

Exploring the Need of Accessibility Education in the Software Industry: Insights from a Survey of Software Professionals in India

An SEET Track Paper

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Background

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Some literature on integrating accessibility in UG courses

Little literature on how to integrate it into industry professionals' training

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Why India?

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(After the US)

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5M+

Software professionals in 35k+ orgs

RQs

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RQ1

Who practices accessibility?

RQs

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Who practices accessibility?

RQ2

How and when do software professionals consider and implement accessibility?

RQs

RQ1	Who practices accessibility?
RQ2	How and when do software professionals consider and implement accessibility?
RQ3	What are the challenges encountered in implementing accessibility?

RQs

RQ1	Who practices accessibility?
RQ2	How and when do software professionals consider and implement accessibility?
RQ3	What are the challenges encountered in implementing accessibility?
RQ4	What resources do software professionals require to implement accessibility?

Method

- ❖ Self-reported online survey, inspired by [Shinohara 2018], a survey of 14,000+ CS Educators in the US
- ❖ Approved by our institute's Human Ethics Committee
- ❖ Google Forms
- ❖ Pilot tested with three professionals in our network
- ❖ Disseminated through our alumni network and professional networks (14k+ emails)
- ❖ Open for 6 weeks in Feb-Mar 2023

Participants

❖ 269 responses

Category	Sub-Category	Count	Percent
Gender	Male	160	59.5%
	Female	63	23.4%
	Not Disclosed	46	17.1%
Qualification	Bachelor's	169	62.8%
	Master's	98	36.4%
	Ph.D.	2	0.7%
Experience	0-3 Years	84	31.2%
	4-7 Years	74	27.5%
	8-15 Years	64	23.8%
	15+ Years	47	17.5%
Domain	Software Developer or Tester	152	56.6%
	Software Management	43	16.0%
	Software Operations	21	7.8%
	Software UX Design	18	6.7%
	Customer Support	6	2.2%
	Others	29	10.7%
Identify as PwD	Yes	11	4.08%
	No	216	80.29%
	Prefer not to say	42	15.61%

