



Building an Engaged Knowledge Society: Strengthening South Africa's Relationship with Science

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How we got here

A CENTURY OF PUBLIC VIEWS ON SCIENCE

— From Power & Progress to Trust & Uncertainty —



1930

1940

1950

1960

1970

1980

1990

2000

2010

2020



ENGINE OF NATIONAL POWER,
military dominance,
and social
progress.



HIROSHIMA –
Science =
a double-edged
sword – an
existential threat
and the vehicle
for prosperity.



**COLD WAR
ANXIETIES –**
consumer prosperity
and national
security while still
a threat to
humanity.



**SPACE RACE AND
CHEMICAL FALLOUT –**
uncritical
techno-optimism
to growing
skepticism.



**QUESTIONING
TECHNOLOGICAL
AUTHORITY –**
skepticism, public
questioning, and
concern over
environmental and
ethical risks
(*Jaws* - 1975)



**CHERNOBYL /
OZONE –**
Deeply polarized,
and commercialised
view.



INNER SPACE –
Debate over
truth, Trust, and
existential anxiety
(*Dolly the Sheep*/
GMOs / *BSE*)



**RISE OF THE
INTERNET AND
PUBLIC ACCESS –**
lower trust in
institutions;
Climate;
Media Ethics
(*The CSI Effect*)



**SCIENTIFIC
UNCERTAINTY –**
Replication Crisis –
Social Media
Impact



**TRUST
ROLLERCOASTER;**
Fatigued correction;
rise of consumer AI
(*Life 3.0*)



Science and society

S&T influence and shape daily life

- Increasingly changing world



S&T play a role in empowering citizens

- Engaged, informed, aware society

Inclusive science–society links are essential for equity & progress

TOGETHER FOR
EQUITY AND
PROGRESS

Science and society

Digital divides & inequalities

- Risk of people being left behind

South Africa's dual population

- Those with access and opportunities vs. those without



Responsible AI in a changing world

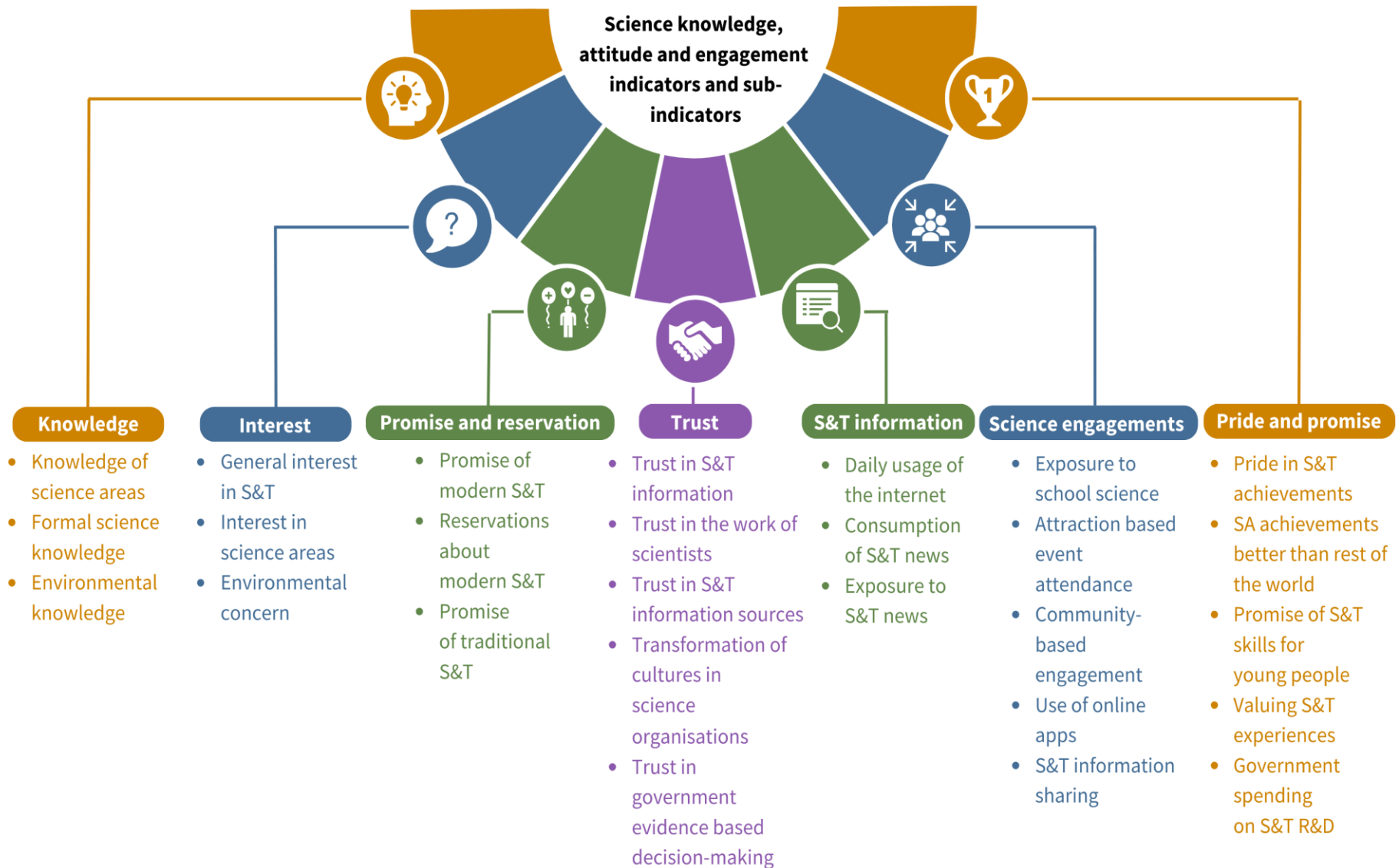
- Must **prioritise digital inclusion** so that technological progress does not increase social and economic inequalities.
- Implementation requires **transparency, accuracy, and algorithmic accountability** to prevent the spread of misinformation.
- Definition requires balancing economic innovation with the mitigation of severe societal risks, particularly **workplace displacement**.
- Should be **integrated into learning environments** to narrow digital divides; increase information access and combat fake news; while integrating traditional knowledge systems



Policy context

- 1996 White Paper on S&T set the scene
- 2015 SES and subsequent plans
- 2019 White Paper on STI: To support a science-literate and science-aware society by increasing (i) the reach of awareness initiatives and (ii) access to S&T information
- To achieve this, the WP advocated for:
 - ‘**Indicators** to measure the success of science engagement’
 - A regular **survey** (5-year cycle) on public perceptions of science’
- HSRC mandated to conduct the survey (2022 → 2027)

Indicators and measures



Conceptual framework

DEMOGRAPHY AND CONTEXT

- Age
- Sex
- Educational attainment
- Home education support
- Socio-economic status
- Employment status
- Spatial location
- Religious beliefs
- Population group

