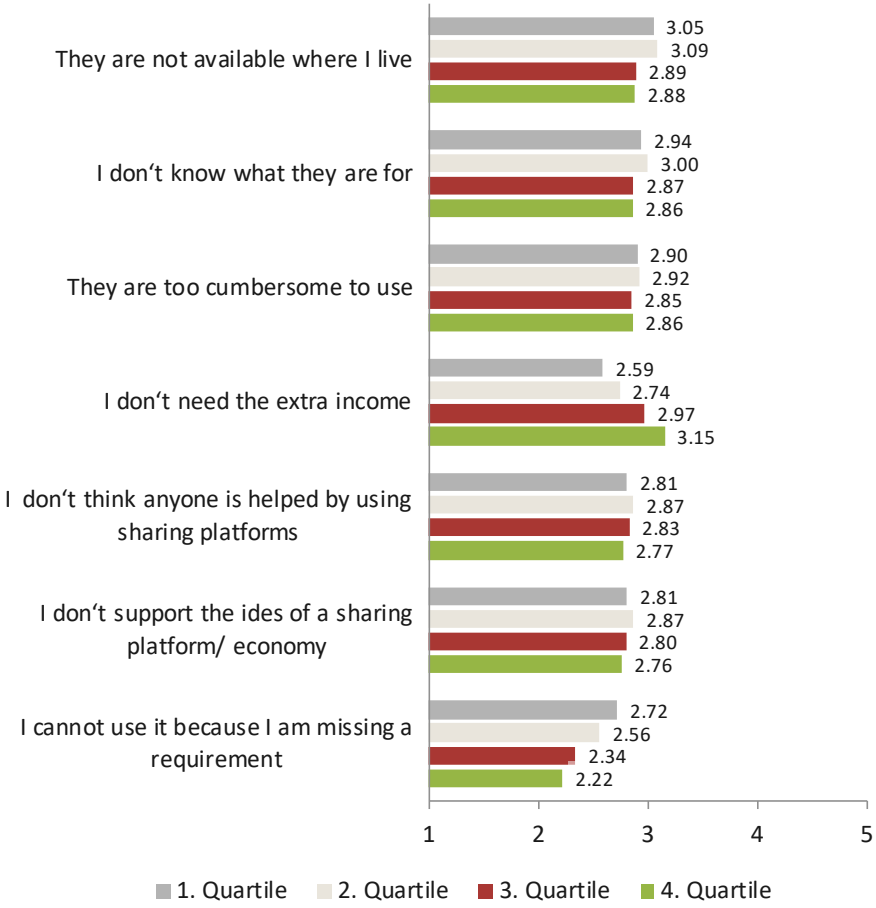



*Figure 60: Reasons for non-participation (providing) by income quartile (Means, scale 1-5, 2/2)*

Differences in reasons for non-participation as a provider are less pronounced between income groups when compared to educational groups. The most notable difference is in terms of two reasons for non-participation: Higher-income respondents tend to abstain more because they don't need the additional income from sharing, while lower-income respondents abstain more frequently because they lack the requirements to provide a sharing service. Lower-income respondents also more frequently say that sharing services are not available where they live.

**Reasons for non-use are generally more important for lower-skilled users**

| Skill Index | I don't see a use in them | I don't know what they are for | I don't trust them with my data | I don't feel legally secure using them | They are not available where I live | They are too cumbersome to use | I cannot use it because I am missing a requirement |
|---|---|---|---|---|---|---|---|
| Very low | 3.45 | 3.53 | 3.57 | 3.55 | 3.16 | 3.27 | 2.94 |
| Low | 3.17 | 3.16 | 3.44 | 3.34 | 3.03 | 3.01 | 2.66 |
| Average | 3.03 | 2.95 | 3.37 | 3.27 | 2.95 | 2.89 | 2.46 |
| High | 2.98 | 2.72 | 3.32 | 3.20 | 2.98 | 2.78 | 2.29 |
| Very high | 2.89 | 2.41 | 3.23 | 3.03 | 2.81 | 2.60 | 2.09 |
| **Total** | **3.07** | **2.92** | **3.37** | **3.26** | **2.97** | **2.89** | **2.46** |

*N = 3818; Arithmetic means for providing by Internet skills are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*

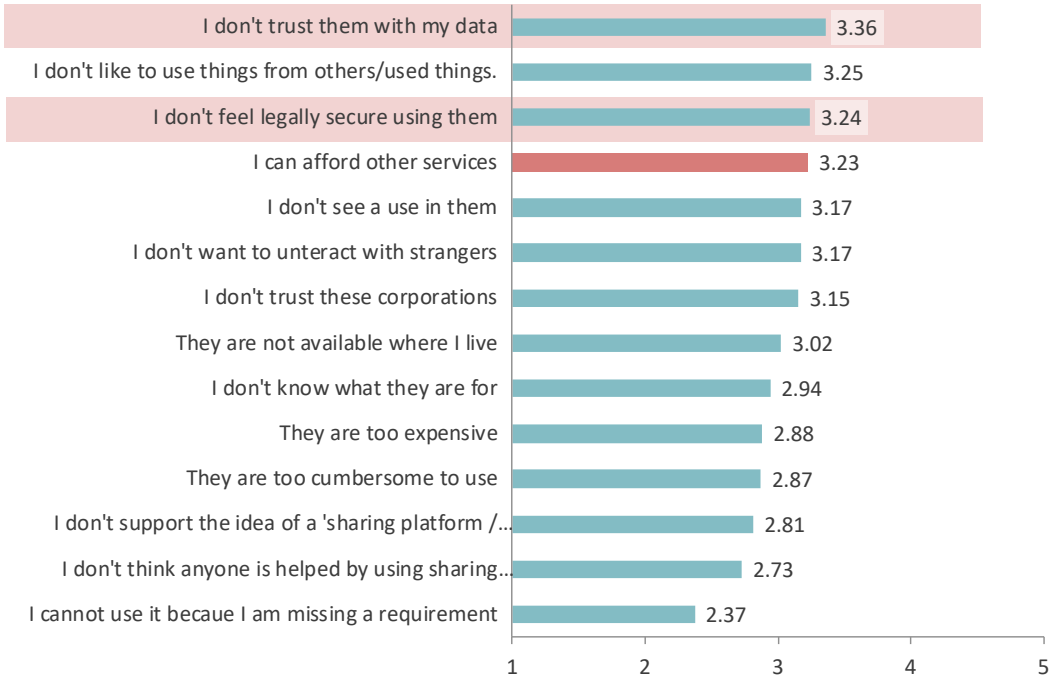
| Skill Index | I don't like to share my things | I don't need the extra income | I don't want to interact with strangers | I don't think anyone is helped by using sharing platforms | I don't trust these corporations | I don't support the ides of a sharing platform/ economy |
|---|---|---|---|---|---|---|
| Very low | 3.66 | 3.06 | 3.54 | 3.20 | 3.45 | 3.24 |
| Low | 3.45 | 2.91 | 3.30 | 2.96 | 3.23 | 2.96 |
| Average | 3.43 | 2.78 | 3.24 | 2.79 | 3.11 | 2.76 |
| High | 3.48 | 2.87 | 3.19 | 2.71 | 3.07 | 2.69 |
| Very high | 3.48 | 2.86 | 3.11 | 2.62 | 3.05 | 2.63 |
| **Total** | **3.47** | **2.86** | **3.25** | **2.82** | **3.15** | **2.81** |

*N = 3818; Arithmetic means for providing by Internet skills are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*

***Figure 61:*** *Reasons for non-participation (providing) by Internet skills (Means, scale 1-5)*

Finally, when comparing reasons for not providing sharing services by respondents' level of Internet skills, we find that lower Internet skills are consistently associated with more perceived obstacles for participation. A personal dislike for sharing personal belongings and not needing extra income are the only two reasons for not providing that are not clearly associated with respondents' skills levels.

**Users avoid sharing services when they can afford alternatives**




*N = 3818; Arithmetic means for consuming are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*

***Figure 62:*** *Reasons for non-participation (consuming, Means, scale 1-5)*

When turning to reasons for not consuming sharing services among non-participants, we again find privacy and legal concerns as well as a dislike to use other people's belongings as key obstacles. Interestingly, the fourth most important reason is the availability of alternatives. As we have seen, consumers tend to use sharing services because they are affordable. Accordingly, when respondents can afford attractive alternatives, they turn away from sharing services. Again, missing a requirement least frequently keeps respondents from engaging in the sharing economy.

**Lack of availability in many countries is an important reason for not consuming sharing services**

| | I don't see a use in them | I don't know what they are for | I don't trust them with my data | I don't feel legally secure using them | They are not available where I live | They are too cumbersome to use | I cannot use it because I am missing a requirement |
|---|---|---|---|---|---|---|---|
| Denmark | 3.37 | 3.05 | 3.44 | 3.53 | 2.91 | 3.01 | 2.18 |
| France | 3.26 | 3.30 | 3.38 | 3.25 | 2.89 | 2.90 | 2.46 |
| Germany | 3.27 | 2.73 | 3.51 | 3.17 | 3.08 | 2.90 | 2.16 |
| Ireland | 3.26 | 3.15 | 3.60 | 3.47 | 3.27 | 3.03 | 2.30 |
| Italy | 2.86 | 2.52 | 3.10 | 2.88 | 3.12 | 2.67 | 2.30 |
| Netherlands | 3.48 | 2.81 | 3.39 | 3.25 | 2.82 | 2.70 | 2.28 |
| Norway | 3.21 | 3.01 | 3.22 | 3.22 | 3.20 | 2.83 | 2.09 |
| Poland | 2.99 | 2.98 | 3.20 | 3.16 | 3.00 | 2.87 | 2.65 |
| Portugal | 2.91 | 3.01 | 3.31 | 3.22 | 3.08 | 2.70 | 2.76 |
| Spain | 2.97 | 2.79 | 3.46 | 3.33 | 2.98 | 3.03 | 2.56 |
| Switzerland | 3.15 | 2.83 | 3.16 | 3.01 | 2.84 | 2.92 | 2.39 |
| UK | 3.36 | 3.09 | 3.46 | 3.32 | 3.11 | 2.90 | 2.22 |
| **Total** | **3.17** | **2.94** | **3.36** | **3.24** | **3.02** | **2.87** | **2.37** |

| | I don't like to use things from others/ Used things | They are too expensive | I can afford other services | I don't want to interact with strangers | I don't think anyone is helped by using sharing platforms | I don't trust these corporations | I don't support the ides of a sharing platform/ economy |
|---|---|---|---|---|---|---|---|
| Denmark | 3.11 | 2.94 | 3.22 | 3.22 | 2.74 | 3.31 | 2.94 |
| France | 3.42 | 2.97 | 3.26 | 3.17 | 2.89 | 3.21 | 2.84 |
| Germany | 3.70 | 2.69 | 3.14 | 3.27 | 2.64 | 3.09 | 2.71 |
| Ireland | 3.12 | 2.97 | 3.15 | 3.32 | 2.84 | 3.34 | 2.99 |
| Italy | 3.22 | 2.77 | 3.09 | 2.59 | 2.50 | 2.87 | 2.64 |
| Netherlands | 3.26 | 2.82 | 3.35 | 2.96 | 2.57 | 3.17 | 2.85 |
| Norway | 3.24 | 2.92 | 3.25 | 3.54 | 2.67 | 3.17 | 2.79 |
| Poland | 3.44 | 2.89 | 3.35 | 3.06 | 3.01 | 3.13 | 2.85 |
| Portugal | 3.01 | 2.92 | 3.14 | 3.09 | 2.80 | 2.97 | 2.79 |
| Spain | 3.29 | 2.94 | 3.32 | 3.35 | 2.74 | 3.31 | 2.81 |
| Switzerland | 3.34 | 2.73 | 3.22 | 3.00 | 2.49 | 2.91 | 2.62 |
| UK | 2.91 | 2.99 | 3.19 | 3.43 | 2.80 | 3.35 | 2.90 |
| **Total** | **3.25** | **2.88** | **3.23** | **3.17** | **2.73** | **3.15** | **2.81** |

*Figure 63: Reasons for non-participation (consuming) by country (Means, scale 1-5)*

While in general the lack of requirements is not a key obstacle to consuming sharing services, in Portugal, Spain, and Poland, quite a few respondents consider this an important issue. In Ireland, Norway, Italy, and the UK, respondents also name lack of availability as a relatively important reason for non-participation. Negative attitudes towards sharing appear as a common reason for non-participation in the Netherlands, Denmark, and the UK. Privacy concerns are especially pronounced in Ireland, Germany, Spain, and Denmark.

**Older non-consumers are more concerned for their privacy**

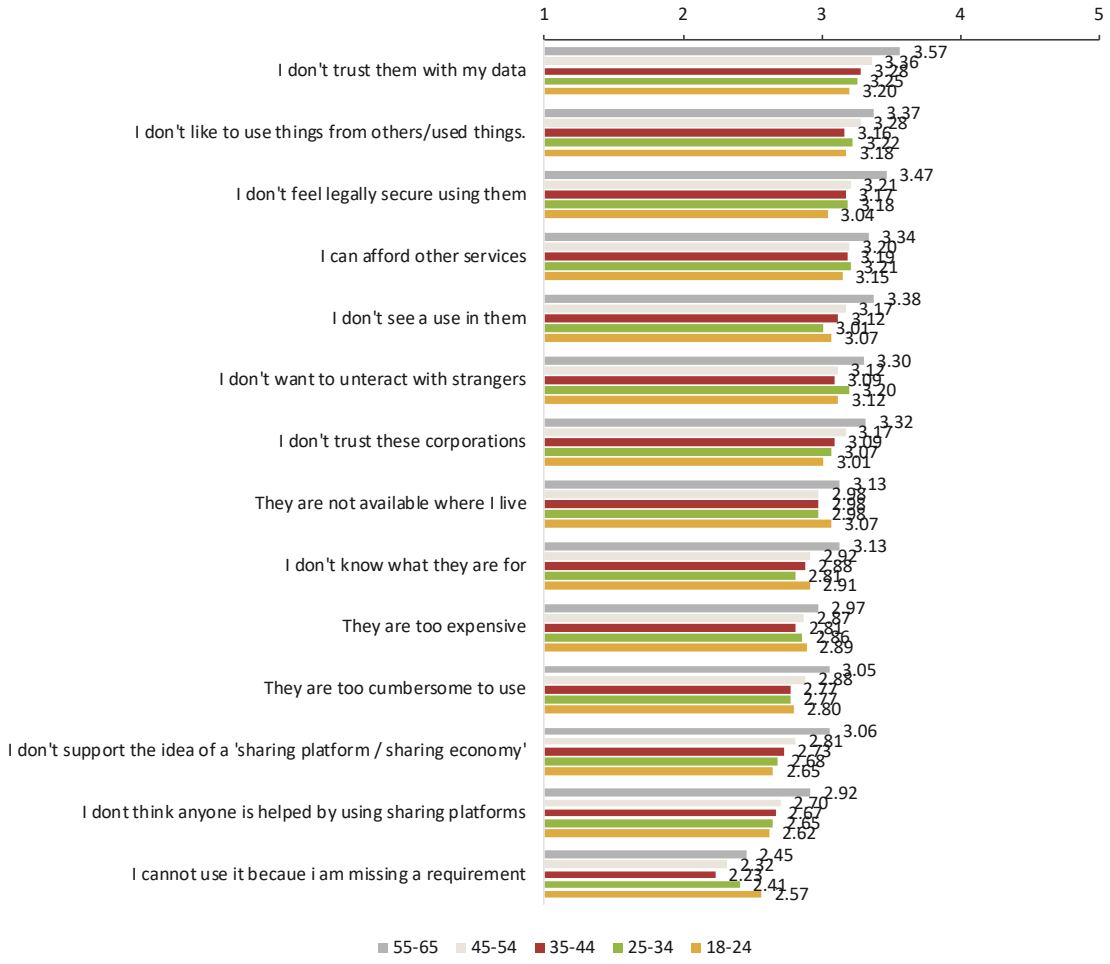



*Figure 64: Reasons for non-participation (consuming) by age group (Means, scale 1-5)*

Overall, reasons for non-participation as consumers are less pronounced among younger respondents – the only exception being, again, a lack of necessary requirements for participation.