Participants

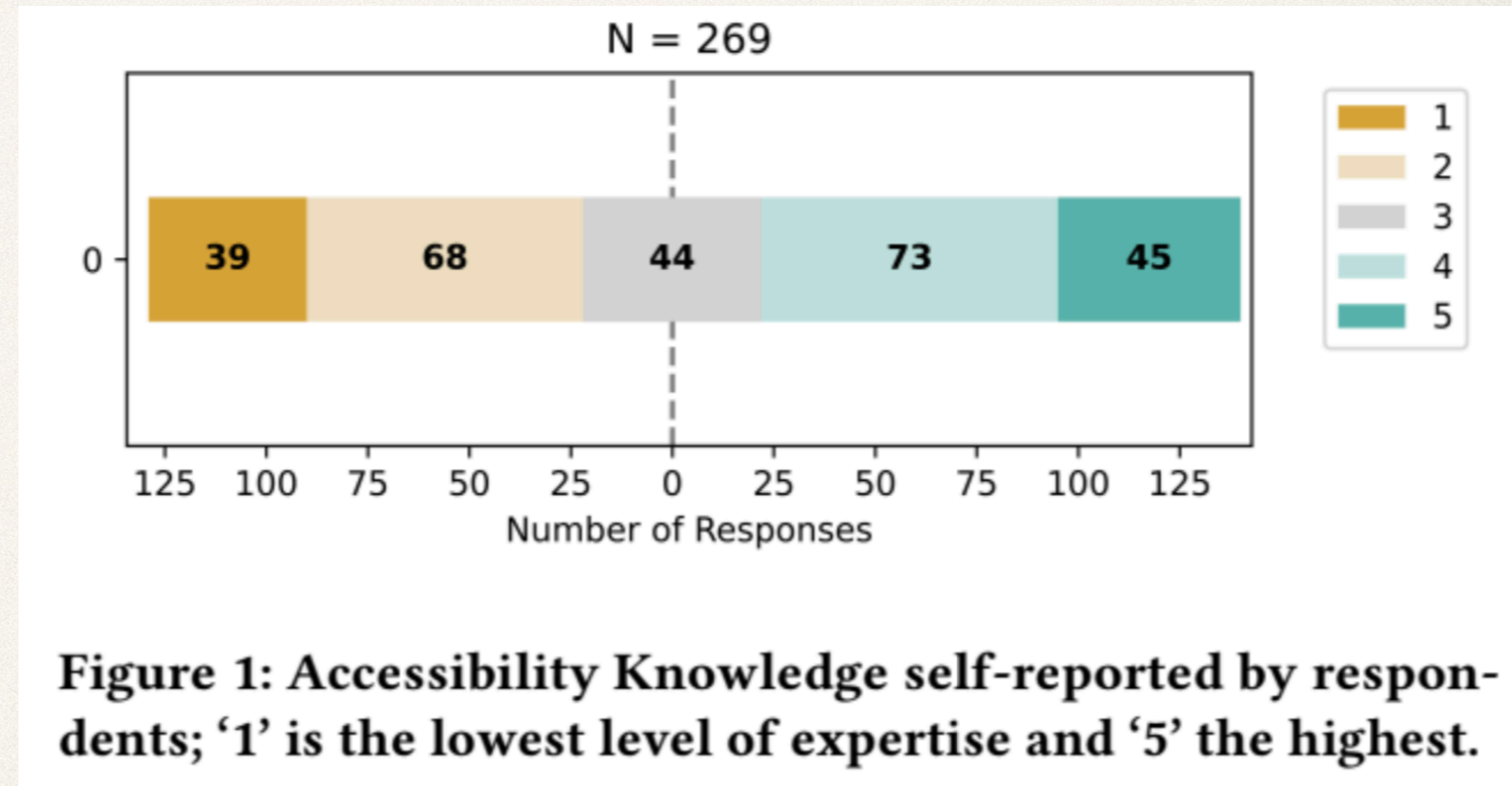
❖ 269 responses

Reported a range of disabilities
Five of these 11 stated multiple disabilities

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Findings

- ❖ Self reported accessibility knowledge



RQ1—who practices accessibility?

4.4%

Work in roles related to accessibility (12 out of 269)

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11 males, 1 female

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7 developers, 4 managers, 1 customer support

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UX design, accessibility tester, mobile app developer

RQ2 – Accessibility considerations and implementation

105

Worked on a project that uses inclusive design

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21.9% – outsourced accessibility testing

