Ecosystem Services: Bridge or Barrier for Marine and Coastal Management – Results from Stakeholder Questionnaire

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Take Home Messages

- Despite numerous studies, and inclusion in high level policy, Ecosystem Services (ES) remains a complex and at times poorly understood concept.
- On the surface, UK marine and coastal stakeholders appear to 'like' it – but things are not always as they seem!
- For future effective use, some early recommendations:
  - need for consistency across theories, frameworks and valuations.
  - improved inclusion of cultural and heritage based values and benefits within assessment, and overarching ES debate.
  - economic valuation isn't the only value!

Background to this study

Aim: To examine practitioners' views and understanding of new legislation in Wales and the implications for saltmarsh ecosystem services and ber fi

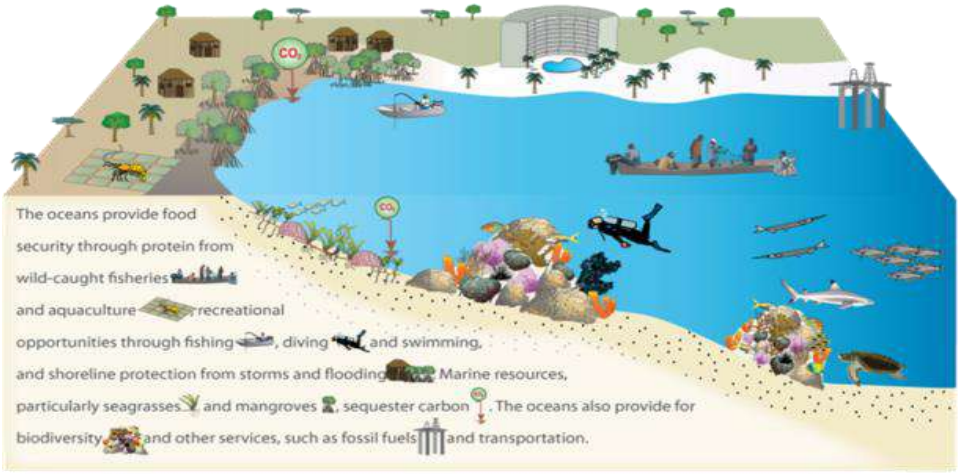
"It's about your audience isn't it, about who you're talking to"

"It's a difficult and I'm not blaming anybody in particular but it is a difficult concept to explain"

"I've got some fundamental issues with the term"

Comments on the use of ecosystem services as a concept within saltmarsh governance and management

The Ecosystem Service (ES) Approach



Conceptual diagram illustrating the ecosystem services provided by oceans and the ways in which humans depend on oceans.

Symbols library courtesy of the Integration and Application Network (ian.umces.edu/symbols), University of Maryland Center for Environmental Science.

Conceptual diagram illustrating the ecosystem services provided by oceans and the ways in which humans depend on oceans.
Diagram courtesy of the Integration and Application Network (ian.umces.edu), University of Maryland Center for Environmental Science. Source: Samonte G, Karrer L, Orbach M. 2010. *People and Oceans*. Science and Knowledge Division, Conservation International, Arlington, Virginia, USA.

"Ecosystem services are the benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services, such as nutrient cycling, that maintain the conditions for life on Earth" – Millennium Ecosystem Assessment (2000)

"Ecosystem services are the benefits provided by ecosystems that contribute to making human life both possible and worth living." – UKNEA (2014)

"The direct and indirect contributions of ecosystems to human wellbeing. The concept ''ecosystem goods and services'' is synonymous with ecosystem services"- TEEB.


ODEMM
TEV
NEA
Barbier et al
Beaumont et al
ValMER
deGroot et al
Boyd and Banzhaf
PERSEUS
TEEB
MA
VECTORS
Nahlik et al
COST-IMPACT
Costanza et al
Balmford et al
Daily
Fisher et al


Well being
Beneficial
Provisioning
Values
Ecosystem services
Supporting services
Functions
Typology
Habitat
Regulating
Core
Final services
Benefits
Goods
Framework
Cultural
Ecosystem processes
Intermediate services
Classification

FIGURE 6:
Reaction to Alternative Phrases to Describe Ecosystem Services
(Split Sample; Rated on a Scale From 1 to 7 in Terms of Appeal)

Name	% Rating a 6 or 7 *(Very Appealing)*	Mean Score
Nature's Value	61%	5.5
Nature's Benefits	53%	5.3
Earth's Benefits	55%	5.2
Environmental Value	49%	5.2
The Planet's Assets	45%	5.0
Nature's Health and Safety Systems	46%	4.9
Environmental Wealth	45%	4.9
Environmental Goods	44%	4.9
Natural Life-Support	44%	4.9
Ecological Wealth	42%	4.8
The Planet's Products and Services	34%	4.6
Natural Infrastructure	32%	4.6
Ecosystem Services	31%	4.5
Nature's Social Safety Net	34%	4.4
Natural Capital	30%	4.3
Earth's Capital	29%	4.2

Metz, Fairbank, Maslin, Maullin, Weigel 2010

What are user/ practitioners' perceptions/ attitudes towards the concept of ES?

How do they differ between user groups?

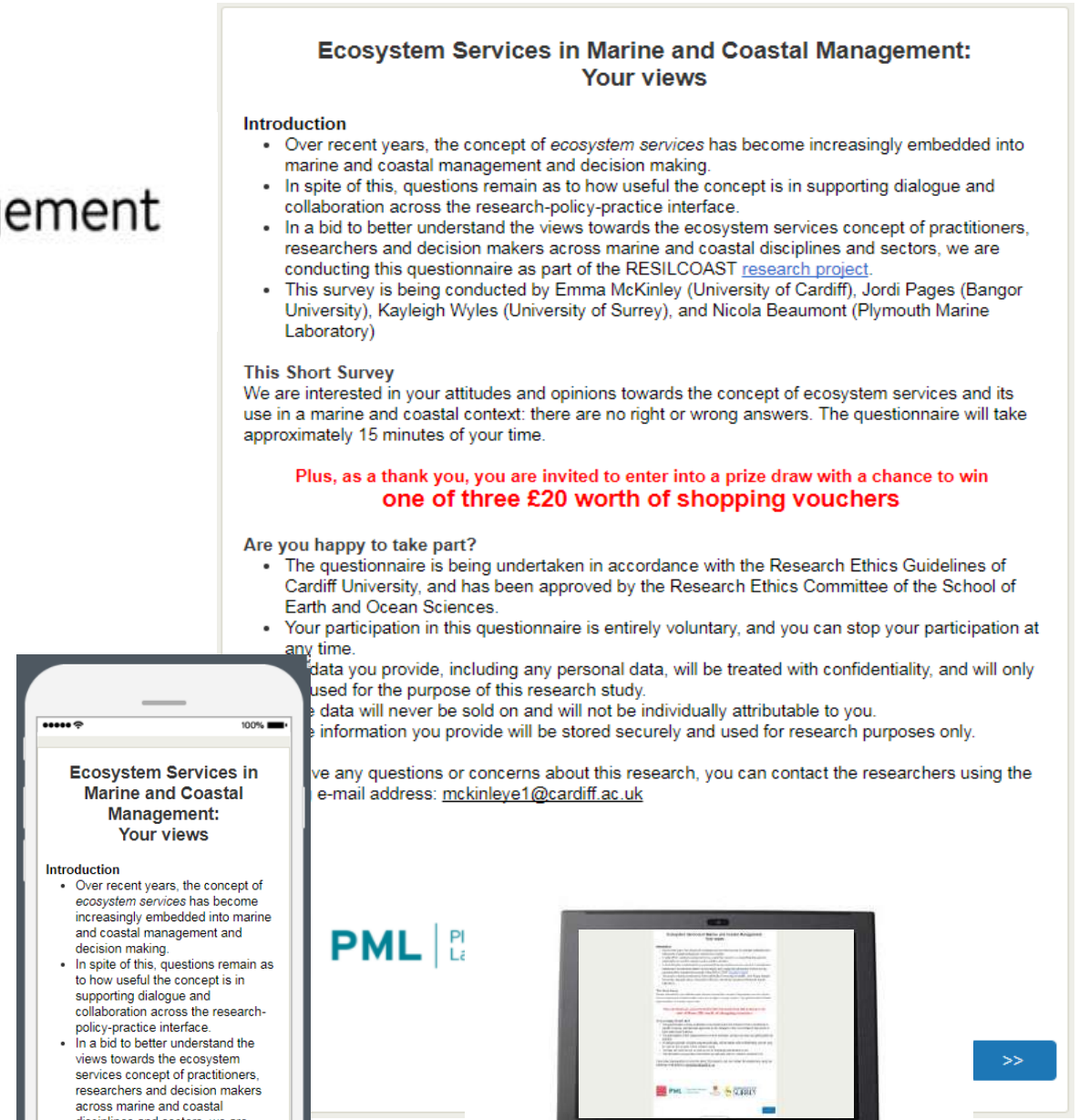
How do these attitudes/ views influence the use of the concept?

Does ES support the science-policy-practice interface for marine and coastal management?

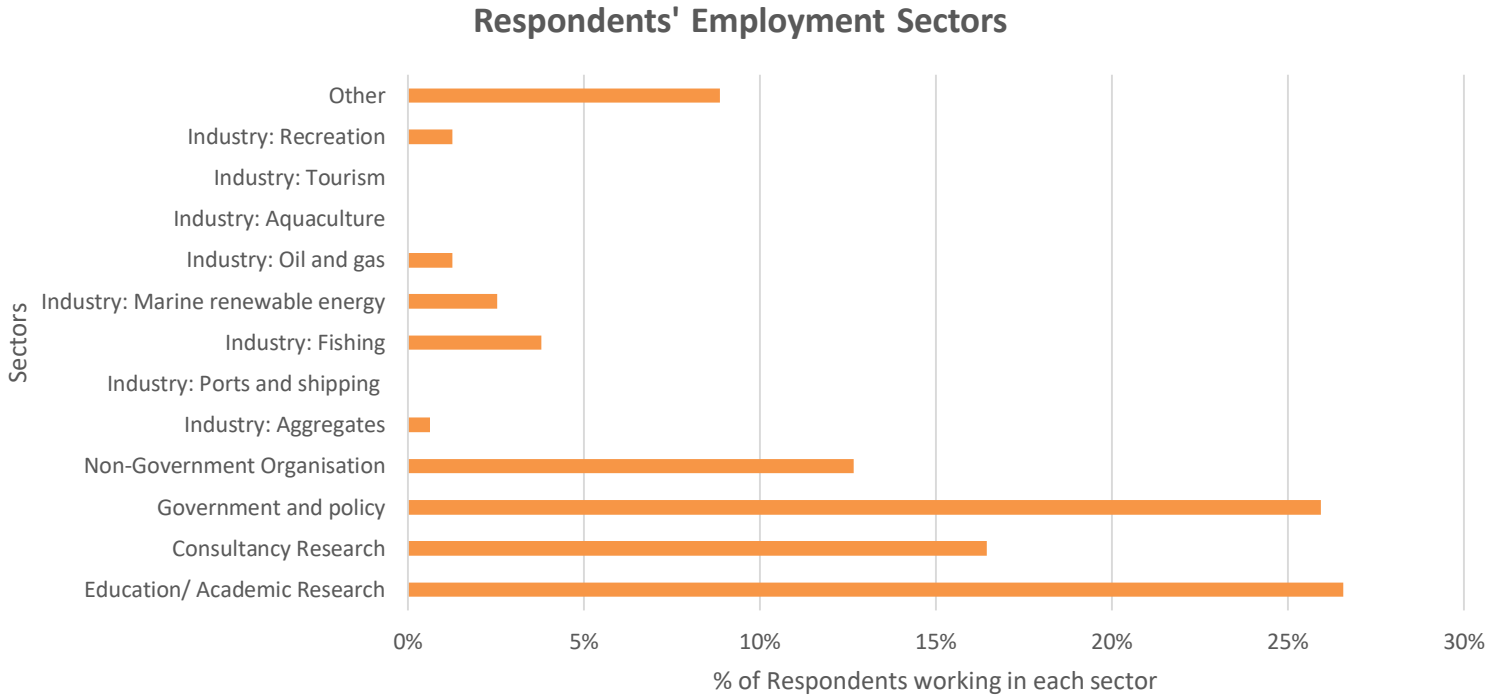
UK Stakeholder Questionnaire

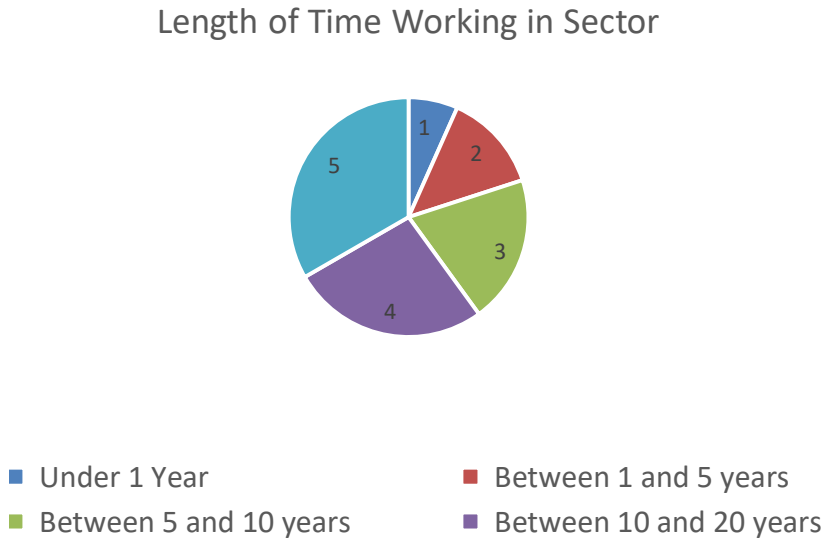
Communications and Management for Sustainability