SCIENCE KNOWLEDGE AND ATTITUDES TOWARDS S&T

1. SCIENCE
KNOWLEDGE
AND INTEREST

2. PROMISE AND
RESERVATION
TOWARDS
MODERN AND
TRADITIONAL S&T

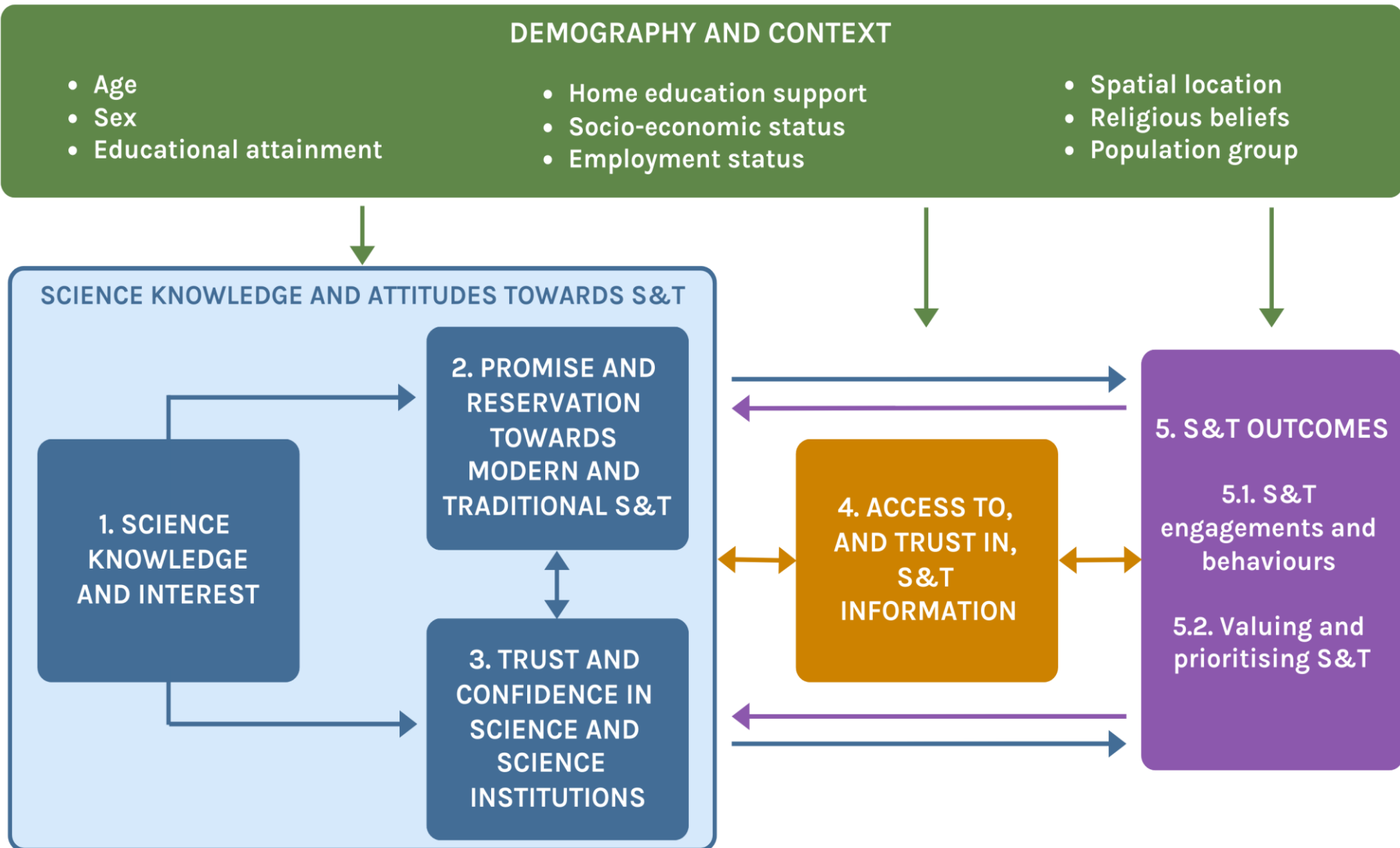
3. TRUST AND
CONFIDENCE IN
SCIENCE AND
SCIENCE
INSTITUTIONS

4. ACCESS TO,
AND TRUST IN,
S&T
INFORMATION

5. S&T OUTCOMES

5.1. S&T
engagements and
behaviours

5.2. Valuing and
prioritising S&T



Methodology



Sample population

- Representative national sample
- Adults, 16 years and older
- 500 areas across 9 provinces



5960
respondents



Survey instrument

- 200 items about the public and science
- 28 demographic and contextual items



Survey approach

- Conducted by the HSRC through the annual SASAS

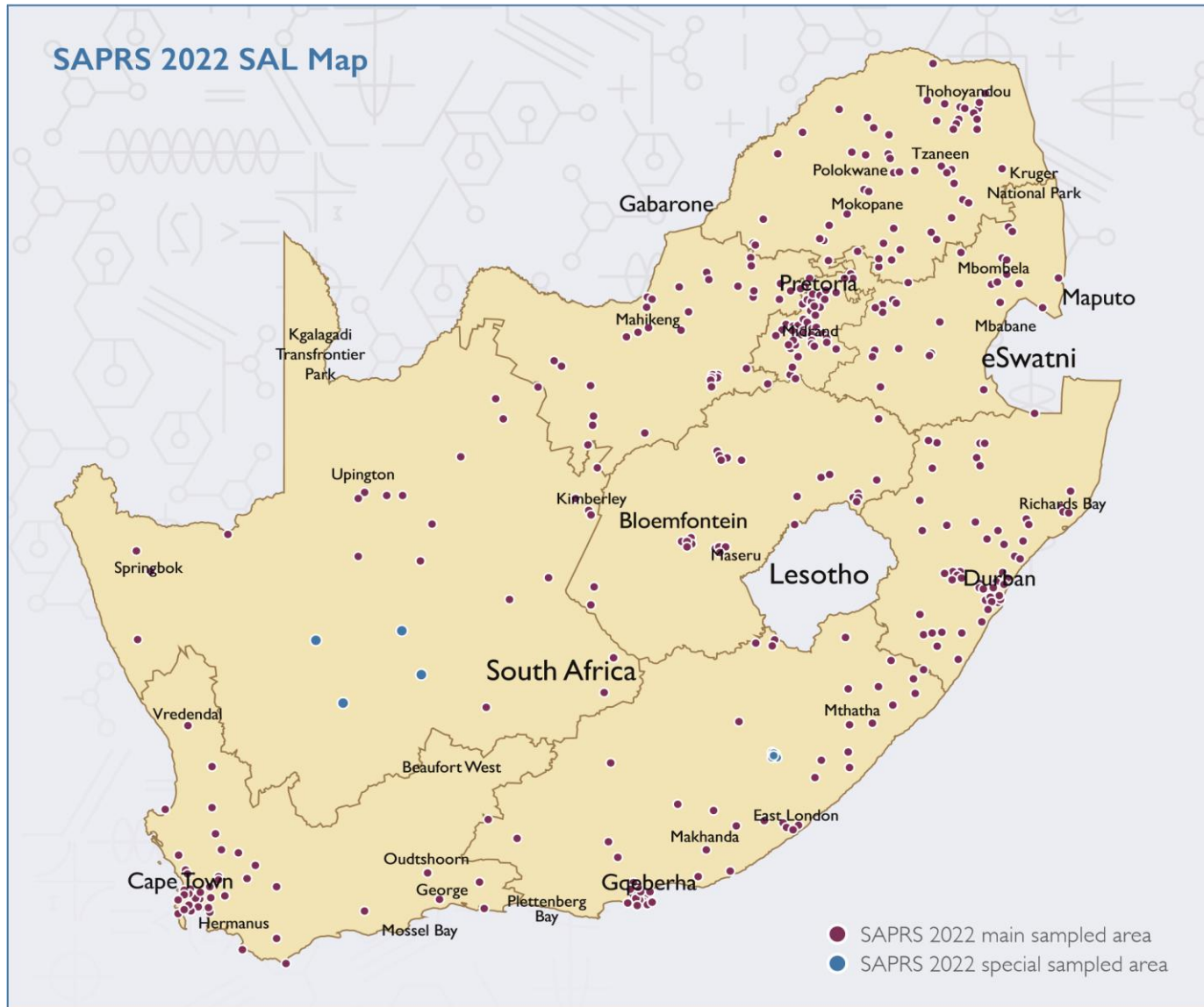


Survey interviews

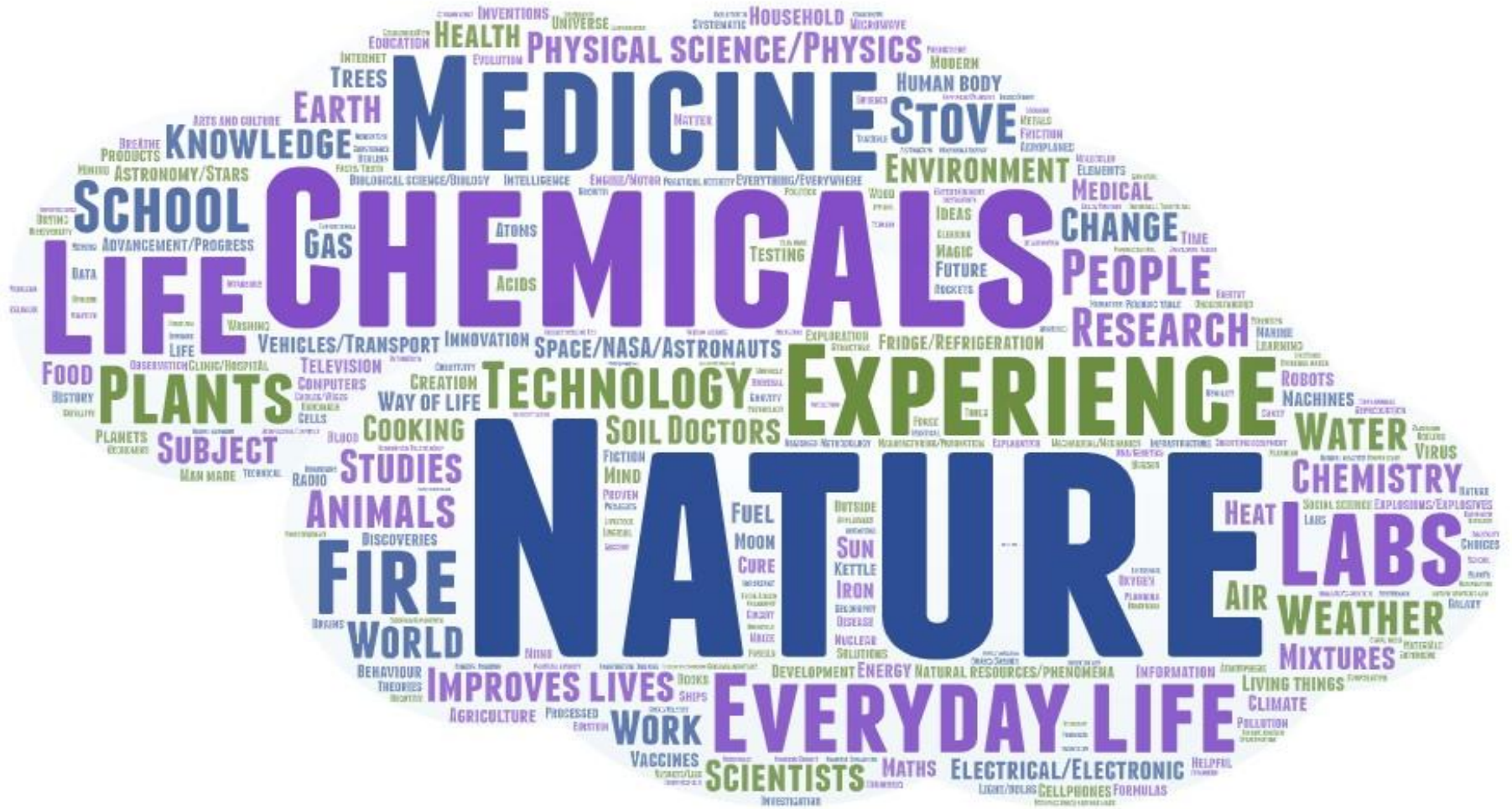
- November 2022 – January 2023
- Face-to-face interviews
- 11 official languages, based on preference