**Higher educated non-consumers can afford alternatives to sharing services**

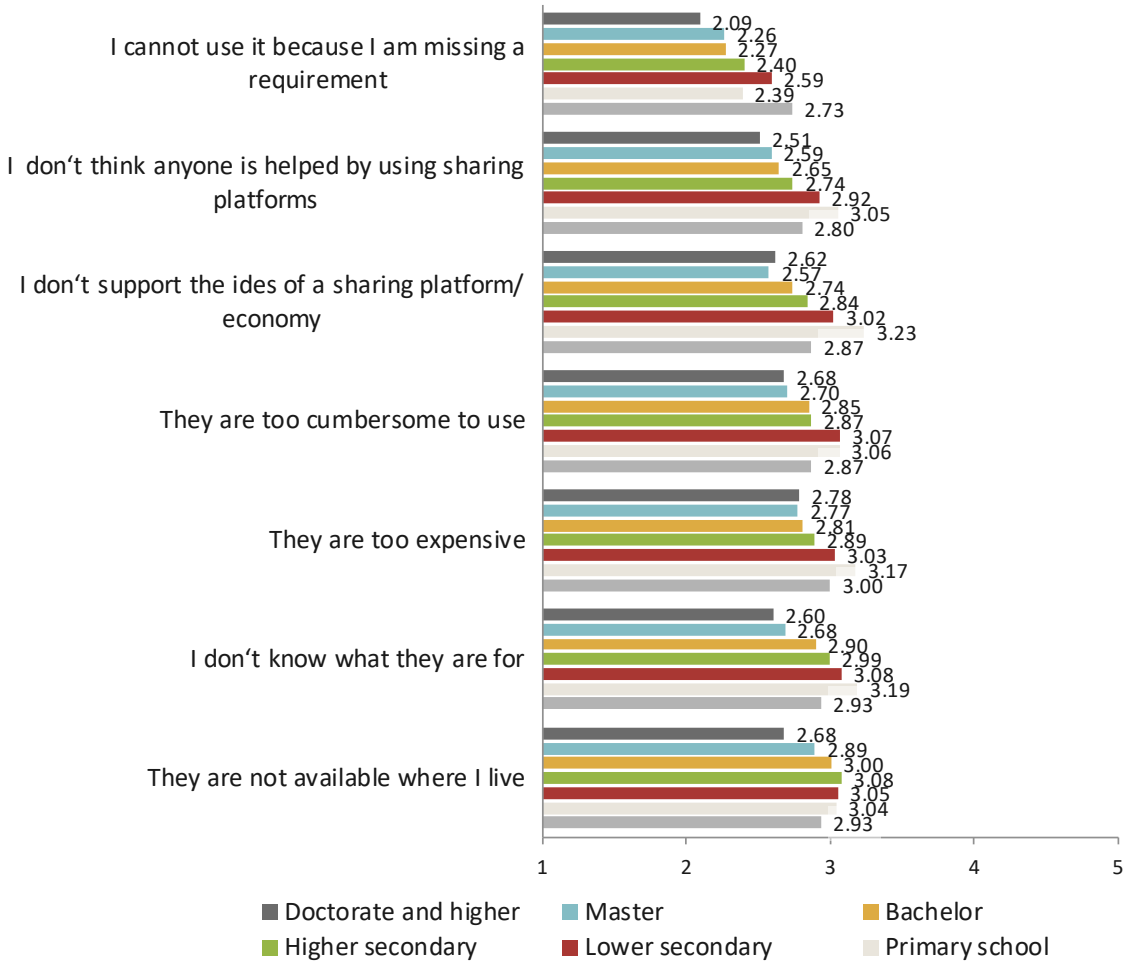



*Figure 65: Reasons for non-participation (consuming) by education (Means, scale 1-5, 1/2)*

Higher educated non-participants tend to consider most reasons for abstaining from consuming sharing services as less relevant. This is especially the case for a lack of necessary requirements, negative attitudes towards sharing, or a lack of understanding of sharing platforms. However, for a number of reasons for non-participation, there are no significant differences between respondents of varied educational attainments. This is the case for dislike of using other people's belongings, privacy, and legal concerns. Higher-educated respondents, however, most frequently say they don't consume sharing services because they can afford alternatives.

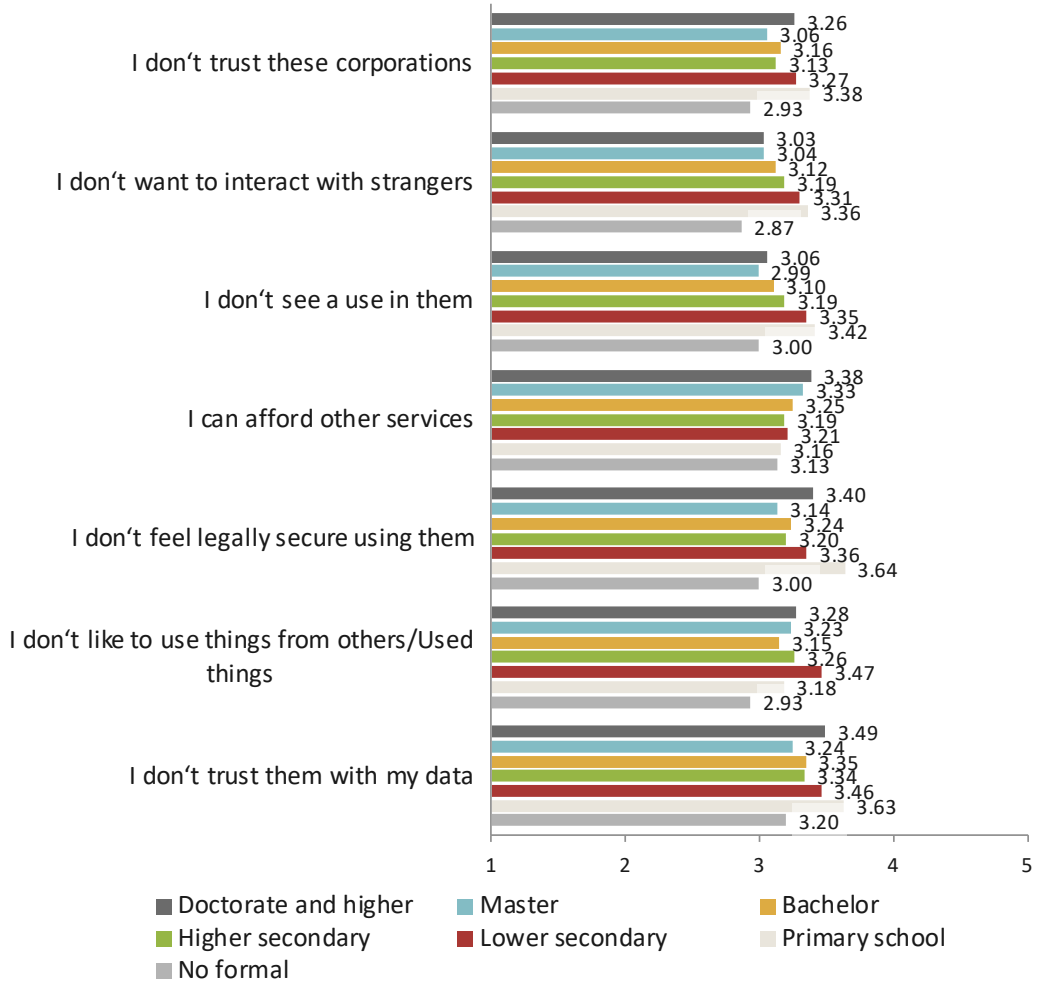
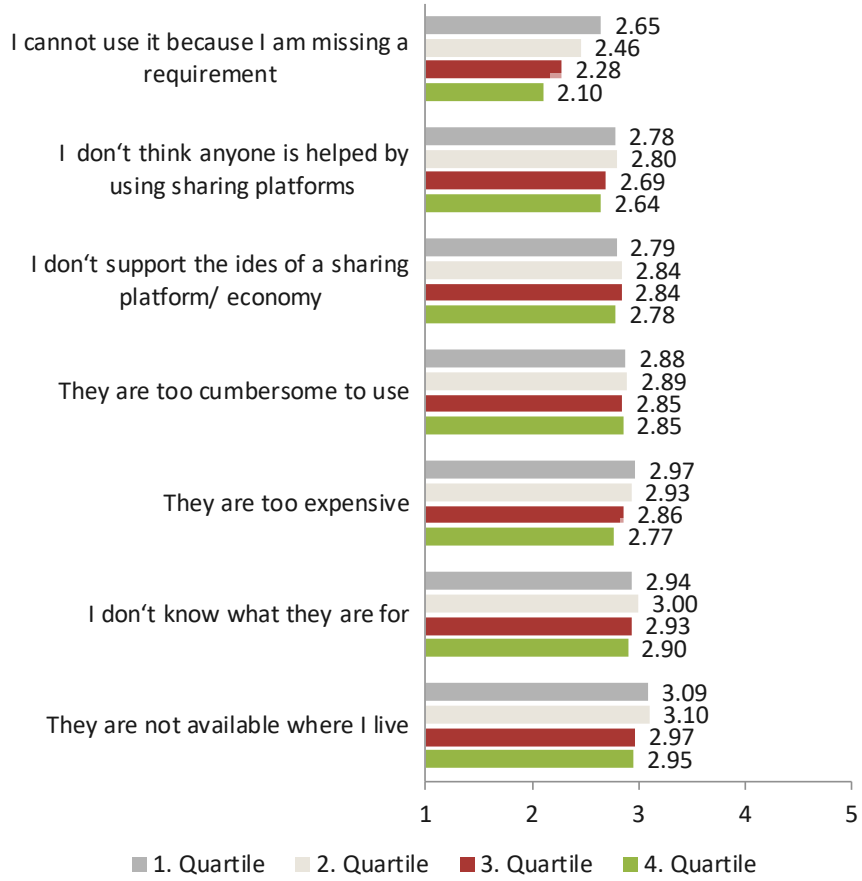



***Figure 66:*** *Reasons for non-participation (consuming) by education (Means, scale 1-5, 2/2)*

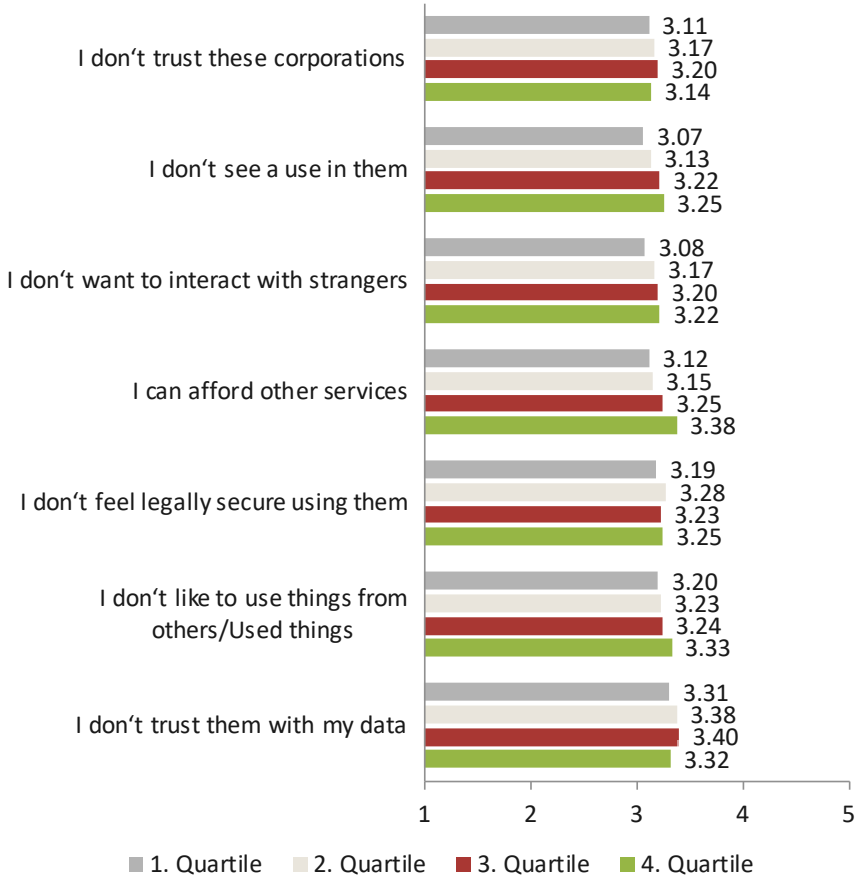
**Lower income users more frequently lack requirements for using sharing services**




*N = 3818; Arithmetic means for consuming by income quartiles are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*
*Quartiles cut the distribution of income in approximately even quarters*

***Figure 67:*** *Reasons for non-participation (consuming) by income quartile (Means, scale 1-5, 1/2)*

In terms of non-participation as consumers in the sharing economy, we find the exact same influence of income as in the case of non-participation as a provider. Higher-income respondents less frequently feel they lack a requirement to participate as a consumer. Moreover, they less frequently report a lack of availability of sharing services and they less frequently feel that sharing services are too expensive to use, but they more frequently report being able to afford alternatives. Accordingly, higher-income non-participants find less use in sharing services.




*N = 3818; Arithmetic means for consuming by income quartiles are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*
*Quartiles cut the distribution of income in approximately even quarters*

***Figure 68:*** *Reasons for non-participation (consuming) by income quartile (Means, scale 1-5, 2/2)*

**Lower skilled non-consumers perceive more obstacles to using sharing services**

| | I don't see a use in them | I don't know what they are for | I don't trust them with my data | I don't feel legally secure using them | They are not available where I live | They are too cumbersome to use | I cannot use it because I am missing a requirement |
|---|---|---|---|---|---|---|---|
| Very low | 3.57 | 3.67 | 3.60 | 3.47 | 3.18 | 3.25 | 2.82 |
| Low | 3.26 | 3.17 | 3.42 | 3.36 | 3.06 | 3.00 | 2.57 |
| Average | 3.10 | 2.94 | 3.35 | 3.23 | 2.99 | 2.84 | 2.36 |
| High | 3.10 | 2.75 | 3.28 | 3.15 | 3.04 | 2.78 | 2.23 |
| Very high | 3.06 | 2.43 | 3.24 | 3.05 | 2.91 | 2.65 | 2.03 |
| **Total** | **3.17** | **2.94** | **3.36** | **3.23** | **3.02** | **2.87** | **2.37** |

*N = 3818; Arithmetic means for consuming by Internet skills are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*

| | I don't like to use things from others/ Used things | They are too expensive | I can afford other services | I don't want to interact with strangers | I don't think anyone is helped by using sharing platforms | I don't trust these corporations | I don't support the ides of a sharing platform/ economy |
|---|---|---|---|---|---|---|---|
| Very low | 3.44 | 3.11 | 3.27 | 3.40 | 3.14 | 3.36 | 3.14 |
| Low | 3.32 | 3.00 | 3.24 | 3.25 | 2.90 | 3.25 | 2.98 |
| Average | 3.21 | 2.85 | 3.20 | 3.14 | 2.70 | 3.11 | 2.75 |
| High | 3.19 | 2.81 | 3.23 | 3.13 | 2.57 | 3.12 | 2.72 |
| Very high | 3.22 | 2.73 | 3.23 | 3.02 | 2.53 | 3.02 | 2.60 |
| **Total** | **3.25** | **2.88** | **3.23** | **3.17** | **2.73** | **3.15** | **2.81** |

*N = 3818; Arithmetic means for consuming by Internet skills are displayed*
*1-5 scale with 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-strongly agree*

*Figure 69: Reasons for non-participation (providing) by Internet skills (Means, scale 1-5)*

We again find that Internet skills are closely related to reasons for non-participation in that obstacles appear weightier the lower the respondents' Internet skills. This is especially true for understanding the purpose of sharing services but also a lack of requirements for use. Only for the ability to afford sharing services, there is no clear relationship with respondents' income.

