



State of Developer Experience

Developer Advocate Program
Open Source Office



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State of Developer Experience

Executive Summary

The State of Developer Experience Survey for Cardano aimed to understand developers' and contributors' challenges, motivations, and aspirations of developers and contributors within the Cardano ecosystem.

Below are the key takeaways:

- The Cardano ecosystem attracts a diverse range of developers, from novices to experienced professionals, who are strongly motivated to contribute and grow within it.
- Addressing challenges related to developer tools, documentation, and technical complexities will be critical for improving productivity and onboarding new developers.
- Language support and multilingual resources are vital for fostering inclusivity and reducing barriers for non-native English speakers. Two-thirds of respondents are willing to volunteer to translate resources into their native languages.
- The community's willingness to contribute to open-source projects and translation efforts highlights the potential for collaborative growth and innovation.

The insights from this survey will guide the developer advocates and Intersect's open source committee (OSC) in designing initiatives that address developers' needs, reduce barriers to entry, and empower the community to contribute effectively.



Introduction

The Developer Advocates of Intersect's Open Source Office, conducted a Developer Experience (DevEx) survey to specifically understand the needs and challenges faced by early-career developers and non-native English speakers. This initiative complements the Cardano Foundation (CF) survey, which provides broader trend analysis, by adopting a more focused approach on the pain points of this often underrepresented demographic. The DevEx survey aims to inform the creation of targeted initiatives and resources designed to support their growth and success, ultimately fostering a more inclusive and supportive environment for all developers within the Cardano community.

As a community-centric organization, Intersect's DevEx survey underscores its commitment to prioritizing developer feedback in shaping the future of the Cardano ecosystem. By actively seeking input from this specific group of developers, Intersect highlights the importance of their experiences and perspectives. The analysis of this survey is intended to yield valuable insights into the developer experience, pinpoint areas requiring improvement, and guide the development of resources and initiatives that effectively cater to the diverse needs of the Cardano community.

Ultimately, the analysis of the DevEx survey is expected to provide actionable insights that will contribute to a more collaborative and dynamic Cardano ecosystem. By focusing on the specific challenges of early-career developers and non-native English speakers, Intersect aims to create a more welcoming and effective environment for all contributors. This targeted approach reflects Intersect's dedication to ensuring that the development of Cardano considers and addresses the needs of its diverse developer base, thereby strengthening the community as a whole.

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Survey Results

Q 1 : How long have you been working with Cardano?

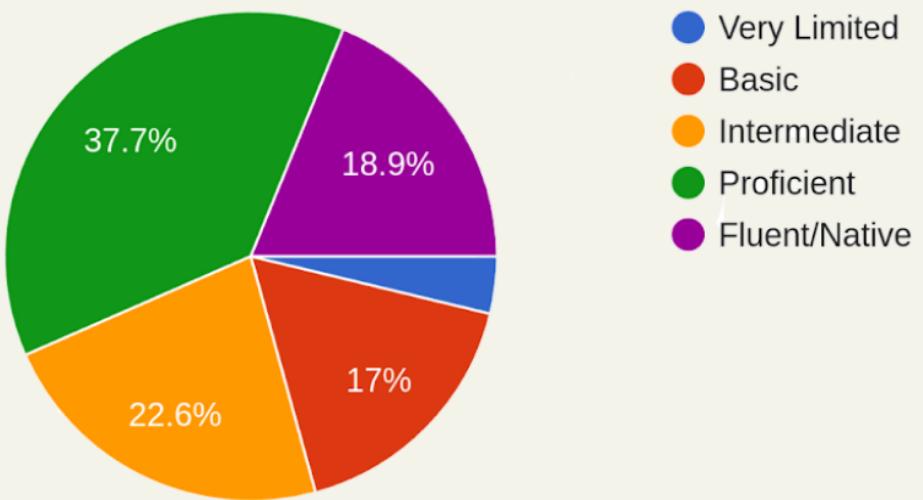
53 responses



Of the 52 survey participants, the largest segment has been working with Cardano for over two years, indicating a strong cohort of seasoned users. Another substantial portion has less than two years of experience, while nearly a quarter are just beginning their journey with Cardano. Smaller slices of the chart represent those with around 5-6 months of experience and those who are not actively developing but have been learning or investing in Cardano for over two years. The chart highlights a balanced mix of new and experienced individuals in the Cardano community. Additionally, one respondent is not working directly with Cardano but has been learning about and investing in it for over 2 years, indicating a long-term interest in the platform.

Q 2: How would you rate your English language proficiency?

