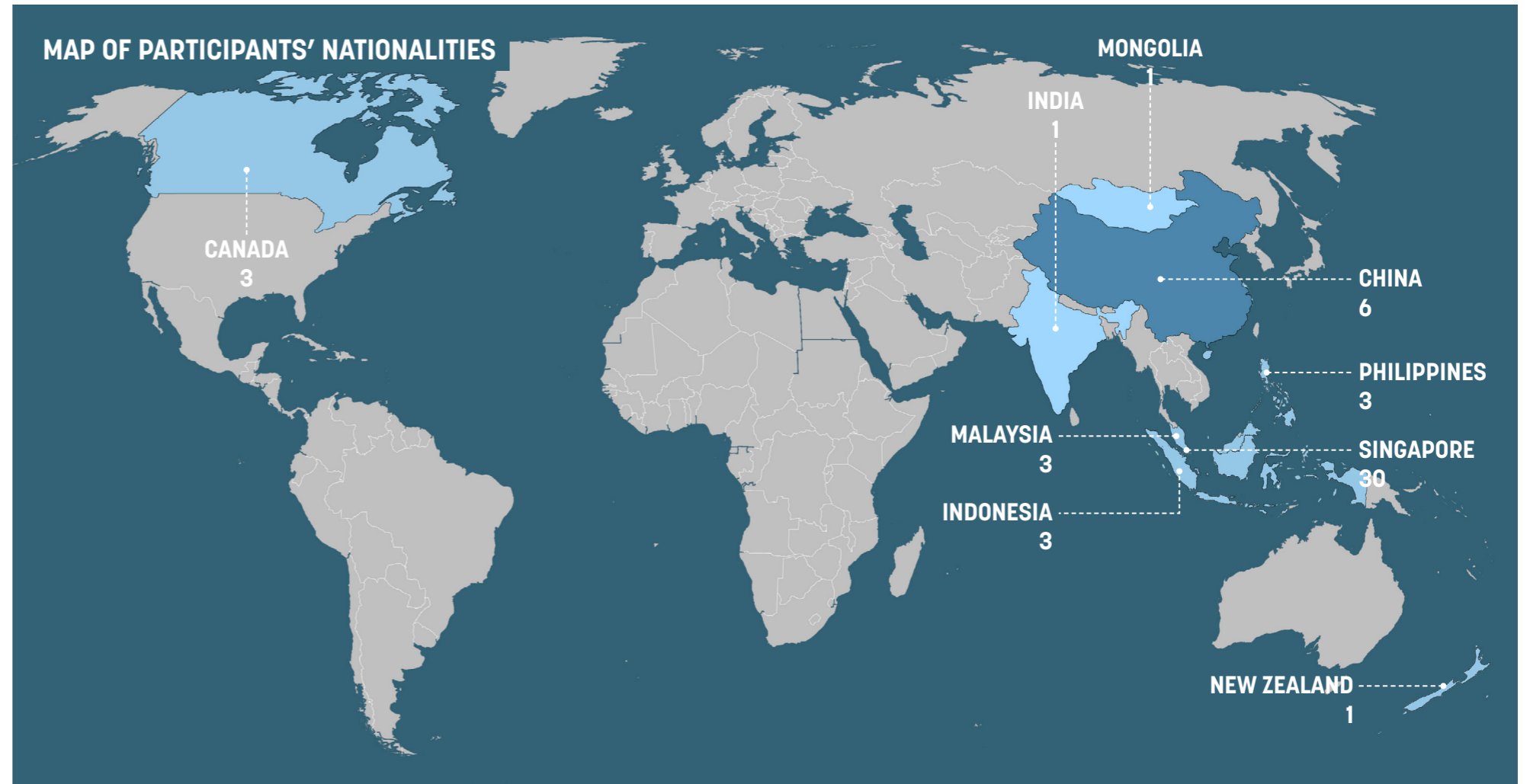


Mapping the Contours of Planning Education in Singapore

WHO ARE OUR PARTICIPANTS?



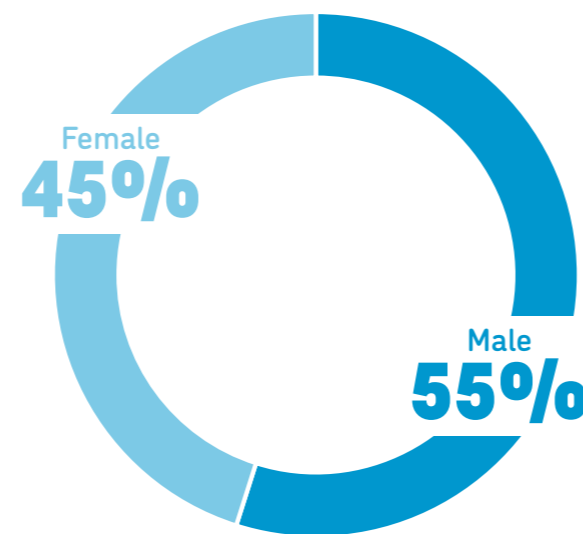
51 PARTICIPANTS



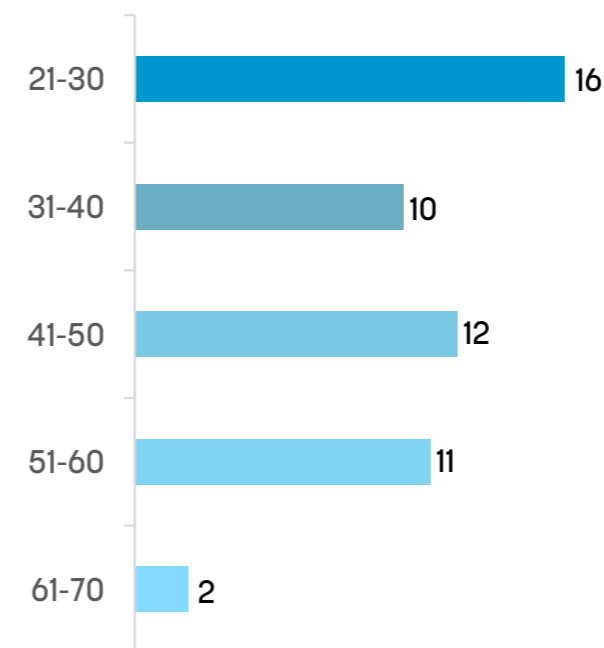
The participants of our survey come from across the globe with the majority of them from Southeast Asia and East Asia. Most of them are working professionals from Singapore and have obtained a Master level degree.

The 51 participants are composed of members and non-members of the Singapore Institute of Planners (SIP), and several SIP members are also members in organisations including Royal Town Planning Institute (RTPI) and American Planning Association (APA).

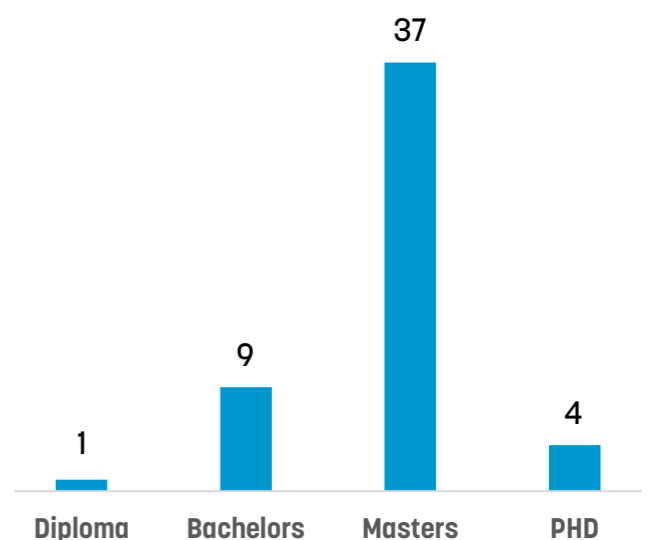
GENDER



AGE GROUPS



HIGHEST QUALIFICATIONS



WHO ARE OUR PARTICIPANTS?