# 8. Outcomes

**Short summary**

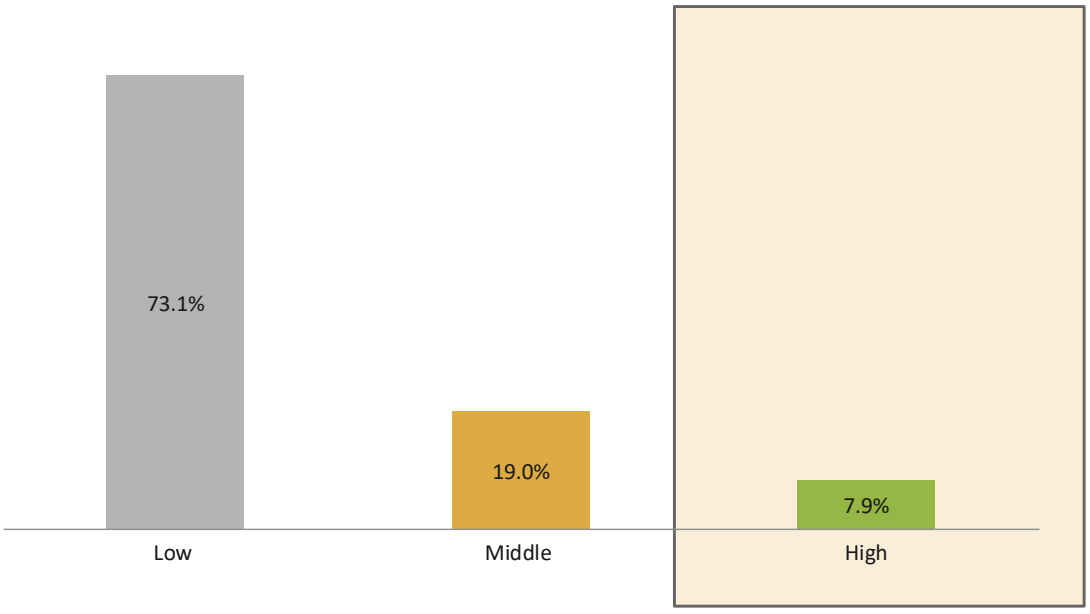
Our analysis of motives for sharing or reasons for not participating highlight key benefits of the sharing economy. Empirical accounts of sharing economy platforms (Botsman & Rogers 2010; Pais & Provasi 2015) point out how economic exchange is enabled by a network of trust between strangers. Reputational algorithms and the omnipresence of product (and provider) reviews make this feat possible, as they alleviate the inherent difficulty in attributing value to a good or service, whose quality cannot be assessed by other means (i.e., brand recognition or word of mouth from friends). Nonetheless, relations established on sharing platforms can have an intrinsic value. Engaging in meaningful and reciprocal relations can increase social capital. Early adopters of sharing platforms (Parigi, 2014) participated to expand their personal network and to experience a lifestyle focusing on new relations and friendships. Yet, as the sharing economy is increasingly professionalized and centered on large scale platforms, such as Uber or Airbnb, these initial benefits may erode.

Our survey included two key indicators related to reciprocity and economic outcomes. The first one measures how likely any given participant (provider or consumer) is to interact repeatedly with those encounters through sharing, both within and outside of sharing platforms. The second one measures the importance of income raised by providers through sharing platforms. Across countries, we find that consumers do not seem inclined to have repeated interactions with people met on sharing platforms. Neither Internet skills nor the preferred platform (e.g., Airbnb, Uber, Blablacar) relate positively to reciprocity. Men have a slightly stronger preference for reciprocal relations, which may be related to issues of personal safety. Moreover 'millennials' (aged 18 to 34) seem to be more willing to entertain repeated exchanges with other users.

Providers, instead, are generally more willing to reciprocate. Here, we find some national distinctions, with southern Europeans more geared towards reciprocity than northern European providers. This may be due to different welfare regimes, relying on personal connections to a different extent (Esping-Andersen, 2013). However, providers' higher propensity for reciprocity, is not necessarily motivated by a desire to develop meaningful social relations. Instead, fostering a community of committed customers may simply be good business sense. By differentiating platforms, we find that Uber drivers are more willing to engage in reciprocal (and long term) exchanges than Airbnb hosts or Blablacar drivers. Our analysis of economic outcomes confirms that Uber is the most professionalized sharing platform.

Out data on economic outcomes show that few providers exclusively rely on sharing services for their income, thus becoming 'professional sharers'. Again, millennials are more willing to consider 'professional sharing' as a career option. Also, users with low Internet skills are more likely to be 'professional sharers', implying that 'professional sharing' may be a low-skill (and low-income) occupation. Multiple empirical accounts (Scholz, 2016; Schor & Attwood-Charles, 2017) indicate a similar trend. When accounting for the platform chosen by providers, Uber exhibits the highest share of professional sharers.

**Sharing economy consumers rarely reciprocate with providers**




*N = 1143, consumers*
*Social reciprocity index: 1-3 scale with 1-low, 2-middle, 3-high*

*Figure 70: Reciprocity (consumers)*

Our reciprocity index measures the degree to which consumers engage in repeated exchanges with sharing partners. The index is calculated as the mean of three survey questions: '*how often do you exchange again with the same person on the same platform*', on '*another platform*' or on '*no platform*'. This index serves as a proxy for meaningful social ties, as repeated interaction is the basis for friendship and, in general, for the expansion of personal networks.

Our analysis, however, shows that consumption of sharing services rarely leads to long lasting social ties. Instead, it appears that the purchase of services (or goods) on sharing platforms may be conceived by consumers as a series of 'on the spot' economic transactions. This finding runs partly counter earlier accounts (Parigi, 2014) reporting on how participation on sharing platforms is motivated by a desire to enjoy new contacts and friendships. However, this may be due to the rapid professionalization of sharing platforms. Earlier experiments (such as Couchsurfing) may have had more of a focus on community, as peer-to-peer transactions replaced monetary exchange (Kostakis & Bauwens, 2014). Today, sharing giants such as Airbnb or Uber are quintessentially market actors, aiming to provide satisfaction for the needs of regular consumers that, unlike early adopters, are less concerned with societal concerns and more with obtaining reliable (and cost effective) services.

**Low reciprocity is common**

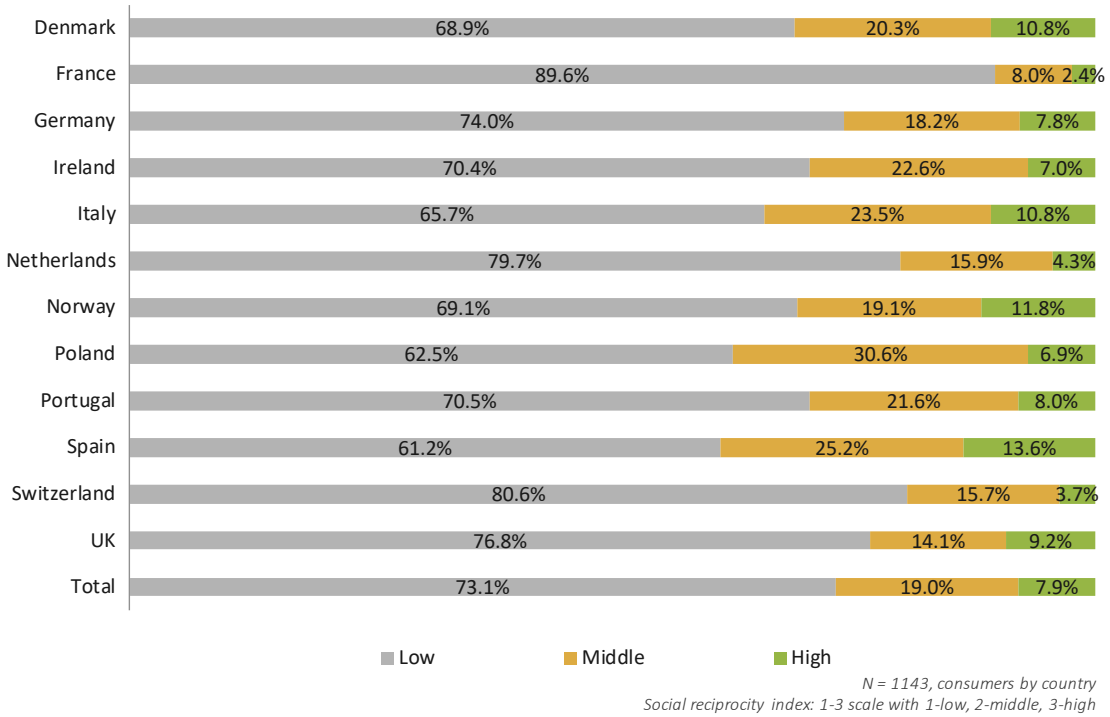



*Figure 71: Reciprocity (consumers) by country*

Considering the variation of the reciprocity index across all twelve surveyed countries, we find low reciprocity throughout Europe. Consumers from some countries, such as Denmark, Italy, Norway, Spain, and the UK, report slightly higher reciprocity scores. However no country has more than 13.6% of respondents declaring that their interaction on sharing platforms often leads to subsequent exchanges. We might expect that consumers from southern European countries exhibit higher reciprocity scores due to a familistic welfare regime (Esping-Andersen, 2013): Individuals from southern European countries, in general, tend to rely more on personal networking when trying to satisfy personal needs. However our findings do not seem to confirm this hypothesis since consumers from welfare regimes centered upon state provision (Denmark, Norway) or market exchange (UK) report similar scores.

**Low reciprocity is less common among 'millennials'**

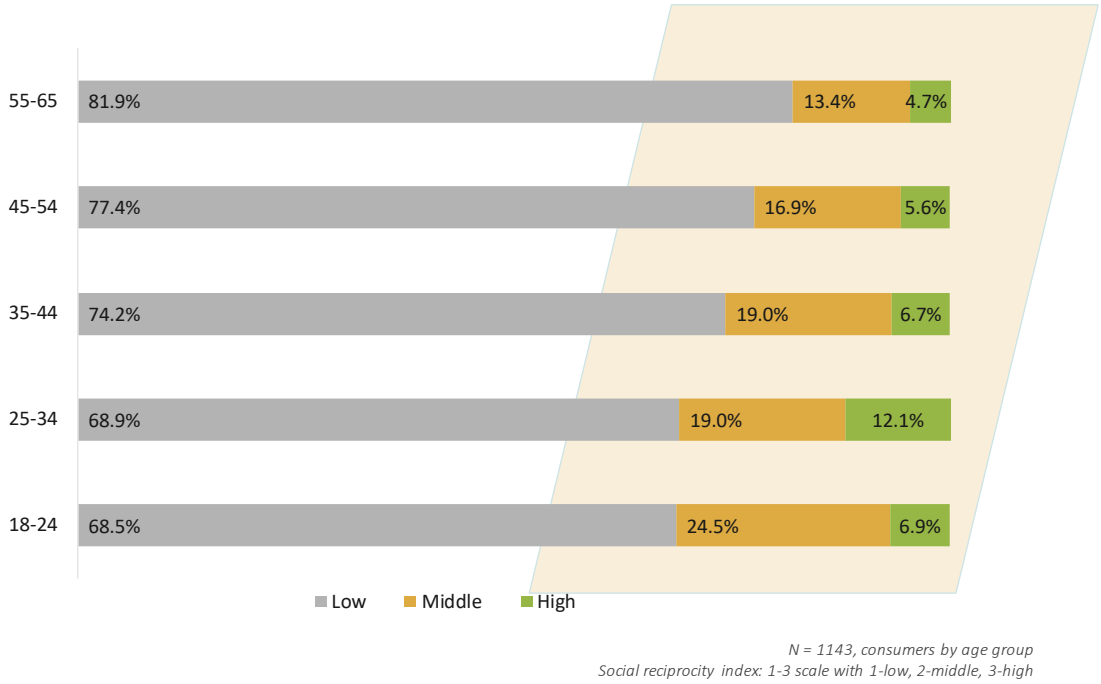
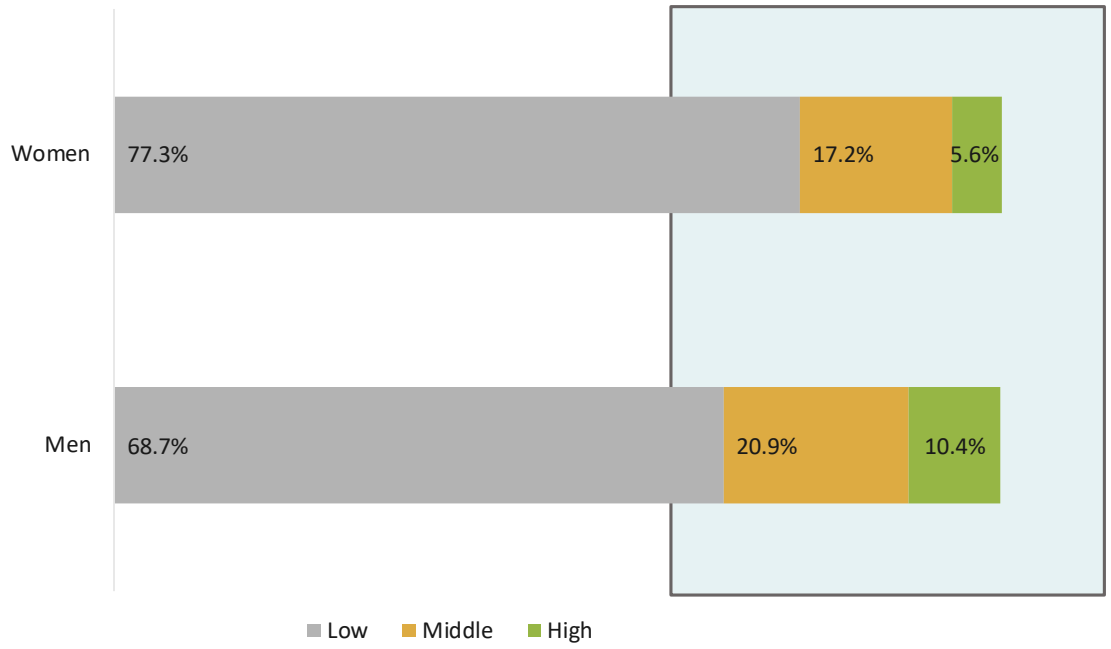



*Figure 72: Reciprocity (consumers) by age group*

Consumers of all age groups are not willing (or able) to interact repeatedly with providers. All age cohorts are apparently driven by a value-for-money rationale. However, our analyses show that reciprocity decreases with age. 'Millennials' (18-34 years) exhibit more willingness to engage in repeated exchange. The lack of reciprocity experienced by older consumers might be interpreted as an effect of the lack of familiarity with the web and mobile technology. At the same time, there may be another explanation for higher and more active participation from the 'millennial' age cohort: Young people may be more willing to explore the more 'social side of sharing platforms', having experienced, on average, the cultural influx of phenomena like making, hacking or, in general, p2p culture. Furthermore, 'millennials' may be more open to 'alternative' lifestyles, putting less emphasis on value for money and more on 'ethical' drives for economic activity (Arvidsson & Peitersen, 2013). As a consequence, the prospects of having more 'meaningful' social relations through an Internet platform may have a greater appeal for younger Europeans.