53 responses



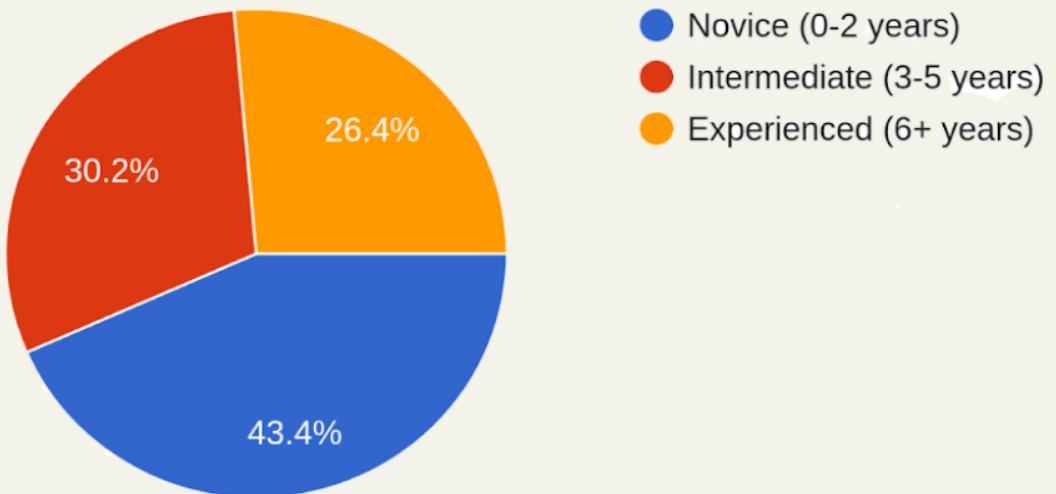
Analyzing the survey responses, it is apparent that the majority of respondents, 20, consider themselves proficient in English. This suggests a high level of comfort and ability to communicate effectively in English. In contrast, only 2 respondents reported having minimal proficiency.

A naive conclusion would indicate a relatively low number of individuals who may struggle with language barriers. Still, survivor bias suggests that people who self-identify as having minimal skills in English avoid filling out the survey.

The remaining respondents are dispersed among the fluent/native, intermediate, and basic categories, with 10 identifying as fluent or native, 12 as intermediate, and 9 as fundamental. This distribution suggests a diverse range of language abilities within the group, with a slight skew towards higher proficiency levels. The survey responses indicate a strong foundation in English language skills, with many respondents demonstrating advanced or native-level abilities.

Q 3: How would you rate your years of experience in software development?