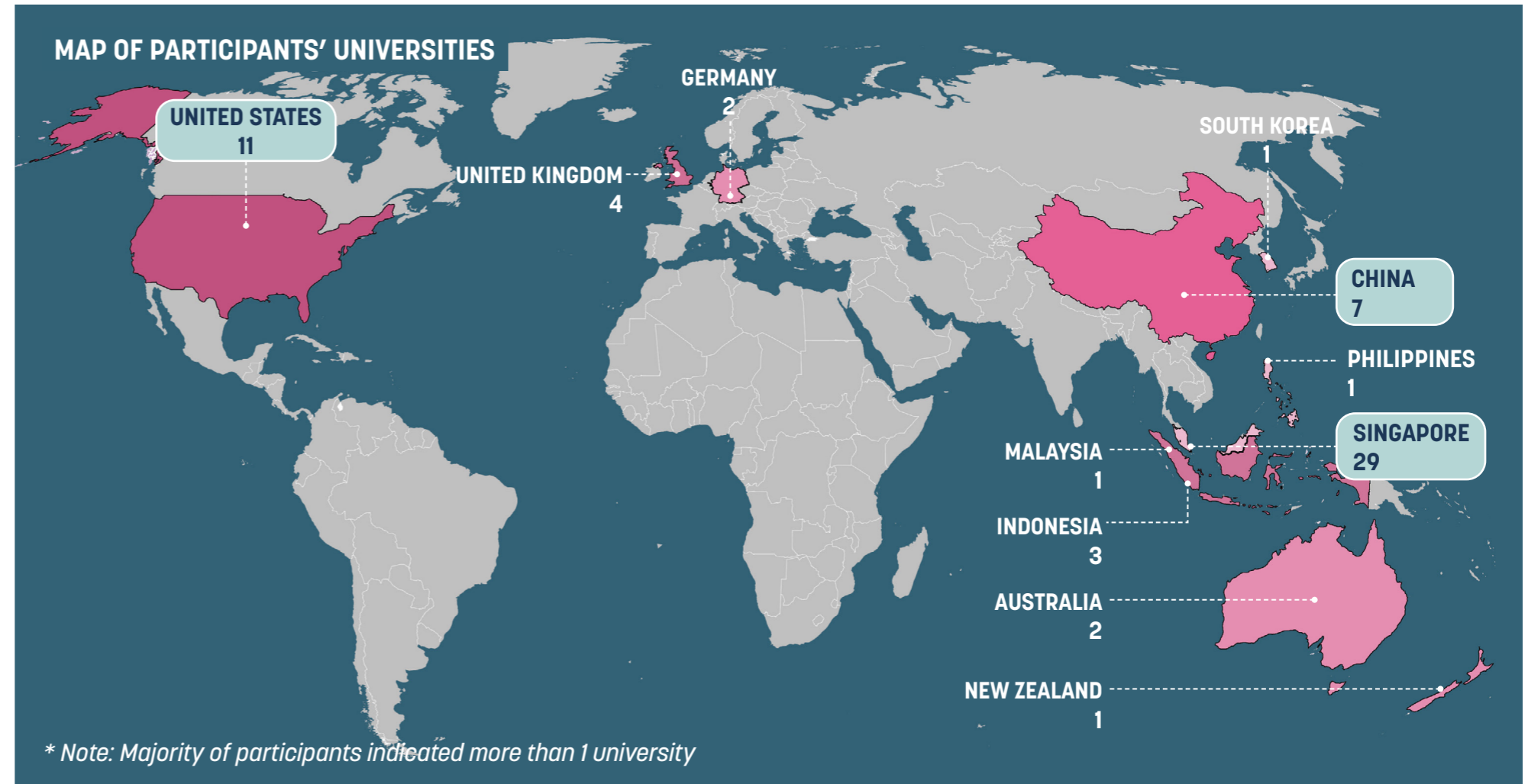
EDUCATIONAL BACKGROUNDS

Singapore, United States, and China are the 3 top countries where our participants received their planning education.

Singapore: participants received their Masters level education. More than 50 percent of them have multiple disciplines in architecture, urban design, or real estate, in addition to planning education.

The United States: many participants received Masters level education in planning, in addition to education in social science and humanities.

China: participants received a mix of Masters level and Bachelor level education, often in one discipline that includes architecture, urban design, or urban planning.



LIST OF PARTICIPANTS' UNIVERSITIES

United States:

- Harvard University
- Massachusetts Institute of Technology
- Pratt Institute
- Rutgers University
- University of Illinois Chicago
- University of Southern California

United Kingdom:

- Heriot-Watt University
- University College London
- University of Oxford
- University of Reading
- University of Sheffield

Germany:

- University of Karlsruhe
- University of Stuttgart

Malaysia:

- University of Malaya

Indonesia:

- Institute of Technology Bandung
- Parahyangan University of Bandung

Australia:

- University of New South Wales

South Korea:

- Seoul National University

China:

- Beijing University of Civil Engineering & Architecture
- Chongqing University
- Tongji University
- Tsinghua University
- Taiyuan University of Technology

Philippines:

- University of Santo Tomas

Singapore:

- James Cook University Singapore
- National University of Singapore
- Singapore University of Technology and Design

New Zealand:

- University of Auckland

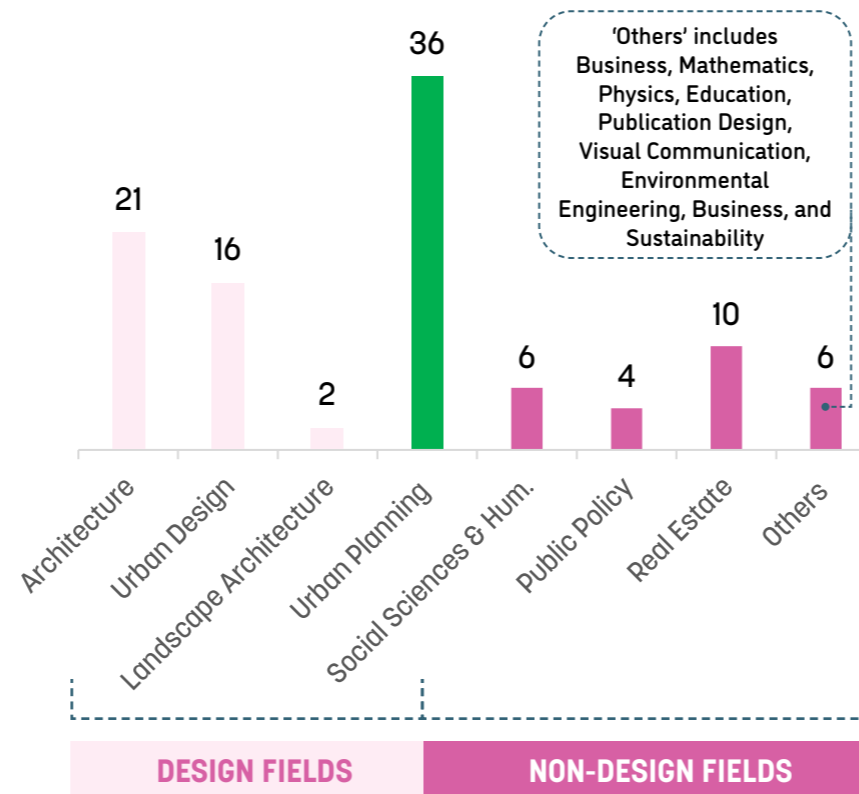
WHO ARE OUR PARTICIPANTS?

PLANNING EXPERIENCE

Urban Planning is a field of practice and research that integrates multiple disciplines and skill sets. 69 percent of our participants have more than one area of expertise, of which a combination with architecture, urban design, or landscape architecture is most common (design disciplines). A handful also have expertise in real estate and social sciences like Sociology and Geography, public policy, real estate, and environmental engineering (non-design disciplines).

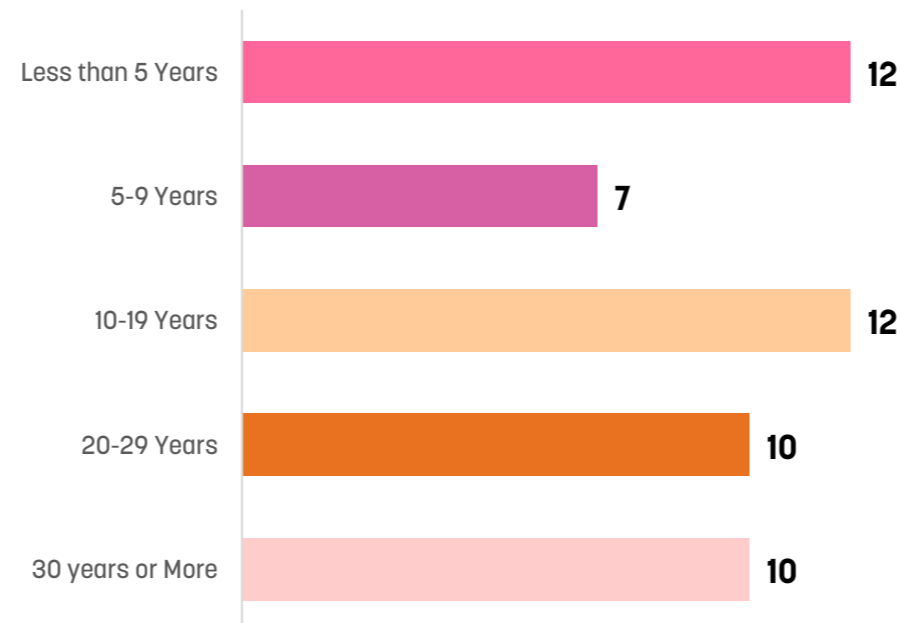
Most of our participants are working either in the public sector or private practice. A handful of the participants work in both sectors, and a small number are involved in research and education. Among the five student participants, the majority are pursuing their Masters in Urban Planning. Several also have degrees in real estate, architecture, or urban design.