**Women reciprocate on sharing platforms less often than men**




*N = 1143, consumers by gender*
*Social reciprocity index: 1-3 scale with 1-low, 2-middle, 3-high*

*Figure 73: Reciprocity (consumers) by gender*

Female consumers are less likely to interact repeatedly with providers on sharing platforms. As sharing services enable contact with strangers in an unfamiliar environment, issues of personal safety might play an important role: Women might be more exposed to unwanted attention from male providers, as opposed to male consumers. Low reciprocity scores may thus reflect a gender imbalance in how personal security is enforced by sharing platforms. This may be especially critical for national and supra-national regulators, considering how the issue of women's security in sharing services has received attention from mainstream news reporting sexual harassment by the hands of Airbnb hosts or Uber drivers. This issue may also be critical for platforms, as pre-emptive screening of providers is not always effective in dealing with potential harassers. However, when compared to 'traditional' competitors (i.e., taxi companies or the hospitality industry), large-scale sharing platforms may have more policy tools available to repress these behaviors, as they may mobilize centralized control, or implement stricter screening practices.

**Internet skills foster reciprocity among users**

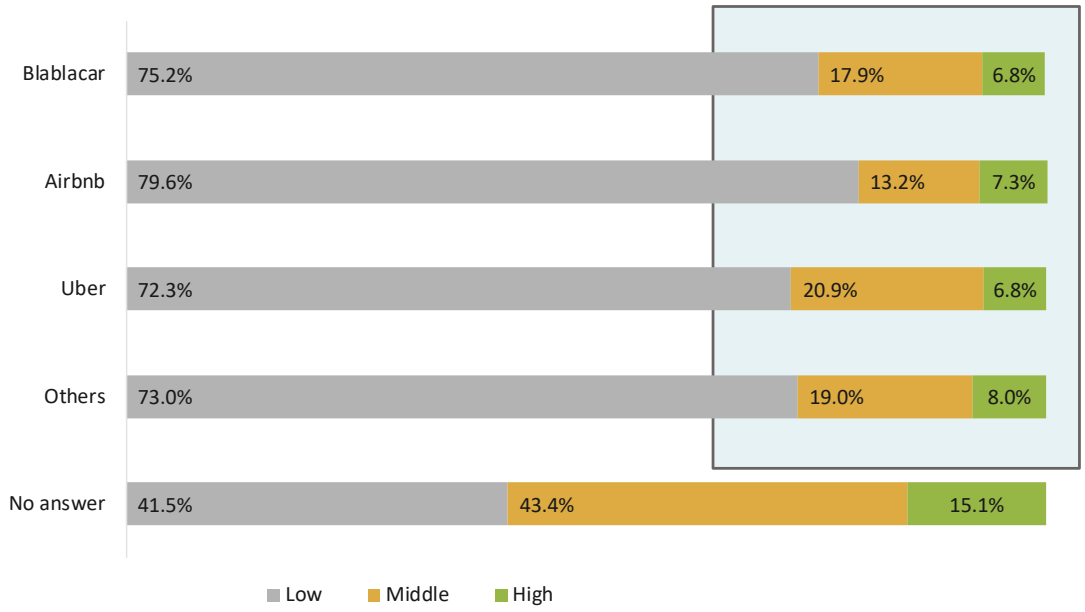
| | | Social Reciprocity Index | | |
|---|---|---|---|---|
| | | Low | Middle | High |
| Skill Index | Low | 78.6% | 78.6% | 6.8% |
| | Average | 75.8% | 75.8% | 6.3% |
| | Medium High | 71.5% | 71.5% | 7.3% |
| | Highest | 71.6% | 71.6% | 9.5% |
| | Total | **73.1%** | **73.1%** | **7.9%** |

*N = 1143, consumers by Internet skills*
*Social reciprocity index: 1-3 scale with 1-low, 2-middle, 3-high*
*Skills index reduced by aggregating highest and lowest values*

*Figure 74: Reciprocity (consumers) by Internet skills*

Taking Internet skills into consideration, we find a positive relationship with the willingness to develop durable ties. The main asset of sharing economy platforms is their ability to foster 'trust between strangers' (Botsman & Rogers, 2010) through reviews and rating algorithms. However, it is worth mentioning that while Internet skills are relatively commonplace, the ability to filter out mendacious reviews or, in general, to assess the quality of any given transaction, is more difficult to master, especially in older aged cohorts. This may lead to an unwillingness to reciprocate social ties. Moreover, rating systems are complex and 'opaque' objects. The willingness to cultivate long-term relations mediated by a sharing platform relies upon trust placed in them. It is probable that familiarity with digital technology breeds trust in sharing platforms, acting as guarantors of safe economic transactions and social interactions.

**No effect of platforms on reciprocity**



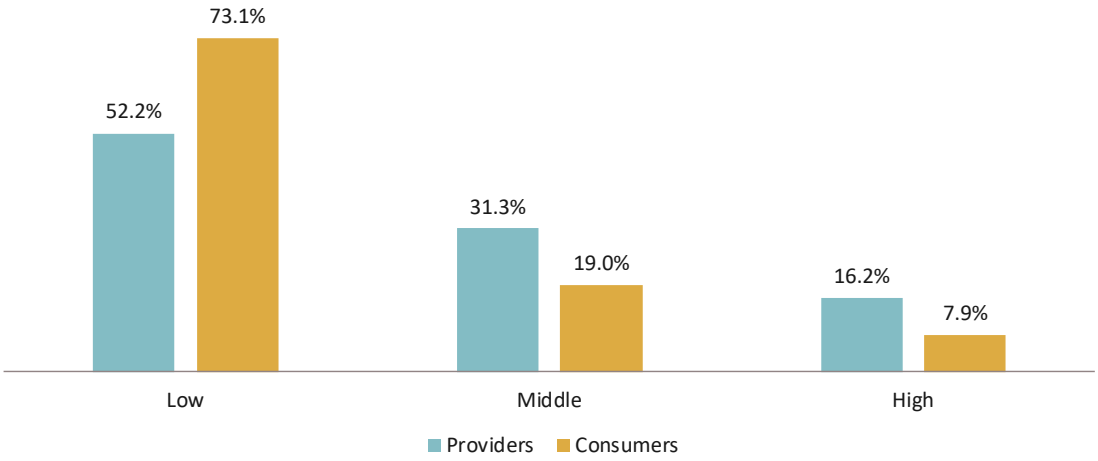

*N = 1143, consumers by platform*
*Social reciprocity index: 1-3 scale with 1-low, 2-middle, 3-high*

*Figure 75: Reciprocity (consumers) by common platforms*

For the purpose to this analysis we differentiated the most frequently used sharing platforms in our sample. Airbnb, Uber and Blablacar emerge as the dominant players on the European markets. Other platforms garner few mentions each. This provides further evidence of a 'professionalization effect' for sharing platforms. While earlier experiments may have produced a proliferation of small or medium-scale platforms, survey data show that the contemporary sharing economy is controlled by a handful of US-based, large corporates. This may have important consequences when it comes to the ability of local and national governments to regulate these ventures.

In general, there seems to be little effect of platforms (with the partial exception of Uber) on repeated exchanges. While platform structures or processes may be at play here (i.e., making it easier for customers to make repeated 'purchases' from the same producer), this effect may also be due to the willingness of Uber drivers to build a strong customer base.

**Producers reciprocate more than consumers**




*N = 1699*
*Social reciprocity index: 1-3 scale with 1-low, 2-middle, 3-high*

*Figure 76: Reciprocity (providers)*

The reciprocity index calculated for providers exhibits a similar structure as the one for consumers. Yet, providers are somewhat more willing to establish long-term commitment to consumers. These scores may be related to providers being early adopters and, thus, being driven more by the social rationales of earlier platforms. However, the difference may also be explained by the fact that building reciprocity is more valuable for providers: First, the creation of reciprocity and social capital may be a way to improve quality of life and create meaningful social relations. Second, engaging in repeated interaction may also be a way of securing income through the creation of a loyal customer base. To put it simply, providers may engage in 'affective labor' (Hardt, 1999) providing emotionally pleasant interactions to customers, in order to achieve economic sustainability, through repeated purchase of a given service.

**Reciprocity for providers at country level**

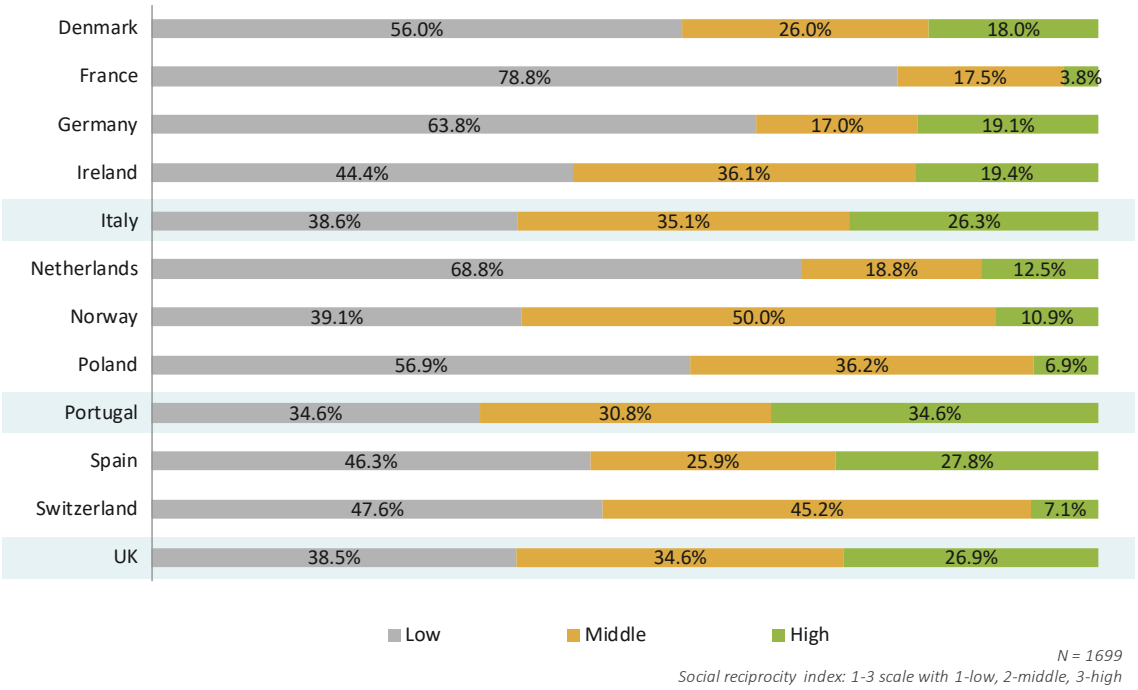
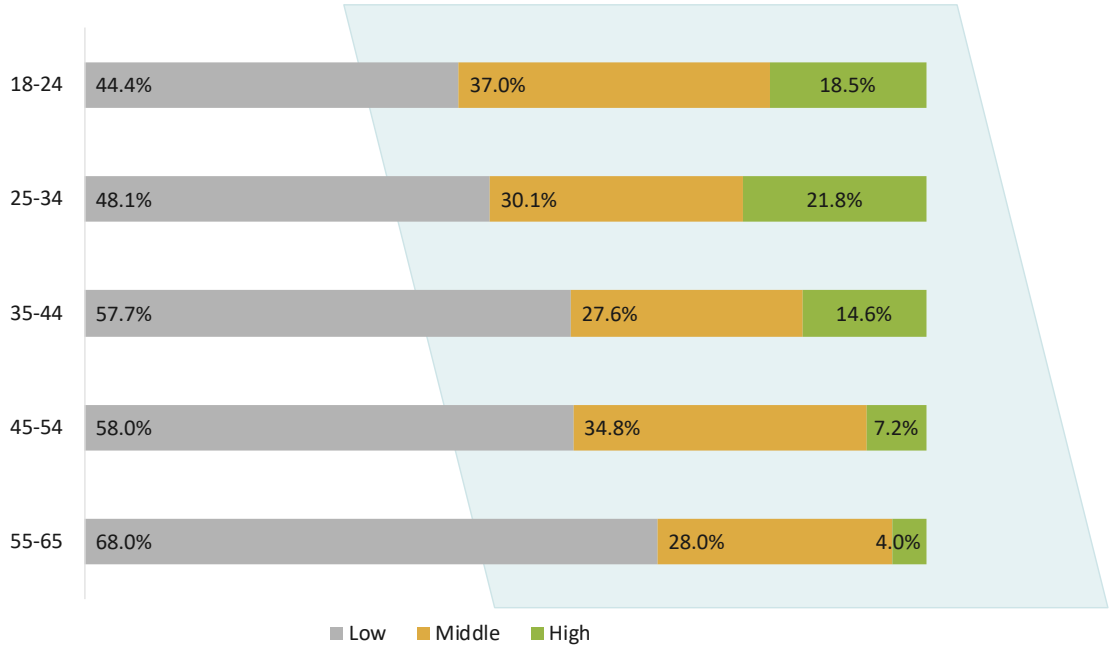



*Figure 77: Reciprocity (providers) by country*

Comparing the surveyed countries, we again find that the majority report low reciprocity scores. It is noticeable that southern European countries (Italy, Portugal, and Spain) plus the UK report higher reciprocity scores. This might be because of such countries (except UK) relying on a 'familistic' welfare model (Esping-Andersen, 2013), putting a premium on personal ties to satisfy personal and social needs, as opposed to having to rely on market exchange and the state to achieve the same outcome. As a consequence, providers coming from these countries might be more 'trained' to build personal connections as, in their own day-to day experience, this is a proven way of providing for personal needs. This would, of course, not account for the UK results – yet we found car sharing to be especially common in UK, so there may be an 'Uber-effect' at play here, as we have seen that Uber exhibits relatively high reciprocity-scores.

**'Millennial' providers reciprocate more**

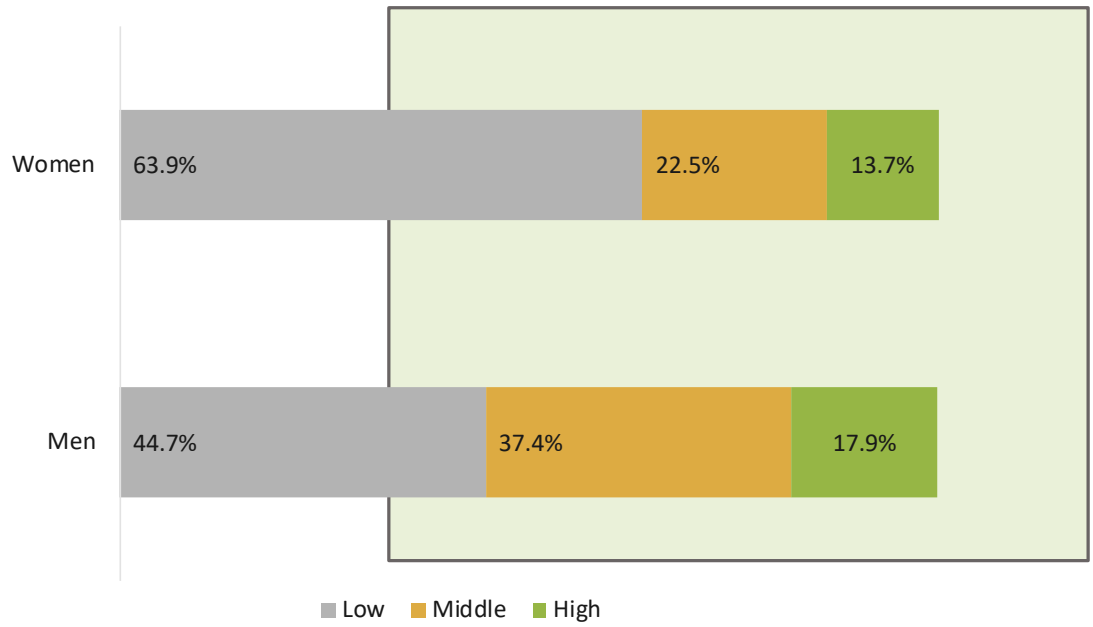



*N = 556, providers by age group*
*Social reciprocity index: 1-3 scale with 1-low, 2-middle, 3-high*

*Figure 78: Reciprocity (providers) by age group*

Differentiating providers by age groups reveals a similar pattern as among consumers: 'Millennials' are the most likely to reciprocate. Two factors seem likely to influence this trend: Internet familiarity and lifestyle priorities. Internet skills tend to decrease with age, so that younger providers may be better equipped to deal with the complexities of sharing platforms. This leads to a greater capacity for dealing with rating systems and, thus, the ability to create longer lasting ties. This is especially true when considering the increasing difficulty of performing the 'affective labor' needed to tend to one's online reputation, both on sharing platforms and on social media sites. At the same time, it may be possible that younger providers have been more exposed to the 'hacker/maker/p2p' ethos of early sharing platforms. They may therefore be more willing to trust in the capacity of digital platforms to enable meaningful social interaction.