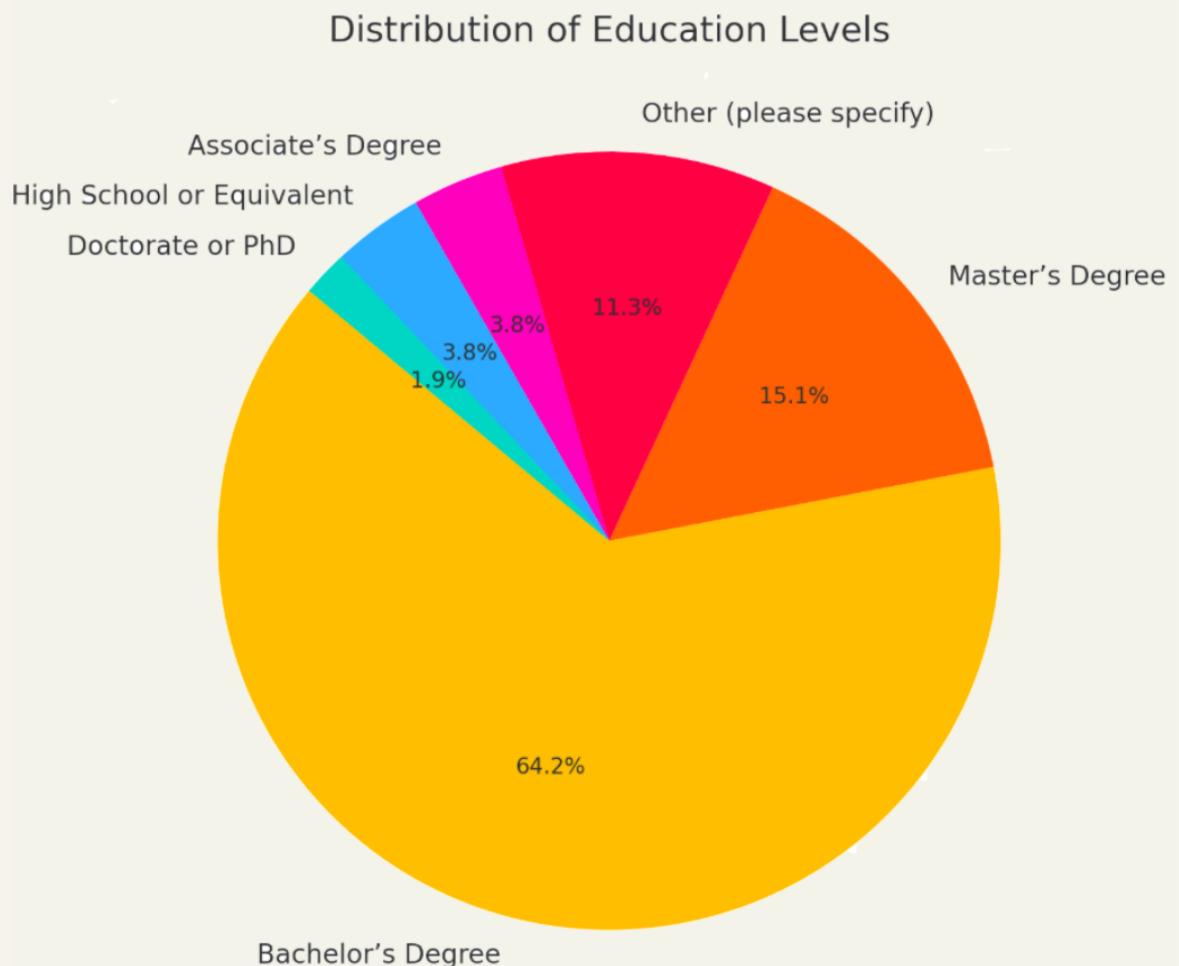
53 responses



The survey responses reveal an interesting distribution of experience levels in software development. Notably, the majority of respondents, 23, identify as novices, suggesting that a significant portion of the group is still in the early stages of their careers. In contrast, 14 respondents consider themselves experienced, indicating a smaller but still substantial presence of seasoned developers. Meanwhile, 16 respondents fall into the intermediate category, bridging the gap between novice and experienced. Overall, the survey responses suggest a somewhat skewed distribution, with a greater number of respondents at the entry-level stage, potentially indicating biases in survey responses.

Q 4: What is your highest level of education?

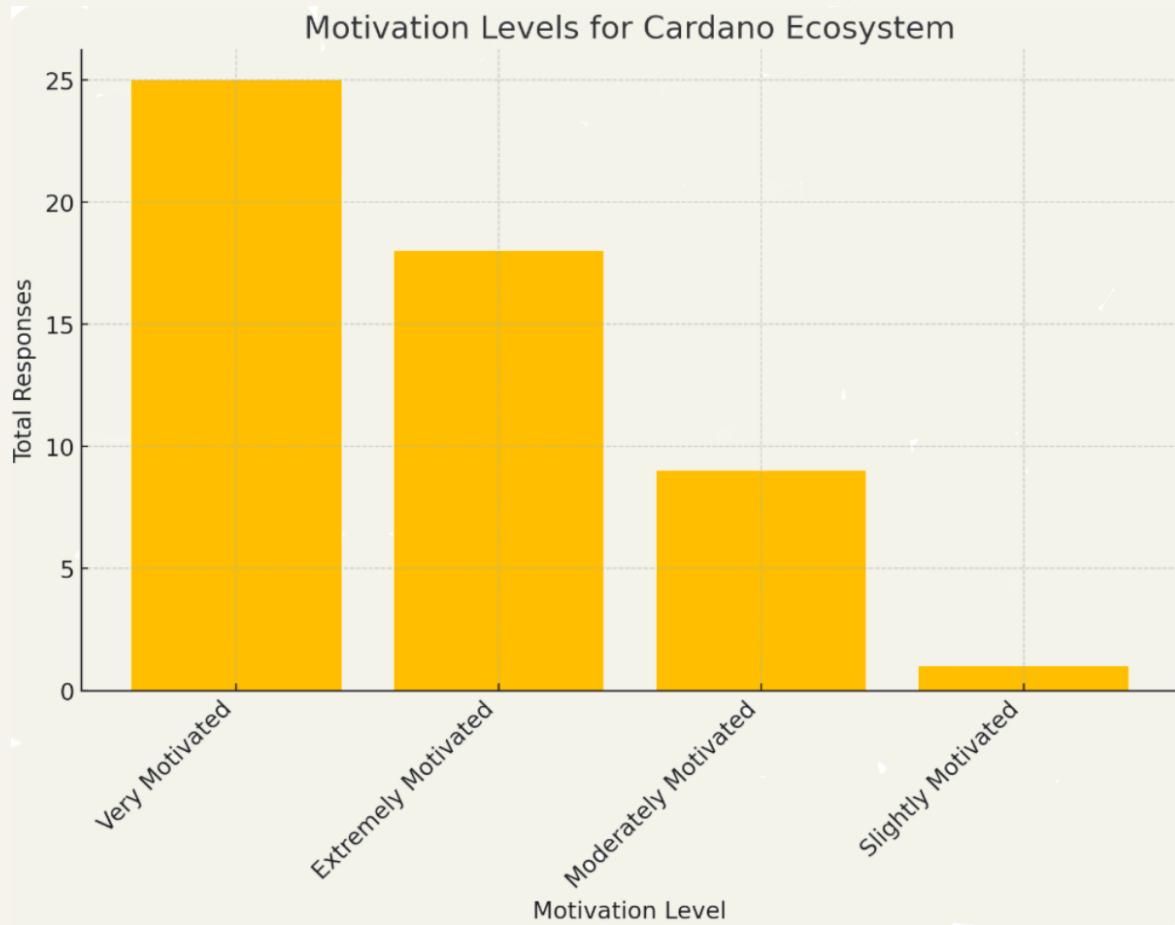
The Pie chart shows more clearly how Bachelors dominated the survey.