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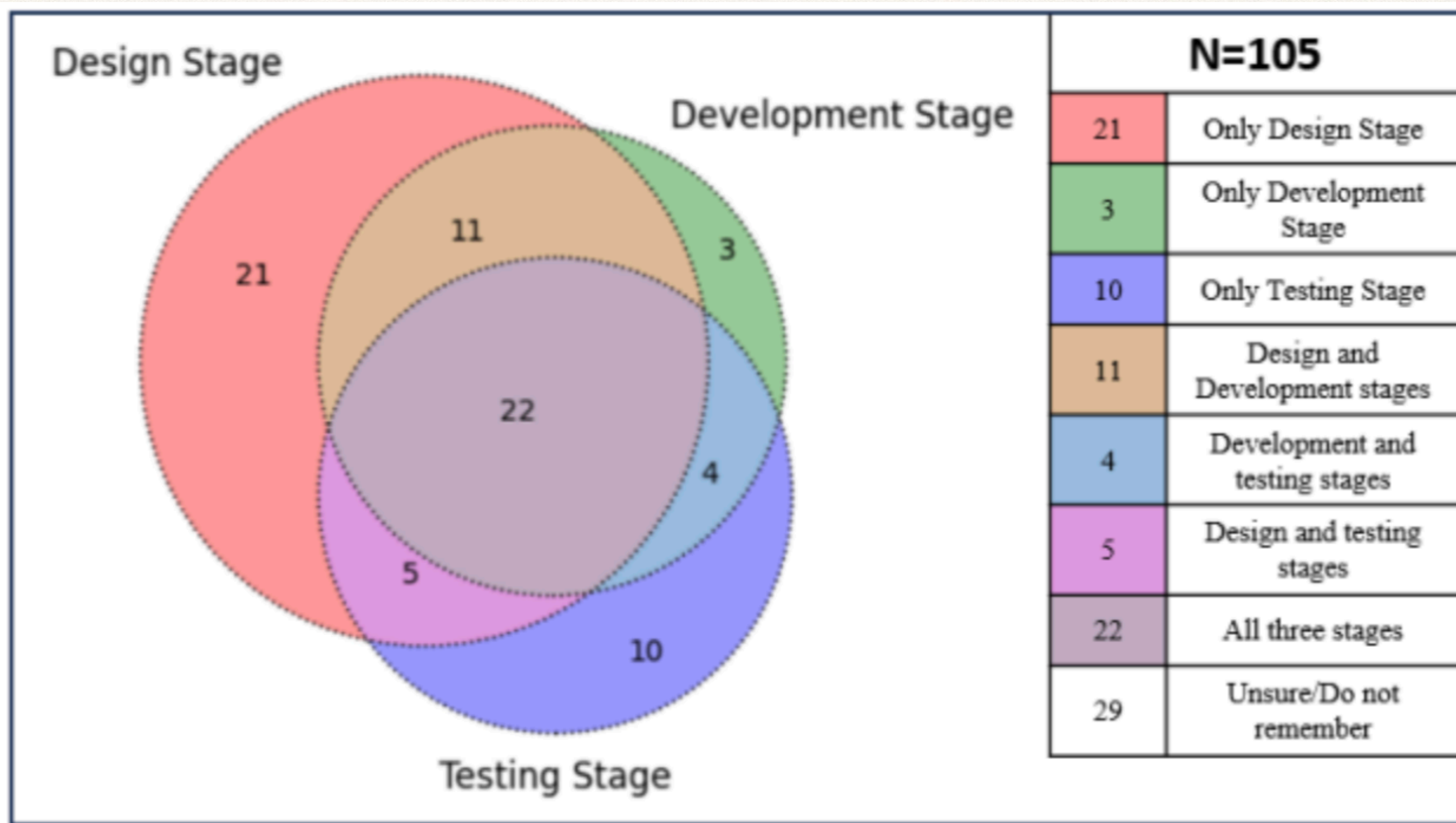