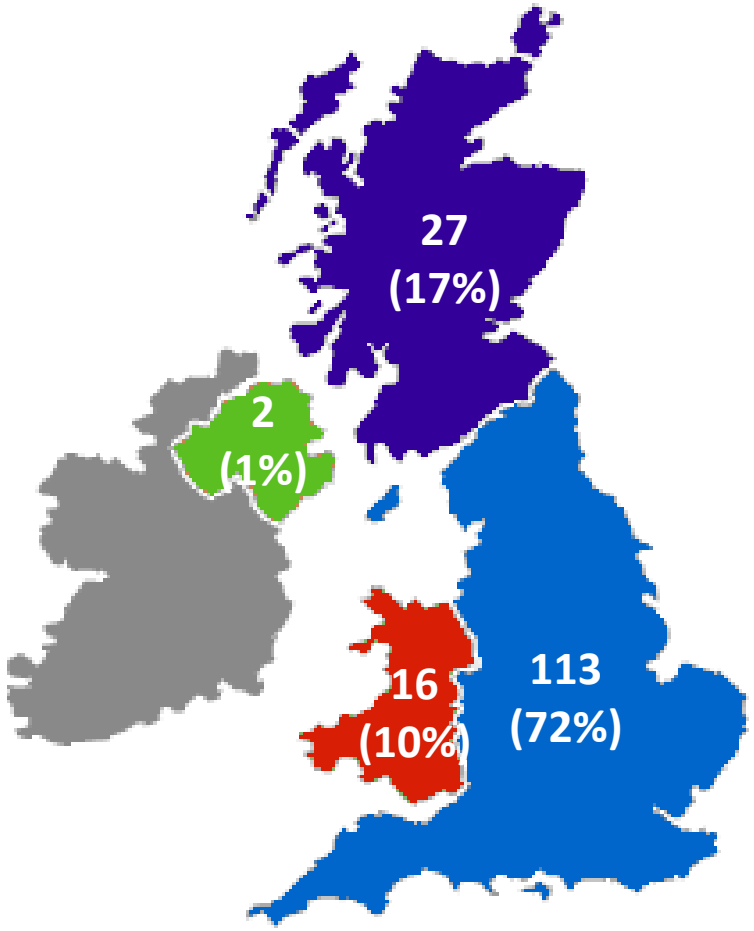
- Diverse group of marine and coastal practitioners and user groups incl. industry, academics, policy makers, NGOs, consultants, among others.
- Large potential sample size – representation
- Potentially interesting geopolitical differences



CMS Questionnaire Respondents - Preliminary Findings







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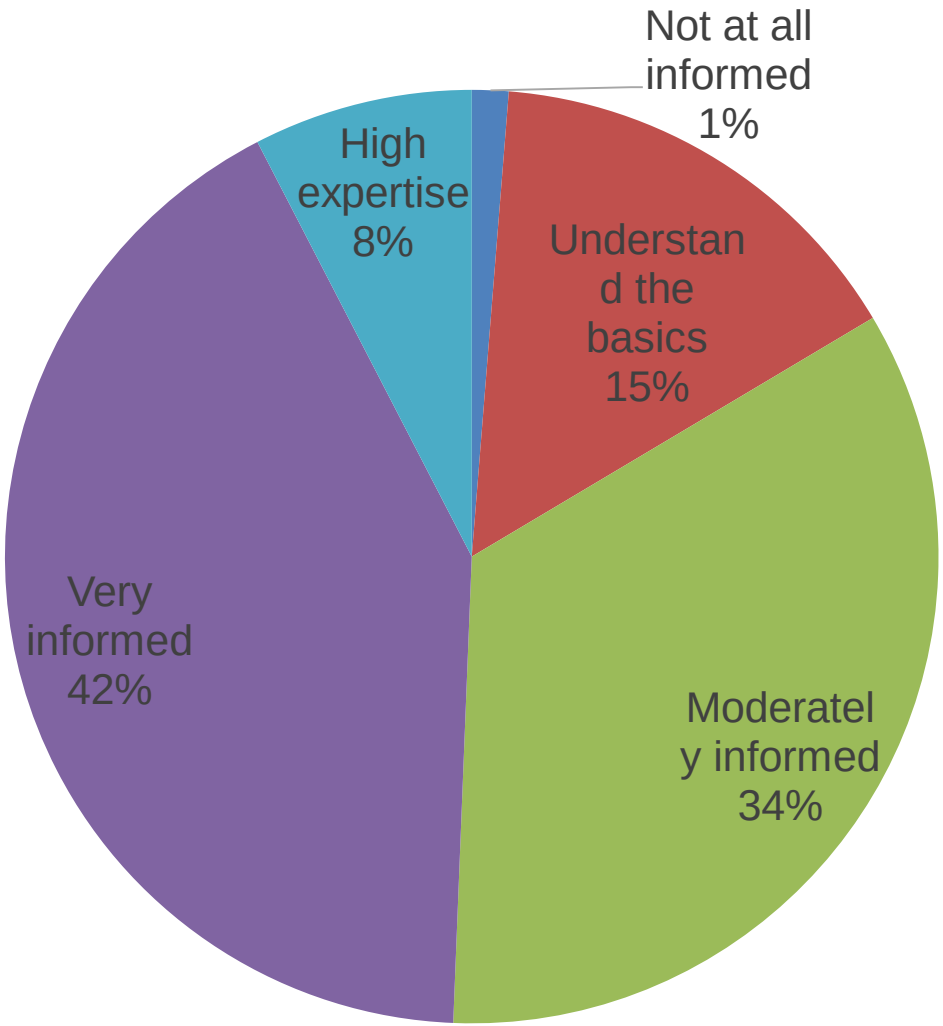
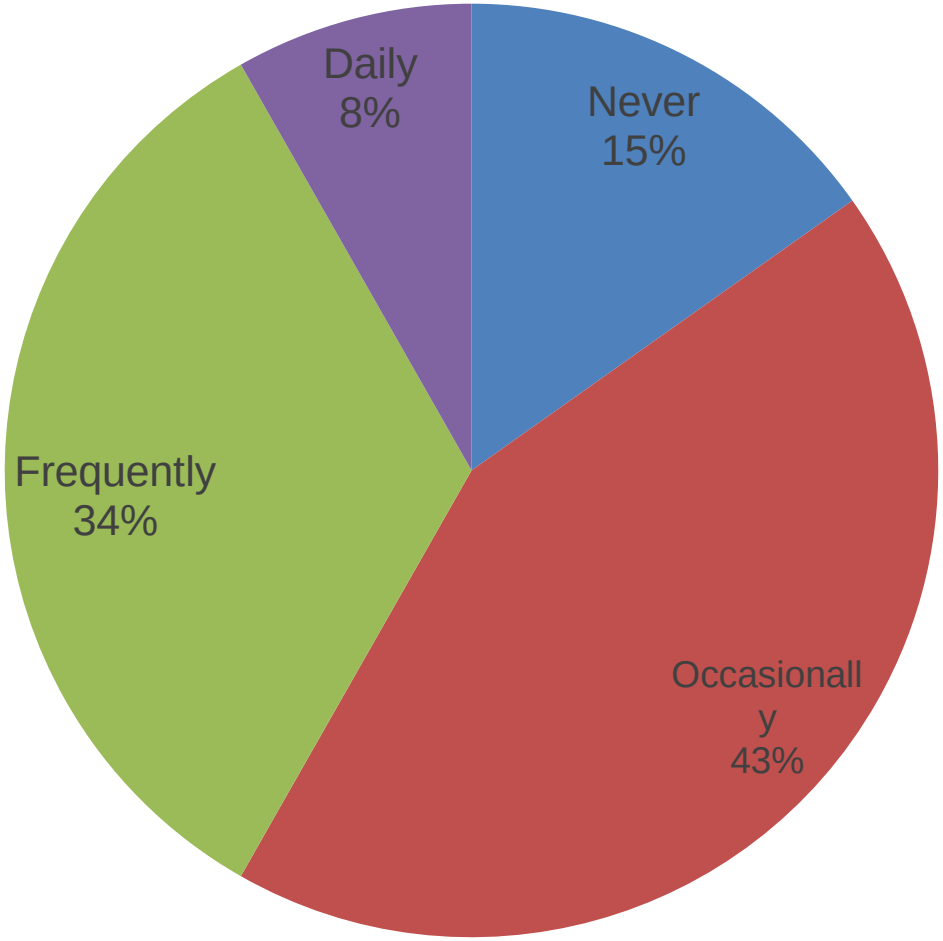
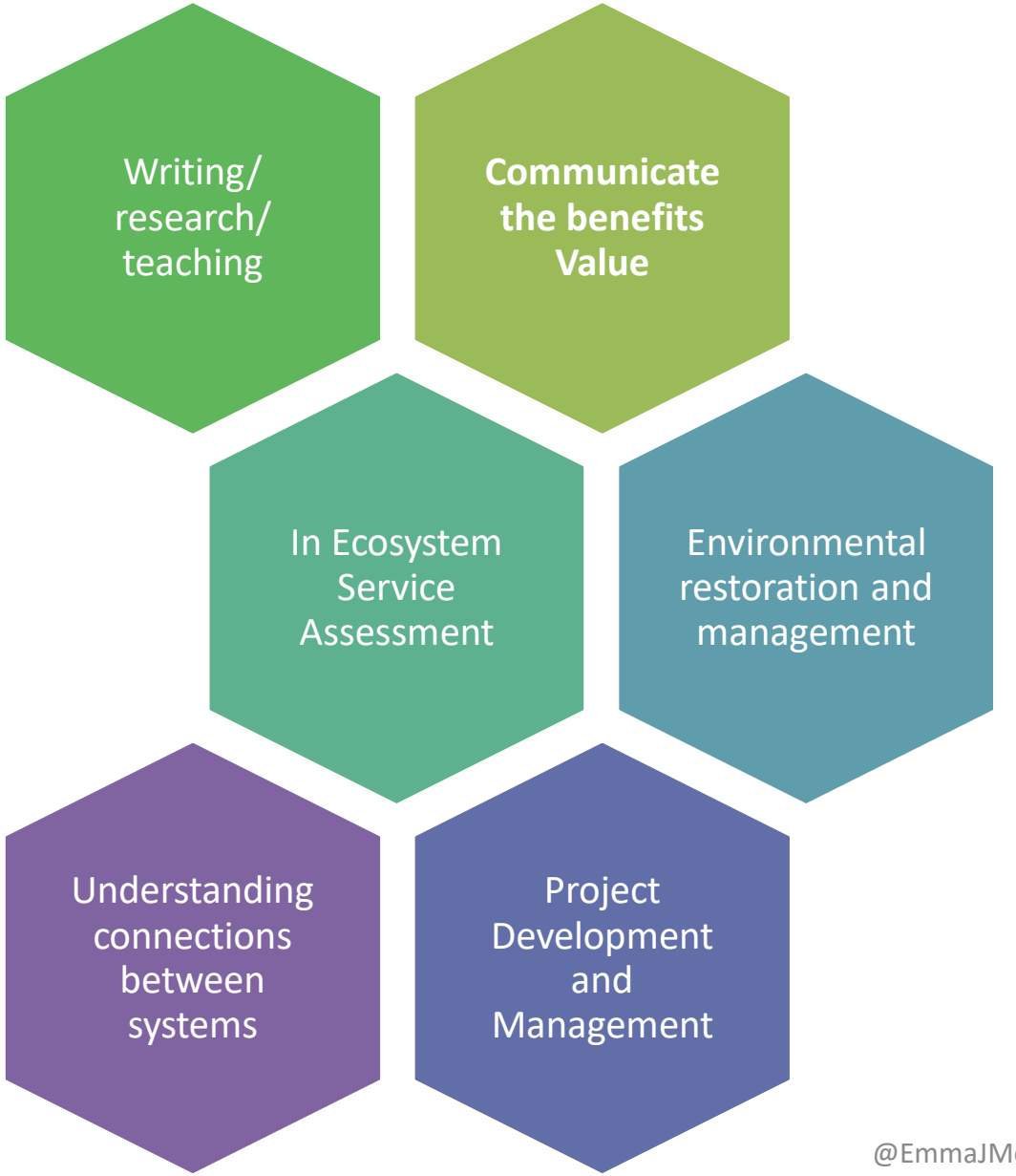
Self-reported knowledge and use





How is the ES concept used?