The pie chart depicting education levels shows that most respondents hold a Bachelor's Degree, followed by a significant number with a Master's Degree. A smaller portion of respondents have Doctoral Degrees or Other educational backgrounds. The survey results are mostly the opinions and views of academic professionals. The OSO must focus more on academic institutions, graduates, and professionals. Also, other ways to attract non-academic developers need to be explored to be inclusive.

Q 5: To what extent do you feel motivated to learn and contribute to the Cardano Ecosystem?

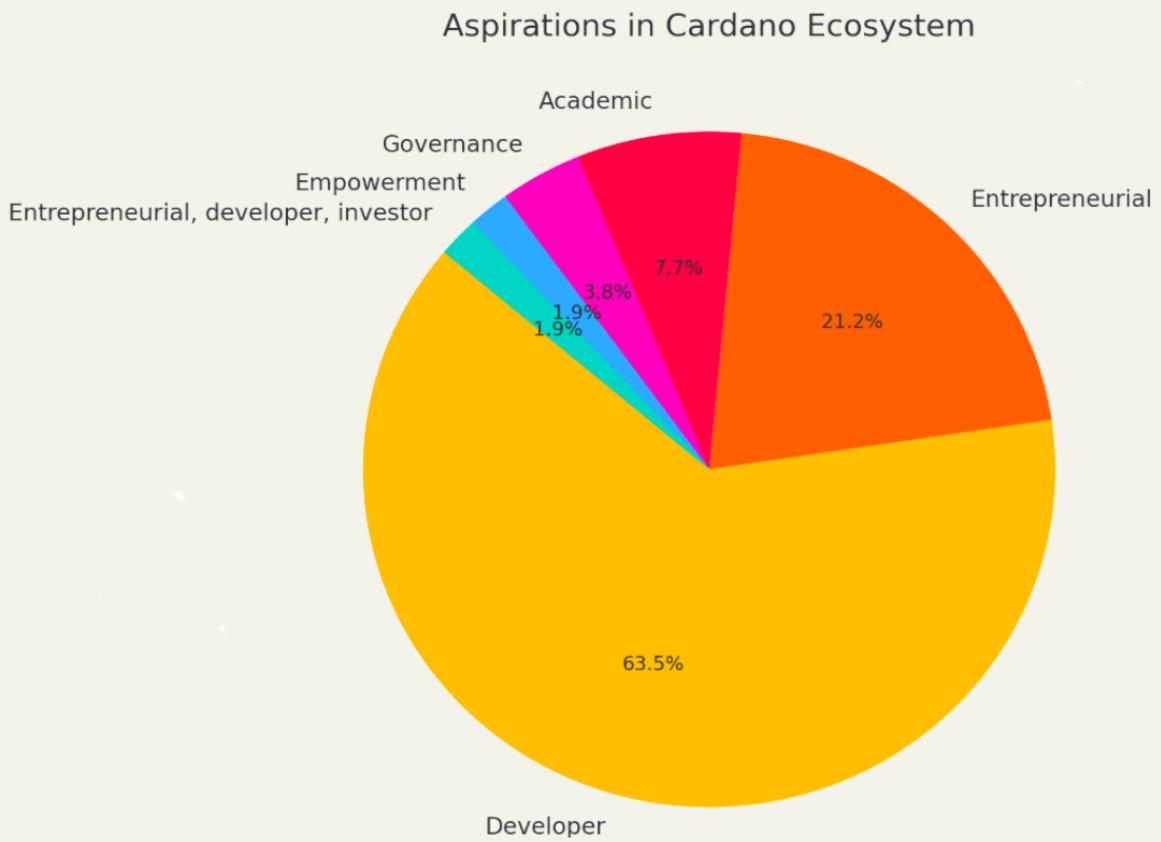
This question measures the degree of motivation to contribute to Cardano's development. A lower index requires remedial action, and a higher index requires measures to maintain it.