AREAS OF EXPERTISE



* Note: Majority of participants indicated more than 1 specialisation

YEARS OF INVOLVEMENT



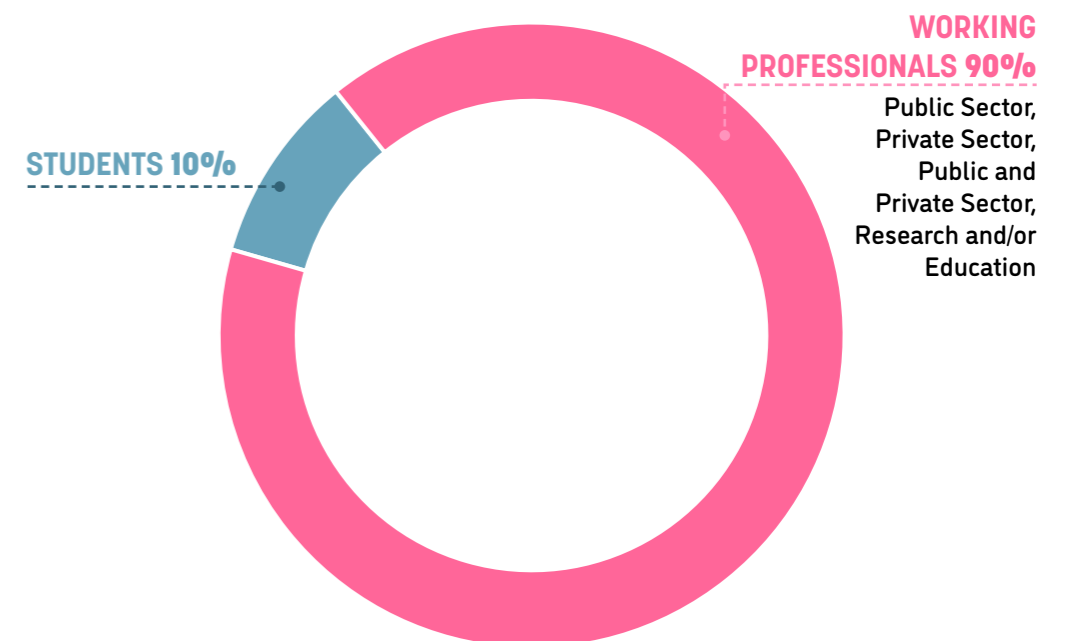
EXPERTISE PAIRINGS

	COUNT	%
Participants with only 1 specialisation <i>Urban planning, architecture, urban design or environmental engineering</i>	16	31%
Participants with more than 1 specialisation	35	69%
TOTAL	51	100%

EXPERTISE PAIRINGS

- Urban planning; Real estate (5)
- Architecture; Urban planning (5)
- Urban planning; Urban design (3)
- Architecture; Urban planning; Urban design (2)
- Urban planning; Social sciences and humanities (2)
- Architecture; Urban design (2)
- Architecture; Urban planning; Urban design; others: Business
- Architecture; Urban planning; Urban design; public policy; Real estate; other: mathematics, physics, education
- Architecture; Urban design; others: Interdisciplinary Program in Urban Design
- Urban planning; Urban design; others: Publication Design, Visual Communication
- Urban planning; Landscape Architecture
- Architecture; Urban planning; public policy
- Architecture; Urban design; Real estate
- Urban planning; Real estate
- Urban planning; Urban design; Real estate
- Urban planning; others: Sustainability
- Urban design; Landscape Architecture
- Urban planning; Urban design; Social sciences and humanities; Public policy
- Architecture; Urban planning; Public policy; Real estate; others: Built environment

STUDENTS AND WORKING PROFESSIONALS



WHAT ARE THE SKILLS TAUGHT IN PLANNING EDUCATION?

According to the participants, urban planning curriculum has emphasised predominantly Physical Planning and Design Techniques. Comparing the two lists, we observe a disparity that suggests to us that there is an unevenness in the teaching of Data Analysis, and Strategic and Systematic Design Thinking skills in planning education.

From the list of "What you wish you learnt in school" : skills such as Project Management, Infrastructure and Transport Planning, knowledge of sustainability, ethics, and practice experience are important for planners, but are not as widely taught. Planning educators may want to consider how to weave these areas into their curriculum.

SKILLS LEARNT IN SCHOOL THAT ARE USEFUL NOW

- *** Physical Planning & Design Techniques
- *** Data Science & GIS
- *** Systems & Scalar Thinking
- *** Policy and Research Skills
- ** Visual Communications
- ** Real Estate
- ** Site Analysis and Zoning
- * Planning and Design Principles
- * Urban Theory and Planning Theory
- * Stakeholder Engagement
- * Project Management

WHAT YOU WISH YOU LEARNT IN SCHOOL

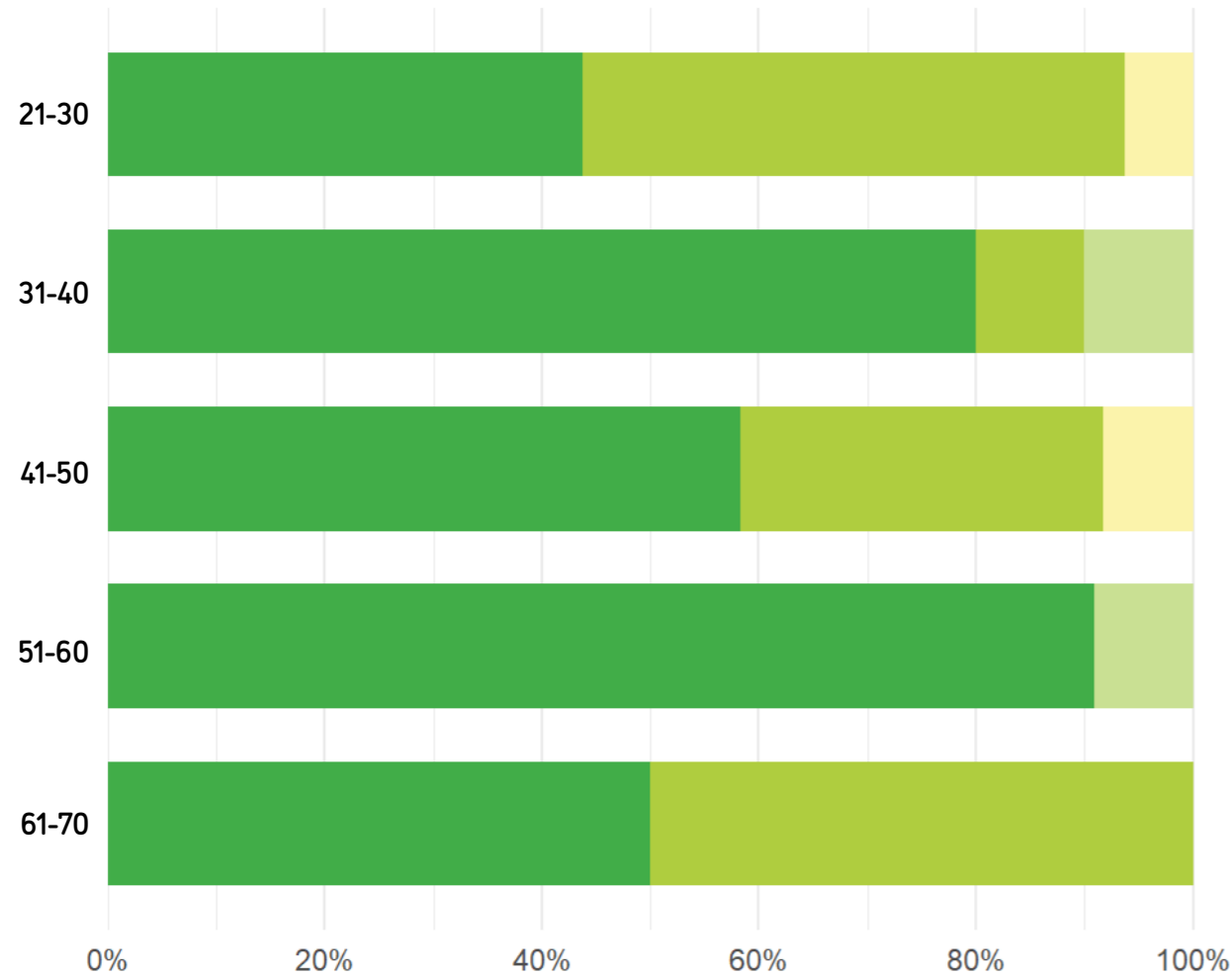
- *** Systematic Design Thinking, Strategic Thinking
- *** Big Data Analysis & Digital Tools
- ** Infrastructure & Transport Planning
- ** Project Management & Communications
- * Sustainability
- * Drawing & Making Models
- * Exposure to Practice
- * Ethics
- * Financing
- * Land Use Planning
- * Future Forecasting

The 21st century's emphasis on data science and digital technologies is reshaping how planners work and the skill sets they need. For this reason, we have asked our participants for their views about the importance of physical planning and data science.