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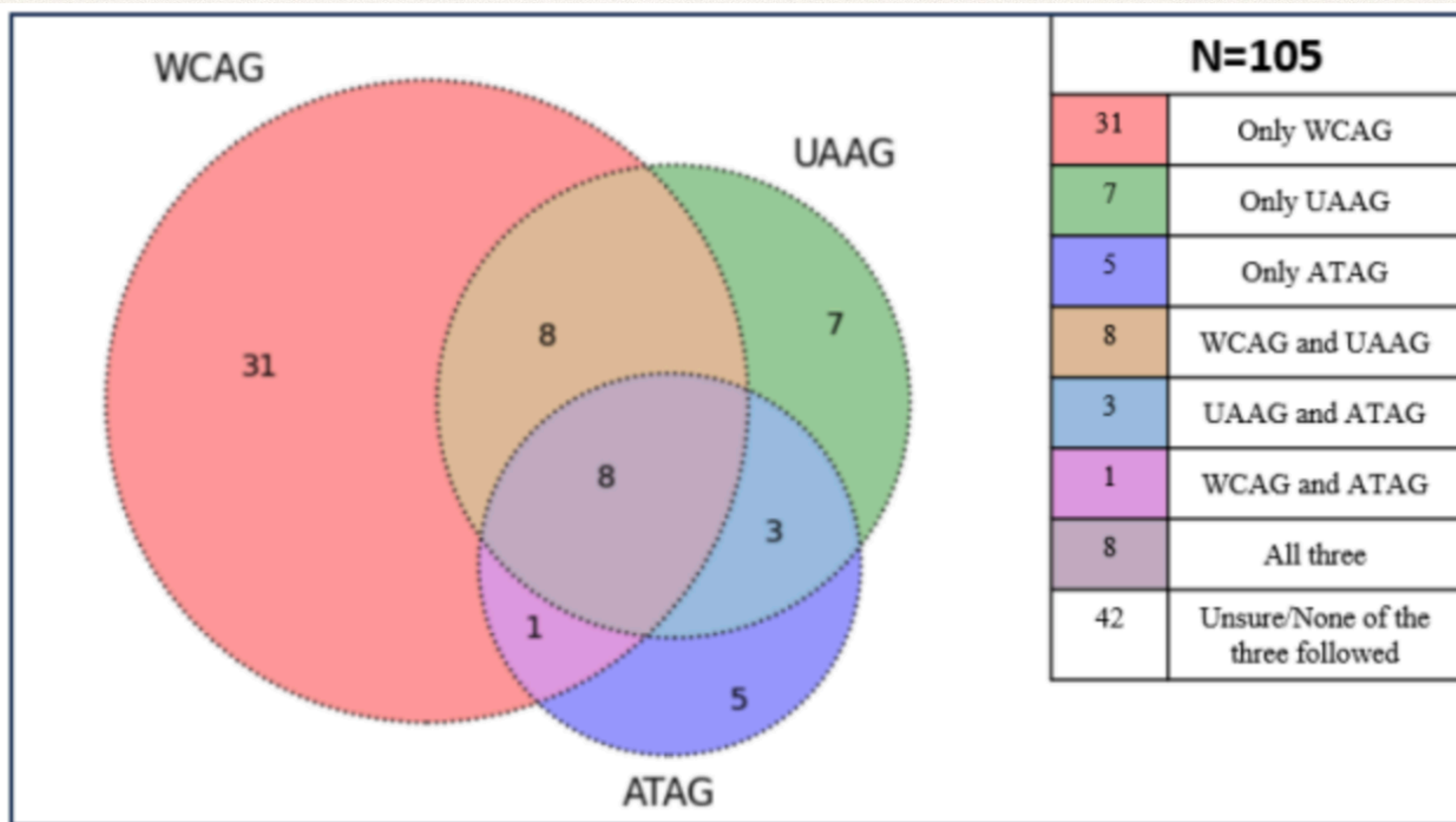
21.9% – outsourced accessibility testing