**Reciprocity is more common among male providers**




*N = 556, providers by gender*
*Social reciprocity index: 1-3 scale with 1-low, 2-middle, 3-high*

*Figure 79: Reciprocity (providers) by gender*

The gender distribution of the reciprocity index among providers quite closely mirrors the findings among consumers – although providers are, in general, more willing to reciprocate when compared to consumers. Again, the higher levels of reciprocity among male participants may be connected with personal safety challenges when dealing with strangers. As female customers may be worried about receiving unwanted attention from male providers or customers, it is likely that the same phenomenon may affect female providers when dealing with potentially threatening male customers.

**Internet skills have a stronger effect for providers**

| Skill Index | Social Reciprocity Index: Low | Middle | High |
|---|---|---|---|
| Low | 67.3% | 25.0% | 7.7% |
| Average | 53.8% | 36.6% | 9.7% |
| Medium High | 52.0% | 37.3% | 10.7% |
| Highest | 47.8% | 23.1% | 29.1% |
| Total | **52.5%** | **31.3%** | **16.2%** |

*N = 556, providers by Internet skills*
*Social reciprocity index):1-3 scale with 1-low, 2-middle, 3-high*
*Skills index reduced by aggregating highest and lowest values*

***Figure 80:*** *Reciprocity (providers) by Internet skills*

Looking at the relationship between Internet skills and reciprocity, we find an even stronger effect than among consumers. The difference between 'low' and 'maximum' skill levels is now 19.5% (consumers: 7%). Since providers are not merely people offering something on a sharing platform but, probably, also very active users, this provides further proof that familiarity with the sharing platform may work as a 'catalyst' for Internet skills. Internet literacy may provide a modicum of trust in sharing platforms, allowing the creation of long-term commitment to other users (and, as a consequence, higher reciprocity scores).

**The Uber effect: professional reciprocity**

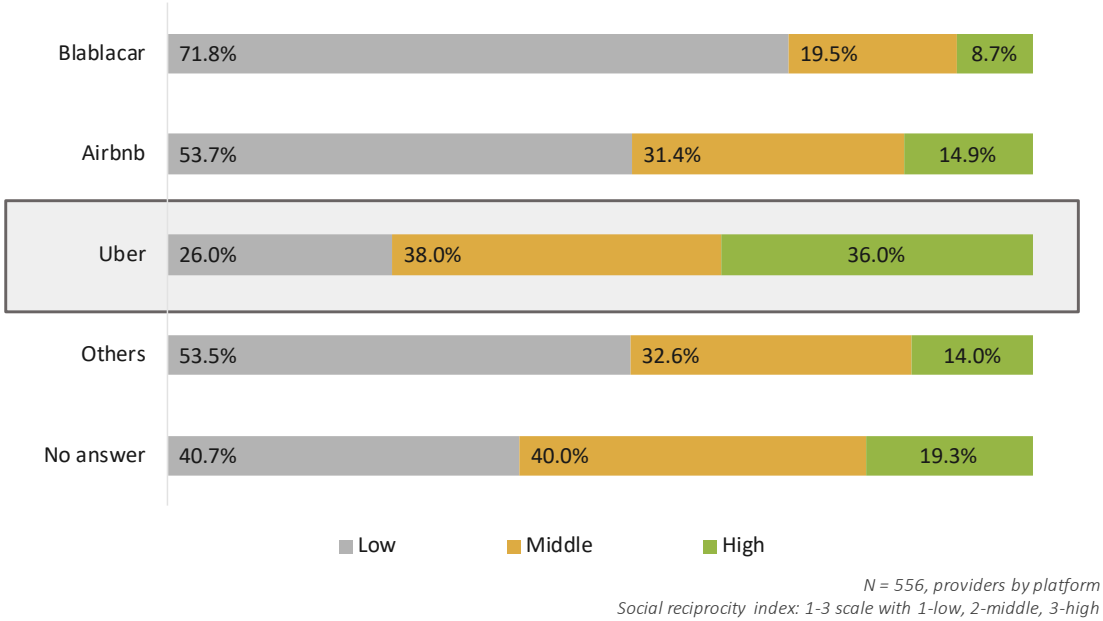
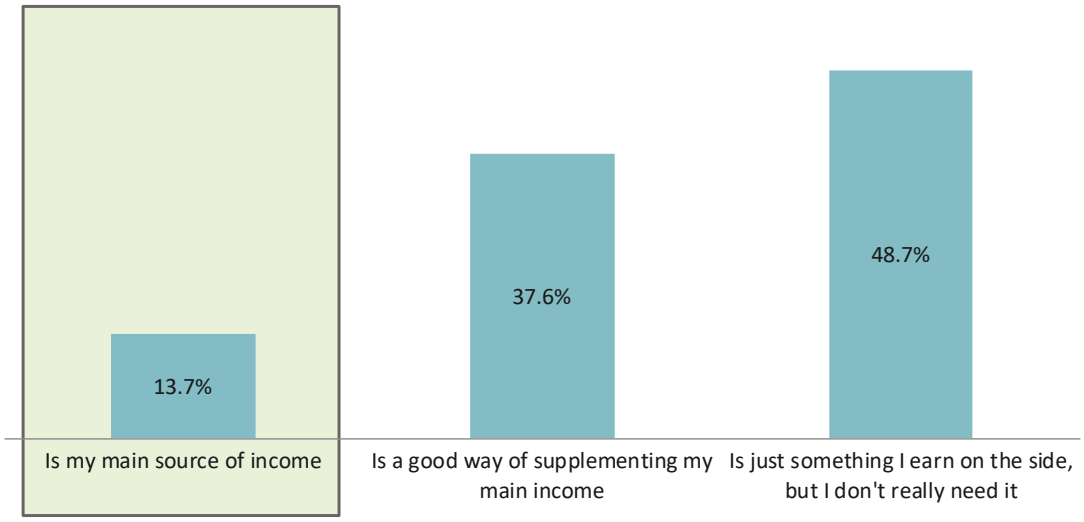



*Figure 81: Reciprocity (providers) by common platforms*

Finally, when differentiating common sharing platforms, we again find that reciprocity is most common on Uber. Again, this may be due to the fact that Uber drivers are more willing to develop a strong consumer base, as they are more likely to be engaged as 'professional' providers. As mentioned above, this may be an effect of the reliance on 'affective labor' in order to create a loyal network of customers. Our data, when examined through the lens of 'affective labor', indicates that some caution is justified when examining the positive impact of reciprocity. While long-term ties may indeed contribute to improved quality of life, engaging in the creation of 'artificial' emotional bonding in order to boost personal ratings in reputation economies (such as the ones employed by Uber or Airbnb) may have consequences in terms of stress and reduced personal wellbeing.

**Economic outcomes: Few are 'professional sharers'**

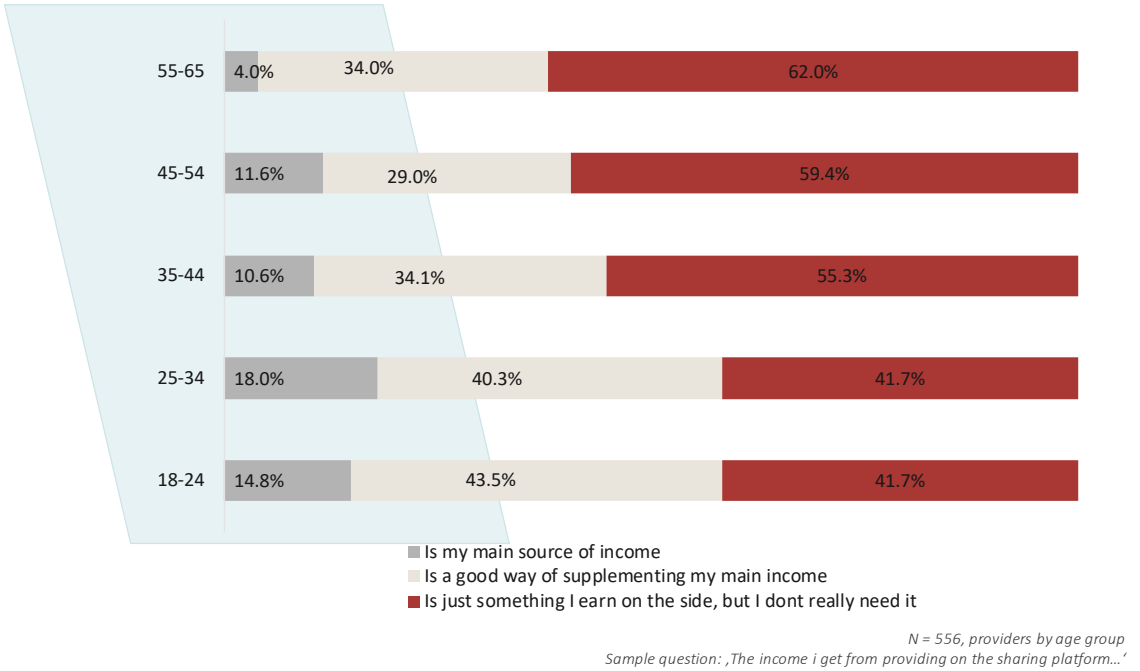



*N = 556*
*Sample question: ‚The income i get from providing on the sharing platform…'*

***Figure 82:*** *Income dependency (providers)*

To examine the economic outcomes of sharing, we asked providers to classify their income originating from offering services on sharing platforms. For the majority of participants, income from platforms is not crucial but is just a little extra income to supplement a regular one. For those users, providing in the sharing economy is mainly experienced as a side job, as opposed to a coherent 'career choice'. On average, while platforms themselves may have evolved towards a 'professionalized' model, putting emphasis on the provision of commercial services, providers do not depend massively on platforms for their incomes. Given that platform jobs are increasingly described as low-skilled and precarious jobs, the issue of providers' compensation is of paramount importance. In our surveyed population, we find a cluster of 'professional sharers' who are clearly affected by these discussions. That being said, 'professional providers' may not be evenly distributed across different platforms.

**Millennials are more likely to be 'professional sharers'**




*N = 556, providers by age group*
*Sample question: ,The income i get from providing on the sharing platform…'*

***Figure 83:*** *Income dependency (providers) by age group*

When comparing providers of different age groups, we find that 'millennials' feature the highest percentage of providers committed to sharing as a 'career choice'. This may be because millennials are experiencing more precarious working conditions when compared to older aged cohorts. This may lead to a situation in which 'professional sharing' is more appealing as a suitable career option vis-a-vis other precarious jobs of a more 'traditional' kind. However, 'millennials', on average, have better Internet skills when compared to older cohorts and are, thus, better equipped to extract economic value from reputation systems, such as the ones employed by sharing platforms. Of course, professional sharing may also be an attractive main source of income for those still undergoing an education.

**Professional sharing is a lower-skilled job**

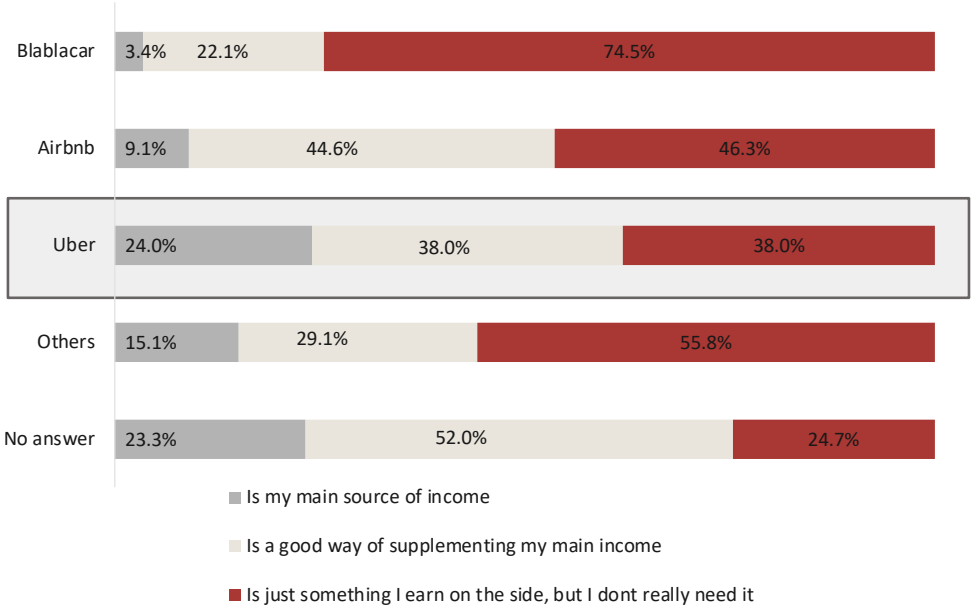
| Skill Index | Main source of income | Supplementing main income | Income earned on the side |
|---|---|---|---|
| Low | 21.2% | 36.5% | 42.3% |
| Average | 17.2% | 39.3% | 43.4% |
| Medium High | 8.5% | 46.9% | 44.6% |
| Highest | 13.7% | 27.5% | 58.8% |
| Total | **13.7%** | **37.6%** | **48.7%** |

*N = 556, providers by Internet skills*
*Sample question: ‚The income i get from providing on the sharing platform…'*
*Skills index reduced by aggregating highest and lowest values*

*Figure 84: Income dependency (providers) by Internet skills*

Relating income dependency to Internet skills, we find that respondents reporting low skills are more likely to be 'professional sharers' relying on sharing platforms as their main source of income. This is especially noteworthy as high-skilled sharers report higher financial benefits from sharing. The possession of Internet skills is a precondition for achieving better paying jobs. Building on previous findings (Scholz, 2016; Schor & Attwood-Charles, 2017) describing professional sharing as low-skilled (and low-pay) jobs, we may confirm that professional sharers in our dataset are also employed in rather low-end jobs. In fact, we find that professional sharers feature a lower socioeconomic status compared to other providers. However, the relationship is not statistically significant. The low-skilled nature of professional sharing is of obvious concern for regulators. However platforms may also suffer from having to rely upon ' the working poor'. As evidenced in the (US-based) commercial conflict between Uber and competitors such as Lyft, new platforms willing to offer better working conditions (and pay) may easily draw higher-skilled providers away from current market leaders.