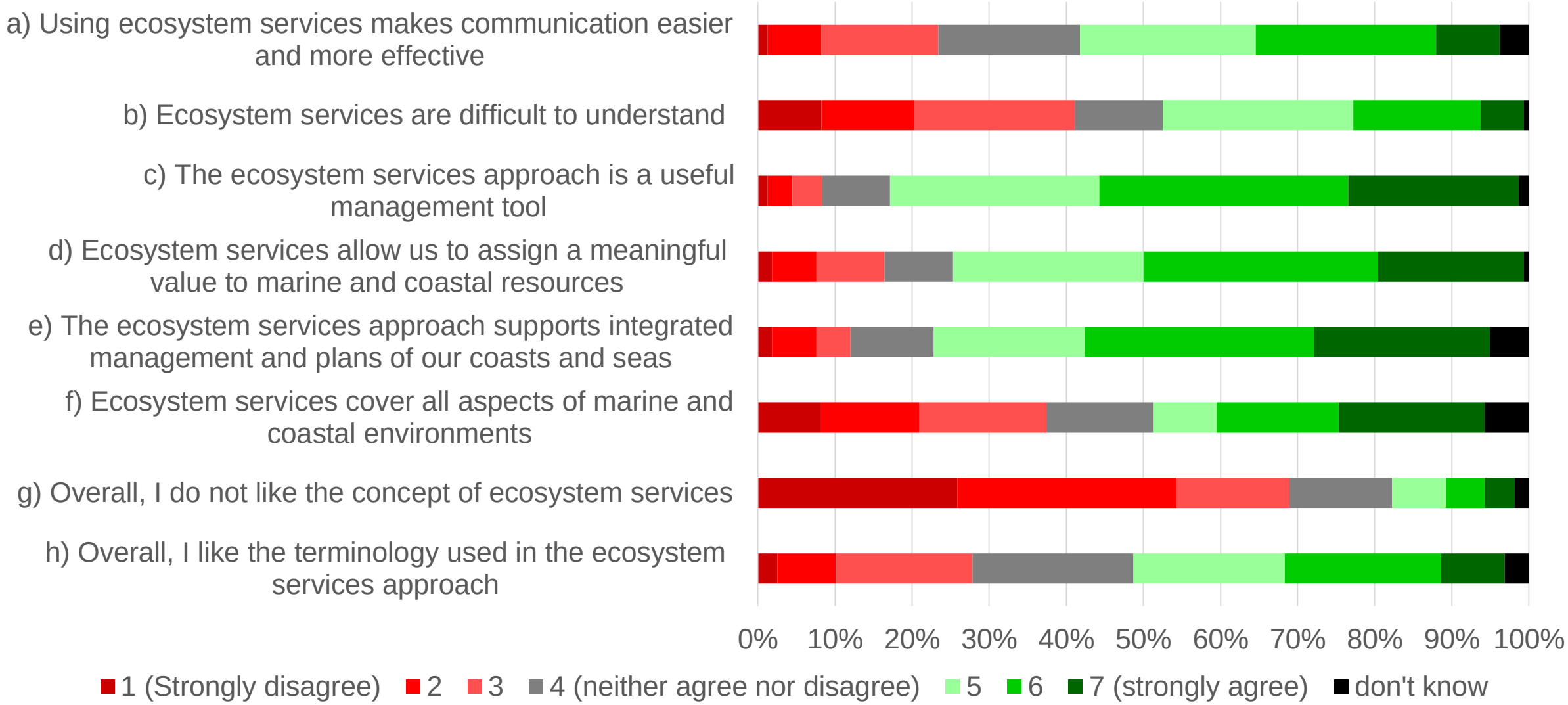


"I haven't [used it] as yet - but it is something that I am increasingly being encouraged to do - and use the language to communicate"

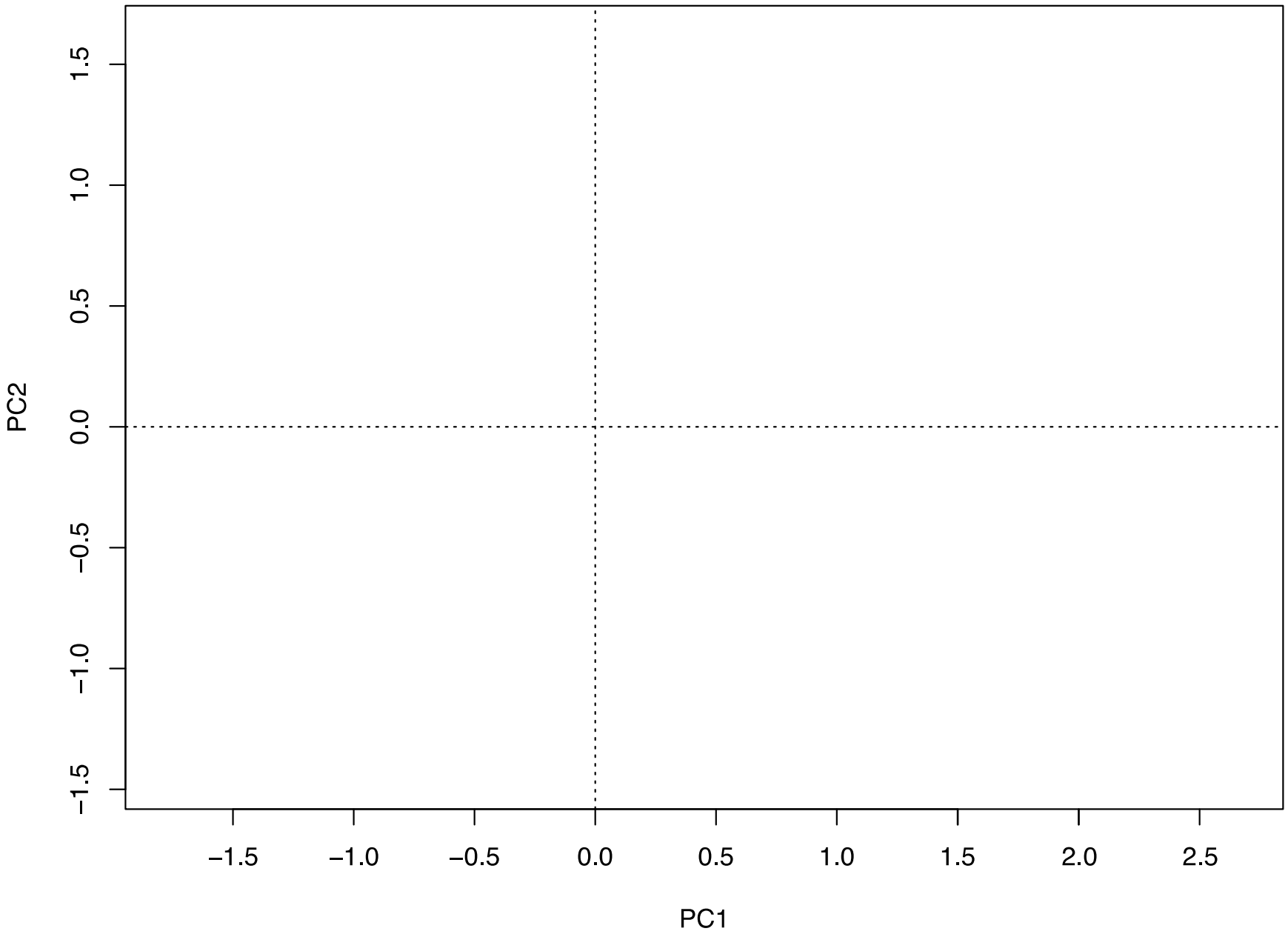
"Communicating with policy makers and marine managers. Within research projects, exploring valuation and trade-offs faced by stakeholders"

"To define the cultural ecosystem services people value in a coastal community"

Stakeholder Views on ES



What are your views about ecosystem services?



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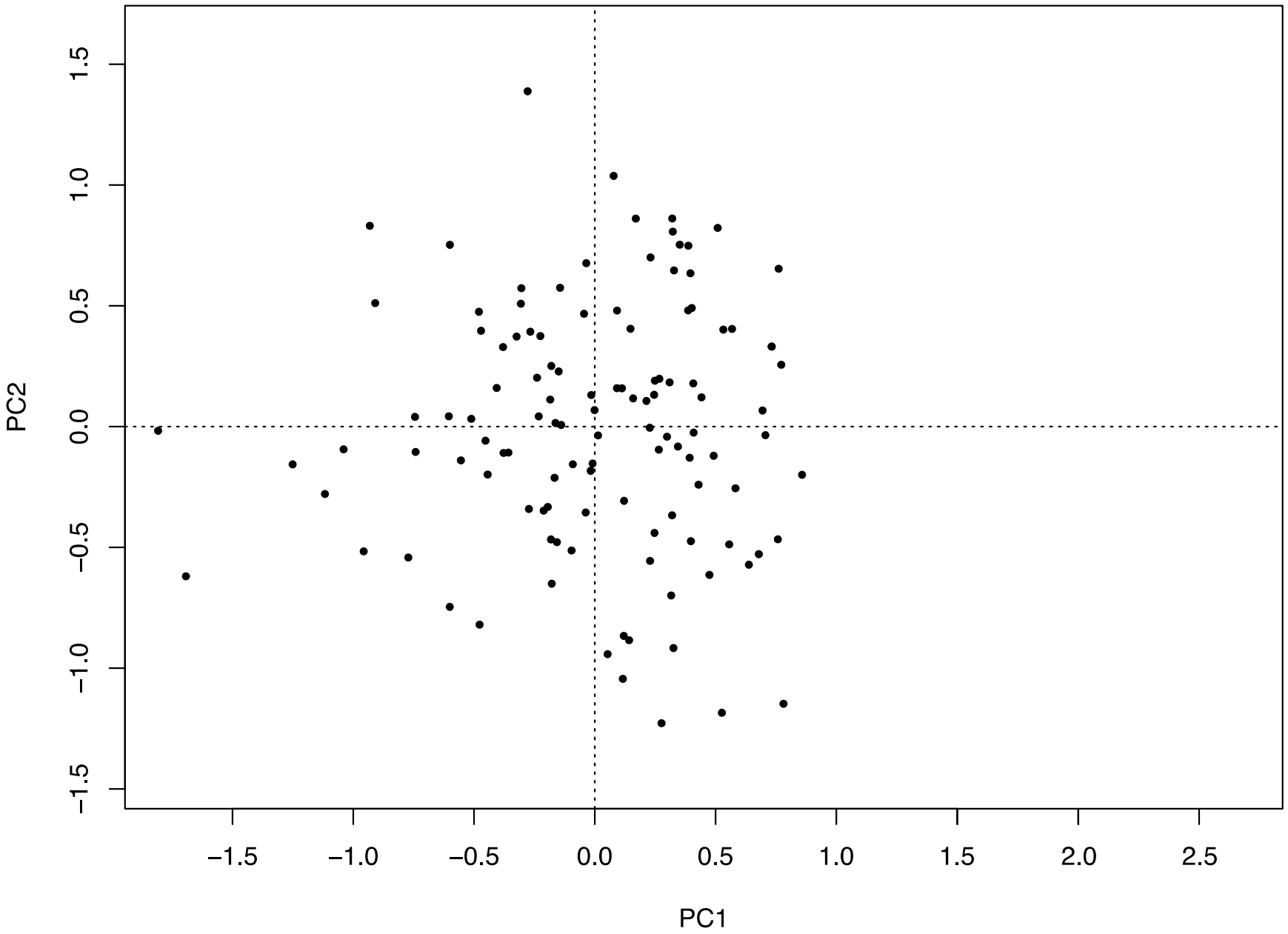

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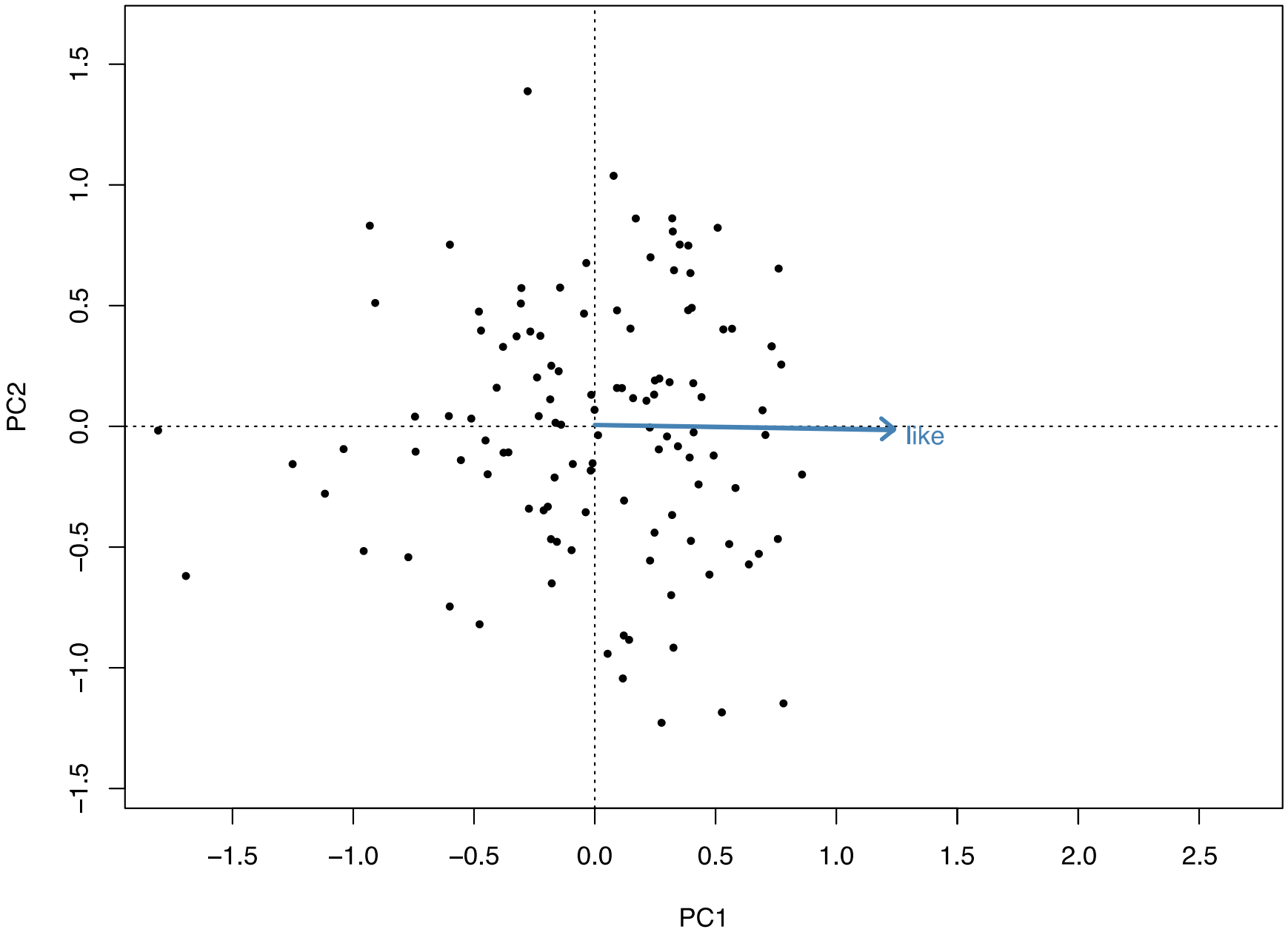