46.7% – in-house accessibility testing

Accessibility considerations in which stage of SDLC?



Use of accessibility standards



RQ3–Challenges in implementing accessibility

Challenge	Percentage
Lack of skilled developers/professionals	76.20%
Lack of awareness	71.37%
Difficult to recruit PwDs with technical knowledge	29.36%
Difficult to accommodate PwDs	15.98%
No recognized parameters to certify a product/service as accessible	14.49%
Budgetary concerns to take care of accessibility	2.60%
No major return on investment	0.37%

RQ3—C

Top barriers in other studies as well

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Could be more relevant to India / Global South in general?

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RQ4—Resources required

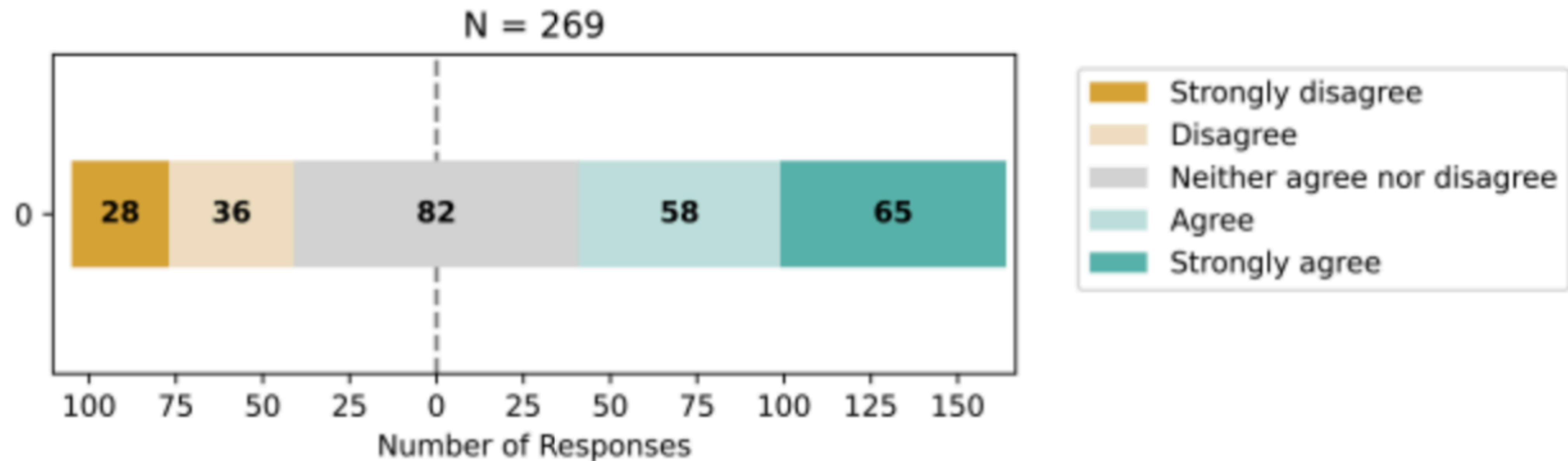


Figure 4: Responses to the statement 'Sufficient resources provided by the organization'

Qualitative analysis of the open-ended question

Table 4: Resources required for improving accessibility

Resource Required	Percentage
Education & Training	69.90%
Budget and Enough Time for Accessibility	11.65%
Improved tools and Processes	6.79%
Recruit skilled engineers with a11y knowledge	3.88%
Facilitate interaction with PwD for user testing	2.91%
Others (Analytics on a11y, better user research)	5.82%

Qualitative analysis of the open-ended question

Educational Resource Required	Percentage
Self-learn materials such as books and videos on Accessibility	36.98%
Hands-on Tutorials, Workshops, and Bootcamps on Accessibility techniques and tools	32.87%
Monthly focused meetings, interaction with a11y experts, regular blogs and articles on happenings in A11Y	12.32%
Sensitize on <i>why</i> a11y is important and provide awareness on the field	10.95%
Facilitate Accessibility Certifications such as ones offered by IAAP	5.47%
Teach Accessibility as part of school or University education	4.10%

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Very few professionals are actually working on accessibility-related roles

- ❖ Only 2 have reported using comprehensive measures
- ❖ all stages of SDLC, experts on team, all three standards, user testing with PWDs

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Small and medium-sized companies show less activity on accessibility

- ❖ Corroborates existing literature [Patel et al. 2020]
- ❖ Mid / senior level professionals more actively engaged in accessibility tasks

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Limitations

- ❖ Anonymous, disseminated online – low response rates..
- ❖ Self-selection bias
- ❖ Limitations of the instrument – some questions may be interpreted differently by the respondent

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Social desirability bias?