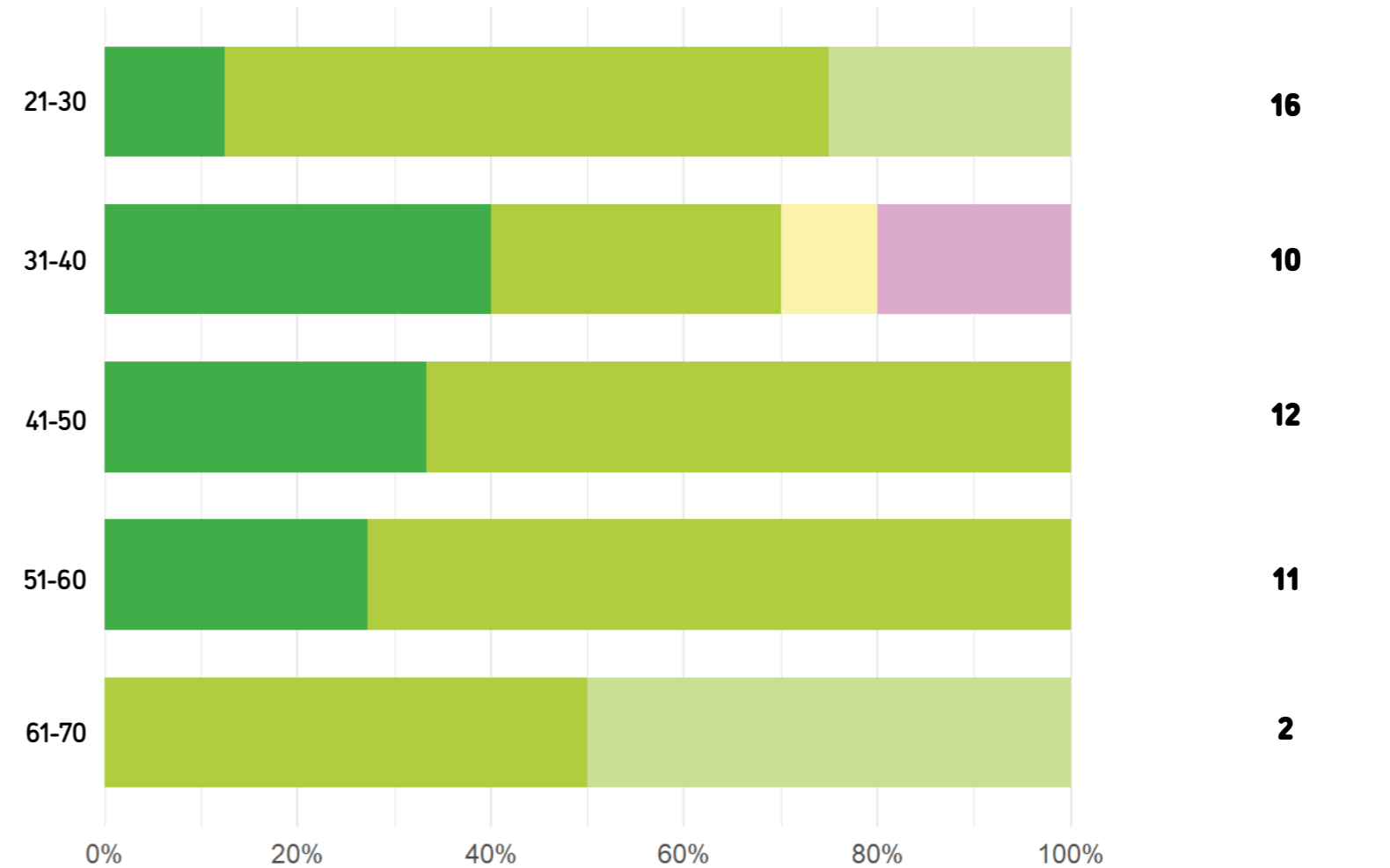
HOW IMPORTANT IS PHYSICAL PLANNING & DATA SCIENCE?

ACROSS AGE GROUPS

PHYSICAL PLANNING IS...



DATA SCIENCE IS...



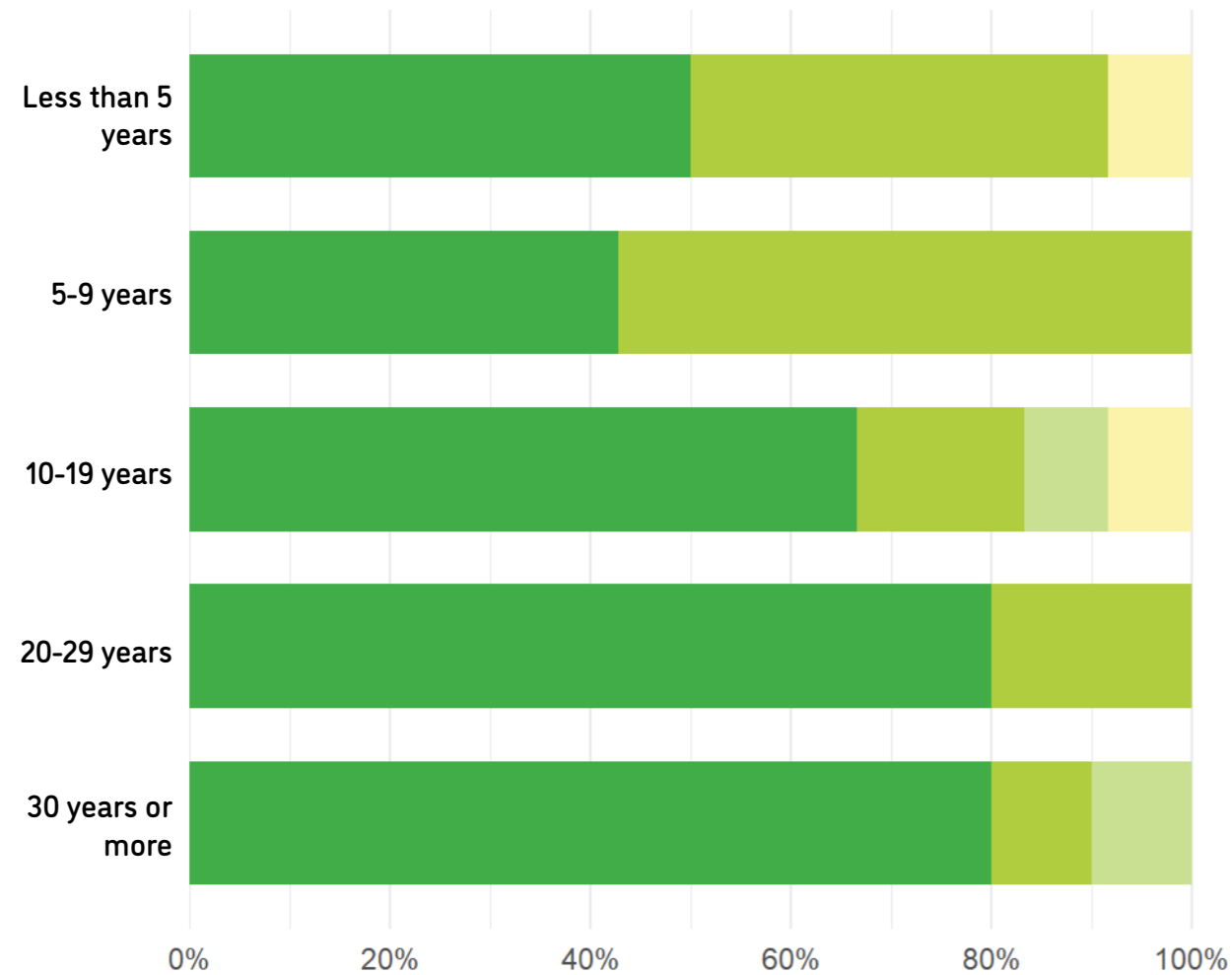
Across age groups, about 90 percent of our participants view physical planning knowledge as “important” and “very important”; while for Data Science, the importance varies across age groups. 100 percent of those between 41-60 years regard data science as “important”, while less than 80 percent in the youngest and oldest age group thought likewise.