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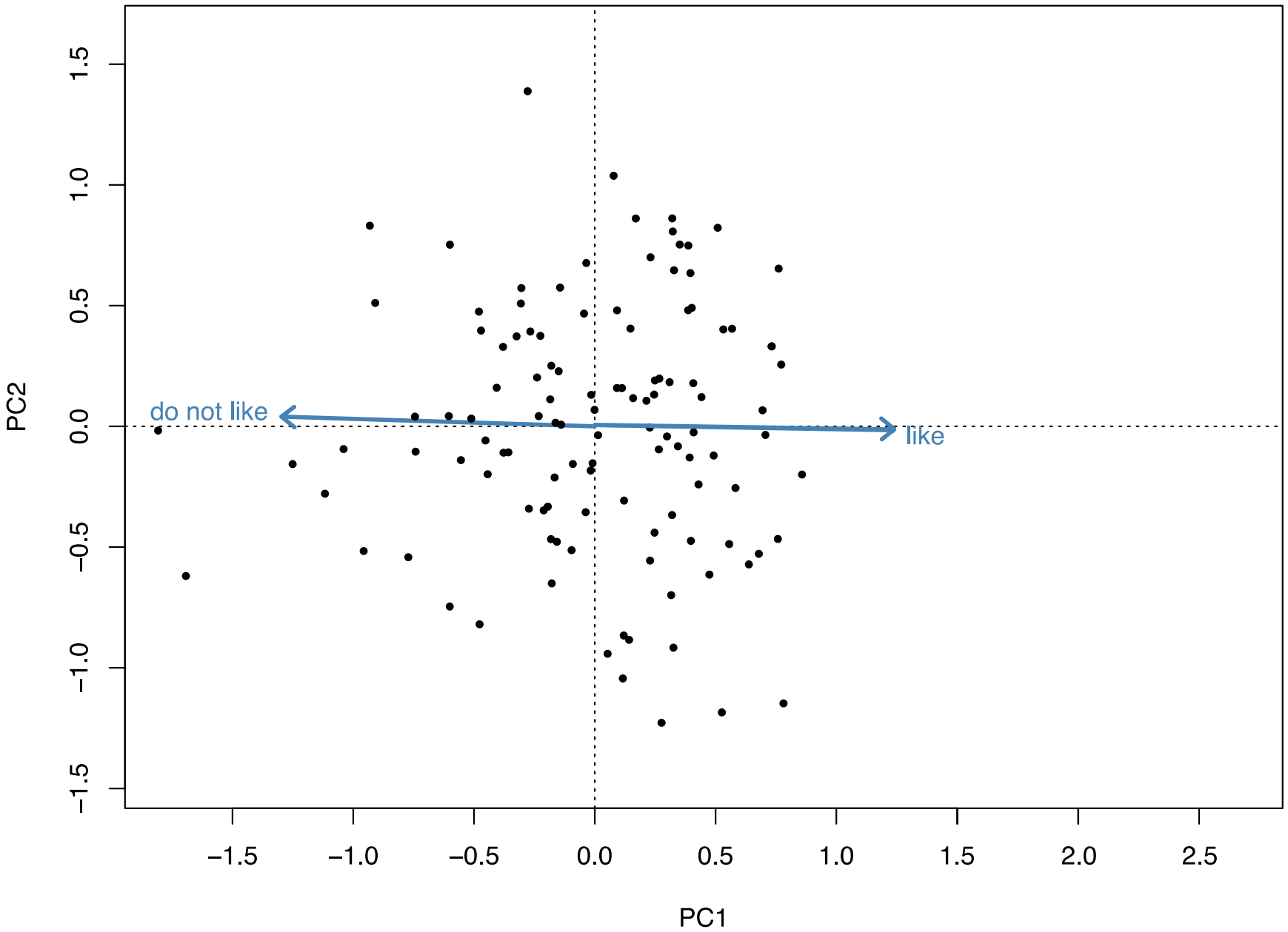

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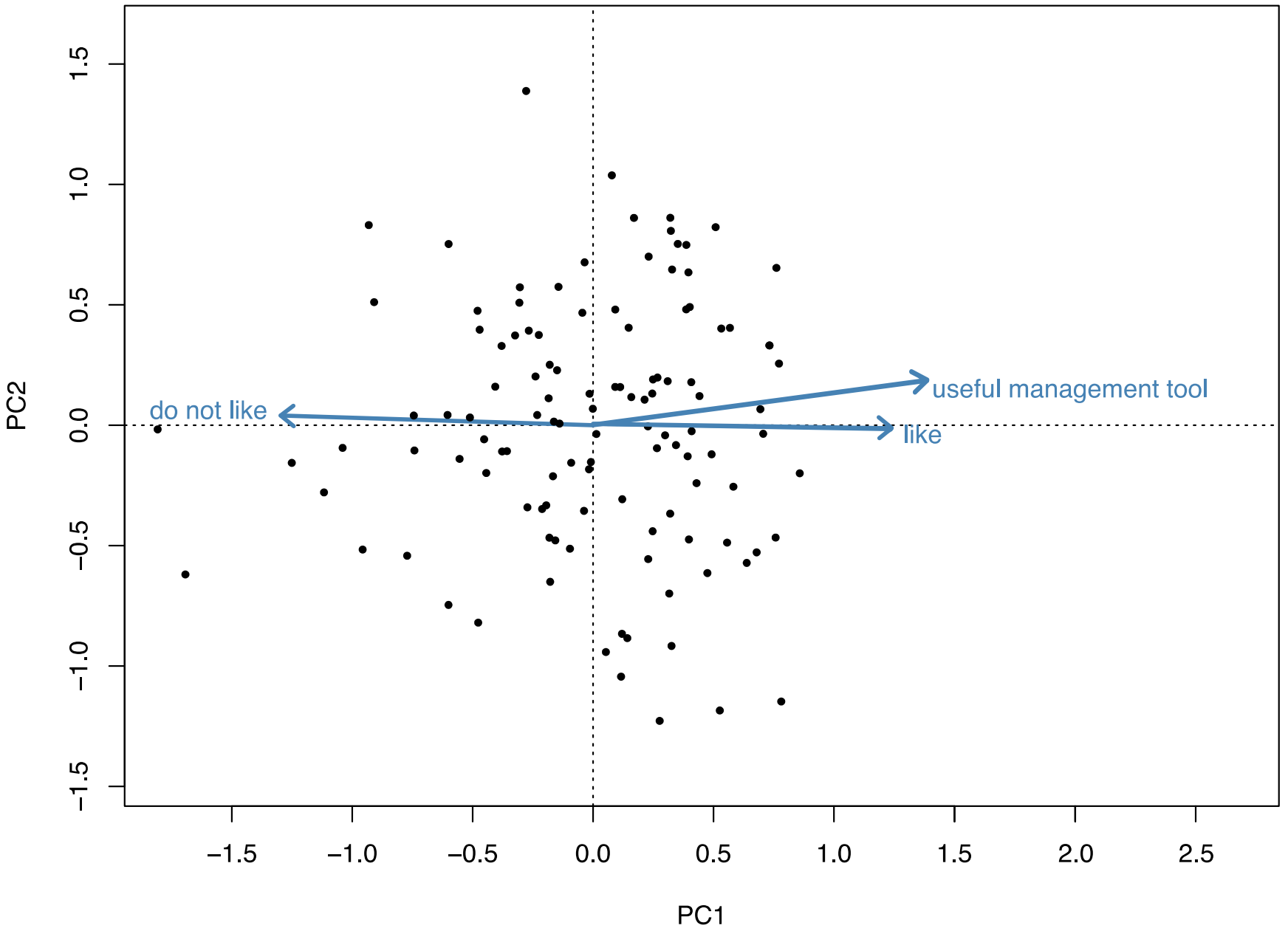

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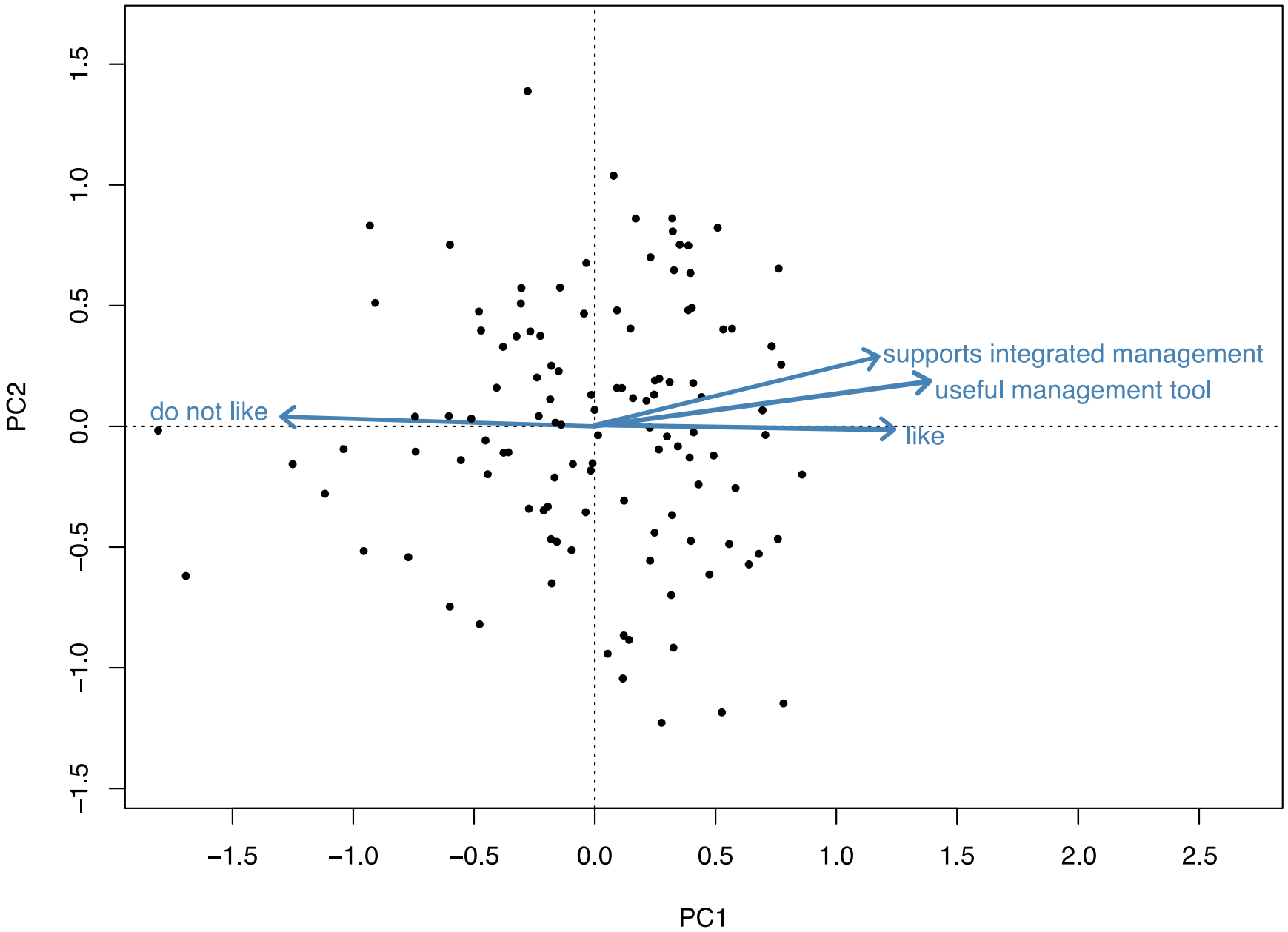