The motivation distribution chart highlights that most respondents feel highly motivated to learn and contribute to Cardano, with a substantial number reporting being either Extremely Motivated or Very Motivated. A smaller portion feels Moderately Motivated, and only a handful express lower motivation. This indicates a strong enthusiasm among educated participants for engaging with the Cardano Ecosystem. Thus, this needs to be maintained.

Q 6: What are your aspirations associated with being involved in Cardano?

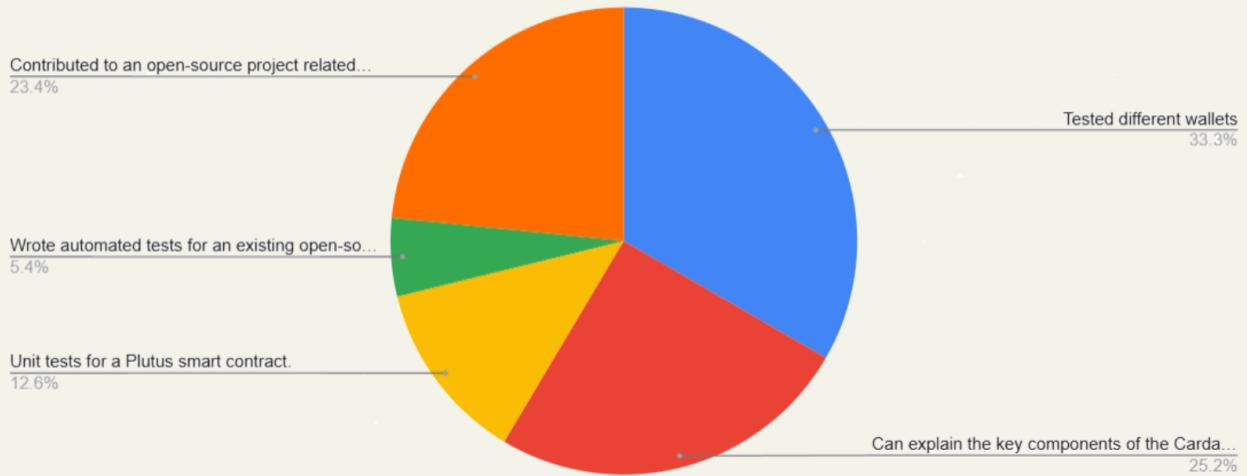
This section explores the aspirations of respondents to work with Cardano.



The pie chart shows that most respondents are developers. Entrepreneurs are also interested in improving the developer experience within Cardano. The aspirations analysis shows that most respondents aim to become experienced Developers. The second-largest group consists of those pursuing Entrepreneurial aspirations, suggesting an interest in business ventures and innovation within Cardano. Other ambitions, such as Academic research, Governance, and Empowerment, are present in smaller proportions. This shows that OSO is fulfilling the role it was created for, that is, nurturing favourable developer experience in Cardano.

Q 7: Which of the following applies to you?

No.Of People



Key Takeaways:

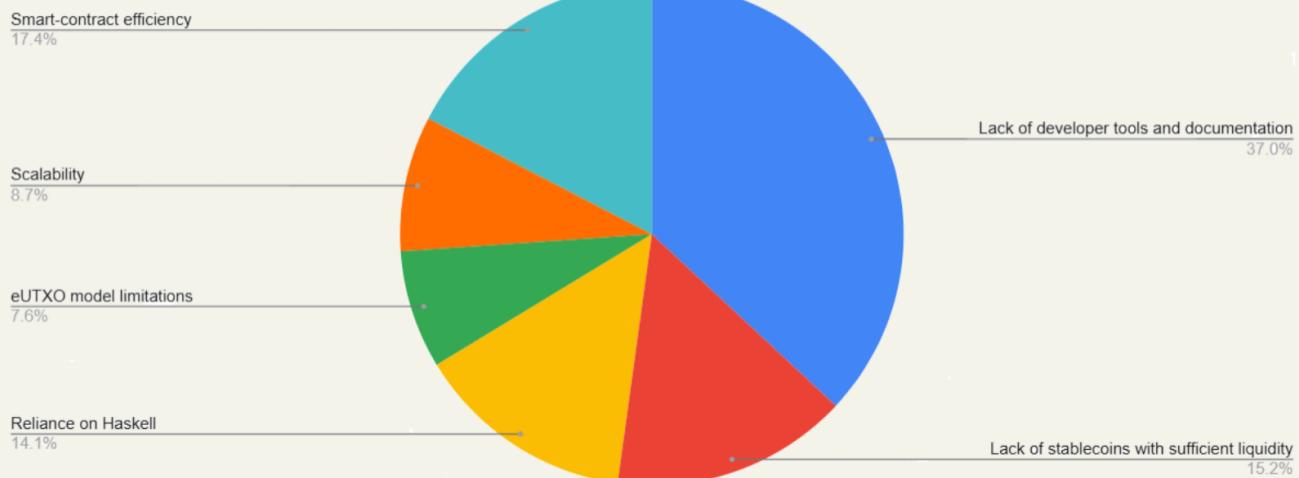
High Engagement with Wallets and Security: The majority of respondents are actively using Cardano wallets and prioritizing key security, indicating a strong foundation of user engagement.