Very Important Important Fairly Important Slightly Important Not Important

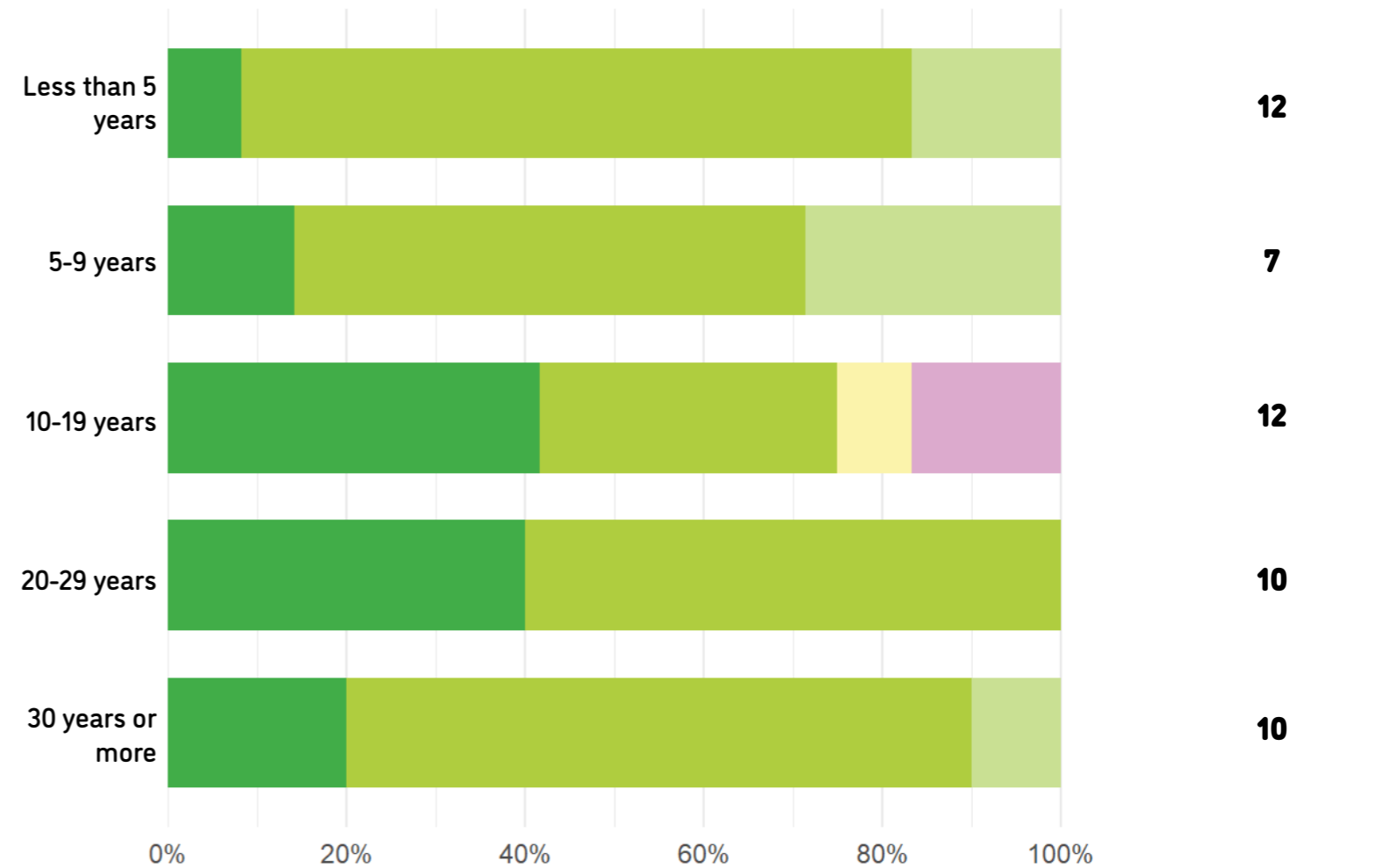
HOW IMPORTANT IS PHYSICAL PLANNING & DATA SCIENCE?

ACROSS YEARS OF INVOLVEMENT

PHYSICAL PLANNING IS...



DATA SCIENCE IS...



No. of Participants

12

7

12

10

10

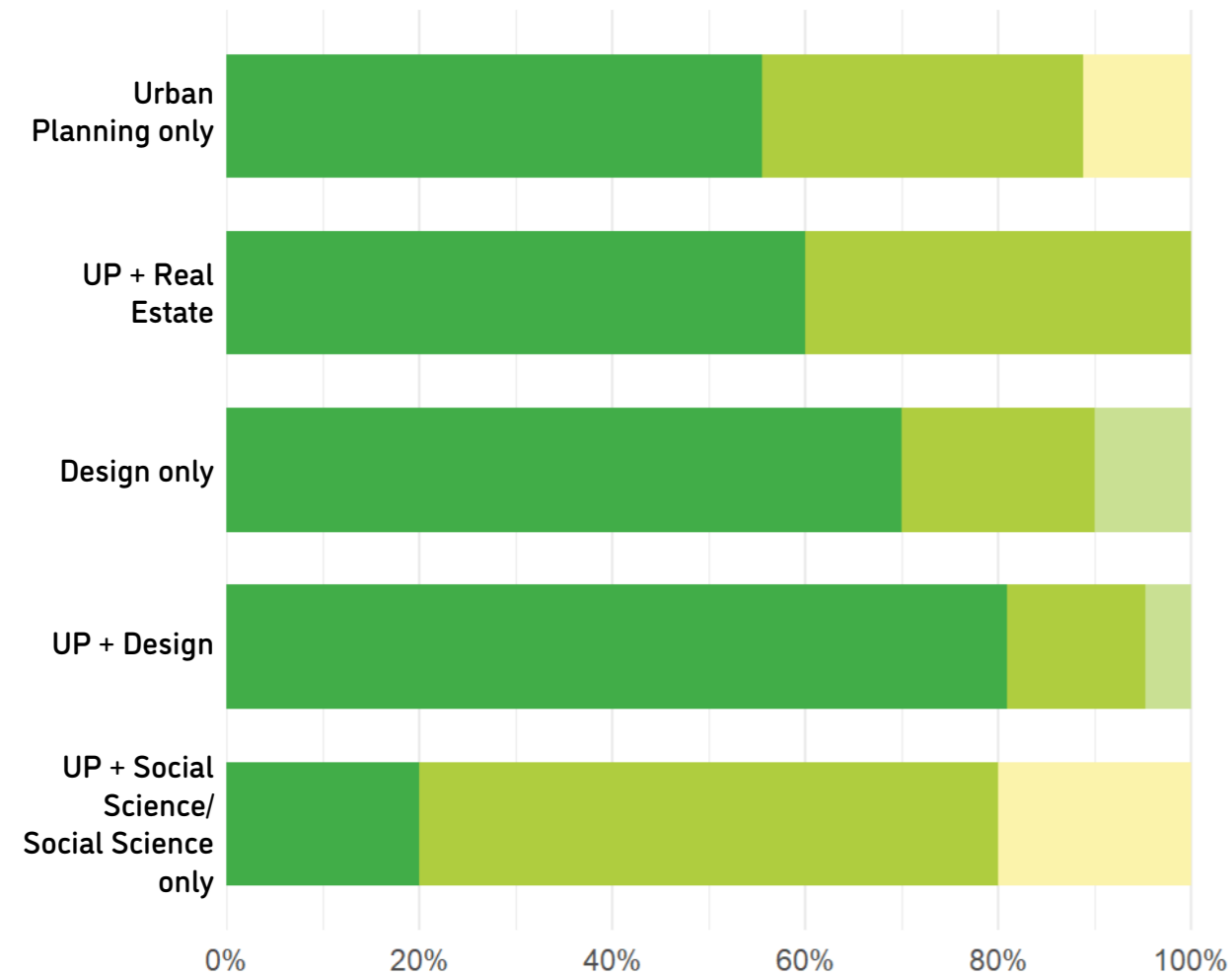
When compared across years of involvement, physical planning knowledge is again considered more important than data science knowledge for urban planning. However, the findings suggest that data science knowledge is becoming a critical skillset for gaining employment given the importance it holds for those with 20 years and above of involvement in planning, who we could expect to be the hiring managers.