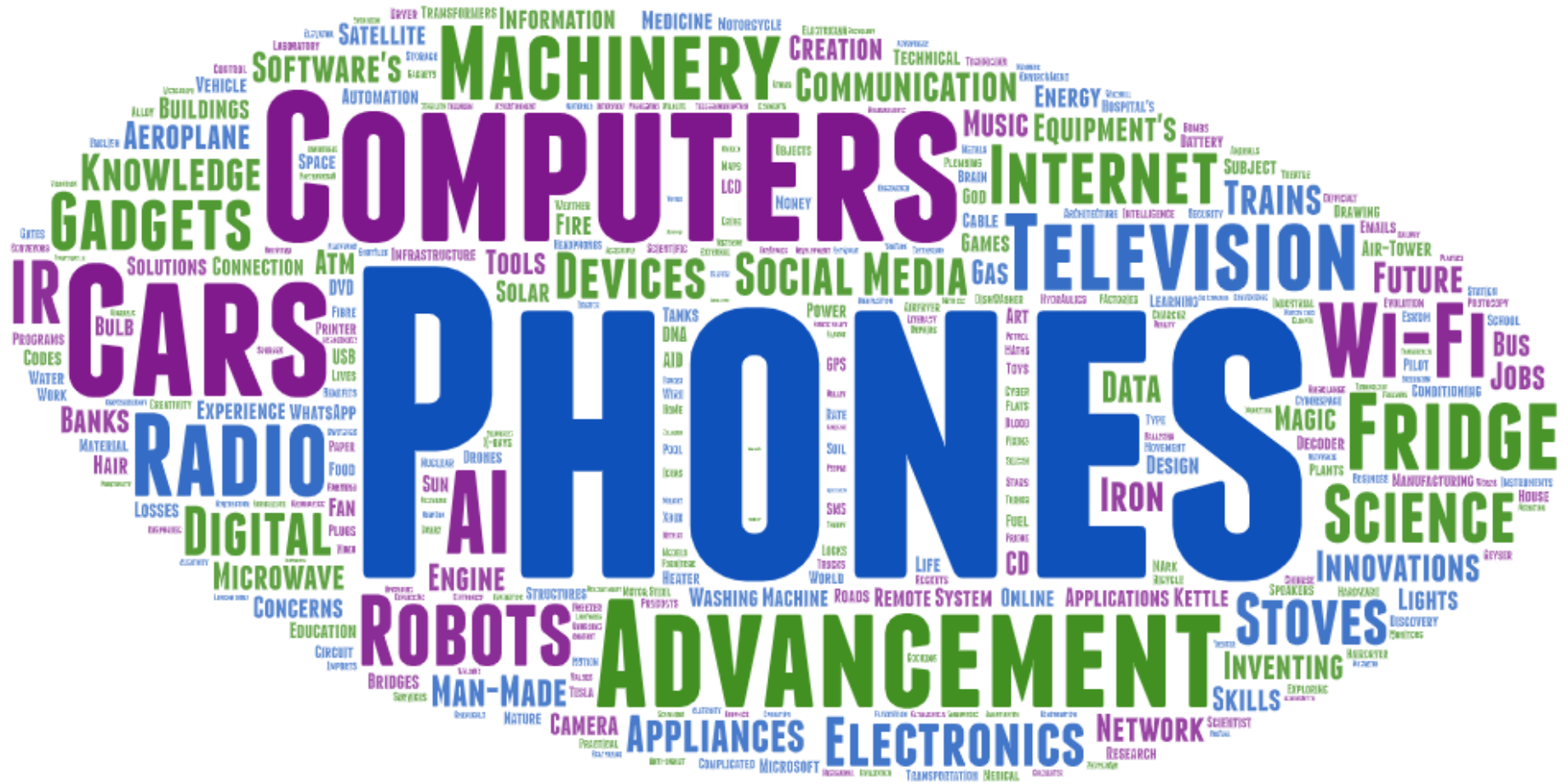
Map of 500 sampled SALs



Views of science



Views of technology



Key findings



Knowledge and Interest in S&T



Promise and reservation attitudes about modern and traditional S&T



Trust in science and science institutions



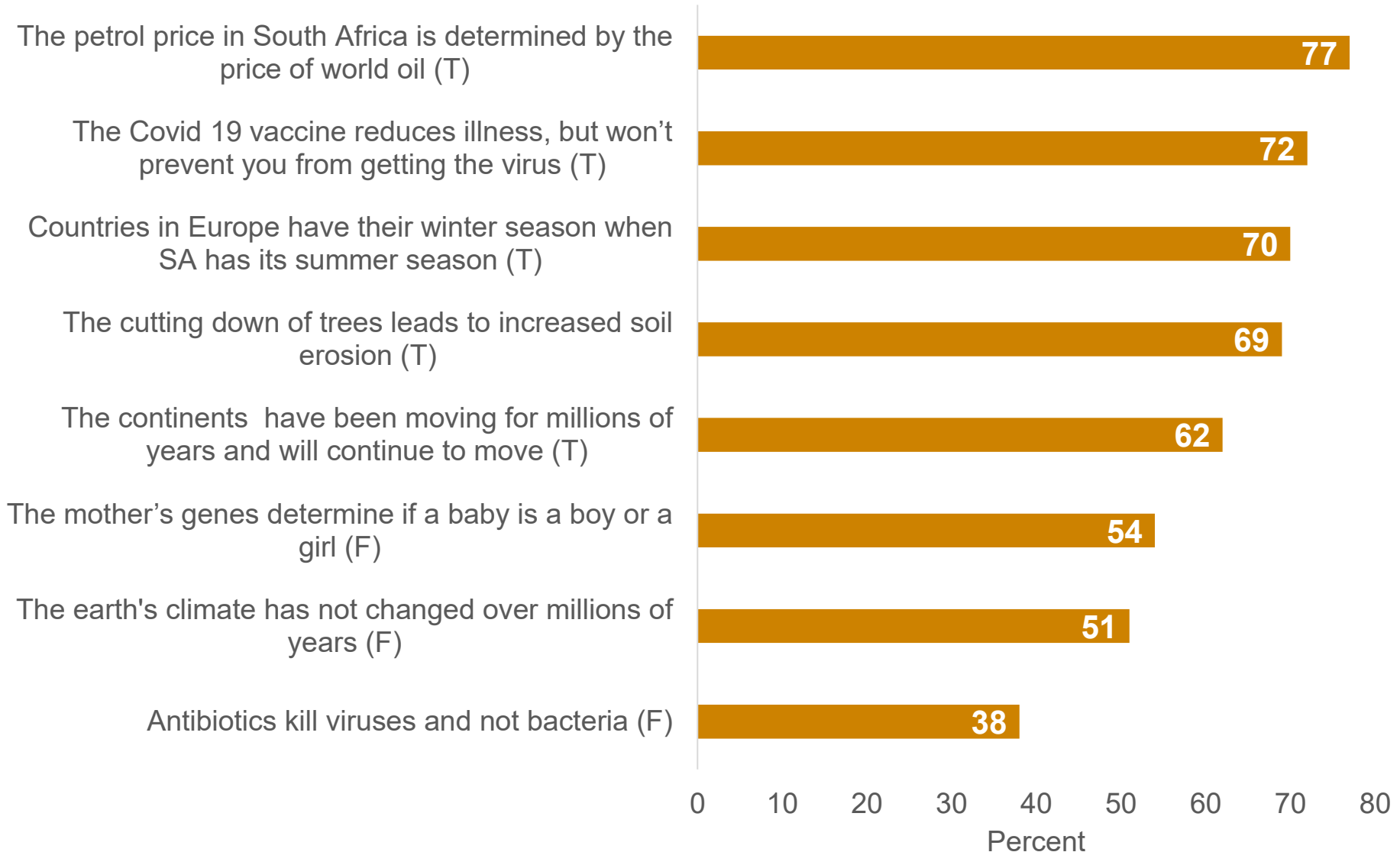
Access to S&T information and trust in information



