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Open Source 2021

Introduction

When the concept of open source was established, the goal was to create a "free and open software" movement where code was accessible to all without restriction or cost. This movement led to a community forming, one built primarily by enthusiasts and hobbyists. Eventually this evolved into the robust ecosystem we know today.

Open source now serves as both a hub of technology innovation and a home for coders of all skill levels to contribute, collaborate, and learn. But for many participants of open source, it's also a place of solace. 31% of our survey respondents said that contributing to open source gives them a feeling of purpose, proof that the community does so much more than simply develop software. Given this strong personal connection many members of the community feel about open source, we knew that we needed to make this year's edition of DigitalOcean Currents — our third open source focused report — a bit different.

2020 was a year unlike any other, so we wanted to better understand the role open source played in the lives of its members during this unique time. We wanted to learn how the pandemic impacted their participation and what changes they felt within the community. We also wanted to get their perspective on whether or not the core tenets of open source — "free" and "open" — still hold true today.

We decided to focus solely on those who were entrenched in the community of open source in 2020. While we surveyed more than 9,500 developers, this report focuses on the responses of the 4,440 who actively participated in open source over the course of 2020.

Key Findings:

- **Open source participation dropped in 2020, but active members dug deeper.**

  The percentage of respondents who actively participated in open source decreased from 63% in 2019 to 47% in 2020. However, the majority of those who did participate reported an increase in their overall involvement. 63% of respondents said they increased their participation and only 12% reported a decrease.

- **Free software changed the industry, but the individuals creating it could use some cash.**

  Only 12% of respondents were against paying contributors for their work with open source. Of the 88% who were either for payment or undecided about it, close to half of them (47%) believed tech companies should fund the payment of open source contributions. This is a much different perspective than that of the original founders of open source who wanted to keep the software free and separate from corporate influence.

- **The community is generally inclusive, but some argue it could be more ethical.**

  59% of participants believe open source is inclusive to people of all demographics, experience levels and locations. This is up slightly (1%) from 2019. Meanwhile, more than a third of respondents believe individuals should be allowed to restrict the use of their code.
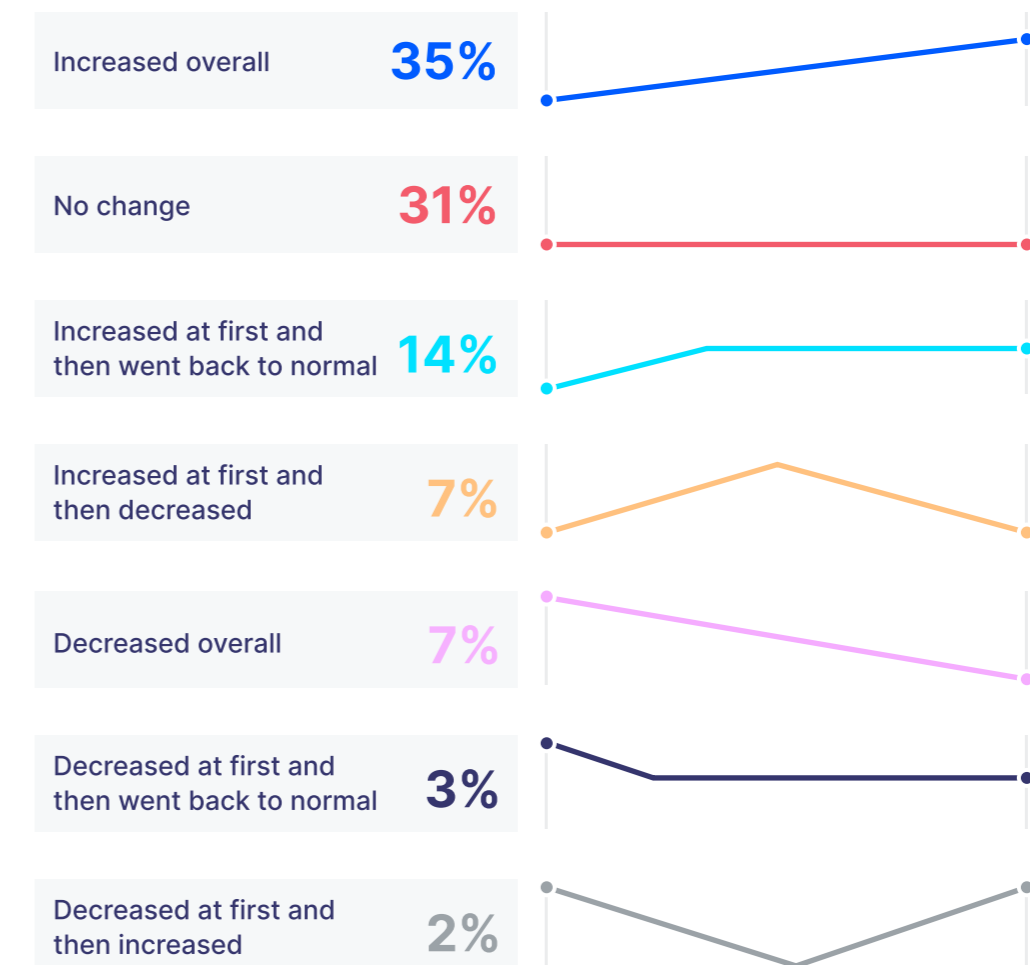
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2020's Toll on Open Source