Very Important Important Fairly Important Slightly Important Not Important

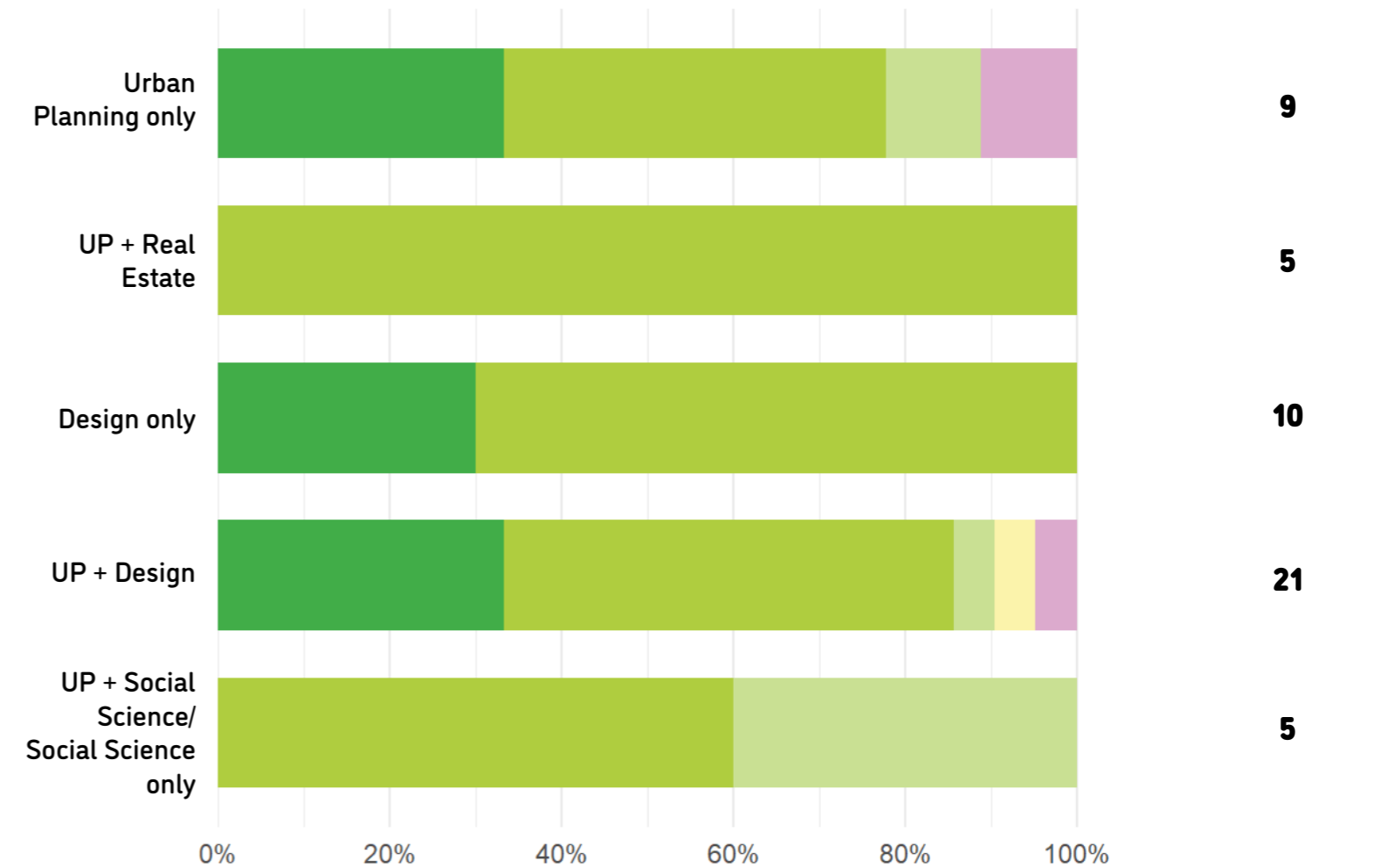
HOW IMPORTANT IS PHYSICAL PLANNING & DATA SCIENCE?

ACROSS EDUCATIONAL BACKGROUNDS

PHYSICAL PLANNING IS...



DATA SCIENCE IS...



No. of Participants

9

5

10

21

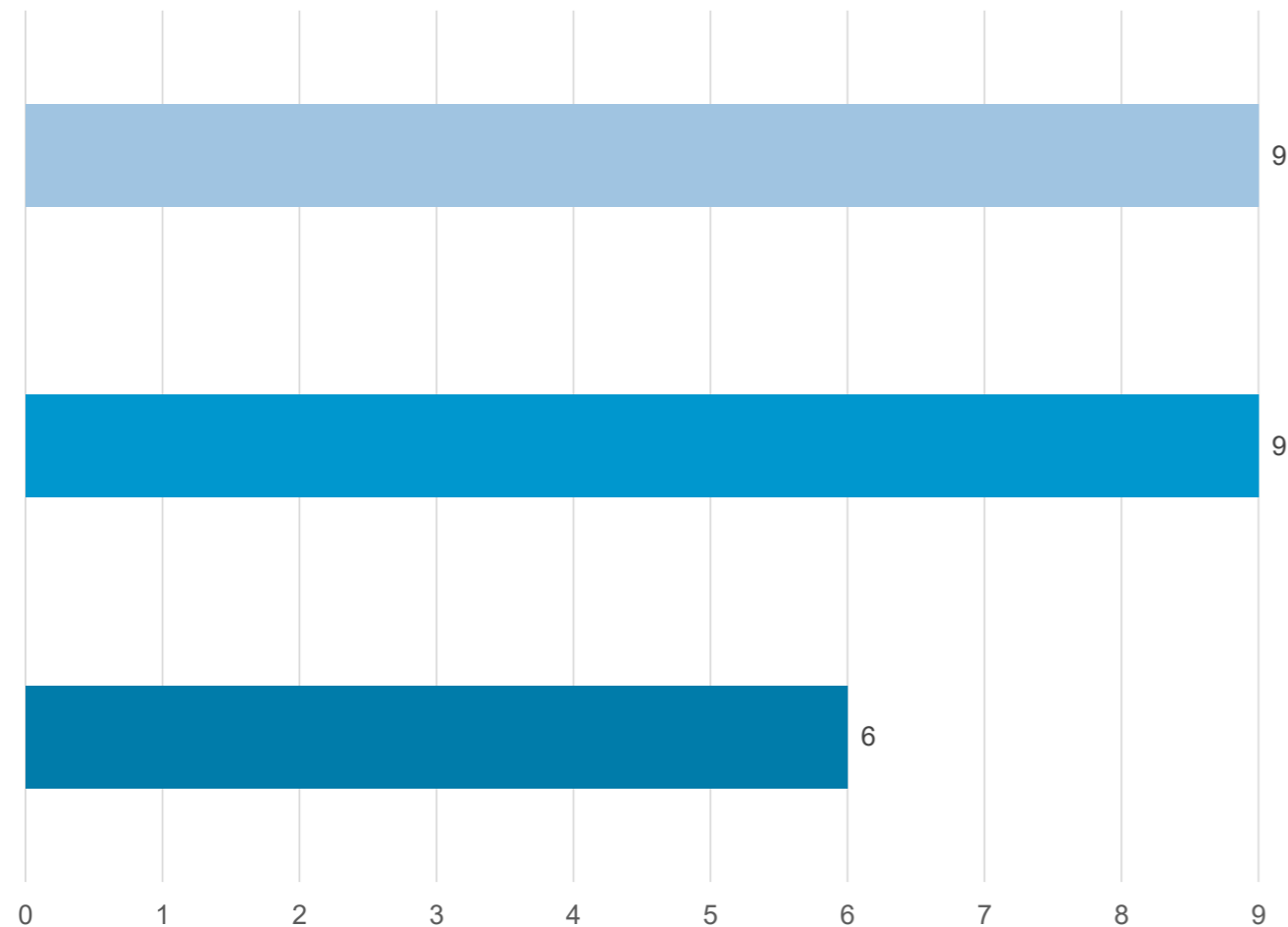
5

Across educational backgrounds, physical planning knowledge is regarded as very important for the majority of the participants, with the exception of participants who have social sciences (Geography, Sociology), public policy, environmental engineering as their educational backgrounds. Comparatively, the relevance of data science knowledge in urban planning appears to be less important across all educational backgrounds.

Very Important Important Fairly Important Slightly Important Not Important

HOW IMPORTANT IS PHYSICAL PLANNING & DATA SCIENCE?

PHYSICAL PLANNING IS IMPORTANT BECAUSE...



- Physical Planning is foundational knowledge for urban planning
- Our built environment is physical in structure and expression
- Physical Planning skills enable ideas that shape our cities to be translated into physical reality



Anonymous Panda, 40 years of experience, says...

"Physical planning is a **comprehensive embodiment** of the **core content** of urban planning."



Anonymous Whale, 1 year experience, says...

"It is **required knowledge for urban planning work** relating to development of physical spaces/ town coordination as it involves looking at infrastructure services, road reserve lines etc. Some **basic understanding of physical planning is required** to engage in discussions with colleagues and staff from various agencies."