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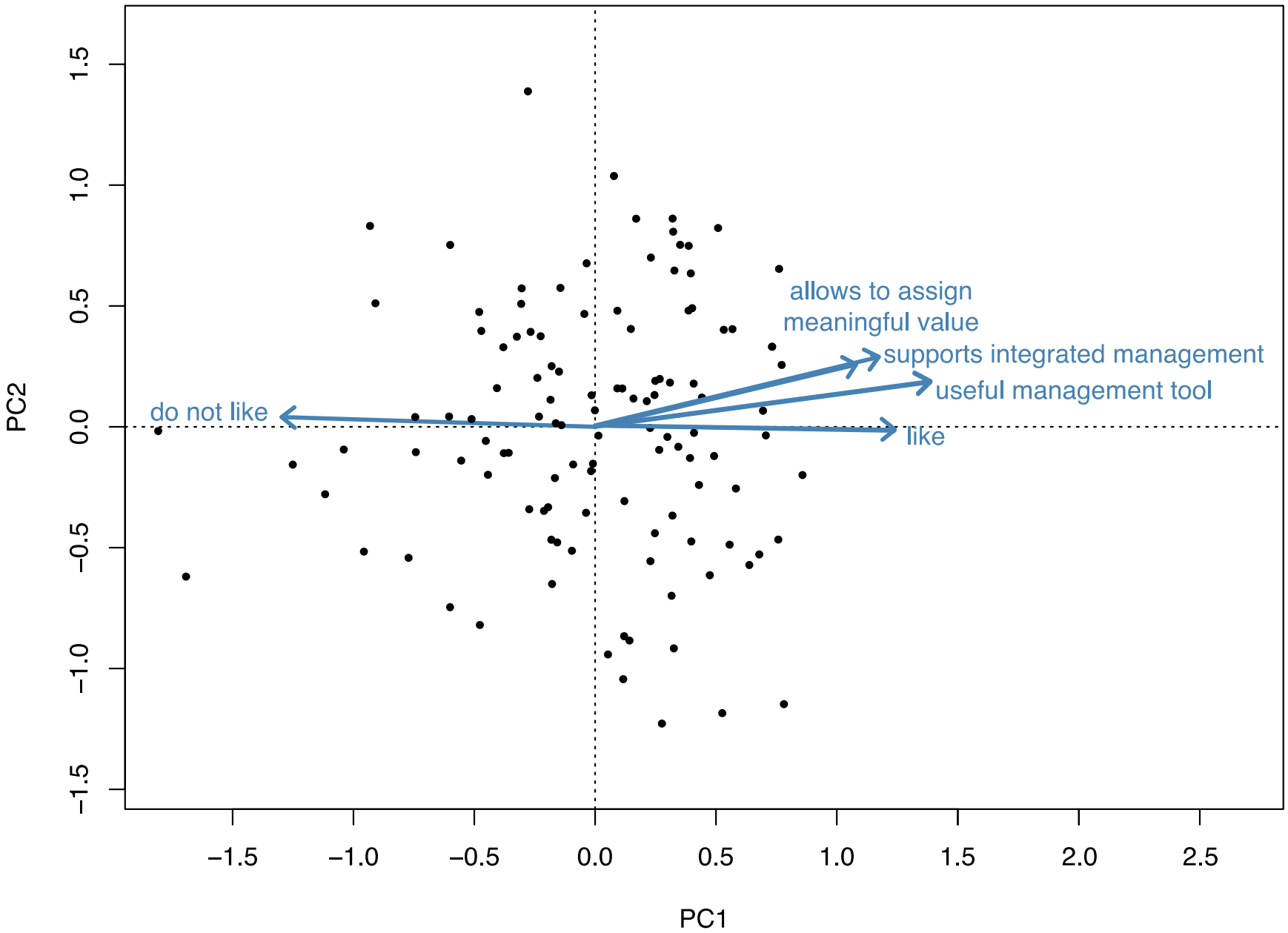

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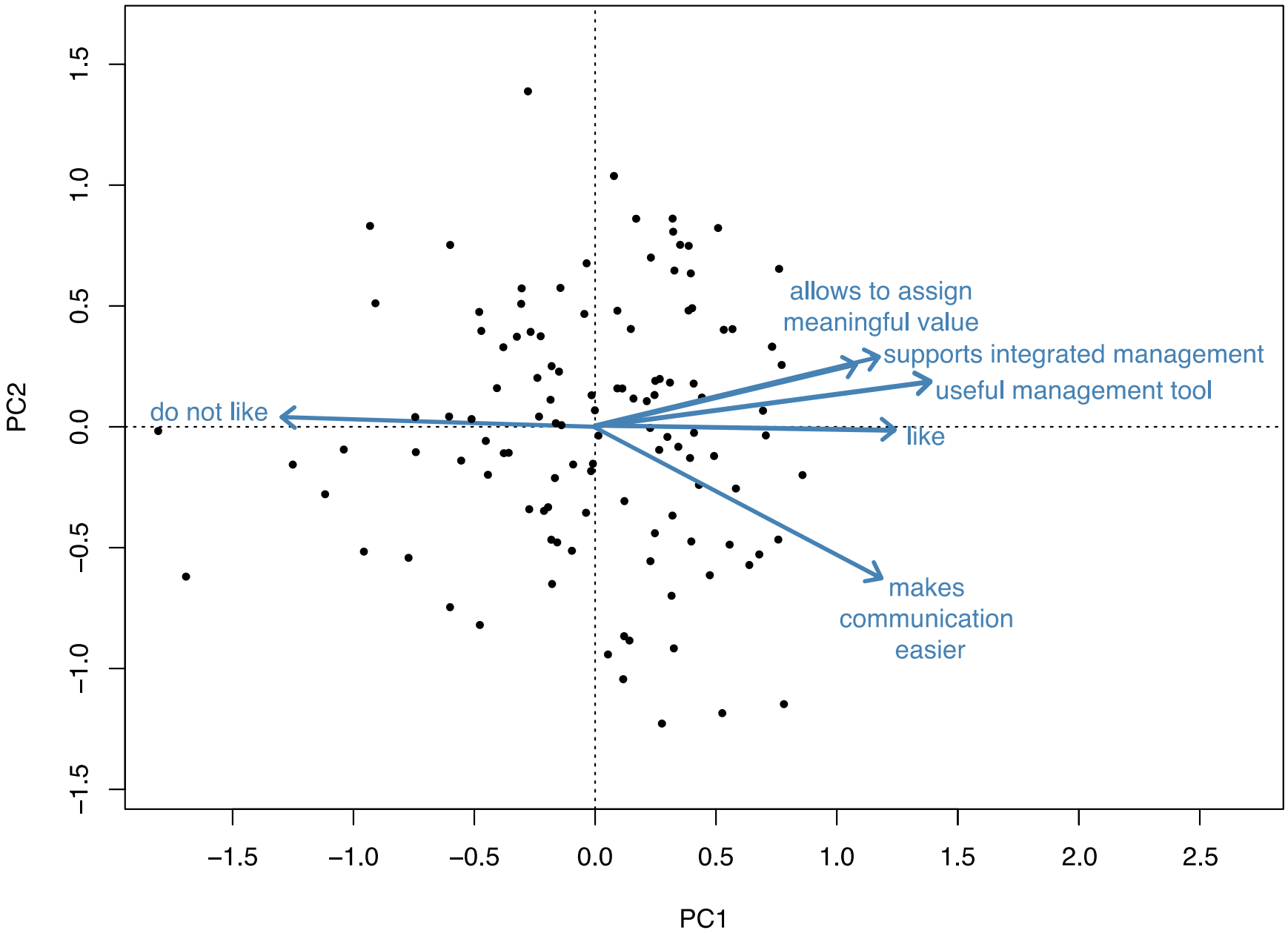

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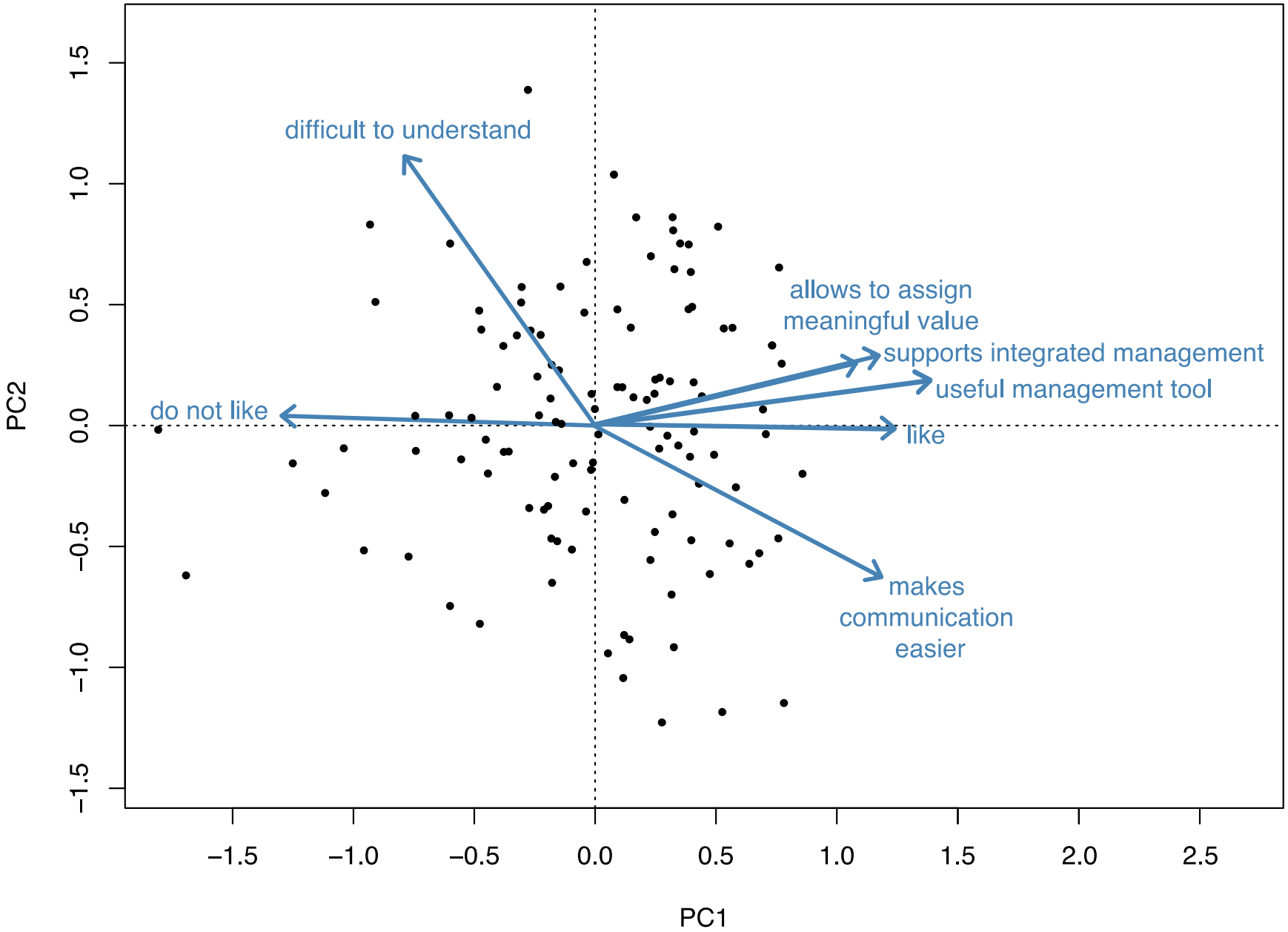