While overall participation in open source was down from 2019 to 2020, the pandemic certainly impacted the way folks contribute. Of those individuals who actively participated in open source in 2020, 63% increased their participation, while only 12% decreased their participation.
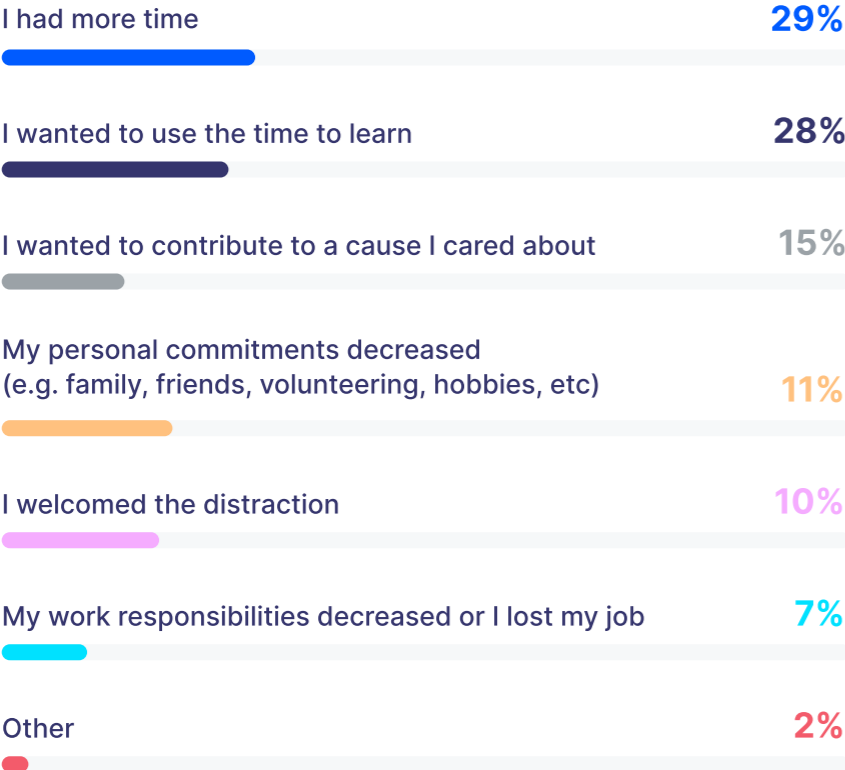
For many, their participation also evolved as the pandemic dragged on. While 35% reported that their participation in open source increased overall, 26% experienced varied levels of participation over the course of the pandemic. Participation trends were also different based on geographic region and age. APAC had the largest increase in overall participation at 51% of respondents, whereas the US, UK, and Canada had more respondents noting that their participation remained unchanged in light of the pandemic (44% of US respondents, 43% of UK, and 42% of Canada). Younger respondents (those under the age of 25) were nearly twice as likely than those over 25 to report an overall increase in their participation in open source.

How has the pandemic impacted your level of participation in open source?

Increased overall	**35%**
No change	**31%**
Increased at first and then went back to normal	**14%**
Increased at first and then decreased	**7%**
Decreased overall	**7%**
Decreased at first and then went back to normal	**3%**
Decreased at first and then increased	**2%**

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The reasons individuals increased their participation were pretty consistent across the board. Most reported that they had more free time (**29%**), wanted to learn (**28%**) or wanted to contribute to a cause they cared about (**15%**). However, the top answer did vary slightly by gender. The top reason men participated more was that they had more free time, while the top reason for women was their desire to use the time to learn.

Why did your participation in open source increase during the pandemic?

I had more time **29%**

I wanted to use the time to learn **28%**

I wanted to contribute to a cause I cared about **15%**

My personal commitments decreased
(e.g. family, friends, volunteering, hobbies, etc) **11%**

I welcomed the distraction **10%**

My work responsibilities decreased or I lost my job **7%**

Other **2%**

Why did your participation in open source decrease during the pandemic?