Anonymous Camel, 2 years of experience, says...

"During my job search, when the employers found that I was **not trained in drawing or physical planning, they immediately rejected me**. And during my studies, even though sometimes I have my ideas during studios, I was **unable to translate it on to physical plans** because I can't draw well, and others who can draw better would just fully take over."



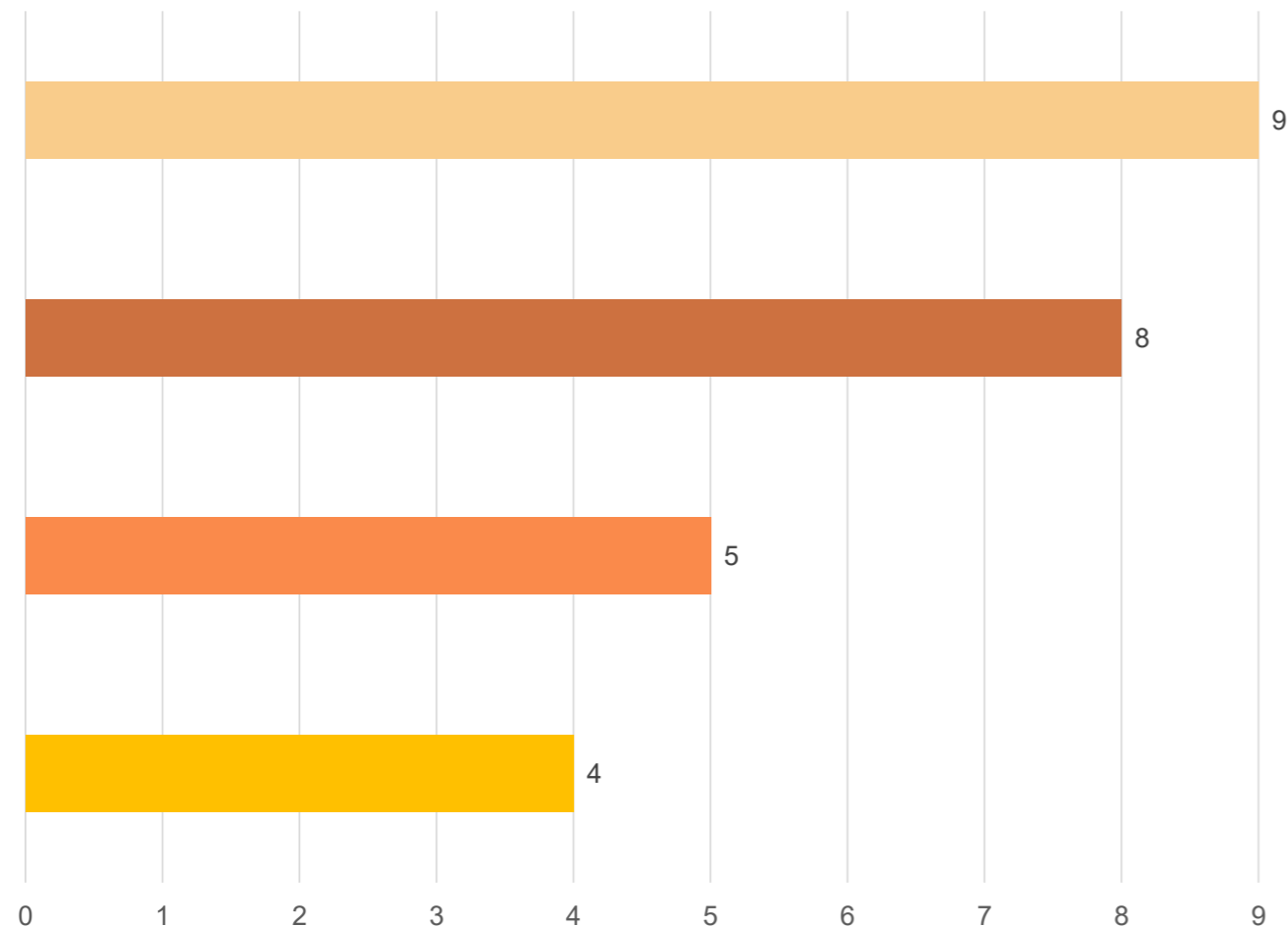
Anonymous Penguin, 24 years of experience, says...

"Appreciation of environmental space and **being able to respond in tangible ways to propose design interventions** is extremely critical to urban planning as a **spatial complex of social, economic, and political relations**. It is also extremely important in addressing the issues of ecology and environmental sustainability"



HOW IMPORTANT IS PHYSICAL PLANNING & DATA SCIENCE?

DATA SCIENCE IS IMPORTANT BECAUSE...



- Increases efficiency and predictability of planning
- Offers objective and scientific evidence to do planning
- Offers additional information about our urban environment useful for planning and projection purposes
- Increasingly relevant in the way our society functions



Anonymous Shark, 25 years of experience, says...

"Not only data science but also **linking with relevant modelling skills** (parametric, ArcGIS, climate science etc.)"



Anonymous Kangaroo, 1 year experience, says...

"Because now everything is **performance driven** and should be supported by **quantifiable outcomes** and or performance matrix."



Anonymous Squirrel, 1 year experience, says...

"Depending on the information, analysis of data can provide a **broader more objective and insightful perspective** on complex cities and urban populations."



Anonymous Seahorse, 15 years of experience, says...

"I think the **importance of data science in urban planning will increase exponentially**, so long as AI and ICT technologies continue to gain traction in the built environment professions and allied industries."

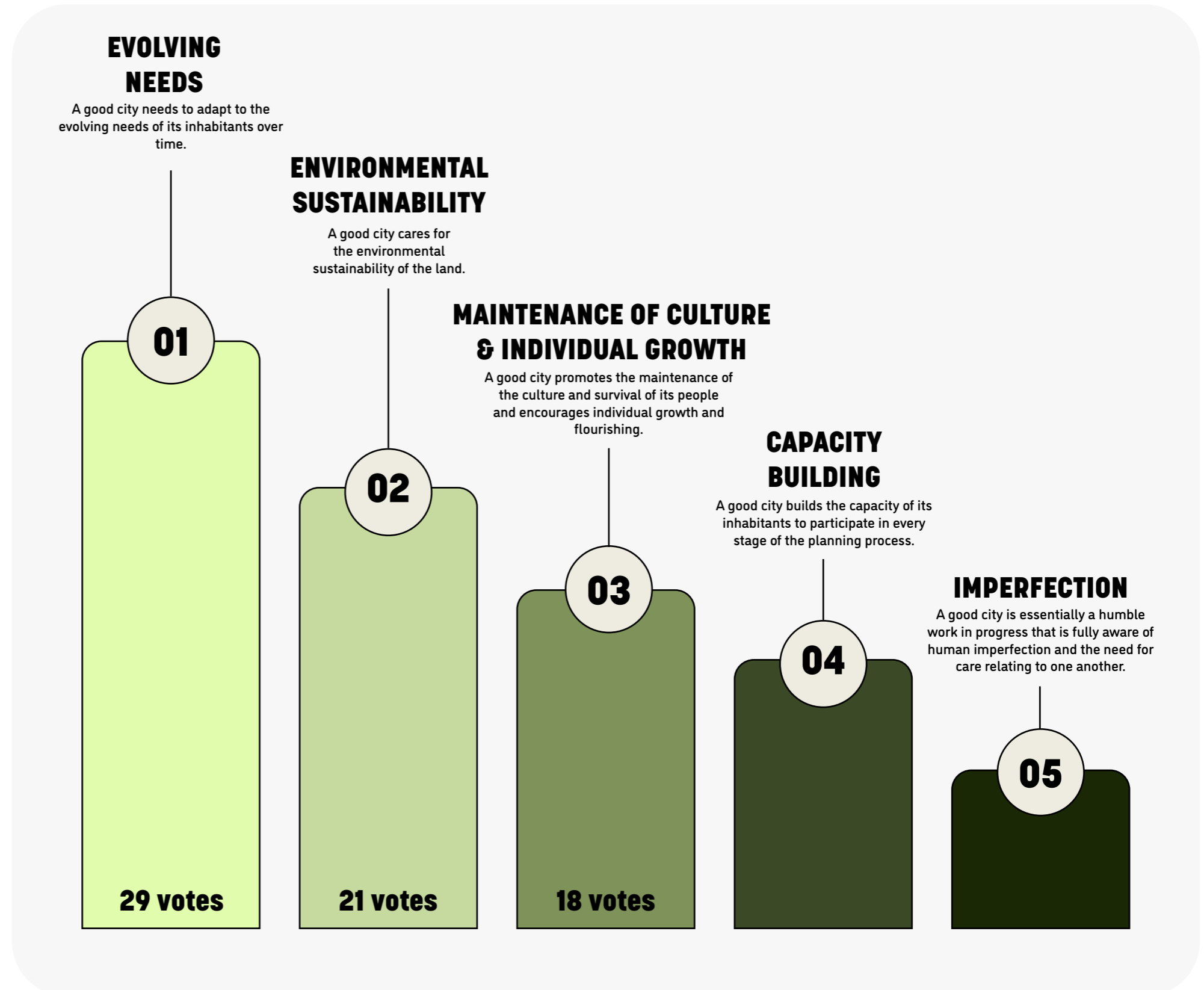


To continue the discussion we started in Volume 1 on *What is a Good City? What do Future-ready planners look like?*, we posed the same questions to the participants.