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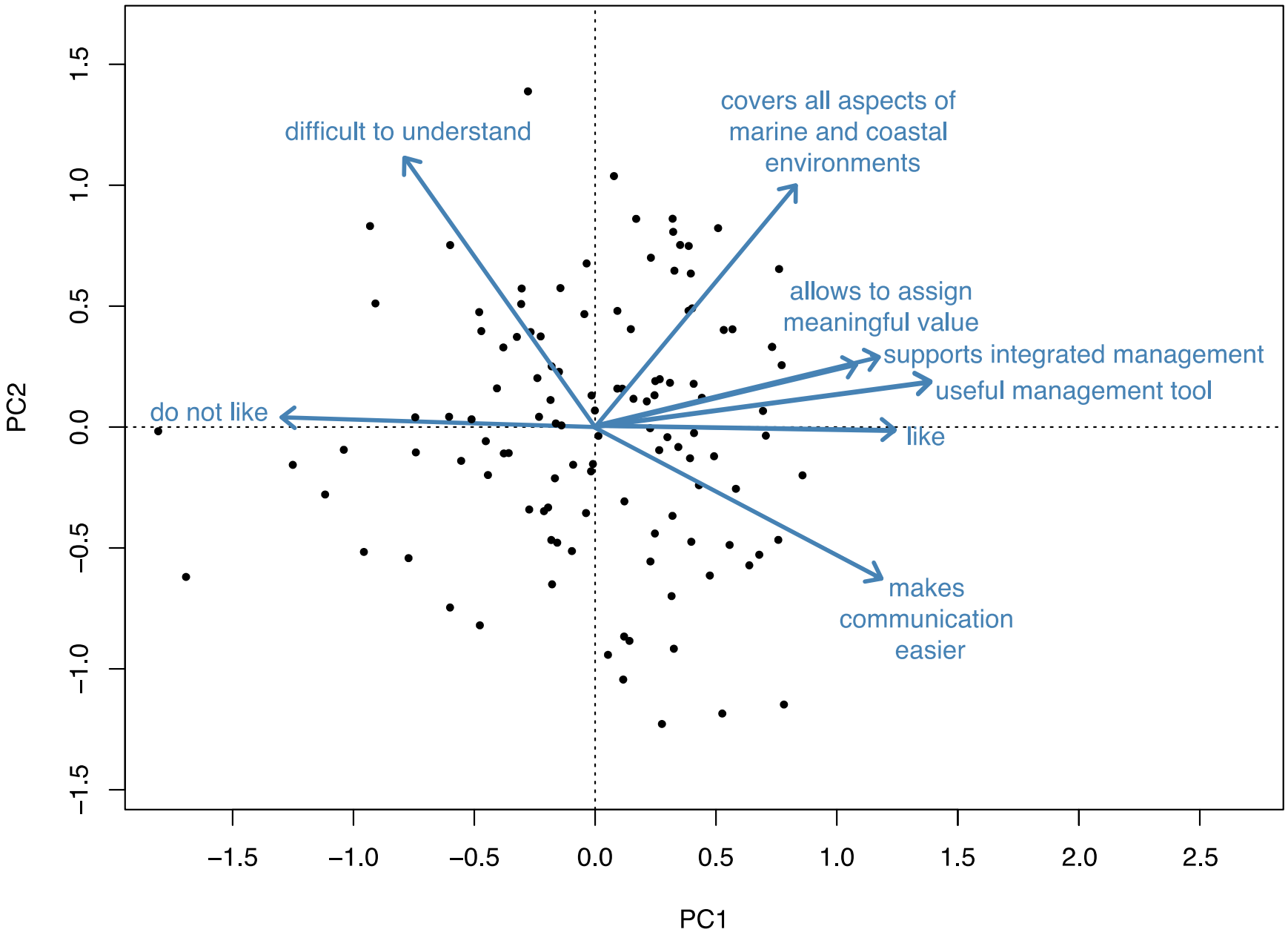
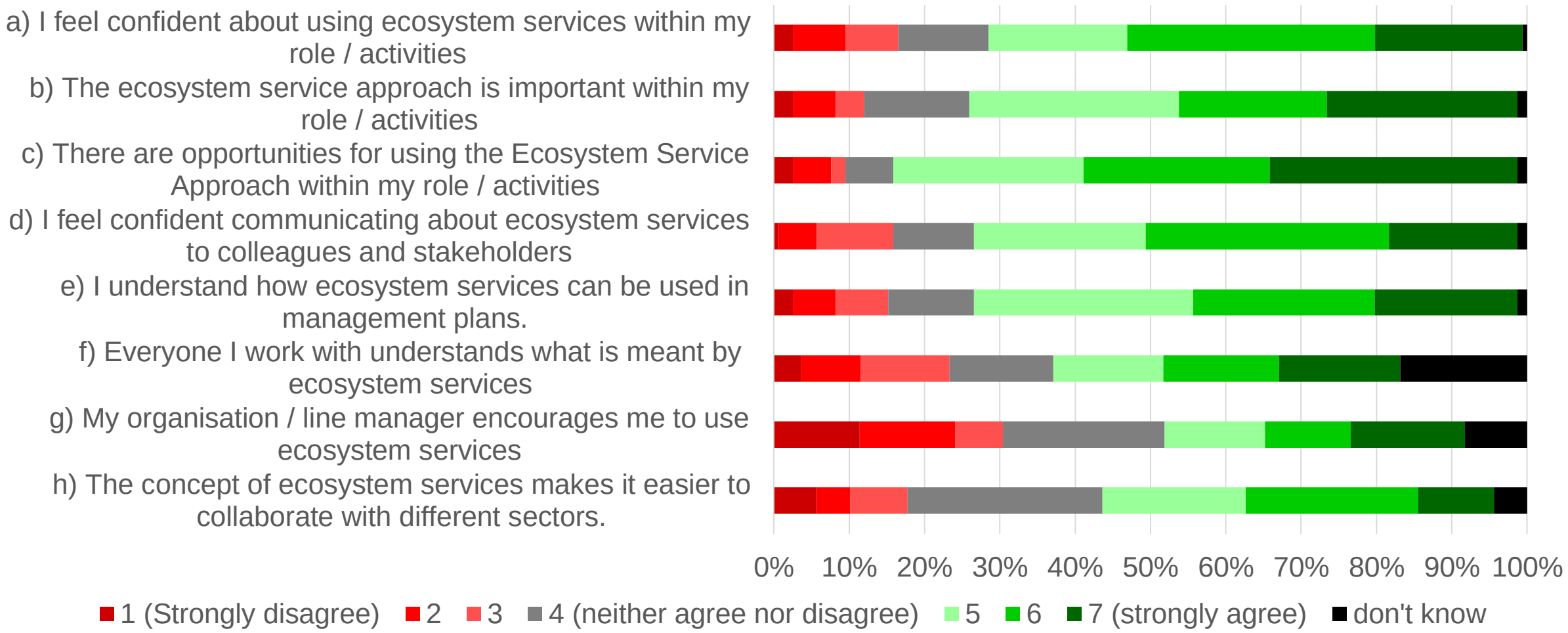
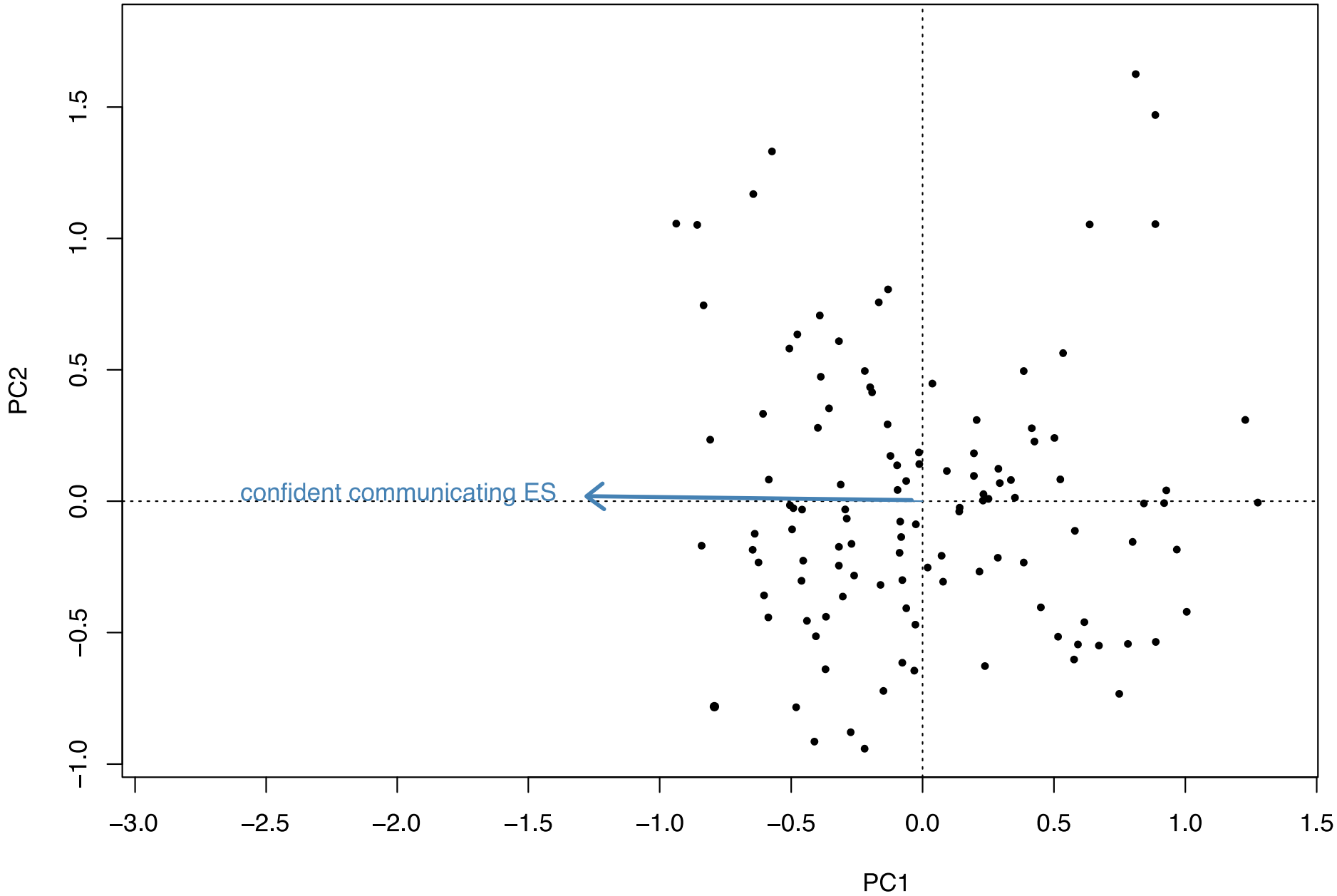


Stakeholder confidence in using ES



How confident are you in using ecosystem services in a professional manner?