My work responsibilities increased **24%**

My personal commitments increased
(e.g. family, friends, volunteering, hobbies, etc) **23%**

I was too overwhelmed to contribute **17%**

I had less free time **16%**

I was focused on finding a new job **11%**

I used the time to take a break from open source **6%**

Other **2%**

Meanwhile, the reasons for decreasing participation varied based on individuals' situations at home. Those who described themselves as a primary caregiver (either as a parent, guardian or a caregiver of another family member), cited increased family responsibilities as the number one reason for contributing less, while those without caregiver responsibilities were more likely to blame increased responsibilities at work. Among the top three reasons for decreased participation was an overall feeling that individuals were simply too overwhelmed to contribute for non-caregivers and that they had less time for those who were primary caregivers.

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How have open source projects changed in 2020?

	Overall	US	Canada	UK	APAC
The number of projects focused on the health related issues (like the pandemic) has increased	58%	49%	54%	46%	72%
The number of projects focused on social issues has increased	49%	45%	41%	37%	59%
The number of projects focused on political issues has increased	33%	42%	29%	34%	33%
The number of projects focused on environmental issues has increased	41%	31%	28%	30%	55%

While the pandemic drove various trends in participation throughout 2020, it also impacted the types of projects the community was involved in. Across the board respondents noticed an increase in projects focused on health, social, political, and environmental issues. However, when looking at the breakdowns by geographic region we did notice a few outliers. APAC, which was hit hard by natural disasters including the Australian bush fires, flash flooding in Indonesia, and a cyclone in India and Bangladesh, reported significantly higher increases in the number of projects focused on environmental issues. Meanwhile, the US, which was in the middle of a presidential election year, had much higher reports of increased projects for political issues than any other location.

The community also changed in light of 2020. Participants reported an increased focus on mental health, inclusivity, and networking to help others find new jobs and mentoring to help others learn. Individual respondents also took altruistic actions of their own within the community. 29% helped community members learn and develop their skills, while 17% contributed to mission-oriented projects such as ones focused on pandemic relief or social issues.

How has the open source community changed in 2020?

	Overall	US	Canada	UK	APAC
The community's focus on mental health has increased	62%	55%	59%	63%	70%
The community's commitment to inclusivity has increased	57%	61%	60%	56%	59%
The amount of networking among community members to help others find new employment has increased	51%	44%	44%	37%	65%
The amount of mentoring among community members to help others learn has increased	50%	37%	39%	30%	69%