**'Uber' jobs and professional sharing**




*N = 556, providers by platform*
*Sample question: ‚The income i get from providing on the sharing platform…'*

***Figure 85:*** *Income dependency (providers) by common platforms*

As indicated above, among the three major sharing platforms, we find the highest share of professional shares on Uber, followed by Airbnb and then Blablacar. Two factors may explain the preference of Uber drivers to become professional sharers. Firstly, becoming an Uber driver requires little in the way of pre-existing assets (a car and a driver's license), so becoming an Uber driver (unlike becoming an Airbnb host) can be attractive for people of lower socio-economic status. As a consequence, being an Uber driver may be more interesting when compared to other available jobs, as it offers more freedom. Secondly, an Uber driver, in order to earn a living, has to rely on a large number of small transactions with significant waiting between each transaction. Because of these circumstances, an Uber driver (compared to a Blablacar one, or an Airbnb host) needs to work long hours to cover costs and, thus may be more committed as a provider. Blablacar has a very low ratio of professional sharers. This may be because Blablacar is used for longer rides and ones that provide sub-standard economic payoff to professional sharers. However, it is also worth mentioning that Blablacar is pursuing a commercial strategy that does not rely on professional drivers (as a matter of fact, professionalization is discouraged by the platform), while simultaneously trying to evoke the more 'social' side of the sharing economy.

# 9. Discussion and Conclusions

Although increasingly professionalized, the European sharing economy is still a minority phenomenon. Of the sampled population, only 27.8% have used sharing services as providers and/or consumers. In terms of sharing activities, the European sharing economy is very much focused on car- and home-sharing. Other forms of sharing are rarely ever engaged in. These two sectors, in turn, are dominated by three providers: Uber, Blablacar and Airbnb. While participants do name a large number of other sharing platforms they are aware of, none of them amount to sizeable markets shares.

When looking more closely at the minority of Europeans engaged in sharing, our findings point to some significant divides in sharing participation. Focusing on sharing consumers, we find that primarily young, highly educated, high-income individuals regularly use sharing services. There is also a slight slant towards male users. This user demographic is characterized by very frequent Internet use, high Internet skills, and frequent use of mobile devices. Consumers are primarily drawn to the sharing economy for financial reasons. They consider the sharing economy an attractive, fun, and cheaper alternative to established services. We also find that with rising age, higher-income and -educated Europeans choose not to employ sharing services when they can afford more comfortable alternatives.

In terms of sharing service providers, we find some similarities but also distinctions from consumers. While overall, providers are also geared towards a young, educated, higher-income population, this is markedly less the case as among consumers. Providers, however, also frequently use the Internet, mobile devices and feature high Internet skills. Interestingly, sharing providers are much less one-sidedly motivated by financial benefits then are consumers. They also value societal or social benefits derived from sharing. As our discussion of sharing outcomes shows, though, it is worthwhile to differentiate more or less professional providers. Also, there are some noteworthy differences between sharing services.

Those engaging in the sharing economy for a living tend to be less educated, less skilled and on the lower end of the income spectrum. Notably, higher education and skills are associated with more financial benefits from sharing – indicating a way to improve financial benefits from sharing. It is, however, also important to consider that among 'professional sharers' we find many students or young people still undergoing education, who may fade out of the sharing economy as they gain access to better paying jobs. Some of this sub-group of providers may also account for the relative importance of societal and social benefits as motivations to share.

Those actually dependent upon income from sharing (beyond a mere developmental stage) are most likely to be found in car-sharing, more particularly among Uber drivers. This is the segment of the sharing population most likely to be threatened by precarious working and living conditions. At the same time, regulators should be aware that this population, in particular, may also lack alternatives to active sharing and may be grateful to find job opportunities with low barriers to entry, such as car-sharing provides.

On the other end of the provider-spectrum, we find home-sharing providers, who rarely rely on sharing as their main source of income and who are more likely to feature a higher socioeco-

nomic status. Taking these economic implications of providing sharing services into consideration is especially important as we find that sharing rarely fulfills the promise of generating social capital. In fact, economic spot-transactions constitute the bulk of the sharing economy. So even though some providers may be attracted to sharing for social or societal benefits, sharing in Europe is, above all, a business.

Aside from the divide between providers and consumer (or among providers), we also find a significant divide between sharing participants and non-participants. Non-participants are markedly older, less-educated, tend to be lower-income, and are slightly more likely to be female. This (large) segment of the population uses the Internet less frequently and features lower Internet skills. Skills and self-efficacy are particularly low among those not even familiar with the sharing economy. Given that benefits from sharing are closely related to skills, non-participants are actually less likely to benefit from sharing even if they chose to engage.

Non-participation, however, is only rarely due to a lack of opportunity. Primarily very young respondents say that they couldn't engage in sharing because they lacked a necessary requirement. More frequently, non-participants dislike using or sharing personal goods or interacting with strangers. Non-participation may thereby largely be due to attitudes difficult to influence. At the same time, non-participants also frequently list privacy concerns and legal insecurity as reasons for abstention – two factors that actually can be affected by both regulators and service providers.

Finally, in terms of the gender divide, we find that men are more attracted to the sharing economy because they are interested in interacting with others. They also report higher levels of reciprocity. Women, in turn, are more irritated by legal insecurities. Accordingly, providing a safe and secure environment for interacting with strangers may be key to increasing female participation in the sharing economy.

In summary, divides in sharing participation do pose a challenge to European societies and regulators – divides between consumers and providers, among providers, as well as between participants and non-participants. Currently, the sharing economy is quite an elite phenomenon, providing financial benefits and entertainment to a young, well-educated, skilled, and higher-income demographic. This holds true both in terms of consumers as well as occasional providers. Actual professional providers hail from a much less secure socioeconomic background. Non-participants, in turn, might especially profit from the (financial and social) benefits provided by sharing, yet do not find access to sharing services due to averse attitudes, lack of familiarity and skills, and insecurity.

Before investing efforts and resources into bolstering sharing participation, however, regulators need to carefully weigh the benefits and challenges associated with the increasingly professionalized sharing economy, as it is currently shaped by a low number of (primarily US-based) corporate providers. Developing a vision of a prosperous, sustainable European sharing economy may be called for before determining policy options.

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Report from the EU H2020 Research Project Ps2Share:
Participation, Privacy, and Power in the Sharing Economy

# Appendix: Methods and Sample

Gemma Newlands[1], Christoph Lutz[1], Christian Pieter Hoffmann[2], and Christian Fieseler[1]

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# 1. Introduction

This Appendix forms one element of a European Union Horizon 2020 Research Project on the sharing economy: **'Ps2Share 'Participation, Privacy, and Power in the Sharing Economy'**. The study is undertaken within the scope of the European Union's Horizon 2020 research and innovation programme, funded under grant agreement No. 732117 and with the objective (ICT-35) of "Enabling responsible ICT-related research and innovation".

This project aims to foster better awareness of the consequences which the sharing economy has on the way people behave, think, interact, and socialize across Europe. Our overarching objective is to identify key challenges of the sharing economy and improve Europe's digital services through providing recommendations to Europe's institutions. We focus on topics of participation, privacy, and power in the sharing economy.

The project comprises four primary tasks: 1) A review of existing literature on the sharing economy, focusing on issues of participation, privacy, and power; 2) A platform analysis of more than 300 platforms operating within Europe; 3) A series of focus groups in 5 European countries; and 4) A representative survey of more than 6000 inhabitants across 12 European countries.

The results of the representative survey are reported in three separate reports: **'European Perspectives on Participation in the Sharing Economy'**, **'European Perspectives on Privacy in the Sharing Economy'**, and **'European Perspectives on Power in the Sharing Economy'**. The purpose of this Appendix is to act as a free-standing yet complementary report, providing essential information on the research design, data collection methodology, and demographic factors related to our quantitative sample.

# 2. Methodology

This section provides a brief overview of the methodology adopted in the quantitative survey.

**Research Design:**

To explore the prevalence, antecedents, and outcomes of participation, privacy, and power challenges in the European sharing economy, the consortium determined to construct a cross-national quantitative survey aimed at assessing the attitudes and self-reported behavior of more than 6000 individuals across 12 European countries.

The survey targeted both users and non-users of the sharing economy. Accordingly, the survey was designed so as to filter respondents into four categories, based on their exposure to the sharing economy.

- The first category, 'providers', refers to respondents who have used sharing economy platforms to offer their goods or services.

- The second category 'consumers' refers to respondents who have used sharing economy platforms to receive goods or services. Due to the expected imbalance in numbers

between providers and consumers, respondents who had used sharing economy platforms as both a provider and a consumer were directed towards the provider category and requested to answer the survey as a provider.

- The third category, 'aware non-users', refers to respondents who are aware of sharing economy services, but have never used them as either providers or consumers.

- The fourth category, 'non-aware non-users', refers to respondents who have not heard of the sharing economy and have not used sharing economy services.

The survey was further divided into four sections with regard to topic. The first section focused on demographic information, personality traits, and self-reported skill levels. The second section focused on participation modalities and antecedents. The third section focused on privacy concerns. The fourth section focused on perceived power dynamics in the sharing economy. Full overviews of the items within each section are provided in the respective quantitative reports.

**Country Selection:**

With regard to the country selection, the consortium determined to take a broad European focus, including countries both within and outside the European Union. As a selection criteria, the consortium included countries represented by the consortium members, namely Denmark, Germany, Italy, the Netherlands, Norway, and Switzerland. In addition, the consortium determined to include countries which would represent different geographical regions within Europe, namely France, Ireland, Poland, Portugal, Spain, and the United Kingdom.

With this selection, the survey would include the largest European countries, as well as a representative selection across eastern, western, northern, and southern Europe. In addition, this selection includes countries with both a higher and lower average income, as well as countries with a varied uptake of sharing economy services.

**Questionnaire Design:**

The questionnaire was designed in iterative and collaborative process. Initial items were suggested by members of the research consortium and, due to the relatively novel nature of the sharing economy, the initial questionnaire design included both pre-established scales and newly developed scales. The questionnaire consisted of a series of open and closed questions, where for most closed questions respondents could state their agreement to a statement on a five-point Likert scale.

For the purposes of quality control, testing, and scale reduction, the consortium determined to carry out a pre-test. Additional questions were included within the pre-test survey in the form of open comment boxes. Respondents were asked to give their opinion on the survey and to point out any perceived flaws or confusion.

The pre-test survey was distributed online in May 2017 via Amazon Mechanical Turk and the survey administration was handled via TurkPrime. The survey was distributed among 393 US-based respondents. The survey took 1013 seconds to fill out on average, with the median number of seconds to complete it being 885 (standard deviation 508 seconds). Respondents for the pre-test received a reward of 2 US Dollars, with an additional 1 US Dollar completion bonus.

Due to its nature as a pre-test, the consortium determined it was satisfactory to use a US-based respondent sample. Moreover, the expertise of the US-based sample on Amazon Mechanical Turk, with regard to their exposure to varied survey designs, provided valuable feedback for improving the survey. In light of the pre-test, the questionnaire was further reduced. This questionnaire underwent testing within the consortium through factor analysis and qualitative discussions in order to further reduce its length and increase clarity.

The finalized questionnaire was translated from English into the required languages: Danish, Dutch, French, German, Italian, Norwegian, Polish, Portuguese, and Spanish. A survey for each country, except for Switzerland which received a survey both in French and German, was then programmed by the research team in Qualtrics. Each survey was synchronized to be identical in content.

**Data Collection**

For the recruitment of participants, the research team collaborated with Ipsos MORI, a leading ESOMAR-certified, international, and UK-based survey provider to access a high-quality respondent pool in the form of a consumer panel.

The panel included a representative sample of the online population in each country, in terms of age (18-65), gender, and region (or best efforts by survey provider where necessary). The panel included a target of 500 respondents in each country. Respondents received a small financial reward for filling out the questionnaire directly from the survey provider. The first round of field work took place in June and July 2017.

After a period of quality control, where low quality respondents were removed (i.e., due to speeding, through-lining, or nonsensical answers to open text boxes), the second round of field work took place in August 2017.

A final nationally representative sample was thus prepared, numbering 6111 participants. To ensure representativeness, some countries include more than 500 participants. The descriptive statistics below provide further information as to sample sizes for each country.

**Data Preparation**

After collection, the survey data underwent a process of cleaning and preparation by members of the consortium within SPSS. Firstly, the individual surveys were aligned, using the UK survey as the master-file. The variable names and labels for each item were changed and values were checked, with any inconsistencies being corrected. The process of data cleaning and preparation was fully documented within SPSS syntax.

# 3. Descriptives

### Country

As described above, 12 European countries were represented in the survey, each with a sample of between 500 and 534 participants. Accordingly, each country consisted of approximately 8% of the overall sample, with Italy (8.7%), Spain (8.7%), and the Netherlands (8.4%) being slightly over-represented.

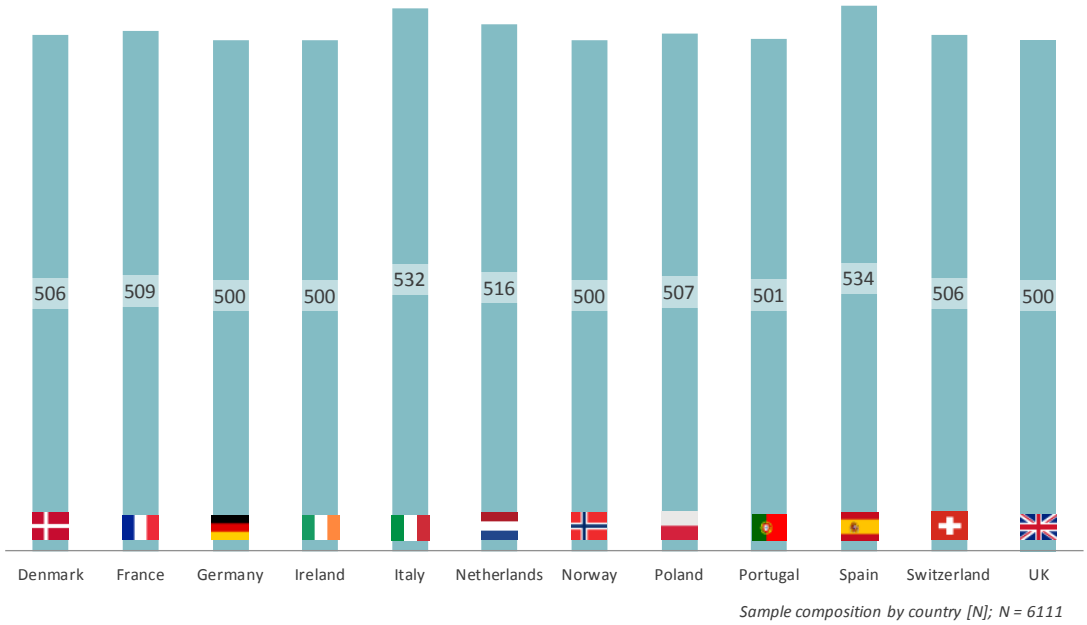


*Figure 1:* Sample Composition by Country

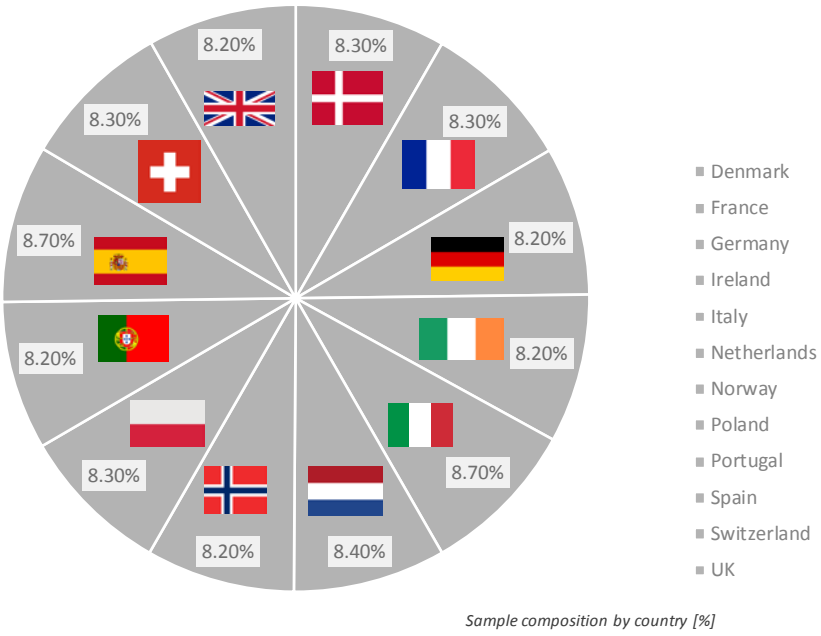


*Figure 2:* Sample Composition by Country, in percent

## Age

The sample consists of Europeans between the ages of 18 and 65. The sample composition is roughly structurally equivalent, with the average age across the sample being 41.7 years old.