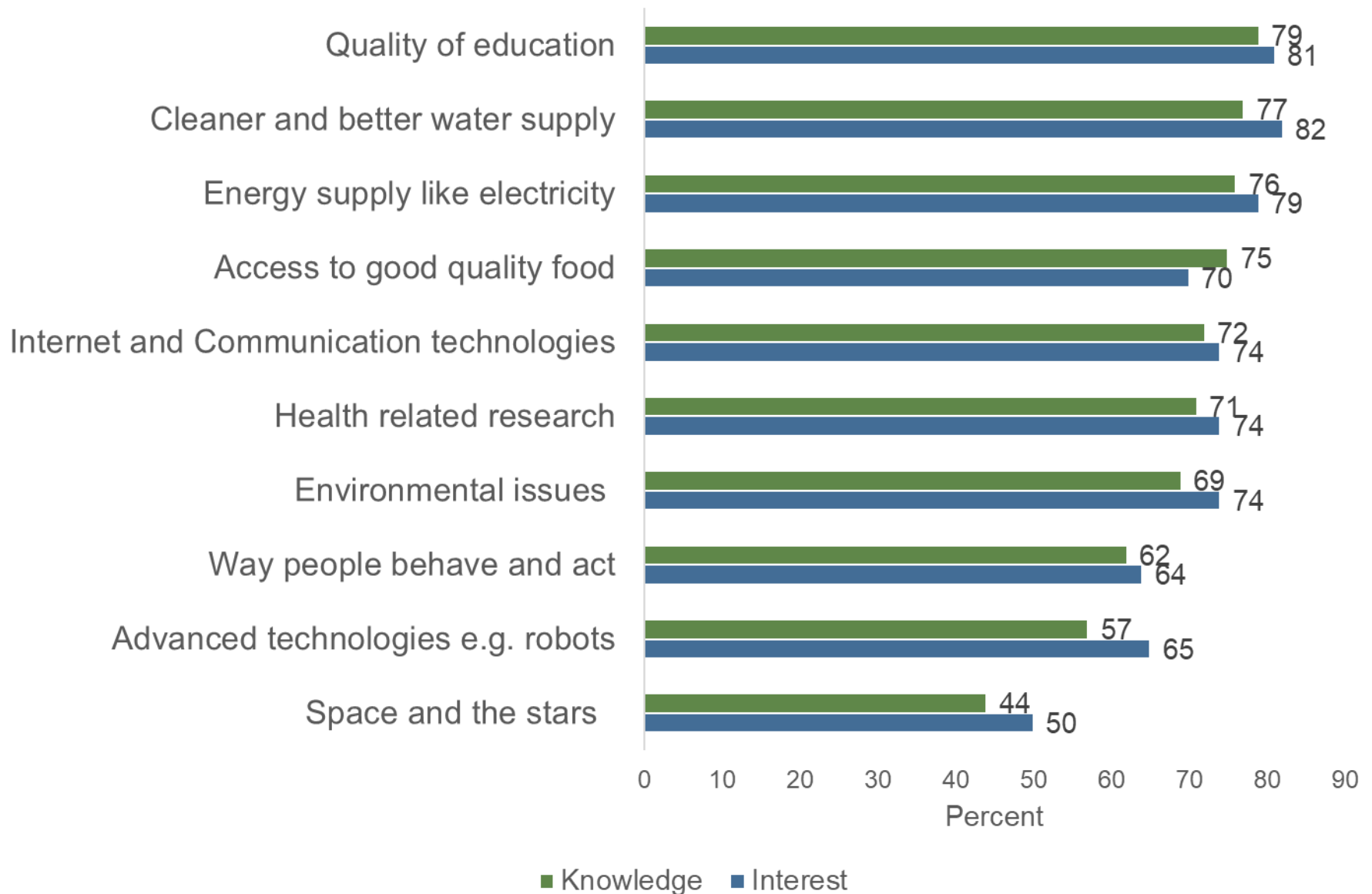
Science engagement outcomes



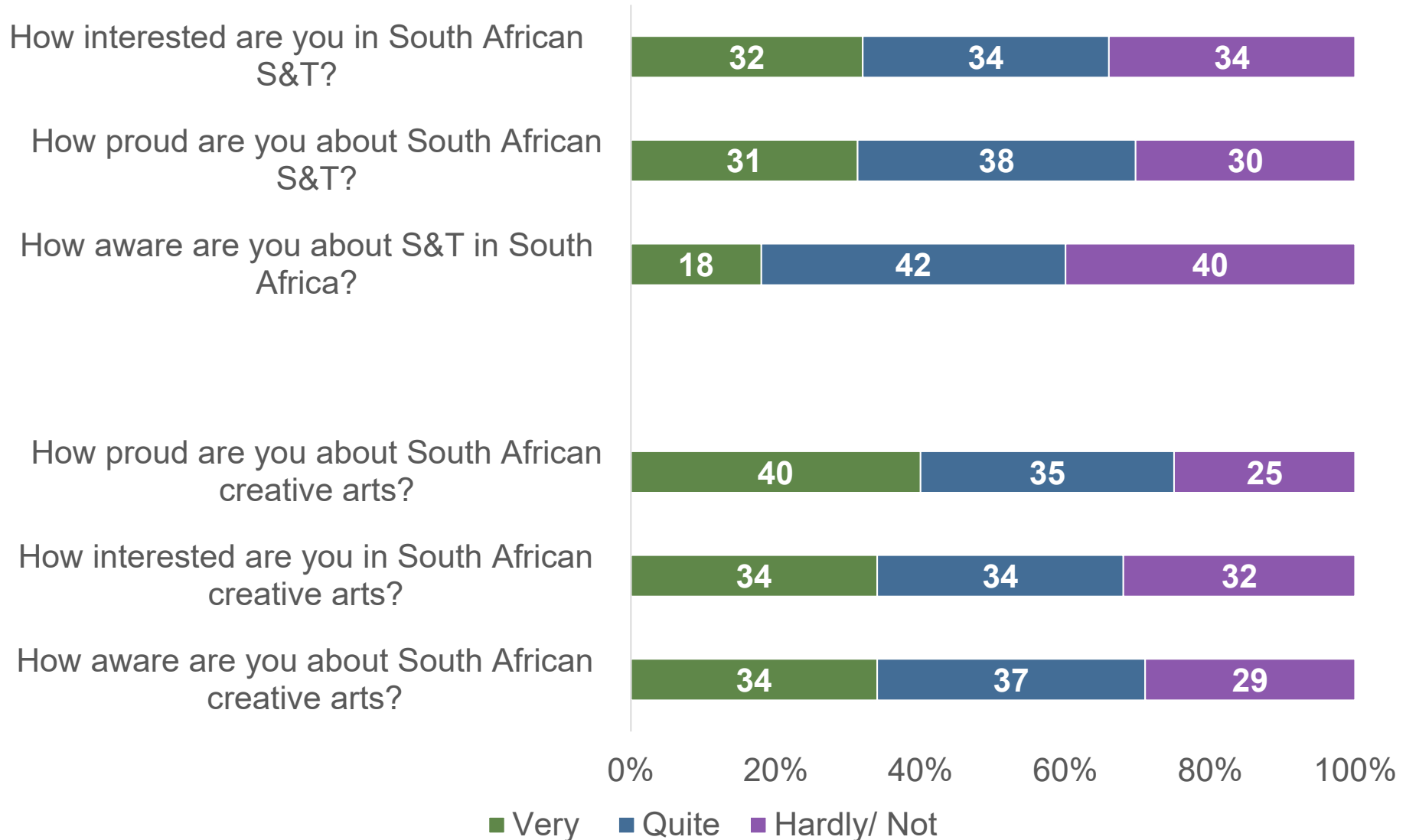
Science knowledge index



Knowledge of and interest in priority S&T



Interest, Awareness & Pride in South African S&T



Attitudes towards modern S&T

PROMISE: What the public sees as the benefits of S&T



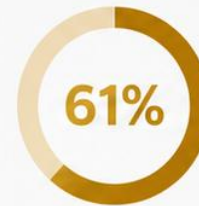
S&T are making our lives healthier, easier and more comfortable