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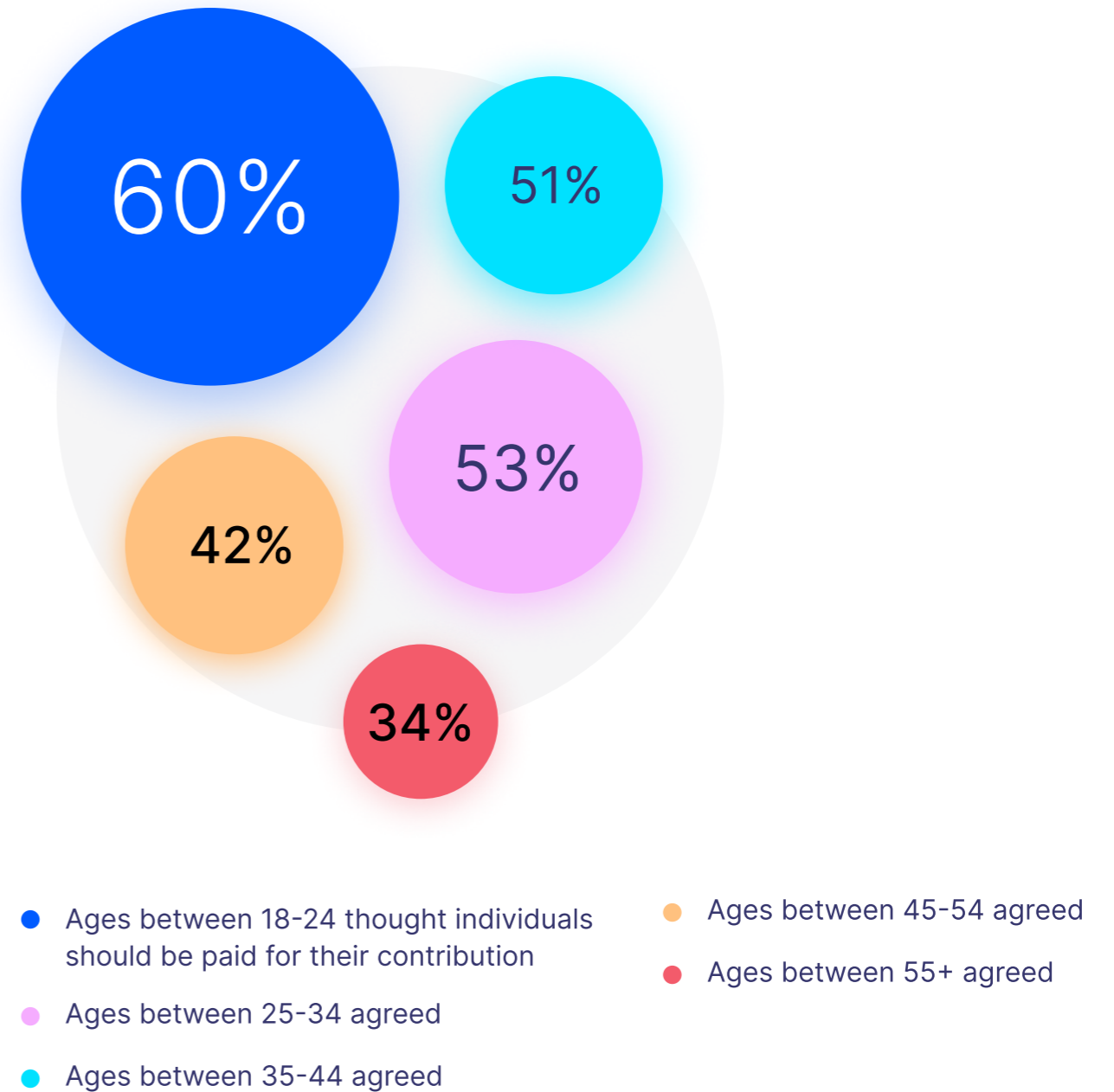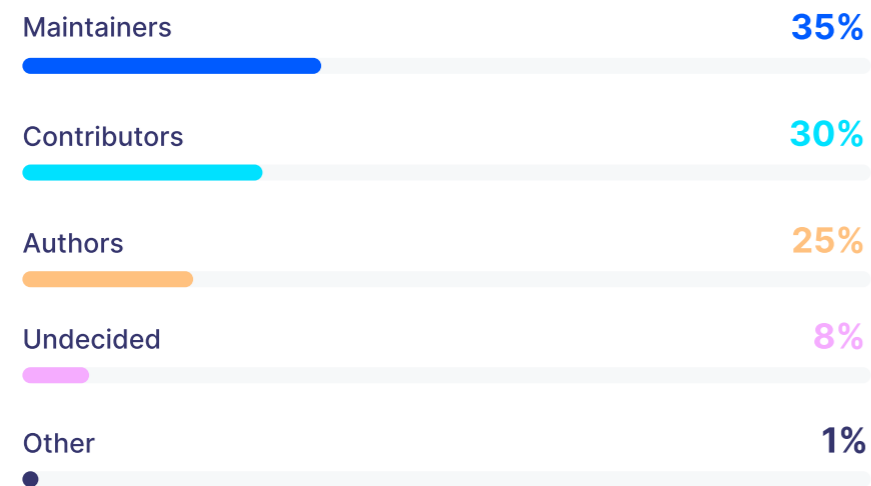# The Economics of Open Source

While open source was originally created to make code free and accessible, many participants are now questioning the practice of not paying individuals for their contributions. More than half of respondents felt that participants should be paid to contribute to open source projects (54%), while about a third remained undecided. Only 12% of respondents were against paying individuals for their contributions.

Do you think individuals should be paid for their contributions to open source?

Yes **54**

No **12**

Undecided **34**

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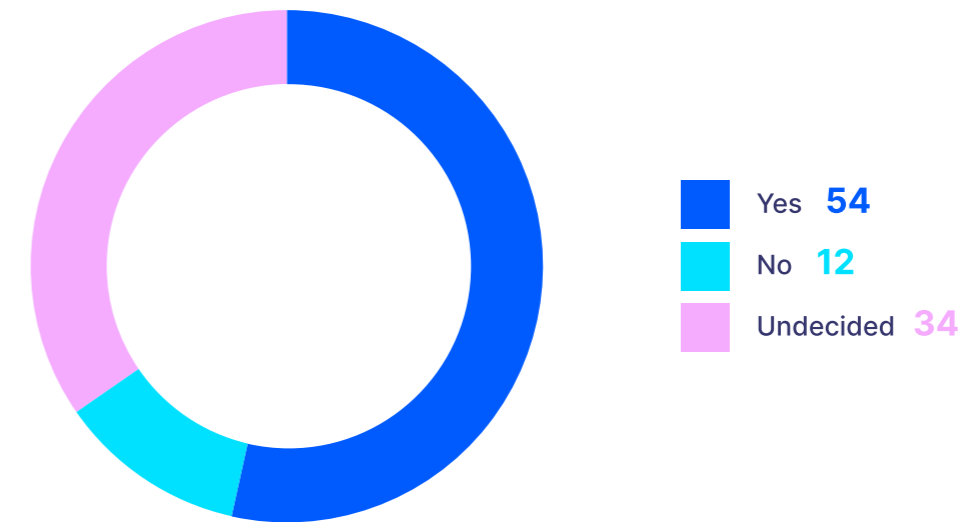
When it comes to who should be paid, respondents were pretty split. 35% believed maintainers should be paid, 30% advocated for contributors to be paid, and 25% thought authors should be compensated for their work. Interestingly, younger generations were much more supportive of payment for open source contributions than some of their older peers. 60% of respondents between the ages of 18-24 thought individuals should be paid for their contributions to open source, while only 53% of those between 25-34, 51% of those between 35-44, 42% of those between 45-54, and only 34% of those above 55 years of age agreed. This could certainly spark change in the years to come if more of the incoming developers lobby to have payment for contributions.