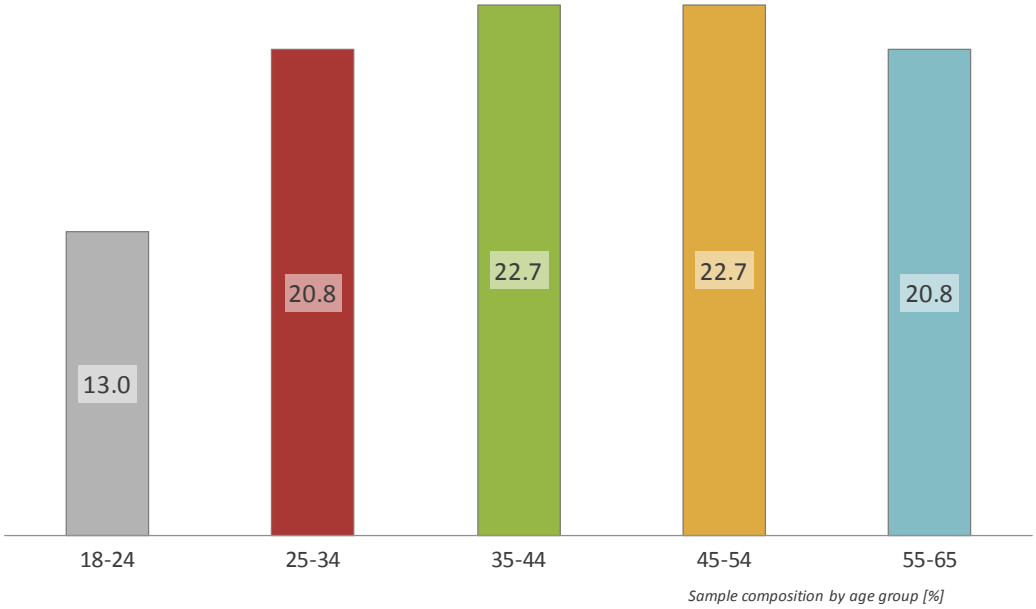


*Figure 3:* Age Band, all Countries

| | 18-24 | 25-34 | 35-44 | 45-54 | 55-65 | M | SD |
|---|---|---|---|---|---|---|---|
| Denmark | 13.6 | 18.8 | 21.7 | 23.3 | 22.5 | 42.29 | 13.812 |
| France | 13.4 | 20.2 | 21.8 | 22.4 | 22.2 | 41.99 | 13.359 |
| Germany | 12.4 | 19.4 | 20.4 | 25.8 | 22.0 | 42.57 | 13.337 |
| Ireland | 12.6 | 24.6 | 24.2 | 20.8 | 17.8 | 40.43 | 12.731 |
| Italy | 12.0 | 20.1 | 23.7 | 23.3 | 20.9 | 42.12 | 13.238 |
| Netherlands | 14.1 | 18.6 | 21.7 | 23.3 | 22.3 | 42.2 | 13.638 |
| Norway | 15.0 | 20.8 | 22.4 | 21.4 | 20.4 | 40.71 | 13.719 |
| Poland | 14.0 | 24.5 | 19.9 | 19.7 | 21.9 | 40.87 | 13.697 |
| Portugal | 11.8 | 19.8 | 24.2 | 23.0 | 21.4 | 42.02 | 13.227 |
| Spain | 9.4 | 20.8 | 28.7 | 23.6 | 21.4 | 41.56 | 11.93 |
| Switzerland | 12.8 | 20.6 | 22.1 | 24.1 | 20.4 | 41.73 | 13.517 |
| UK | 14.8 | 21.2 | 21.8 | 22.0 | 20.2 | 41.33 | 13.204 |
| Total | 13.0 | 20.8 | 22.7 | 22.7 | 20.8 | 41.66 | 13.292 |

*Sample composition by age group and country [%]; Mean and Standard Deviation*

*Table 1:* Age Band per Country

## Gender

The sample is composed of 50% male and 50% female participants. This pattern is generally stable across all surveyed countries.

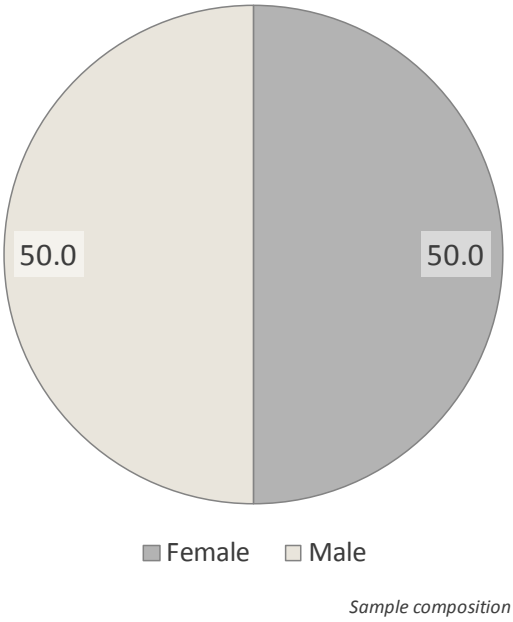


*Figure 4: Sample Composition by Gender, in percent*

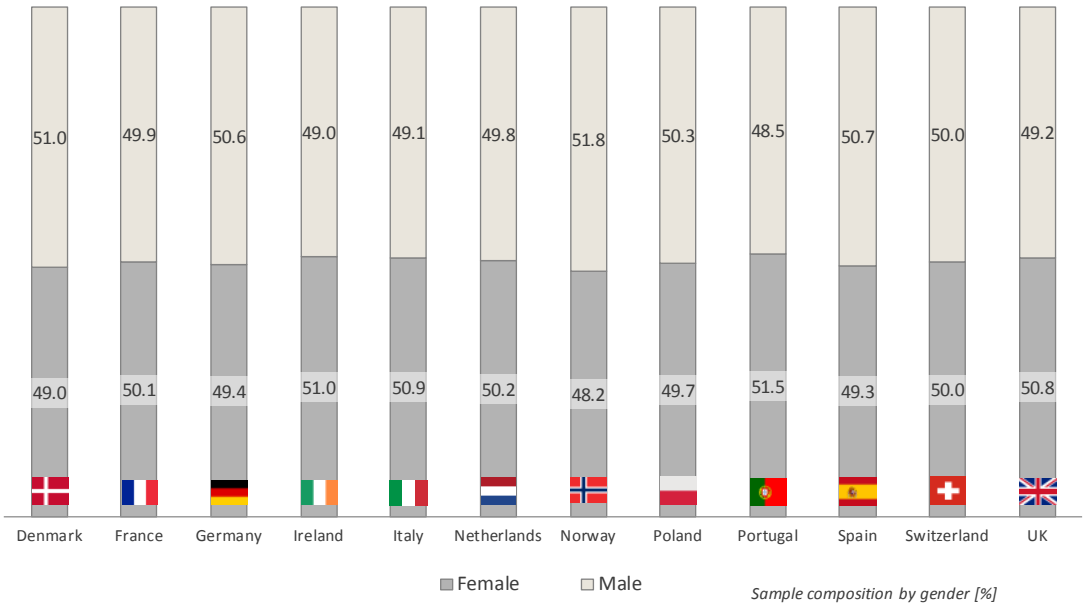


*Figure 5: Gender Composition – Cross-Country Comparison*

### Employment Status

Within the sample, 66.5% of participants are currently employed. There is a notable variance across countries regarding employment status, with Spain (42%), Italy (41.5%), and Denmark (40.7%) showing relatively higher percentage of participants who are not currently employed.

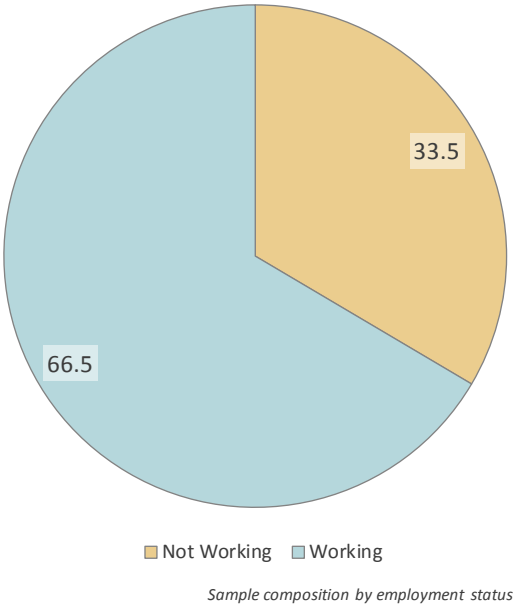


*Figure 6:* Working Status – All Countries, in percent

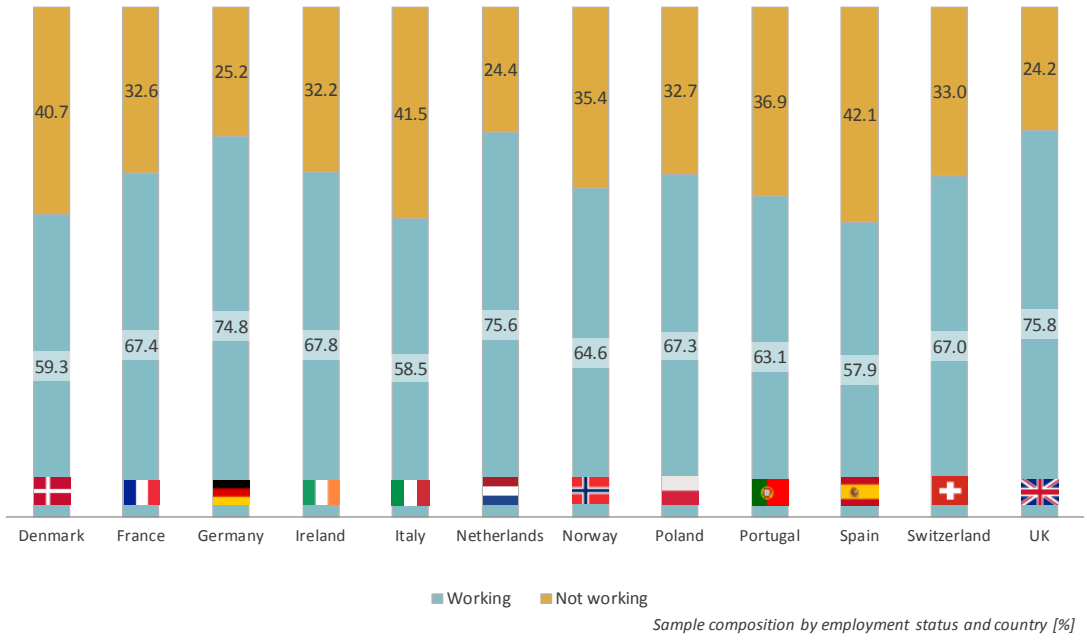


*Figure 7:* Working Status – Cross-Country Comparison

## Education

In terms of education level, 42.4% of the overall sample have completed higher secondary education as their highest educational attainment. 24.5% of the sample hold a Bachelor's degree, 14.4% hold a Master's degree, and 2.6% hold a Doctorate or higher.

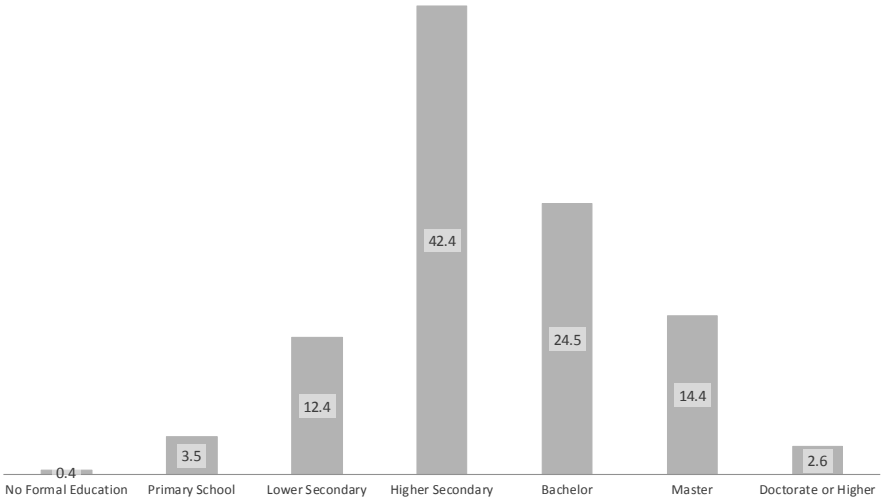


*Figure 8: Education Level – All countries, in percent*

| | No formal Education | Primary School | Lower Secondary | Higher Secondary | Bachelor | Master | Doctorate or Higher |
|---|---|---|---|---|---|---|---|
| Denmark | 1.8 | 25.1 | 13.2 | 23.1 | 24.7 | 9.7 | 2.4 |
| France | 0.4 | 1.0 | 9.4 | 44.0 | 25.7 | 9.7 | 2.4 |
| Germany | 0.4 | 0.4 | 27.8 | 48.8 | 7.4 | 13.2 | 2.0 |
| Ireland | 0.2 | 1.8 | 9.8 | 45.8 | 29.6 | 12.0 | 0.8 |
| Italy | 0 | 1.3 | 9.0 | 52.3 | 12.7 | 21.2 | 2.4 |
| Netherlands | 0 | 1.6 | 30.6 | 21.5 | 29.1 | 13.8 | 3.5 |
| Norway | 0 | 0 | 8.8 | 48.6 | 31.2 | 9.8 | 1.6 |
| Poland | 0 | 2.4 | 9.7 | 36.3 | 16.8 | 33.9 | 1.0 |
| Portugal | 0 | 0.8 | 5.2 | 47.3 | 34.5 | 10.8 | 1.4 |
| Spain | 0.4 | 4.3 | 11.4 | 37.1 | 33.3 | 11.2 | 2.2 |
| Switzerland | 0.6 | 2.6 | 6.9 | 61.9 | 12.1 | 7.9 | 8.1 |
| UK | 0.6 | 0.2 | 6.2 | 42.4 | 36.2 | 11.4 | 3.0 |
| Total | 0.4 | 3.5 | 12.4 | 42.4 | 24.5 | 14.4 | 2.6 |

*Sample composition by education and country [%]*

*Table 2: Education – Cross-Country Comparison*

**Household Size**

Within the sample, 18.9% of respondents live alone in a single household. The largest share of participants (31.5%) live in a household with two people. Roughly a quarter of the sample reports a household size of four or more people. Larger household sizes are relatively common in Poland, Ireland and Italy. Single households are more common in Germany, Switzerland, the Netherlands, and Scandinavia.