S&T will make work more interesting



S&T careers are suitable for women



S&T will create more opportunities for future generations



The benefits of S&T are greater than the harmful effects

RESERVATION: What concerns the public about S&T



S&T make our way of life change too fast



New technologies will result in people losing jobs

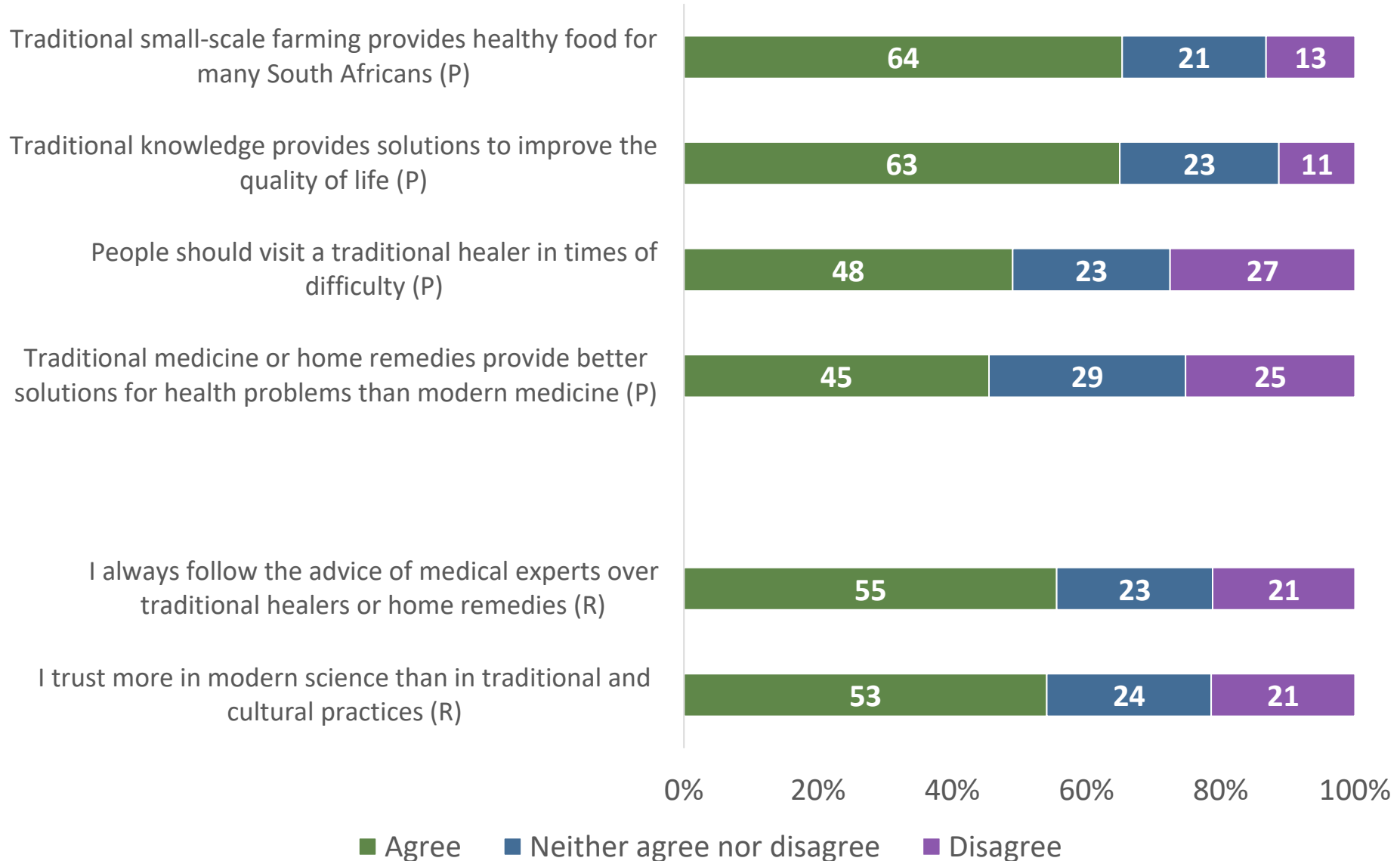


Scientific advances tend to benefit the rich more than the poor

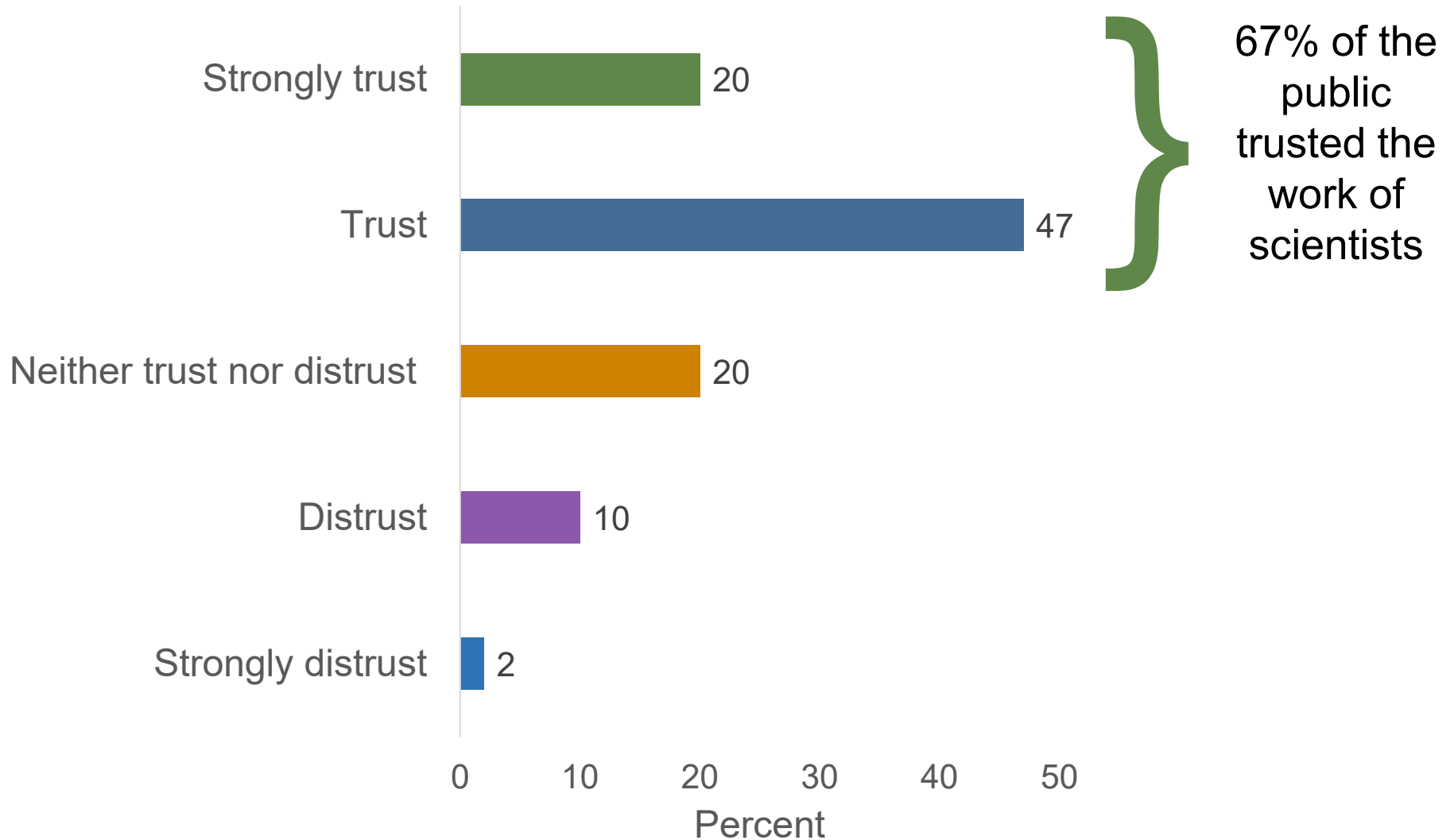


We depend too much on science and not enough on faith or religion

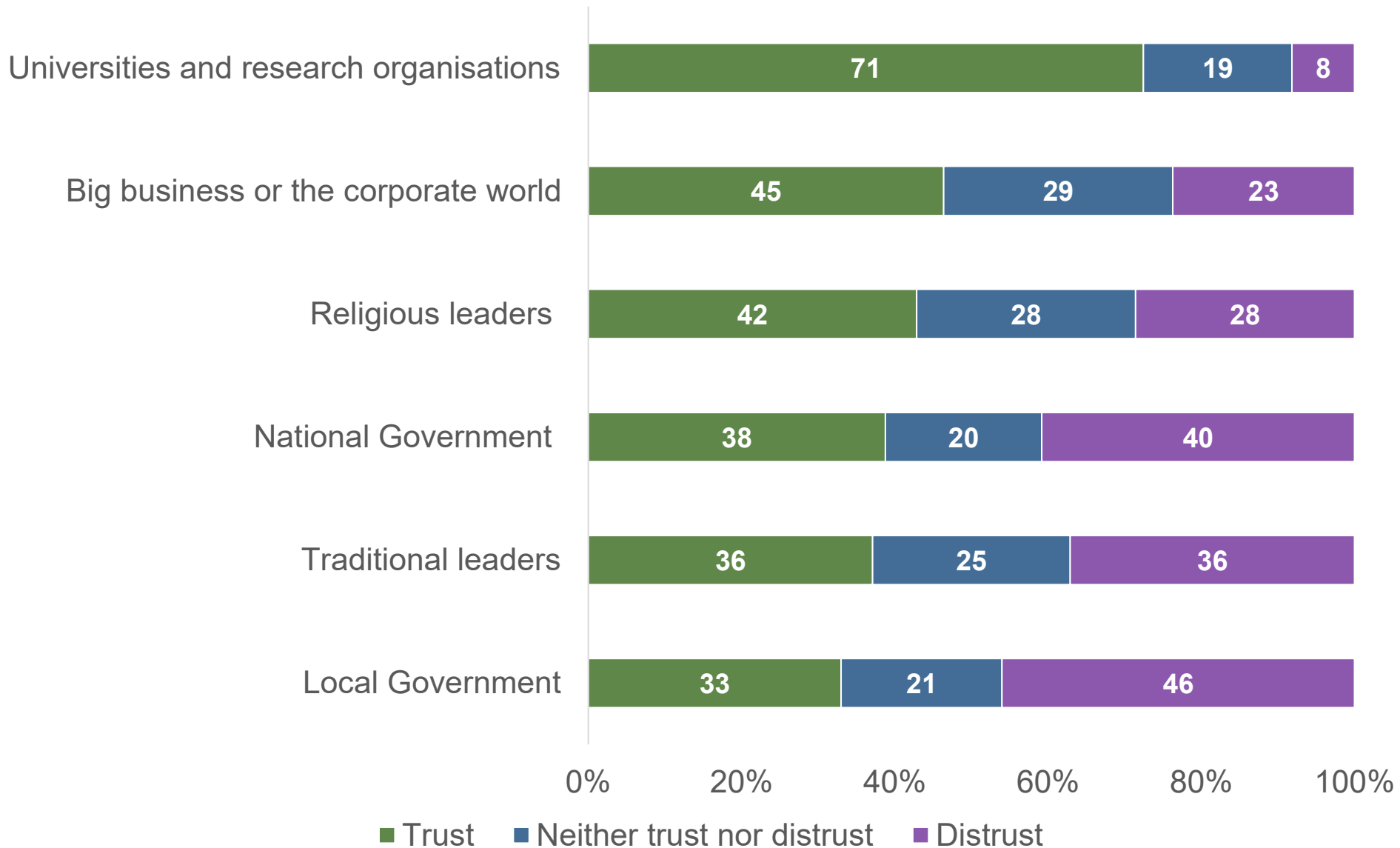
Attitudes towards traditional S&T



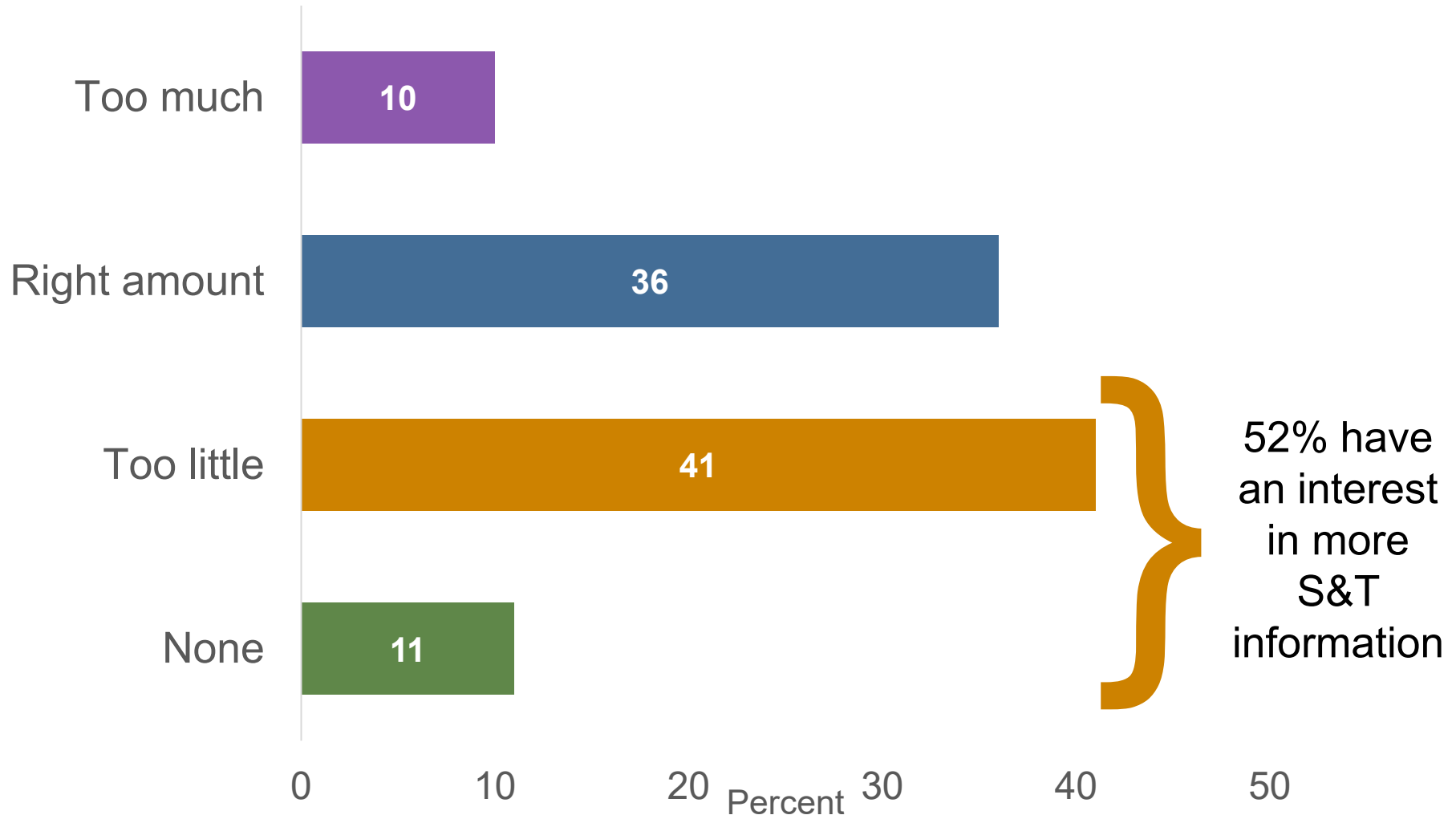
Trust in scientists



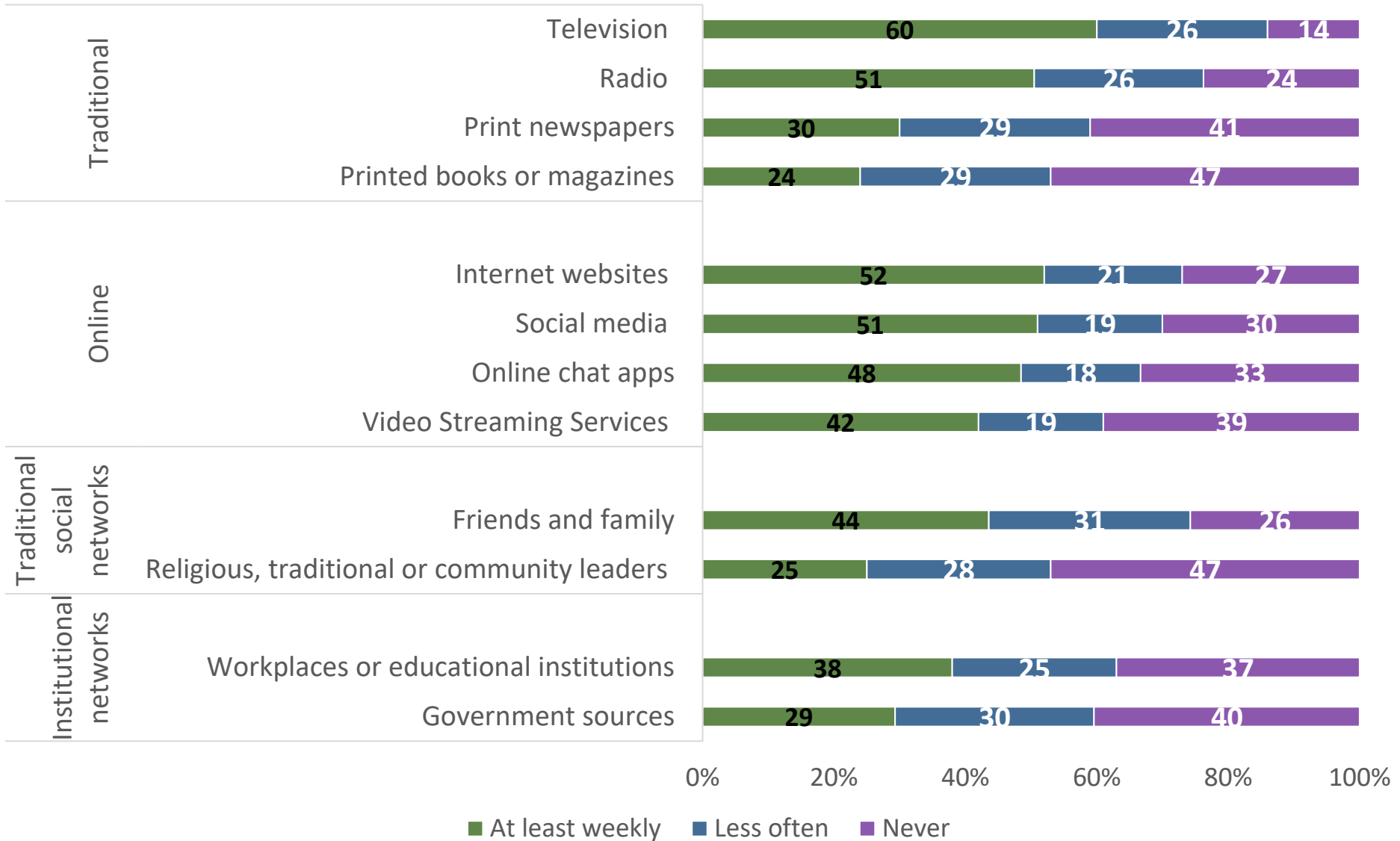
Confidence in S&T information



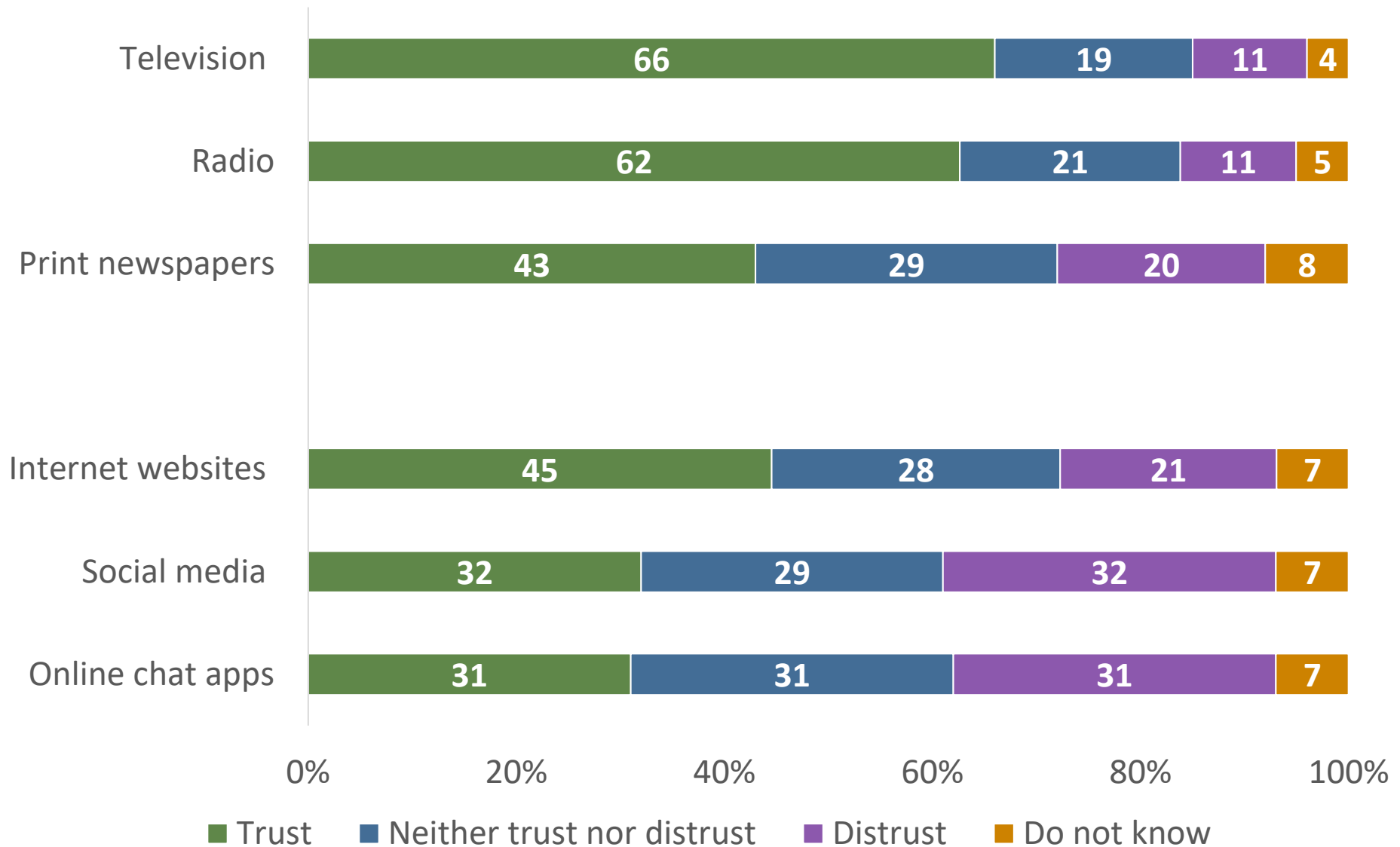
Amount of S&T information received



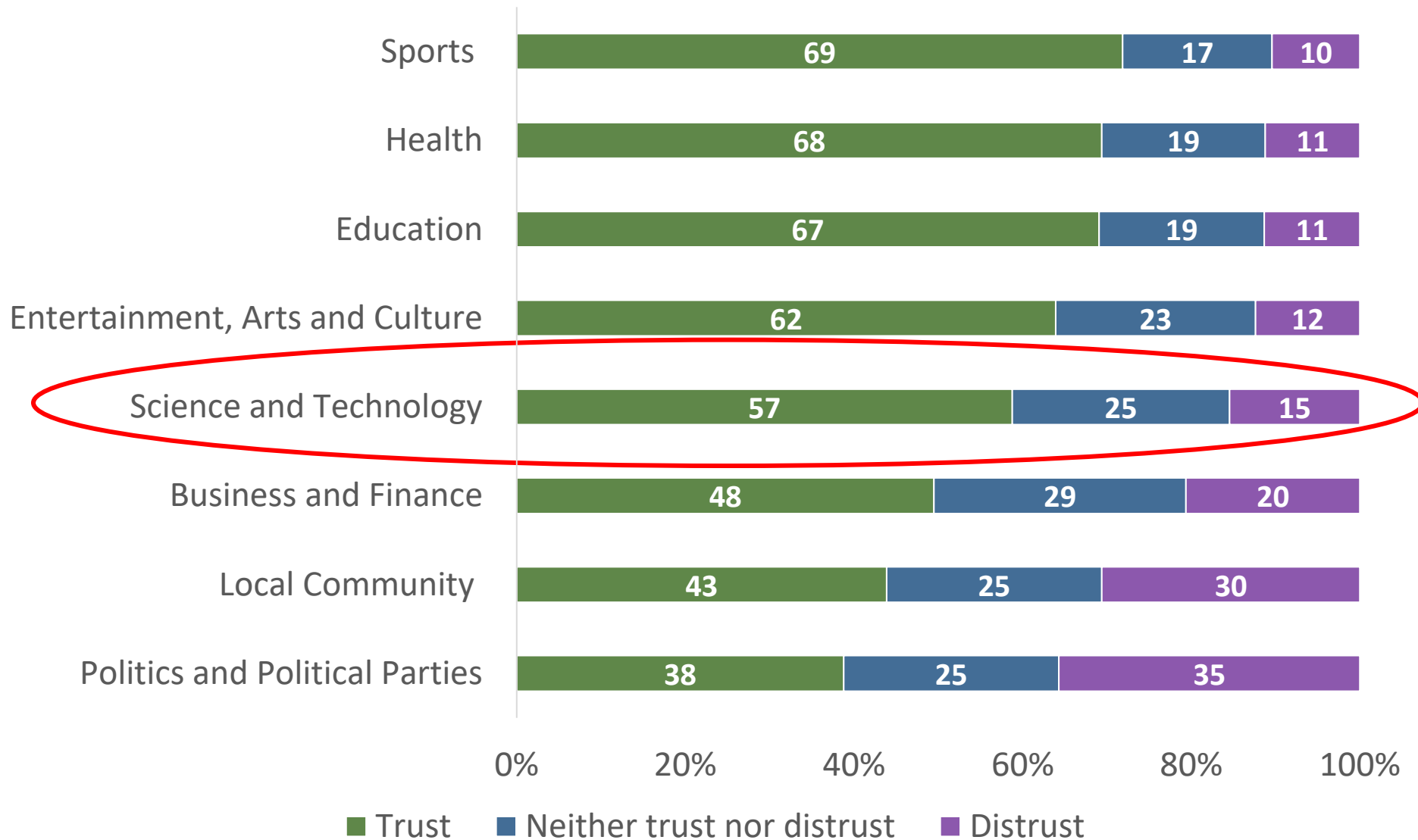
S&T news sources



Trust in S&T news sources



Trust in specific news content



Academic engagement

STEM SUBJECTS



68%

Maths/
Maths Literacy



52%

Biology/
Life Sciences



39%

Physical
Science

31% took all 3 STEM subjects

SOCIAL SCIENCE SUBJECTS



48%

Geography



41%

History

32% took Geography and History

Attendance-based engagement



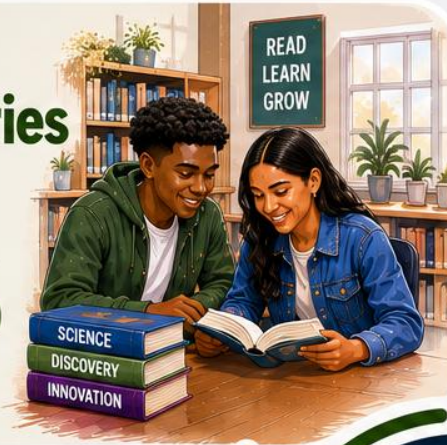
Public libraries

55%

Available

30%

Attended



Public science activities

e.g. community clean ups,
nature walks

14%

Available

18%

Attended



Museums

12%

Available

23%

Attended



SCIENCE ENGAGEMENT SPACES



Botanical gardens, reserves, zoos, aquariums

10%

Available

26%

Attended



S&T centres/ exhibitions

7%

Available

16%

Attended



Community-based engagement



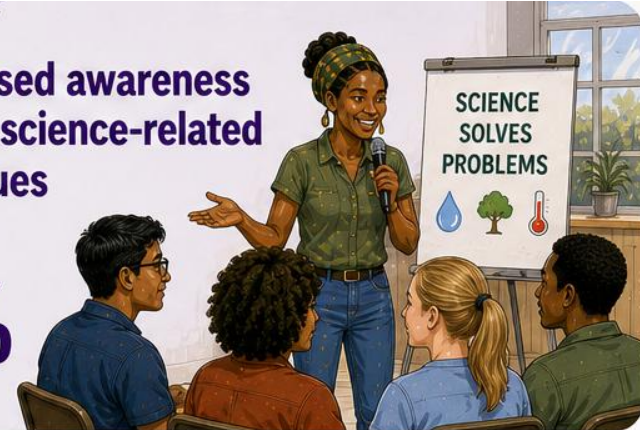
Recycled materials/