Who should be paid for their work on open source projects?

Maintainers **35%**

Contributors **30%**

Authors **25%**

Undecided **8%**

Other **1%**

60%

51%

53%

42%

34%

- Ages between 18-24 thought individuals should be paid for their contribution
- Ages between 25-34 agreed
- Ages between 35-44 agreed
- Ages between 45-54 agreed
- Ages between 55+ agreed

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Respondents were aligned on who should be funding these payments. About half of respondents thought tech companies should fund the payment of open source contributions, while a quarter thought project owners or individuals should pay.

Who should fund the payment of open source contributions?

Tech companies   **47%**

Project owners   **25%**

Individual users   **25%**

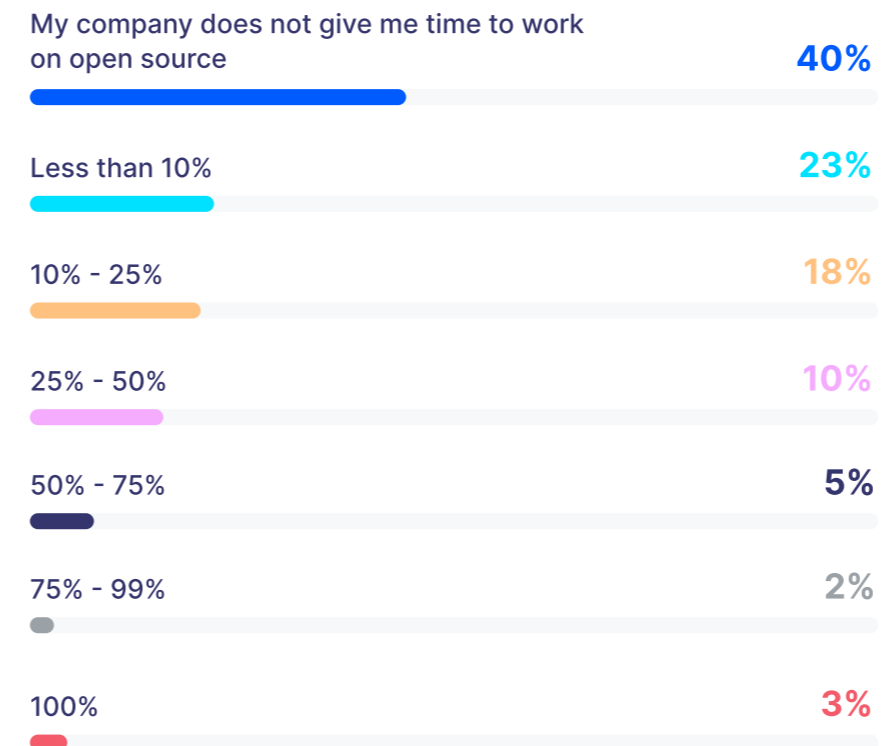Other   **3%**
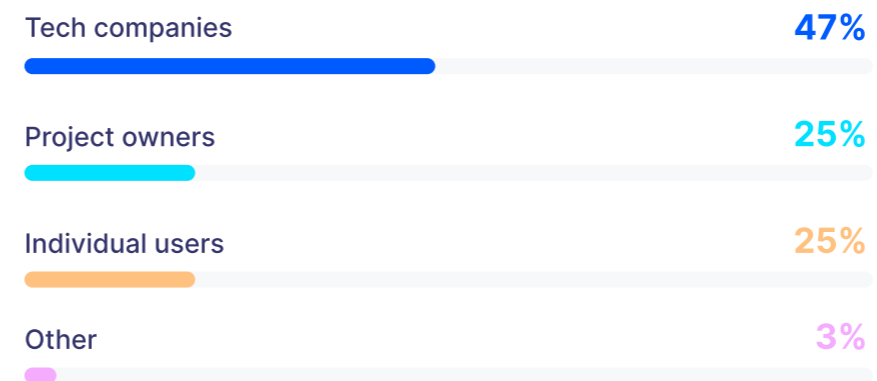
Despite the strong desire for participants in open source to be paid, very few actually are right now. Only 14% of respondents are currently being paid for their work in open source and the majority are given minimal time to work on open source projects at their jobs.