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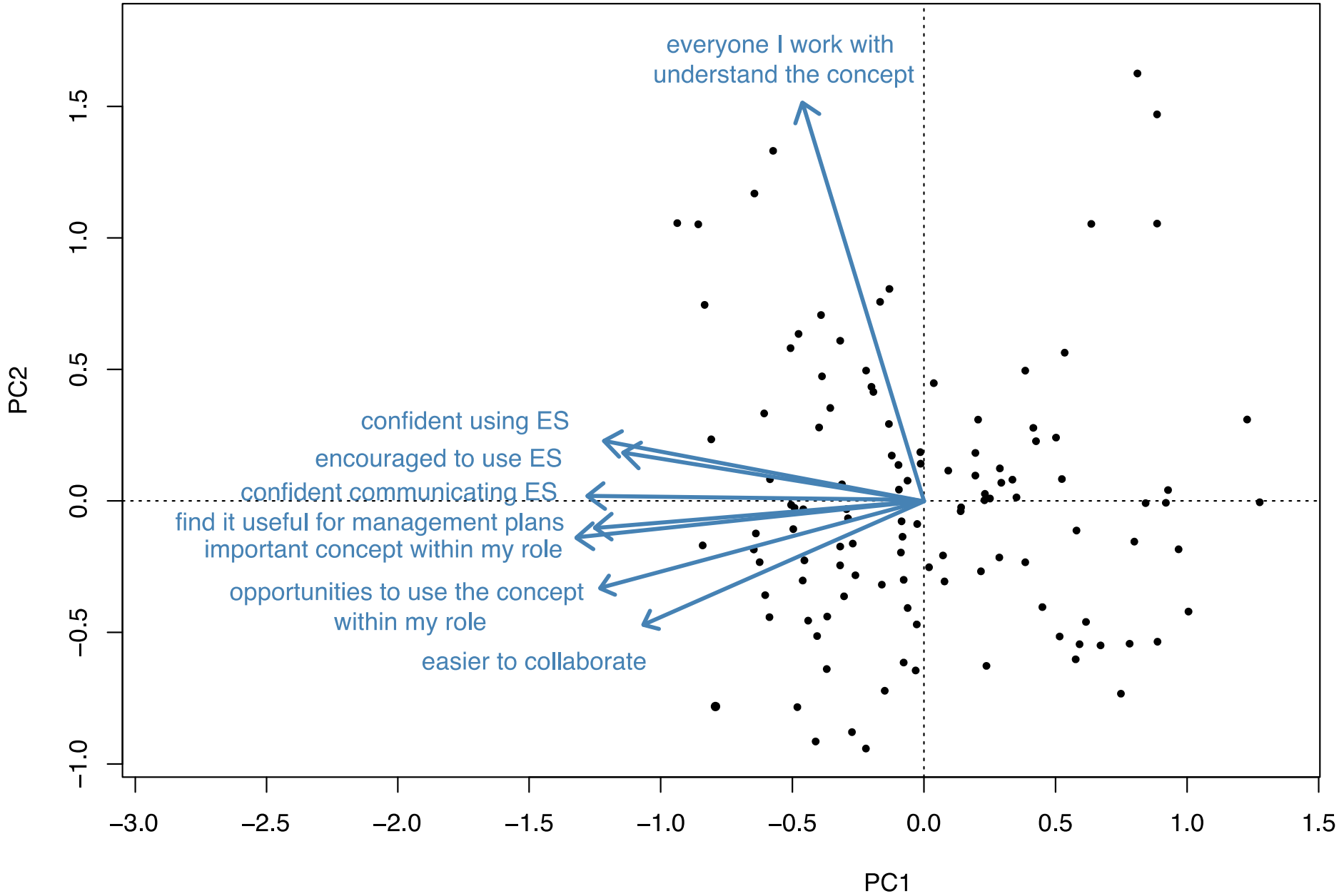
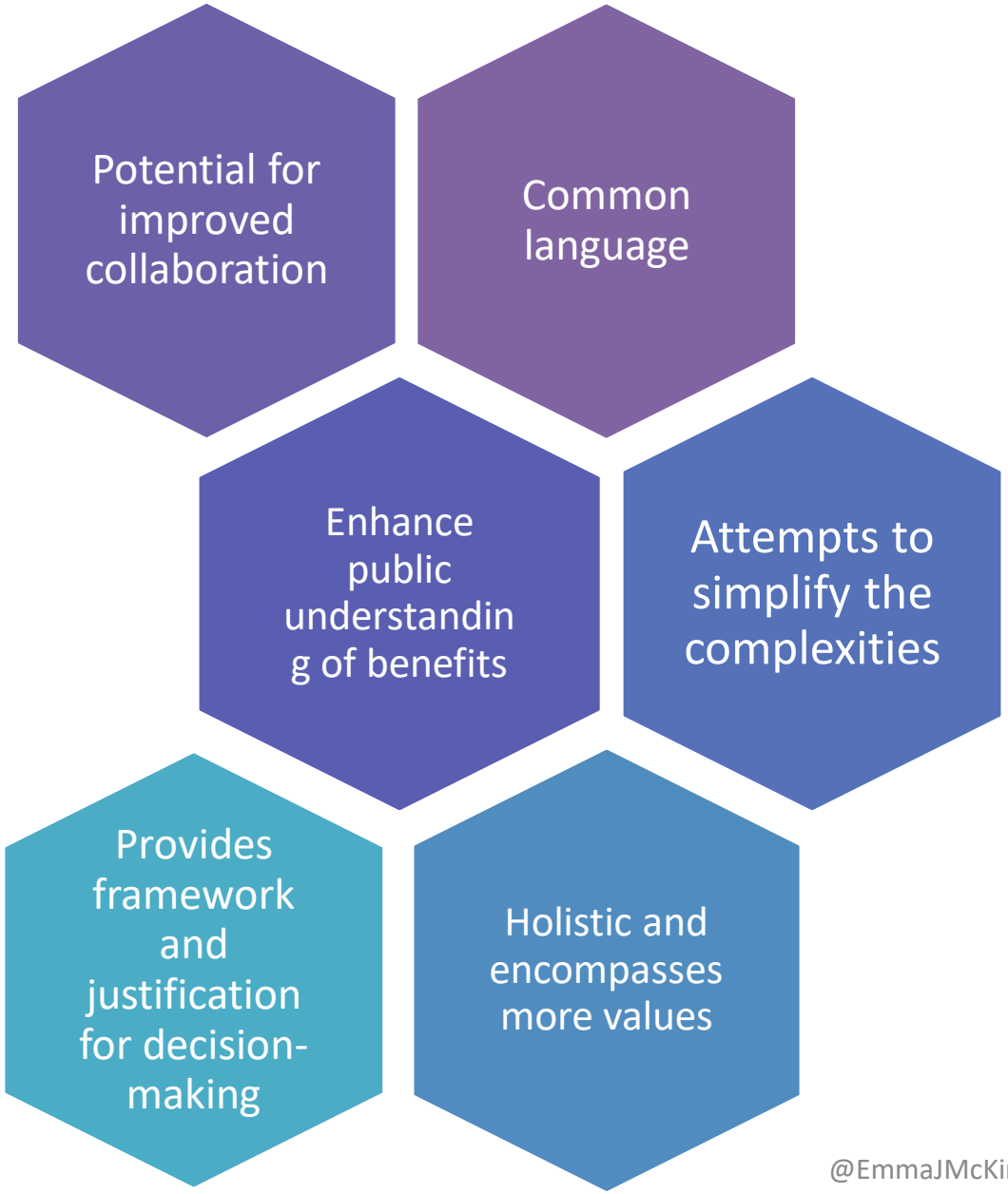
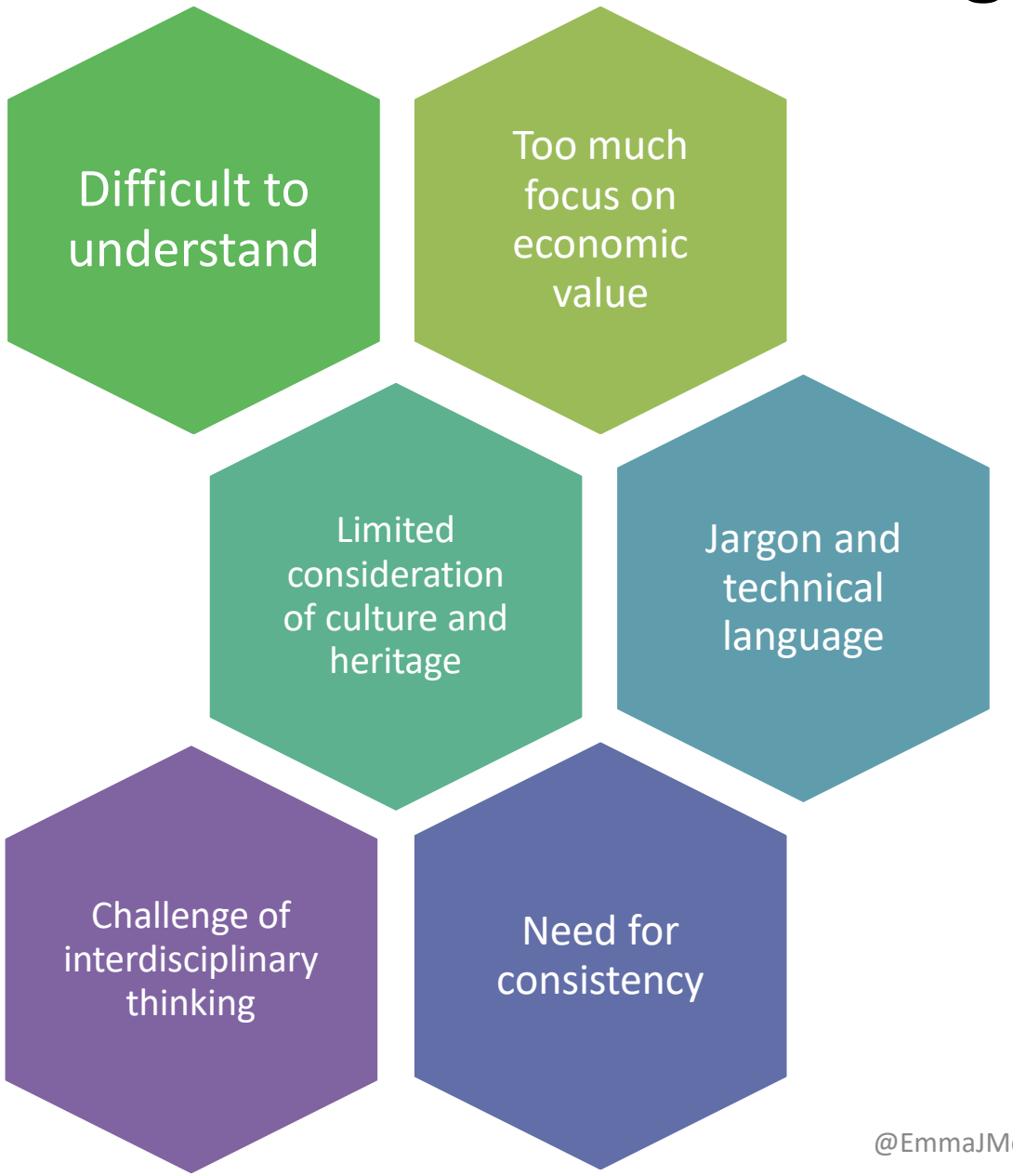


Advantages of ES



- *"They allow **measurement** of things that otherwise may have been forgotten or ignored, and can **communicate** to people that they get more from the natural world than they realise"*
- *"They promote **a wider understanding of the benefits** of protecting and managing the natural environment, not just for it's own sake but because of societal needs. They are **useful communication tool** in this regard (though we normally talk more about benefits than goods and services now as considered more understandable terminology)"*
- *"It puts an **economic cost** on protecting the environment **which can be used to convince decision-makers, businesses, local communities of the benefits** of preserving and improving the environment, and the detrimental costs if we do not protect and enhance it."*

What are the Challenges and Barriers to its use?



"Some classifications of ecosystem services are **difficult for people to understand** - in particular regulating and supporting services as these are often linked to quite indirect benefits of ecosystem functioning"

"I worry that if there's an important ecosystem that needs protecting for it's intrinsic environmental value but it doesn't have a very strong economical case that these important sites will be overlooked."

"The **language** can **be impenetrable** to some audiences."

"Many marine ecosystems processes and functions are **not properly reflected** in the description of services"

Improvements for the future?

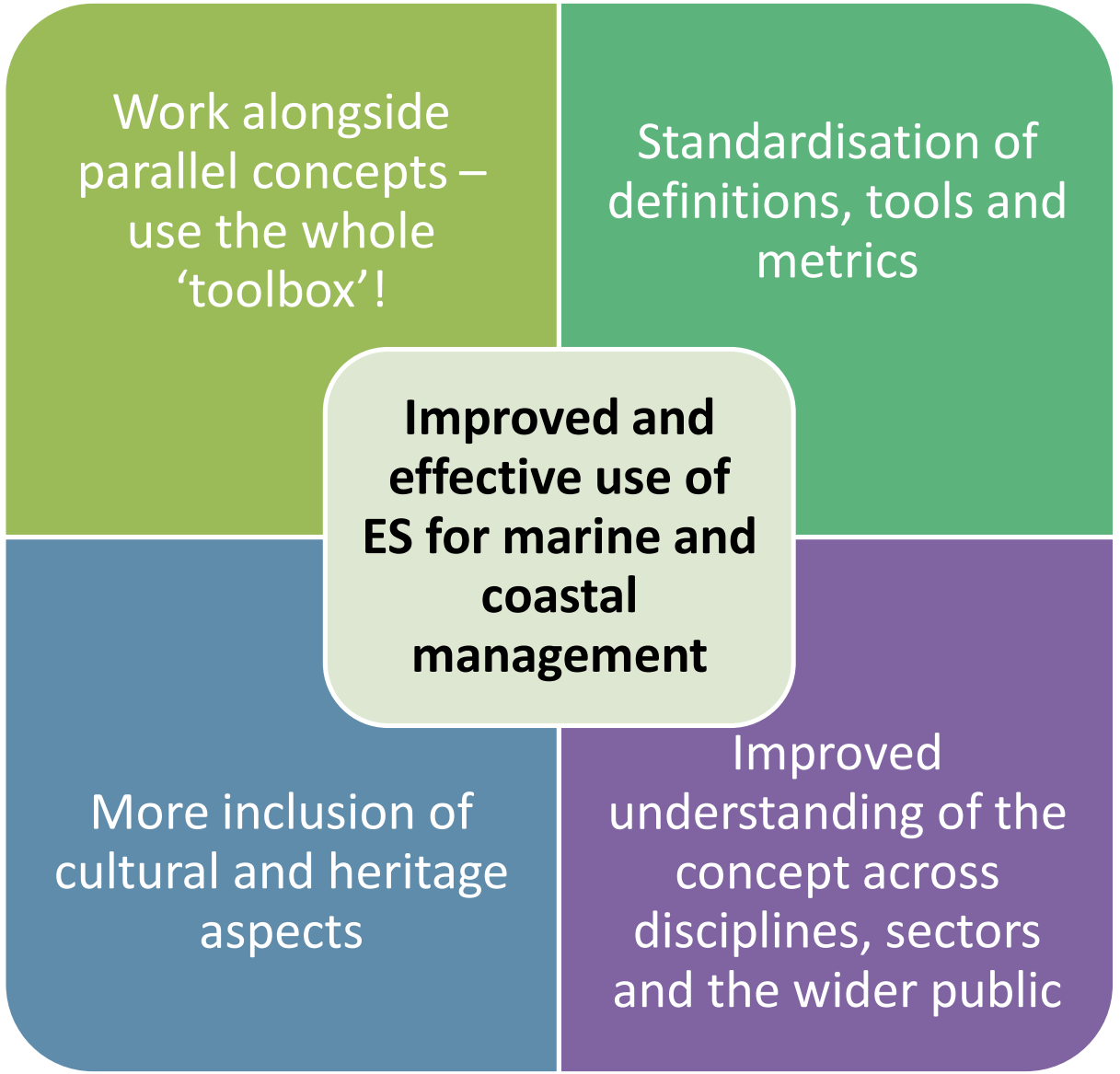
“I don’t know….I'm pessimistic”

“Recognise that this is not the complete answer, it is just a tool which can help to make some comparative values clearer - there is a danger that the concept becomes the important thing and not the place”

“Media champions”

“Use of accessible and appropriate language”

“more research to understand the mental health and well-being benefits”



Review of Research Questions

What are user/ practitioners perceptions/ attitudes towards the concept of ES?	Generally positive – although recognition of weaknesses and opportunities for improvement.
How do they differ between user groups?	Surprisingly limited differences across the sectors – however, the longer you have been working within your sector, the less likely you are to 'like' the ES concept.
How do these attitudes/ views influence the use of the concept?	Generally, those who like the concept more, are those who use it more…….
Does ES support the science-policy-practice interface for marine and coastal management?	Yes……but not completely!

To Summarise:

- ES remains complex – we need:
  - Standardisation of terms, concepts, methods of measuring different values.
  - A clearer understanding of what is meant by ES across all sectors and disciplines.
  - Improved consideration of cultural values (e.g. heritage) within ES discussions.
- Opportunity to align with parallel frameworks and tools.
- Opportunity to work across disciplines to ensure that ES succeeds in providing a ‘common language’

Future work and Upcoming Events

HOME CONFERENCE PROGRAM LOCATION EXHIBITION & SPONSORSHIP DEADLINES CONTACT US

ECSA 57: Changing estuaries, coasts and shelf systems - Diverse threats and opportunities

3-6 September 2018 | Pan Pacific Perth, Perth, WA, Australia

Submit your abstract! Deadline: 9th March 2018.