reduced
plastic use

39%



Raised awareness
for science-related
issues

22%



Participated in
science awareness
events

20%



Took part in
environmental
demonstrations

19%



Participated in
public hearings/
meetings on
science issues

18%



Information sharing



Family, friends
and colleagues

50%



Religious
network

31%



Community
meetings

30%



Online
chat apps

43%



Social
media

42%



Socio-demographic characteristics

- Various characteristics related to S&T knowledge, attitudes and engagement

Greater knowledge and interest

- Higher educational attainment
- Higher SES
- Employed
- Younger
- Urban formal

More positive attitudes

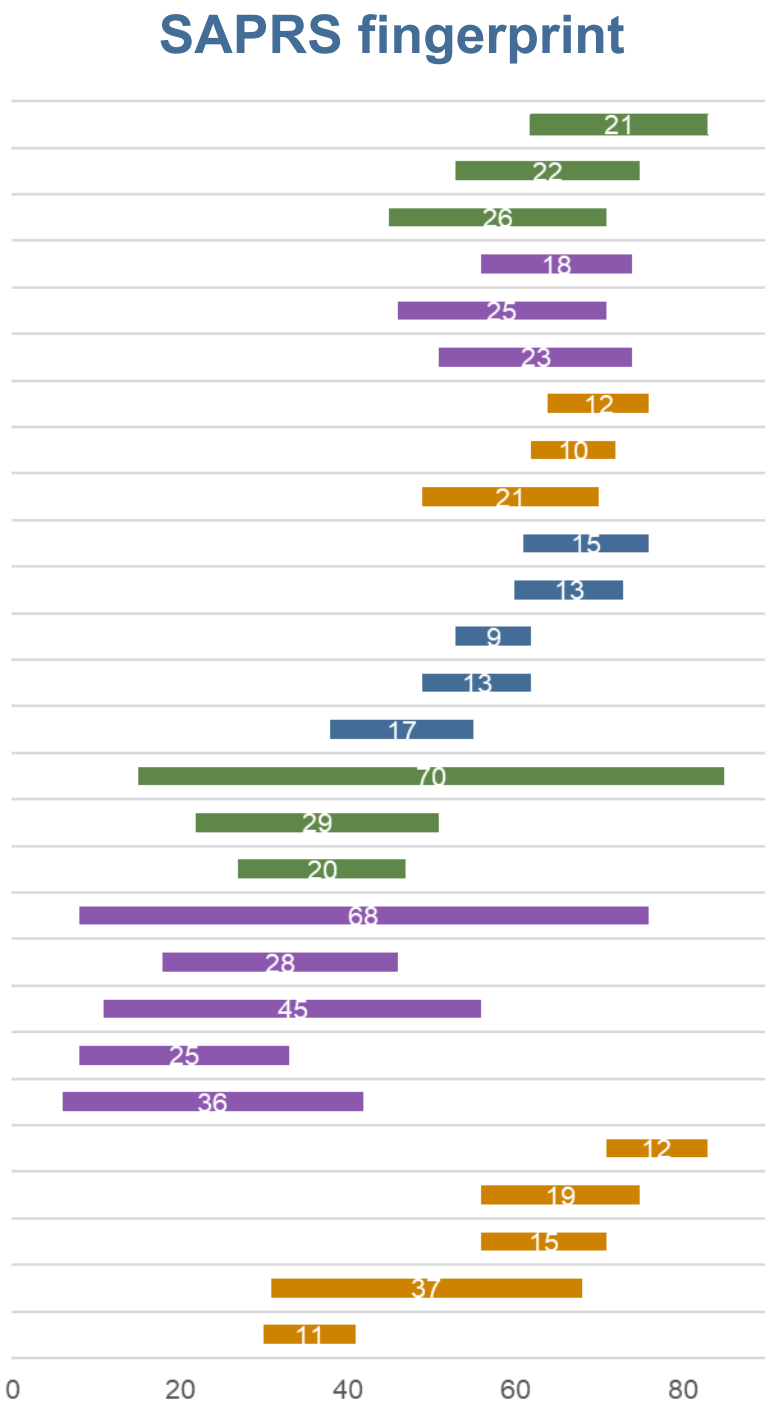
- Higher educational attainment
- Higher SES
- Employed
- Younger
- Urban formal

Greater engagement

- Higher educational attainment
- Higher SES
- Employed
- Younger
- Urban formal

Overall patterns influenced by SES factors

Indicator	Sub-Indicator measures	Average Score
Interest	Environmental concern	72
	Interest in science areas	67
	General interest in S&T	58
Knowledge	Environmental knowledge	67
	Perceived knowledge of science areas	61
	Formal science knowledge	60
Promise & Reservation	Reservation of S&T	69
	Promise of S&T	68
	Promise of traditional S&T	62
Trust	Trust in S&T information from universities	68
	Trust in work of scientists	69
	Transformation of cultures in science organisations	59
	Trust in S&T information sources	58
	Trust in government evidence-based decision making	50
S&T Information	Daily usage of the internet	50
	Exposure to S&T news	42
	Consumption of S&T news	39
Science Engagements	Exposure to STEM subjects	56
	S&T information sharing	37
	Use of online apps	32
	Community-based engagement	23