Technical Proficiency Varies: While 25.2% of respondents deeply understand Cardano's architecture, fewer percentages have hands-on experience with unit and automated testing. This suggests a need for more educational resources and training to bridge the gap between theoretical knowledge and practical application.

Substantial Open-Source Contributions: 23.45% of respondents have contributed to open-source projects, highlighting the importance of community-driven development in Cardano's ecosystem. Encouraging more contributors and supporting open-source initiatives will be critical for long-term growth.

Q 8: Which of the following challenges present roadblocks for the project you are building on the Cardano blockchain?

Number of People

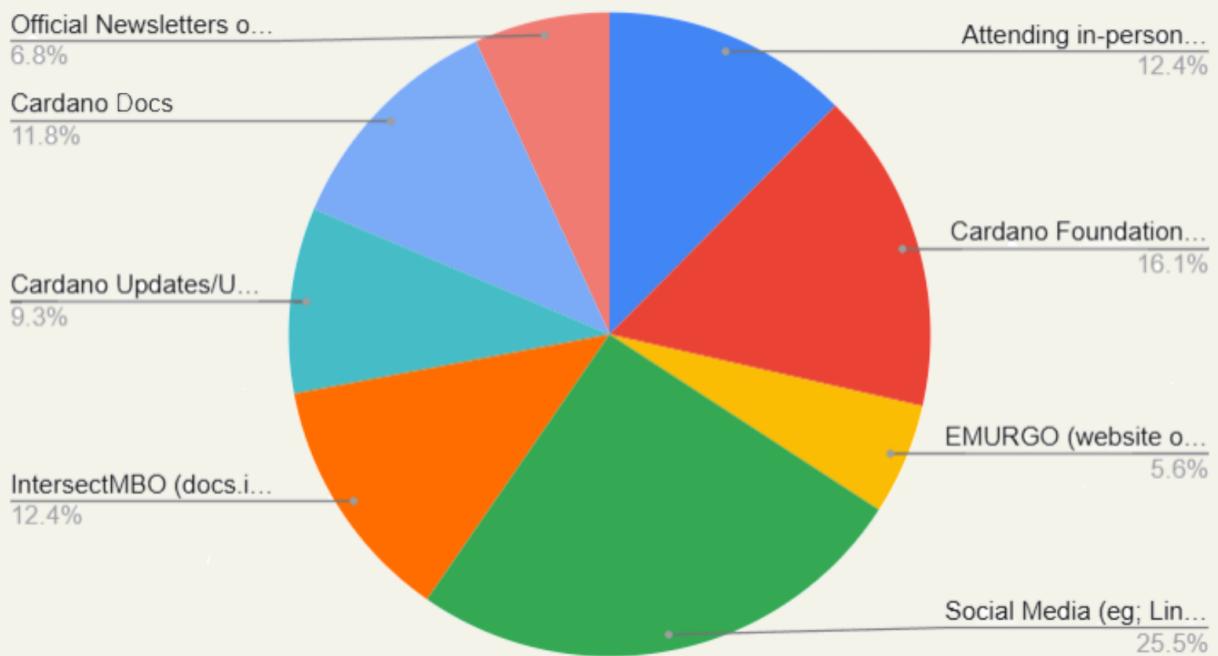


The survey identifies key challenges faced by developers building on Cardano, with insufficient developer tools and documentation emerging as the most critical roadblock. This gap severely impacts productivity and onboarding, signaling an urgent need for improved resources.

Smart-contract efficiency and lack of stablecoin liquidity are secondary priorities, highlighting bottlenecks in DApp performance and DeFi ecosystem maturity. Additionally, reliance on Haskell creates a steep learning curve for developers unfamiliar with functional programming, while eUTXO model limitations and scalability concerns reflect architectural complexities that could hinder advanced use cases as adoption grows.

Q 9: How do you stay updated about new features, updates, and developments within the Cardano community?