WHAT IS A GOOD CITY?

“A good city is one that adapts to the evolving needs of its inhabitants over time” received the most votes as the top criterion of a good city. User-centric and human-centric cities are viewed as important standards for a good city. Environmental sustainability is ranked a little lower, albeit much higher than other criteria that focus on individual growth, capacity building, and care.

Taken as a whole, the ranking results gave us a cause for pause and fodder for future research: How does a good city adapt to the evolving needs of its inhabitants? Might we also need to build capacity for participatory planning, and the ethos of care for one another? How is a city truly good? And how do we get there?



WHAT IS A FUTURE-READY PLANNER?

It's a laboratory to explore scenarios, possibilities and solutions to address current and futures challenges through collaboration and multi disciplinary approach. Courage, Idealism, Righteousness, Humaneness, History, Culture n Civilisation. Art n Science. Take risk. Be bold. Think long term. See Big Picture. Teaching skills required in diverse workplaces that does planning Learn the complete set of problem thinking streams **Exposure to real life projects and case studies. Train them to use latest digital tools. People / User engagement to understand user behaviour and needs** **To include more diverse coverage of other topics related to urban planning.** Allow them to think long-term and holistically to address the changing physical, social and natural environment **1 mindset development to think broadly and deeply, out of box; to be exposed in multi-disciplinary academic environments; 2 to encourage conversation and participation with practitioners to understand real world operations; More field trips and case studies of places around the world, for greater exposure of the present and future review and put the relevant courses into planning education aware of the current happenings and to adapt to it Equip planners to the impending environmental challenges of climate change, heat island etc.** Understand the needs and wants of people. Current architecture, urban planning or urban design education focus too much on the technical skills, aesthetics of final product and forgot the need to understand the psychology of society. We need to understand the society better to cater to the needs and wants of the future. **Change the curriculum often, be competitive, compare against other schools, ensure a good balance of all topics, offer a holistic education. Aside from building the essential technical skills, the education system should prepare the students the confidence to engage people, skills on managing projects, use quantitative data as part of the design process, harness AI tools as an advantage for a more efficient planning, exposed students to the region where they would most likely build their careers a solid guiding knowledge Case-studies from other countries** Future forward learning **The education needs to adapt evolving technology. NA explore more diverse way to understand city development and relevant issues in terms of social, economic, environmental, geographic, historical, management and implementation items etc.** Aside from traditional planning training, planning education should stay relevant to what is happening in the world, and pay more attention to help student understand what are the challenges facing cities now, and how to find a solution. **Build competency and confidence through practice To equip students with an open mindedness considering the fast evolving world, technology and lifestyle More Critical analysis of urban solutions and externalities to understand how planning impacts different social groups, and ways to ensure that planning is beneficial for the majority if not all** Exposure to real life cases Knowledge about psychology, sociology, economics. **Provide a realistic view of what to expect in practice. Address current and future problems and trends. Integration of data analytics and AI Encourage critical inquires and challenge fixed norm** Education should develop planners more in tune with people and culture, facilitating placemaking and urban renewal in an increasingly urbanised world. **Specific approach and tools to deal with these challenges PROVIDING AN UP-TO-DATE WELL ROUNDED KNOWLEDGE ACROSS A NUMBER OF TECHNICAL FIELDS INCLUDING ON POLICY CRAFTING, SUSTAINABILITY AND ENVIRONMENT, DESIGN, DIGITAL SKILLS ETC.** Think out of the box and be innovative **Understanding the past theory and rationale of past planning practices, and learn from the pros and cons that was implemented in the timeline period of the society To meet the challenges of the future, urban planning education should foster: curiosity and innovation (by encouraging free play of ideas) + resilience (by providing opportunities to "unlearn" and "relearn") + humility (by demonstrating that problem-solving is a collective responsibility beyond the planning domain alone). Teach critical thinking skills and soft skills, be rooted in more real world case studies as context is so important!** Understand the needs of the industry. Current urban planning education in Singapore is too outdated & superficial, doesn't equipped graduates well for the real work. **LEARN NEW KNOWLEDGE AND SKILL IN ALL LIFE.** It would be good if planners can sign up for different courses that are relevant with time, to ensure that they possess the basic knowledge in new arenas of urban planning that are important. It will also be good for planners to have a platform to discuss and bounce off ideas on the challenges they face. **Use real world scenarios in planning that recognise political, financial and real estate dynamics and develop planning tools and mechanisms that recognise those forces.** It needs to equip future planners with a mix of social science and physical planning skills. Even better would include knowledge of ecology. Also, planners should gain competences to communicate with a diversifying public and an appreciation of how politics and economics interact with planning. **More practice with industrial players** Climate change, increasing cost of living and the housing crisis are challenges that will disproportionately impact low income earners, minorities, those with precarious work, and other marginalised groups. Planning education needs to centre equity and nourish and develop students' capacity for empathy. Provide more projects related to current challenges **ADMIT ONE FACT: WHAT WE LEARN IN SCHOOL WILL BE OUTDATED VERY SOON, LEARN THE METHODOLOGY OF LEARNING IS RELATIVELY IMPORTANT COMPARING WITH KNOWLEDGE ITSELF To familiarise with global trends and future technologies More relevance to sustainability concepts Adapt to changes, learn and re-learn while gaining new knowledge for a better built environment To understand what goes into developing a master plan, technical considerations**

Appendix

LIST OF SURVEY QUESTIONS

Section A.

Q1. What are your area(s) of primary involvement in planning or planning-related fields?

You may pick more than 1.

- Student
- Public sector planning
- Private sector planning
- Education
- Research
- Others, please specify:

Q2. Education background: What is your field(s) of study?

You may pick more than 1.

- Architecture
- Urban Planning
- Urban Design
- Landscape Architecture
- Social Sciences and Humanities
 - Please specify:
- Public Policy
- Real Estate
- Others, please specify:

Q3. What is your highest qualification attained?

- Diploma/Advanced Diploma
- Bachelors
- Masters
- PhD
- Others, please specify:

Q4. Where did you receive your education? Please state the country and the university.

Q5. How many years have you been involved in planning or planning-related fields?

Section B.

Q6. What are the skills you have learnt in your education that are valuable in the work you

do now?

Q7a. List the top two (2) essential qualities of good planners.

- 1:
- 2:

Q7b. List the top two (2) essential technical skills for good planners.

- 1:
- 2:

Q8. What are the important planning knowledge and skills that you wish were taught in school?

Section C.

Q9a. In your opinion, how important is physical planning knowledge in urban planning?

Please rank the importance of this topic on a scale from Not Important to Very Important.

Q9b. Why do you think physical planning knowledge is/is not important?

Optional.

Q10a. In your opinion, how important is data science in urban planning?

Please rank the importance of this topic on a scale from Not Important to Very Important.

Q10b. Why do you think data science is/is not important? (Optional)

Optional.

Section D.

Q11. What is a good city from your point of view?

Please rank the following statements in order of importance from 1 to 5, where '1' is the most important and '5' is the least important.

1. A good city needs to adapt to the evolving needs of its inhabitants over time
2. A good city builds the capacity of its inhabitants to participate in every stage of the planning process (from blueprint to implementation)
3. A good city promotes the maintenance of the culture and survival of its people and encourages individual growth and flourishing
4. A good city is essentially a humble work in progress that is fully aware of human imperfection and the need for care relating to one another

5. A good city cares for the environmental sustainability of the land

Q12. How can urban planning education equip future planners to meet future challenges?

Section D.

Q13. Are you a member of any professional organisations?

You may pick more than 1.

- Singapore Institute of Planners (SIP)
- Royal Town Planning Institute (RTPI)
- American Planning Association (APA)
- Planning Institute Australia (PIA)
- Canadian Institute of Planners (CIP)
- Hong Kong Institute of Planners (HKIP)
- Ikatan Ahli Perencanaan Indonesia (IAP)
- Korea Planning Association (KPA)
- Others, please specify:

Q14. What is your age group?

- Below 21
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61- 70
- 71-80
- 81 and above

Q15. What is your gender?

Q16. What is your nationality?

Q17. Any last thoughts?

Optional.