	Attraction-based event attendance	23
Pride & Promise	Promise of S&T skills for young people	78
	Pride in SA S&T achievement	66
	Valuing S&T experiences	67
	Govt spending on R&D is too low	49
	SA achievement better than rest of world	36



An engaged South African public



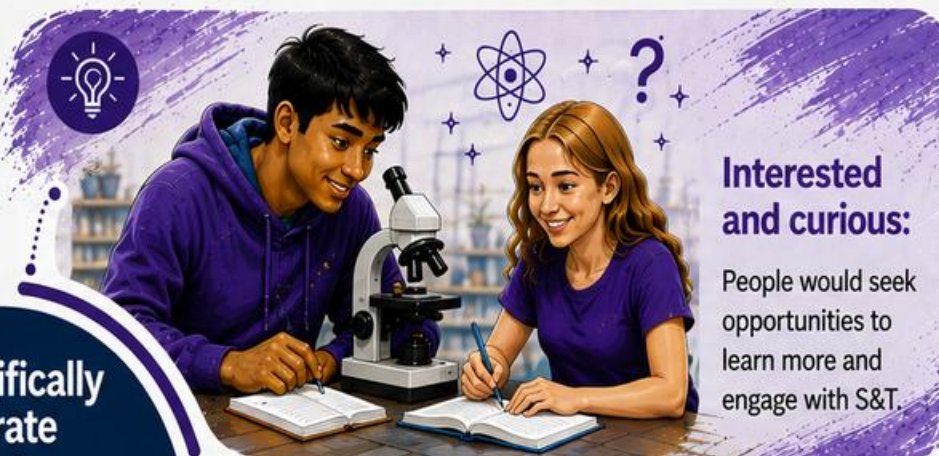
Aware, informed and discerning:

People would be informed, critical and discerning consumers of S&T information.



Interested and curious:

People would seek opportunities to learn more and engage with S&T.



Actively involved:

Public actively engaging with S&T relevant to their culture and daily lives.



Holistic knowledge recognition:

Recognise the value of indigenous/traditional knowledge.



High trust in institutions:

Trust in scientific institutions and expertise, transparency and communication.



Scientifically literate
and
critically-minded,
able to
understand
and evaluate
scientific information
in daily lives:

Bridging the gap

- **Addressing key gaps** driven by socioeconomic status, educational attainment, and rural-urban divides.
- **Translate technical concepts** into all 12 official languages to break down linguistic barriers and democratise information access.
- Expand **affordable digital channels**, public Wi-Fi, and data-free platforms.
- Shift to **community-led engagement**

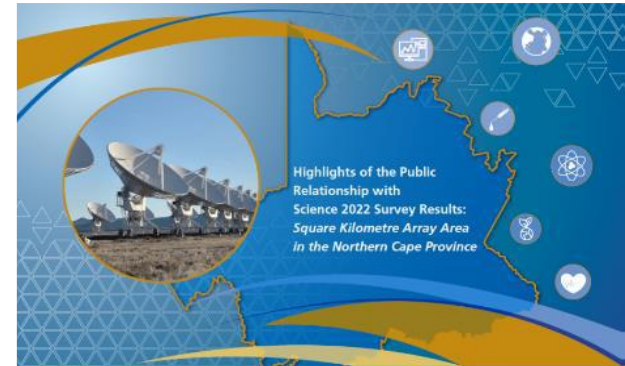


SAPRS outputs

Highlights of the South African Public Relationship with Science: 2022 Survey Results



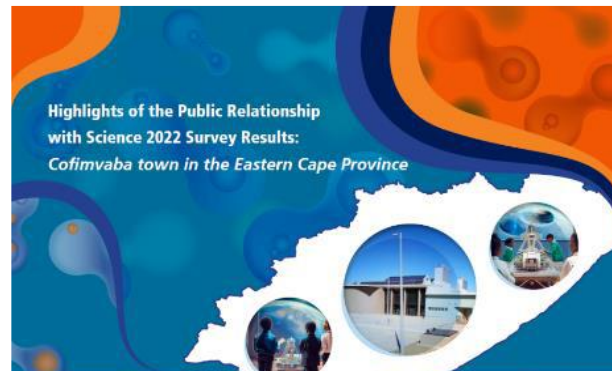
South African Public Relationship with Science: 2022 Survey Results



How South Africans see science: key findings