Are you being paid to contribute to open source?

- Yes **14**
- No **86**
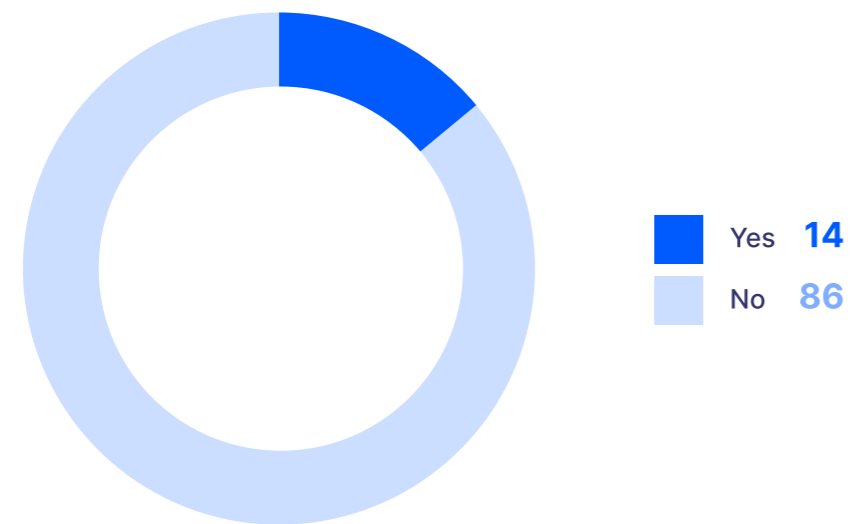
In an average week, what percentage of your time does your company give you to work on open source projects?

My company does not give me time to work on open source	**40%**
Less than 10%	**23%**
10% - 25%	**18%**
25% - 50%	**10%**
50% - 75%	**5%**
75% - 99%	**2%**
100%	**3%**

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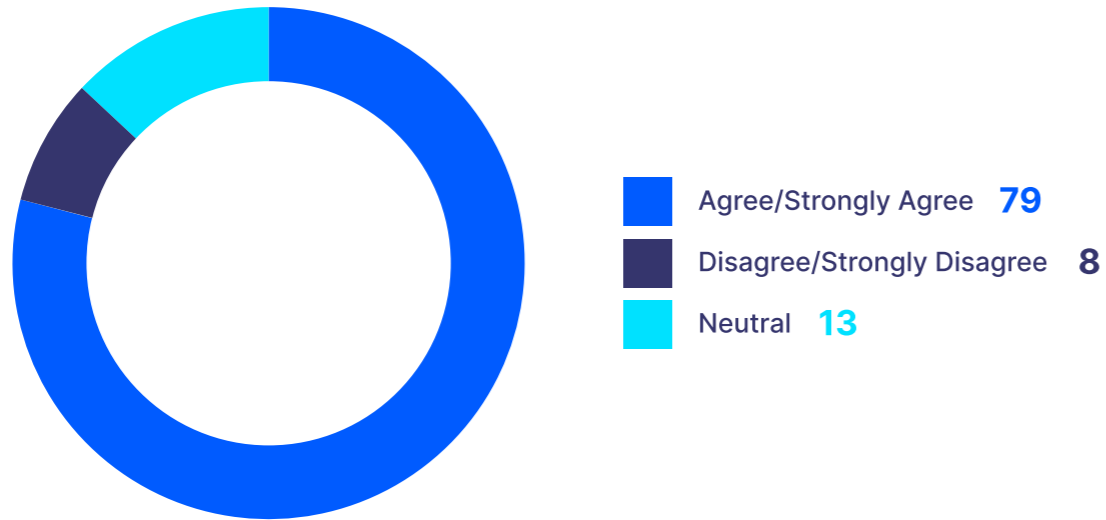# Open Community & Code Restrictions

The majority of respondents feel that the open source community is inclusive to people of all demographic backgrounds, experience levels, and locations. This sentiment grew modestly (1%) since 2019. However, just as we saw in 2019, there's still work to be done. Women and non-binary respondents felt the community was less inclusive than men - 62% of men agreed or strongly agreed that the community was inclusive versus only 46% of women and 42% of non-binary respondents feeling that way. Primary caregivers also found the community less inclusive than non-caregivers, with only 54% of caregivers agreeing or strongly agreeing that the community is inclusive versus 64% of non-caregivers.