- ❖ 43.8% reported proficiency in accessibility
- ❖ But very few have actual experience (another question on the survey)
- ❖ Only 4.4% actively engaged in accessibility implementation

Summary

- ❖ Survey of 269 software professionals from India
- ❖ To understand the perception / understanding of accessibility topics in the industry
- ❖ Some challenges uncovered could be specific to India
- ❖ While there is some awareness of accessibility, comprehensive training resources are required

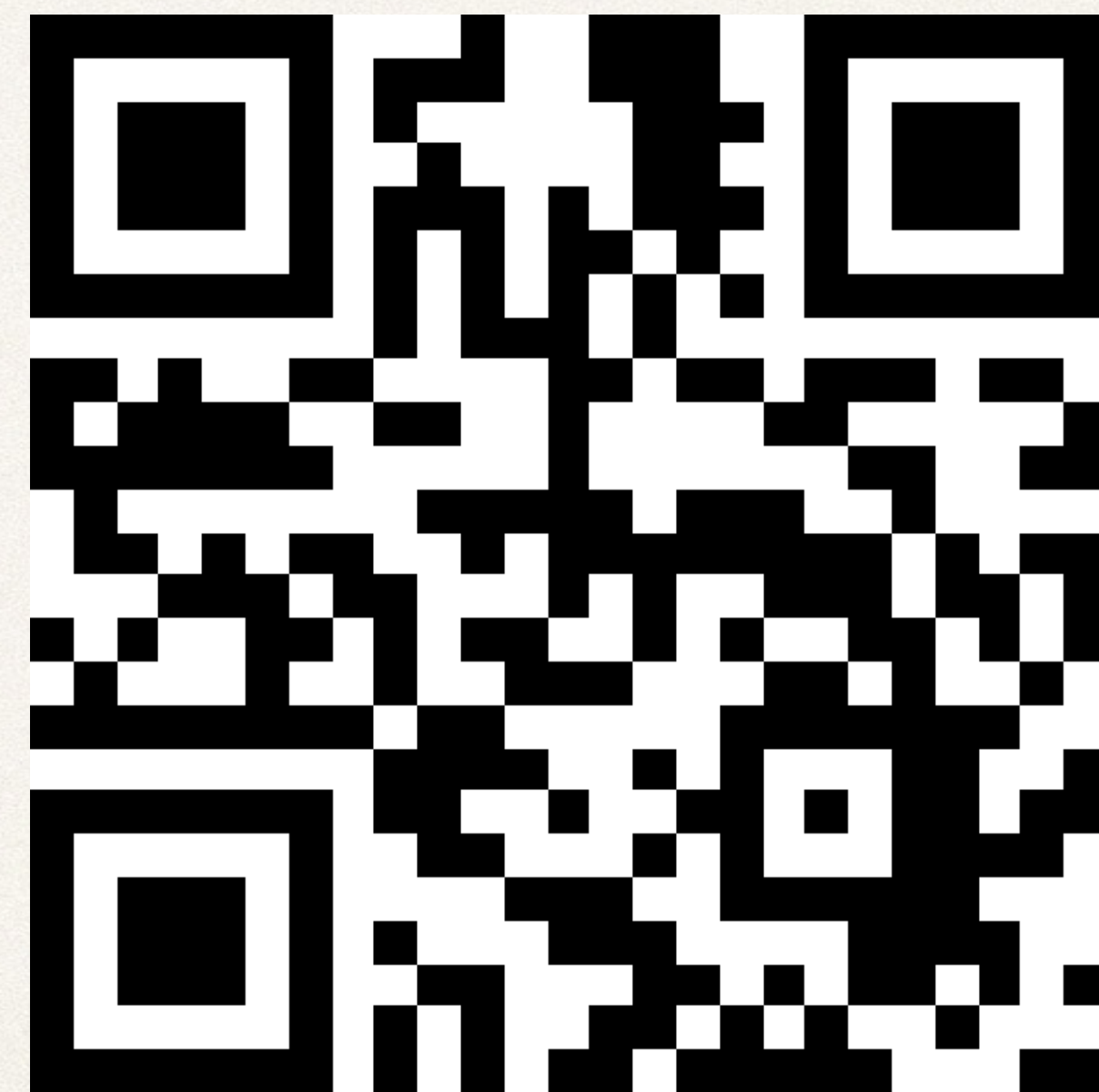
Thank you!

Reach out for collaborations or just casual conversations!

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