A strong relationship between science and society ensures that people are informed about how science and technology can address development challenges. It also enables greater public participation in shaping science policies and priorities. For this HSRC study, researchers used seven indicators and 27 measures to describe the relationship between science and society. This is the first of three articles that present results from the South African Public Relationship with Science 2022 Survey.

Highlights of the Public Relationship with Science 2022 Survey Results: Cofimvaba town in the Eastern Cape Province

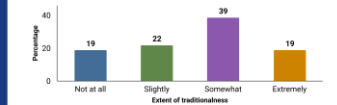


OUR KNOWLEDGE, OUR STORIES, SOUTH AFRICANS' CONNECTION WITH TRADITIONAL SCIENCE AND TECHNOLOGY

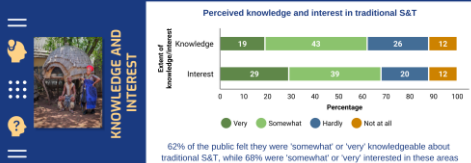
Knowledge takes many forms. While modern science relies on analytical and reductionist methods, traditional knowledge emphasises intuition and holistic understanding. Both of these forms of knowledge are vital and worth promoting.

By traditional knowledge, we mean local knowledge that is unique to a given culture or society and usually passed from generation to generation. It is also referred to as indigenous knowledge.

Level of traditionalness (extent to which they followed cultural practices)



More than half of the South African public said they were 'somewhat' or 'extremely' traditional



62% of the public felt they were 'somewhat' or 'very' knowledgeable about traditional S&T, while 68% were 'somewhat' or 'very' interested in these areas

Promise of traditional S&T



Nearly two-thirds of the public saw the value of small-scale farming and traditional knowledge in improving quality of life, but fewer turned to traditional healers and medicine



SAPRS webpage

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Thank You