Open source is inclusive to people of all demographic backgrounds, experience levels, and geographic locations.

	Overall	Men	Women	Non-binary
Agree/Strongly Agree	59%	62%	46%	42%
Disagree/Strongly Disagree	19%	17%	30%	35%
Neutral	22%	21%	24%	23%

The good news for caregivers and other contributors who are pressed for time is that the majority of respondents (79%) believed that part-time participants could still make meaningful contributions to open source. The majority also believed that first-time contributors were welcomed in the open source community (59%).

## Part-time contributors can make meaningful contributions to open source.

Agree/Strongly Agree	79
Disagree/Strongly Disagree	8
Neutral	13

First-time contributors are welcomed in the open source community.

Agree/Strongly Agree	59
Disagree/Strongly Disagree	13
Neutral	28

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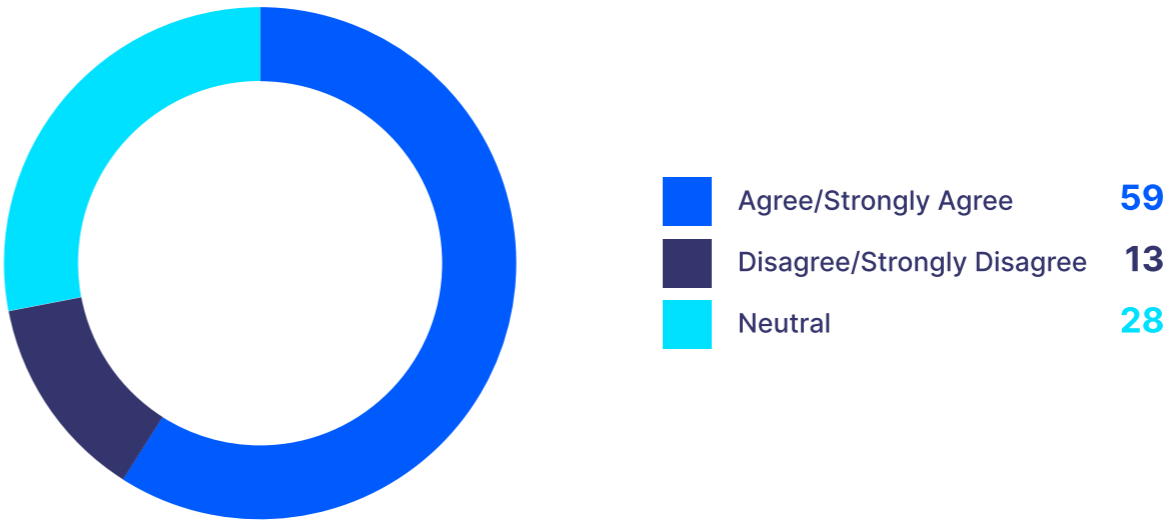
Unrestricted access to code is another key consideration for the community's openness. While more individuals were against allowing restrictions for the use of open source code (47%), more than half of respondents wanted to allow restrictions or were undecided. Authors were more likely to advocate for the ability to restrict usage of open source, with 41% of them agreeing with the statement as opposed to maintainers or contributors, of whom only 37% and 31% agreed with the notion of allowing restrictions for open source usage.

Do you think authors should be able to restrict usage of their open source code?

Yes **34**

No **47**

Undecided **19**
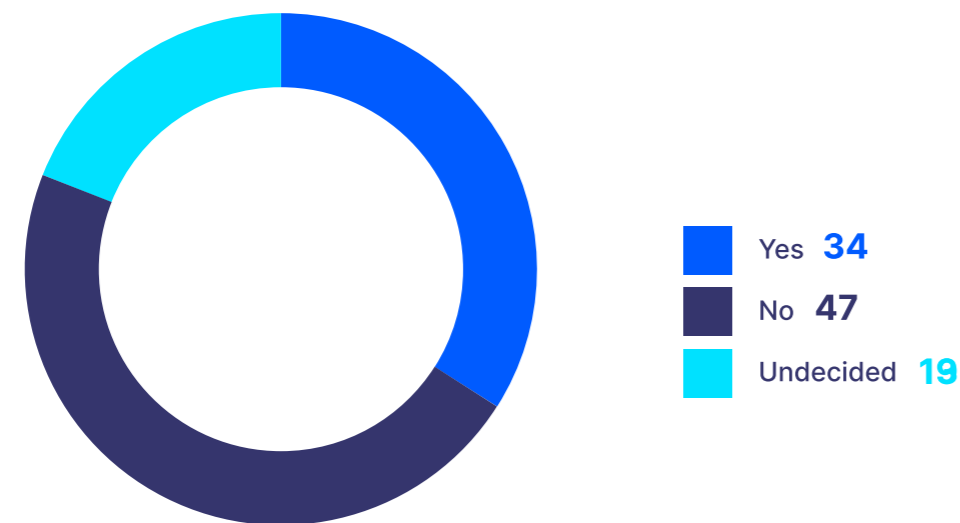
Of those who said yes, the top reason cited is if the use case goes against the author's ethical beliefs.
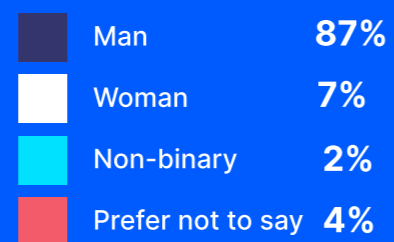
Those who were against restrictions shared concerns that the practice of restricting usage goes against the culture of open source.