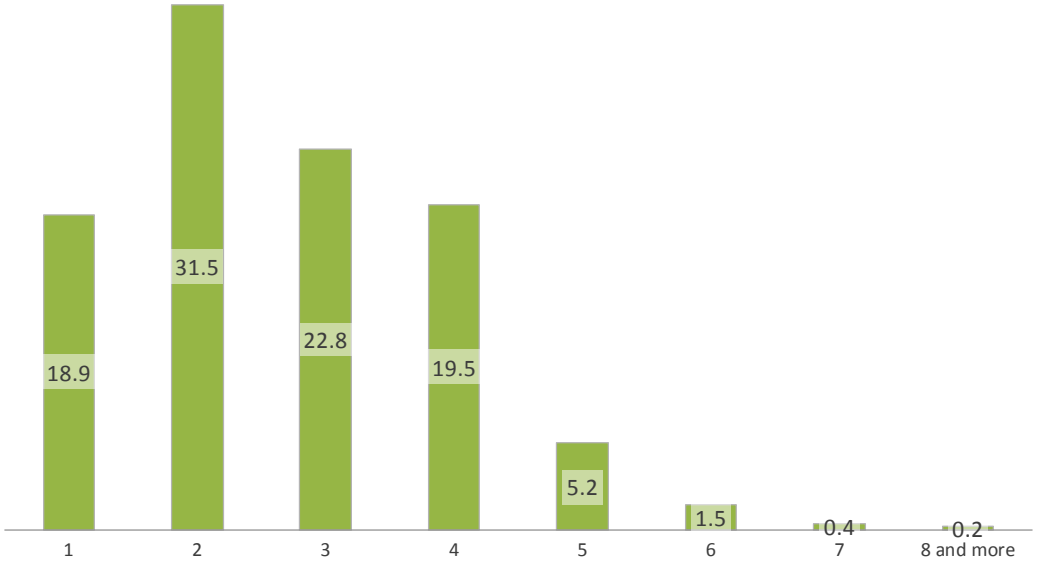


*Figure 9: Household Size - All Countries, in percent*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8+ |
|---|---|---|---|---|---|---|---|---|
| Denmark | 30.8 | 33.8 | 16.8 | 12.3 | 4.3 | 1.6 | 0.2 | 0.2 |
| France | 20.6 | 31.8 | 21.8 | 18.1 | 5.3 | 1.8 | 0.4 | 0.2 |
| Germany | 28.4 | 37.0 | 17.6 | 13.4 | 2.2 | 0.8 | 0.2 | 0.4 |
| Ireland | 16.4 | 28.8 | 24.0 | 17.8 | 8.2 | 3.2 | 1.4 | 0.2 |
| Italy | 7.5 | 24.6 | 29.5 | 29.9 | 6.6 | 1.3 | 0.6 | 0 |
| Netherlands | 25.6 | 34.1 | 15.1 | 18.0 | 5.2 | 1.4 | 0.2 | 0.4 |
| Norway | 24.4 | 31.8 | 19.0 | 17.8 | 5.2 | 0.8 | 0.8 | 0.2 |
| Poland | 12.0 | 32.3 | 28.4 | 17.4 | 8.1 | 1.2 | 0.2 | 0.4 |
| Portugal | 10.8 | 29.5 | 30.1 | 25.1 | 3.0 | 1.4 | 0 | 0 |
| Spain | 9.0 | 24.5 | 31.6 | 28.5 | 5.6 | 0.7 | 0 | 0 |
| Switzerland | 24.5 | 33.6 | 18.8 | 17.4 | 3.6 | 1.6 | 0.4 | 0.2 |
| UK | 17.8 | 36.6 | 20.2 | 17.6 | 5.4 | 2.4 | 0 | 0 |
| Total | 18.9 | 31.5 | 22.8 | 19.5 | 5.2 | 1.5 | 0.4 | 0.2 |

*Sample composition by household size and country [%]*

*Table 3: Household Size – Cross-Country Comparison*

**Region**

Most participants (57.9%) live in urban areas. 27% of respondents report living in a rural area. The Swiss, Irish, and Dutch samples have a relatively large share of inhabitants in rural areas, whereas a relatively large segment of participants from Spain, Poland, and the UK report living in large cities.

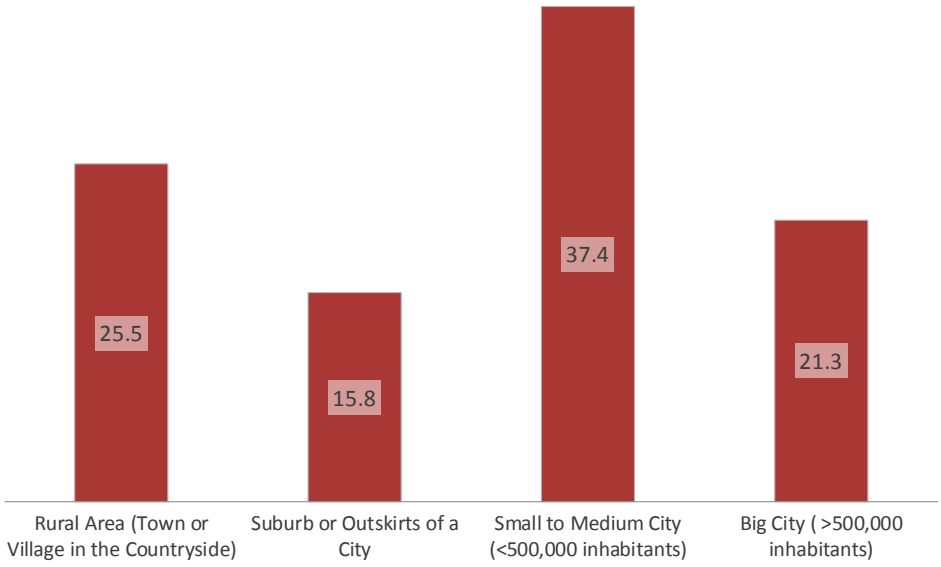


*Figure 10:* Region – All Countries, in percent

| | Rural Area | Suburb or Outskirts | Small to Medium City | Big City |
|---|---|---|---|---|
| Denmark | 25.5 | 15.8 | 37.4 | 21.3 |
| France | 35.0 | 17.5 | 33.2 | 14.3 |
| Germany | 25.2 | 12.4 | 40.6 | 21.8 |
| Ireland | 41.4 | 20.2 | 18.4 | 20.0 |
| Italy | 25.9 | 16.9 | 35.5 | 21.6 |
| Netherlands | 30.2 | 10.7 | 45.5 | 13.6 |
| Norway | 20.4 | 16.8 | 43.2 | 19.6 |
| Poland | 20.1 | 3.9 | 51.9 | 24.1 |
| Portugal | 18.8 | 17.6 | 41.9 | 21.8 |
| Spain | 14.6 | 6.7 | 49.3 | 29.4 |
| Switzerland | 37.5 | 18.6 | 35.2 | 8.7 |
| UK | 29.6 | 25.6 | 20.6 | 24.2 |
| Total | 27.0 | 15.2 | 37.8 | 20.1 |

*Sample composition by region and country [%]*

*Table 4:* Region – Cross-Country Comparison

**Income**

The most common income bracket in the sample is between an income between 20,000 and 29,999 EUR (16.5%), followed by the 30,000-39,999 EUR bracket (13.6%). Local currencies were compared based on the current exchange rates [August 2017]. To compare countries, the overall sample was divided into income quartiles. A large segment of the Polish, Portuguese, Italian, and Spanish samples belong to the first income quartile, while large segments of the Swiss, Danish, and Norwegian sample belong to the fourth income quartile.

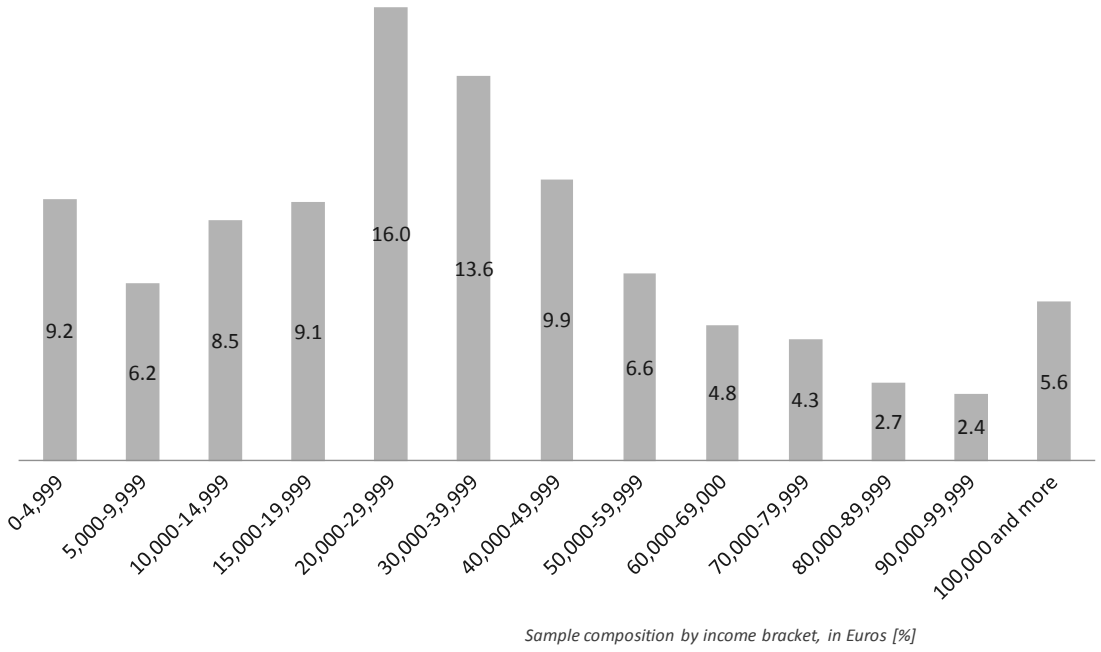


*Figure 11: Income Brackets – All countries, in percent*

| | 1. Quartile | 2. Quartile | 3. Quartile | 4. Quartile |
|---|---|---|---|---|
| Denmark | 11,5 | 16,8 | 19,4 | 52,3 |
| France | 16,1 | 33,4 | 36,4 | 14,1 |
| Germany | 16,7 | 23,6 | 28,4 | 31,3 |
| Ireland | 13,3 | 25,5 | 29,7 | 31,5 |
| Italy | 35,5 | 39,8 | 18,6 | 6,1 |
| Netherlands | 15,7 | 22,0 | 34,1 | 28,1 |
| Norway | 7,7 | 14,4 | 23,5 | 54,5 |
| Poland | 61,3 | 25,2 | 9,5 | 4,0 |
| Portugal | 46,8 | 34,7 | 15,2 | 3,3 |
| Spain | 28,5 | 37,2 | 25,1 | 9,1 |
| Switzerland | 21,4 | 6,4 | 11,6 | 60,6 |
| UK | 15,2 | 24,4 | 33,2 | 27,2 |
| Total | **24,2** | **25,4** | **23,7** | **26,7** |

*Sample composition by income quartile and country [%]*

***Table 5:*** *Income Quartiles – Cross-Country Comparison, in percent*

**User Type**

Of the overall sample, 9.1% have provided services on a sharing platform, thus classed as 'providers'. 18.7% of the sample have only consumed sharing services, thus classed as 'consumers'. 62.5% of the sample have heard of sharing services, but never used them, thus classed as 'aware non-users'. 9.7% of the sample are not even aware of the existence of sharing platforms, thus classed as 'non-aware non-users'. The proportion of providers is relatively high within the French, Norwegian, and Polish samples, whereas the Dutch and Italian samples feature a relatively large segment of non-aware non-users.

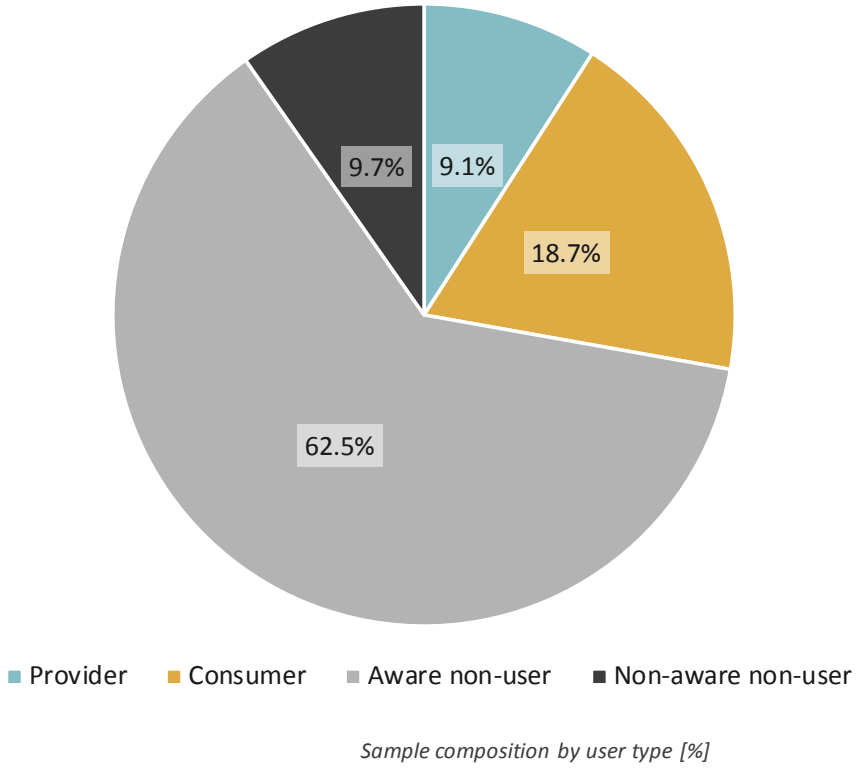


*Figure 12:* User Type – All Countries, in percent

| | Provider | Consumer | Aware Non-User | Non-Aware Non-User |
|---|---|---|---|---|
| Denmark | 9.9 | 14.6 | 62.5 | 13.0 |
| France | 15.7 | 24.6 | 56.6 | 3.1 |
| Germany | 9.4 | 15.4 | 64.0 | 11.2 |
| Ireland | 7.2 | 23.0 | 63.2 | 6.6 |
| Italy | 10.7 | 19.2 | 52.3 | 17.9 |
| Netherlands | 3.1 | 13.4 | 65.7 | 17.8 |
| Norway | 12.8 | 13.6 | 61.4 | 12.2 |
| Poland | 11.4 | 14.2 | 65.3 | 9.1 |
| Portugal | 5.2 | 17.6 | 74.5 | 2.8 |
| Spain | 10.1 | 19.3 | 65.9 | 4.7 |
| Switzerland | 8.3 | 21.3 | 59.7 | 10.7 |
| UK | 5.2 | 28.4 | 59.2 | 7.2 |
| Total | **9.1** | **18.7** | **62.5** | **9.7** |

*Sample composition by user type and country [%]*

*Table 6:* User Type – Cross-Country Comparison

## Open Data and Data Re-Use

*Ps2Share: Participation, Privacy, and Power in the Sharing Economy* is part of the Horizon 2020 Open Research Data Pilot. The project management team has produced a data management plan as a separate deliverable, outlining the types of data collected, their storage, and re-use. Specifically, the data management plan addresses how the data is to be made FAIR: findable, accessible, interoperable, and re-usable. As a participating project of the Horizon 2020 Open Research Data Pilot, the quantitative data which the reports are based on, will be made openly available under an appropriate license, such as Creative Commons-By, after the end of the project.

The data will be made available through the project website in an accessible format such as CSV or XLSX on a request basis through an online form. In addition, we are publishing the data in at least one of the institutional repositories of a participating institution. Sufficient documentation will ensure that potential interested parties will be able to re-use the data quickly and efficiently.