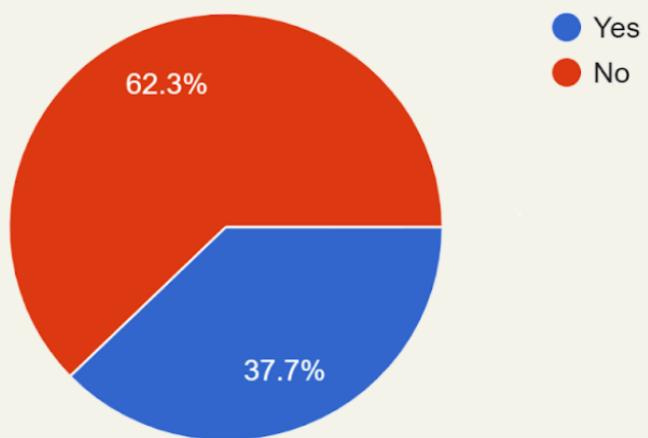
No.Of Responses



The survey highlights social media as the primary channel for staying informed about Cardano updates, with 25% relying on platforms like X (Twitter), LinkedIn, YouTube, Telegram, and WhatsApp. This underscores that the Cardano community members prioritize staying informed through immediate, easy-to-access platforms that deliver updates quickly and conveniently.

Q 10: Have you ever encountered difficulties due to language barriers while working with Cardano?

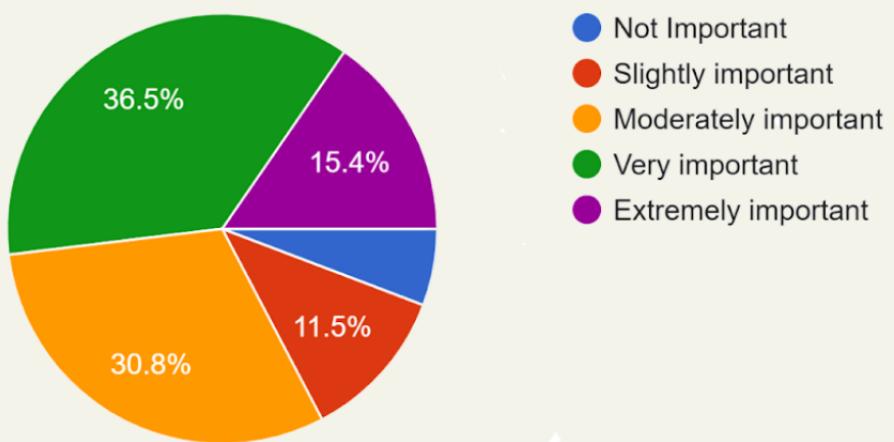
53 responses



Among the 52 respondents, almost two in five (37.7%) reported encountering language barriers, while roughly three in five (62.3%) did not. This indicates that although a majority of developers do not face language-related challenges, a noteworthy minority still experiences them.

Q 11: How important is language support in your experience with developing on the Cardano blockchain?

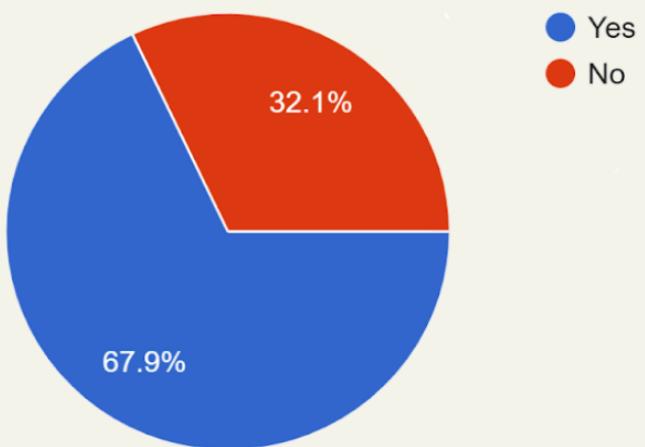
52 responses



Among the 52 respondents, most regard language support as significant in their Cardano development experience. About one-third rate it as 'Very important,' and nearly one-third see it as 'Moderately important.' An additional 15.4% call it 'Extremely important.' Meanwhile, a smaller group (around 17%) considers language support only slightly important or unnecessary. Overall, the data indicates that most participants view language support as vital to building on Cardano.

Q 12: Would you volunteer to translate resources or documentation in your native language?