Of those who advocated for allowing restrictions for open source usage, the top reasons cited were situations where the use case goes against the author's ethical beliefs (35%) or when the organization or individual using the code did not uphold the author's ethical beliefs (32%). Meanwhile, those who argued against allowing restrictions to open source code felt that the practice would go against the culture of open source (67%) or make the community less inclusive (18%).
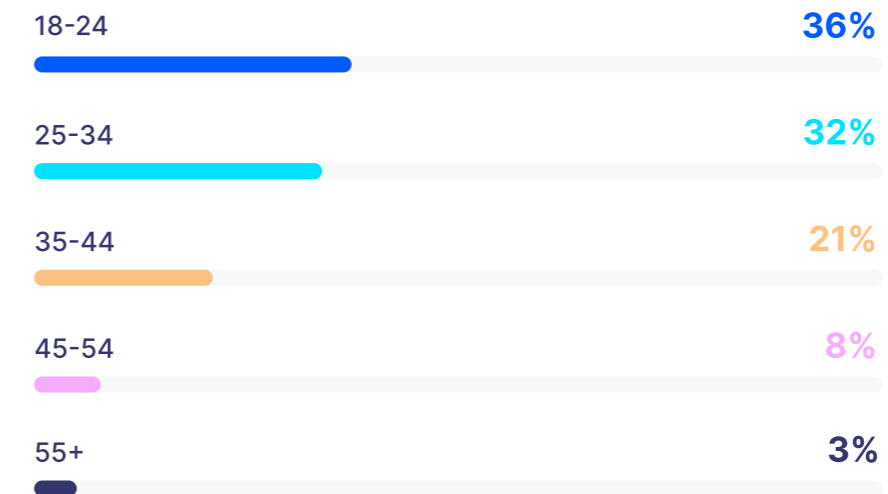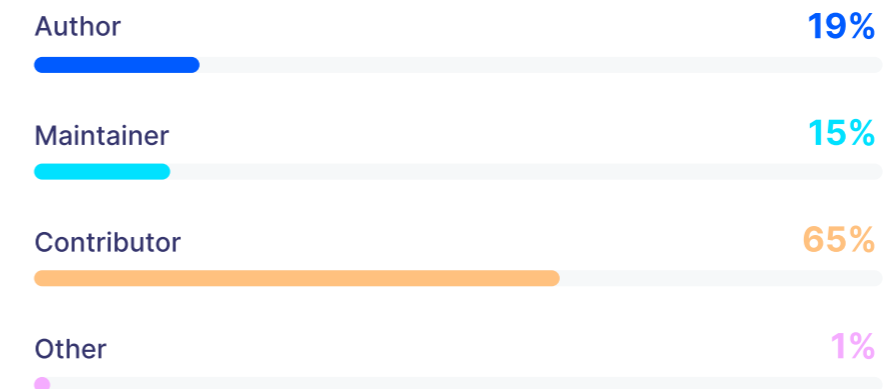
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Demographics

I identify as:

- ■ Man — **87%**
- □ Woman — **7%**
- ■ Non-binary — **2%**
- ■ Prefer not to say — **4%**

What is your age?

18-24	**36%**
25-34	**32%**
35-44	**21%**
45-54	**8%**
55+	**3%**

What best describes your primary involvement in open source?

Author	**19%**
Maintainer	**15%**
Contributor	**65%**
Other	**1%**

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About Currents

Trends in the developer community move quickly. As a developer-focused company, it's vital to keep up with the technologies and tools developers are interested in so we can help them achieve their goals. Currents is DigitalOcean's seasonal report on developer trends that we created to share knowledge with the community.