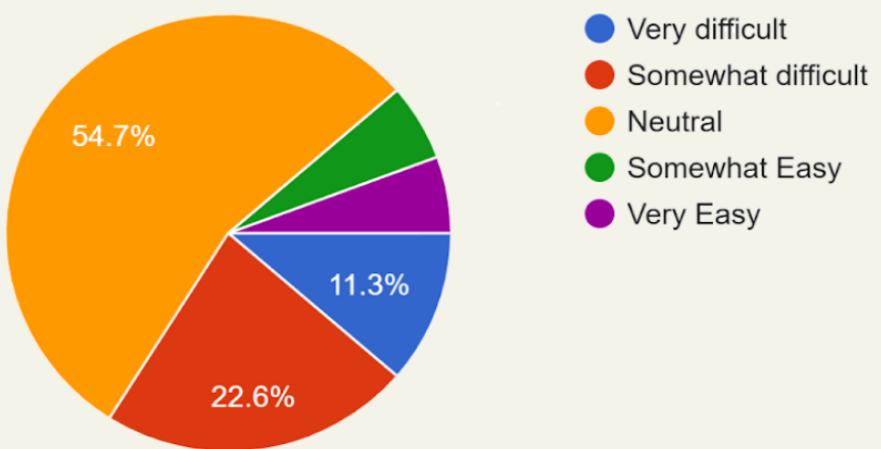
53 responses



The above pie chart shows responses from 52 participants regarding whether they would volunteer to translate resources or documentation into their native language. About two-thirds (67.9%) answered “Yes,” indicating a willingness to help with translations, while the remaining 32.1% said “No.” This suggests that most respondents are open to contributing translation efforts to support Cardano’s developer community.

Q 13: How easy is it to find development opportunities on Cardano?

53 responses



Among the 52 respondents, most find it “somewhat easy” to locate development opportunities on Cardano. Over one-fifth hold a neutral stance, while a more minor portion report moderate or significant difficulty. A modest group finds it “very easy.” Overall, the responses suggest that most developers see at least some level of accessibility when finding opportunities in the Cardano ecosystem.

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Action plan based on survey results

Q2

1. Streamline Developer Tools and Knowledge Sharing:

- Continue to have Haskell/Plutus training through the Developer Experience Working Group.
- Explore other on-chain and off-chain programming languages (Aiken, Mesh, Lucid-Evolution, Helios, etc.) to reduce the barrier to entry for new developers.
- Simplify Haskell Plutus by creating templates, easy-to-use tools, Rapid Dapp Application development libraries, and tutorial content.

2. Collaborate with Universities:

- Academic universities are looking for capstone projects for their students to gain industry experience

3. Facilitate translation initiatives:

- Leverage the interest of respondents willing to volunteer for translations.

Q3

1. Conduct workshops for developers

2. Collaborate with the Community Hubs:

- Establish a mentorship program that pairs experienced developers and industry experts with new developers and startups to provide guidance, support, and feedback on their projects and ideas.
- Offer coaching and consulting services to help developers and startups navigate the Cardano ecosystem's complexities and identify opportunities for growth and innovation.
- Create a network of mentors and coaches who can provide expertise in specific areas, such as smart contract development, decentralized finance (DeFi), and non-fungible tokens (NFTs)

3. Pilot the Lighthugger program.

Q4

1. Foster Cardano Developer Network through the support of the Cardano communities such as Hubs, Town Halls, etc.

2. Evangelize Cardano in relevant spaces

- Crypto events and conferences
- NGL and nixOS/nix package manager
- Effective Altruism forum

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Recommendation to Open Source Office

1.

Colleges are willing to collaborate with Intersect as an Industry partner. We recommend that OSO involve Intersect's stakeholders to open up some projects or small parts of their development to students, where they can gain knowledge by working practically on Cardano. This will enable Cardano to reach a wider audience, cultivate future talent, and strengthen its presence in academic and industry circles.

2.

To bridge the gap between domain experts and developers in the Cardano ecosystem, targeted workshops for developers from developing countries are recommended. These workshops should focus on essential concepts such as career development, venture creation, risk and reward, self-leadership, lifelong learning, and a growth mindset. This approach will help developers understand the value of their involvement in Intersect and equip them with the necessary skills to succeed in the ecosystem.

3.

To encourage participation from domain experts, especially those from the global north, it is suggested to provide personalized incentives for collaboration on projects with the next generation of developers. This could address the current limitations of incentive programs like the Maintainer Retainer, ensuring that experts see tangible value in their engagement.



Conclusion

For Cardano to thrive as a community-led, disruptive technology, fostering a culture of inclusivity, diversity, and decentralization is essential. This can be achieved by promoting grassroots initiatives, supporting local communities, and empowering individuals to take ownership of their participation in the ecosystem. By doing so, Cardano can become a beacon for democratic values, social justice, and economic equality.

Furthermore, by leveraging the potential of blockchain technology, Cardano can help create a more equitable and transparent global economy where individuals and communities can thrive without being bound by traditional power structures. This, in turn, will enable Cardano to become a driving force for positive change, promoting human dignity and social welfare while ensuring the long-term sustainability of the ecosystem.

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