Welcome to ECSA's next major symposium, ECSA 57: Changing estuaries, coasts and shelf systems - Diverse threats and opportunities, which will take place from the 3-6 September 2018 in Pan Pacific Perth, Perth, WA, Australia.

The structure and functioning of our estuaries and seas are shifting due to diverse drivers from local to global scales. The resulting threats to these systems are often all too apparent, yet such changes can also present new opportunities. The challenge is to harness these opportunities through new ways of thinking, scientific developments, innovative technology and more effective integration of science and management.

Register Now

Submit Abstract

View Program

Conference Chairs

Conference Chairs

Fiona Valesini, *Murdoch University, Australia*

Chris Hallett, *Murdoch University, Australia*

Matt Hipsey, *University of Western Australia, Australia*

http://www.estuarinecoastalconference.com/special-session-3j.asp

Thank you

For your responses and your involvement in this research

Contact Details:

mckinleye1@Cardiff.ac.uk

Project websites:

RESILCOAST: http://www.nrn-lcee.ac.uk/resilcoast/

CoastWEB: http://valuing-nature.net/coastweb

References

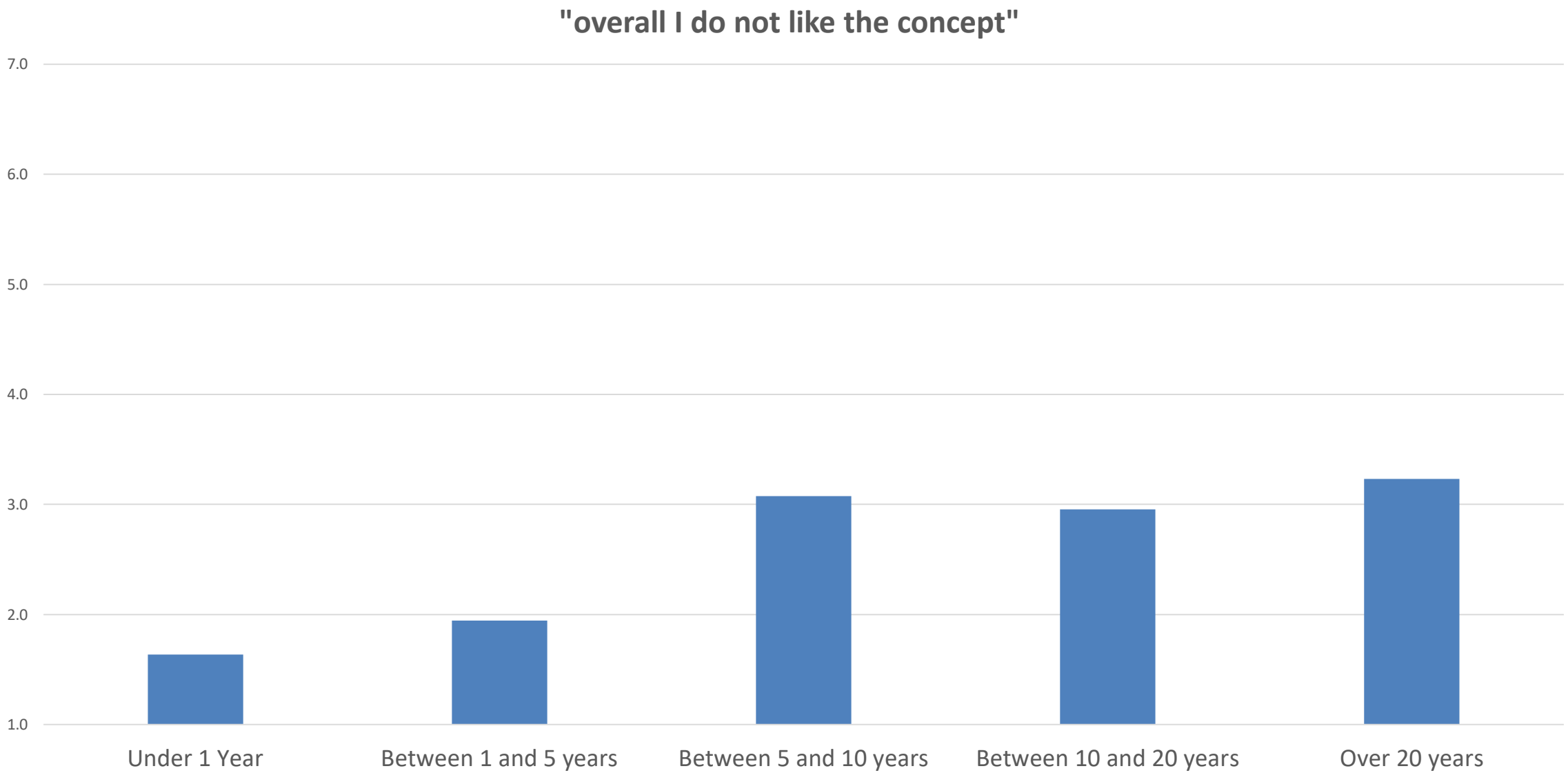
Extra slides……

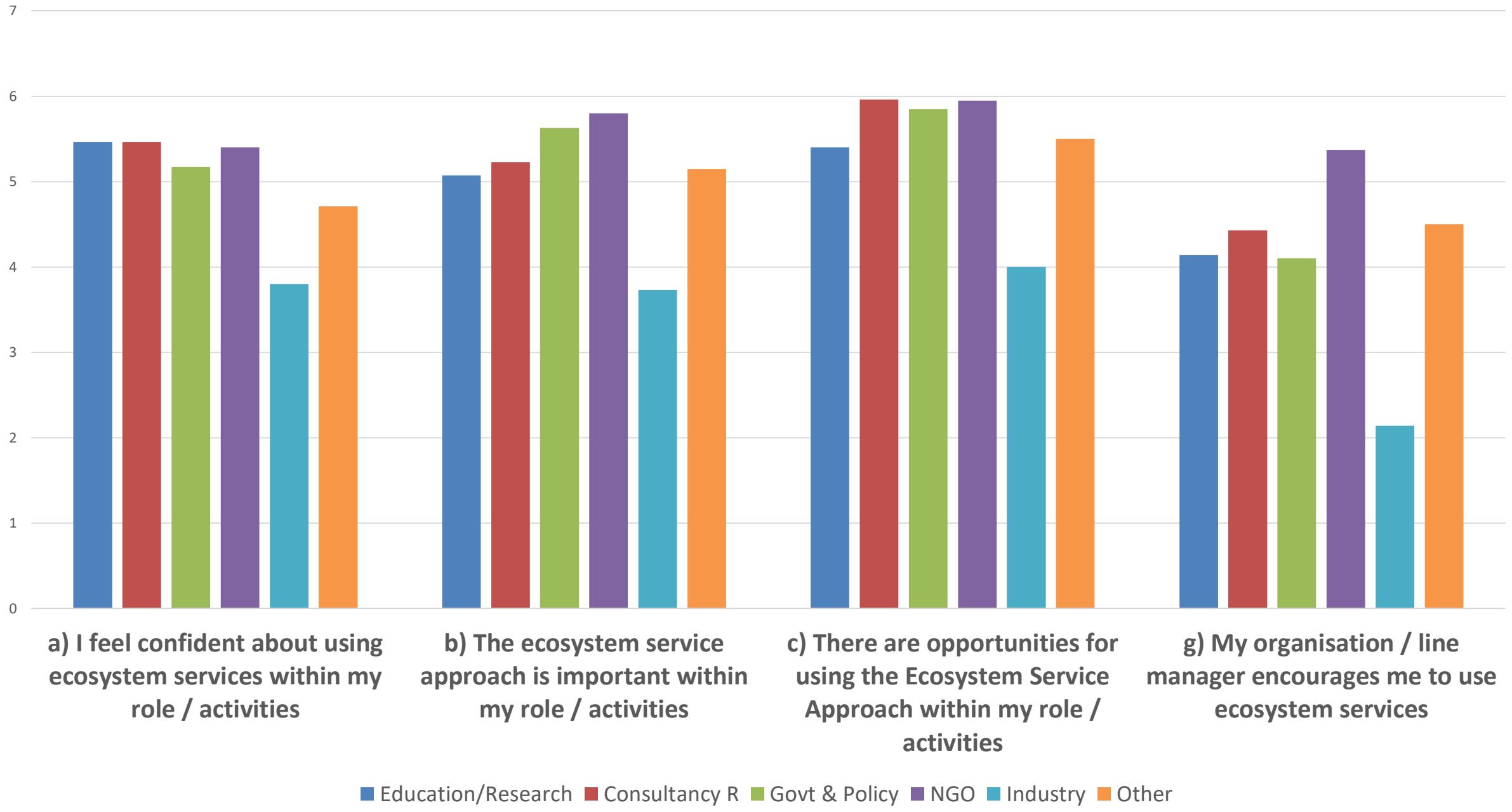
Ecosystem Services: An accepted term?

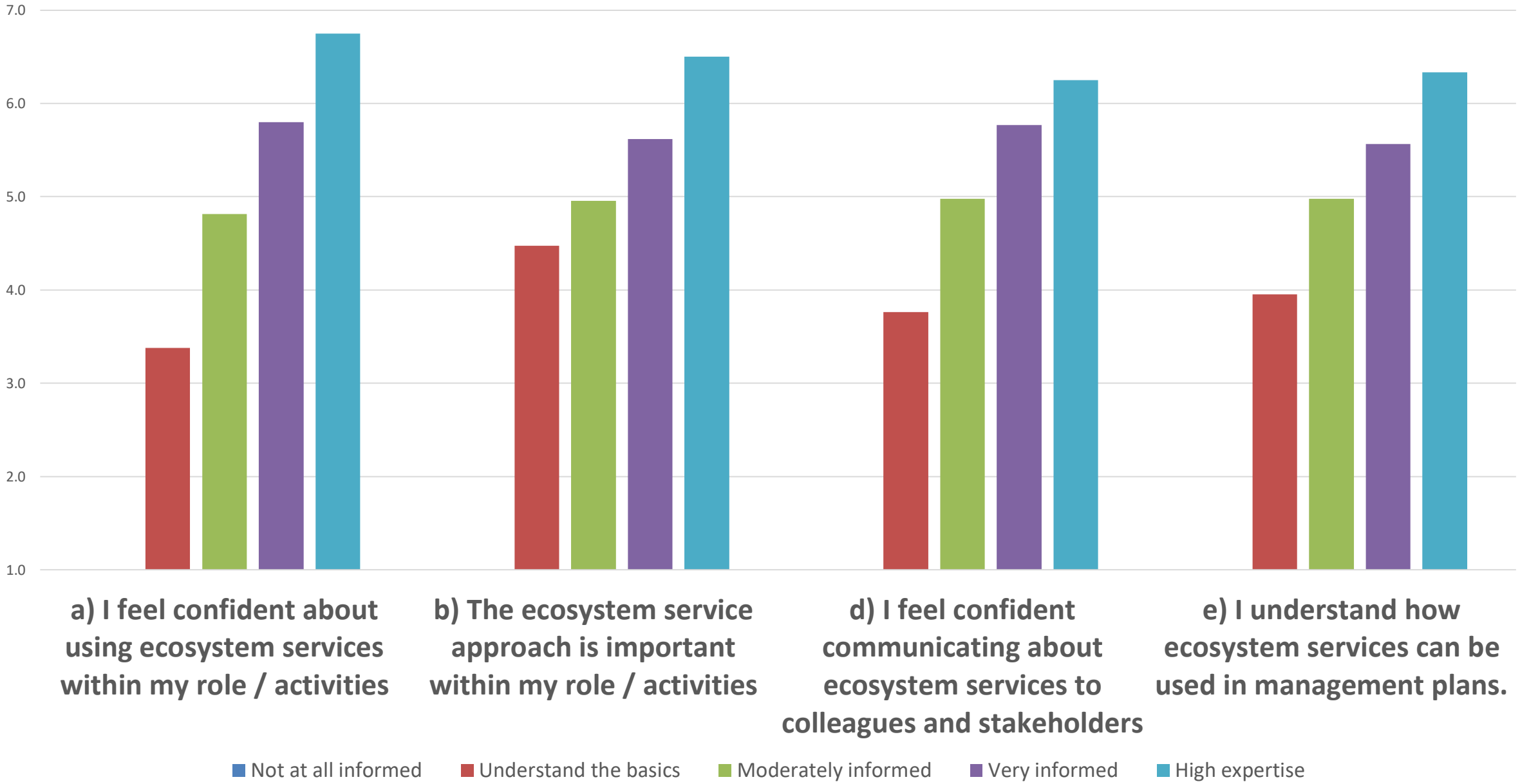
"The ecosystem approach can be part of a larger solution, but its dominance in our characterization of our situation and the solution is blinding us to the ecological, economic and political complexities of the challenges we face" – Norgaard, 2010.

"Contrary to the claim that there is no choice about how we define nature [monetizing it or not], there are clear alternatives to each one of the conceptual developments that has taken place [after Constanza's paper putting monetary value to the world's ecosystems]...**Whether one believes that any of these conceptual developments is right or wrong, it is important to appreciate that all have involved choices that have, often invisibly, shaped our thinking about nature**." – Silvertown, 2015

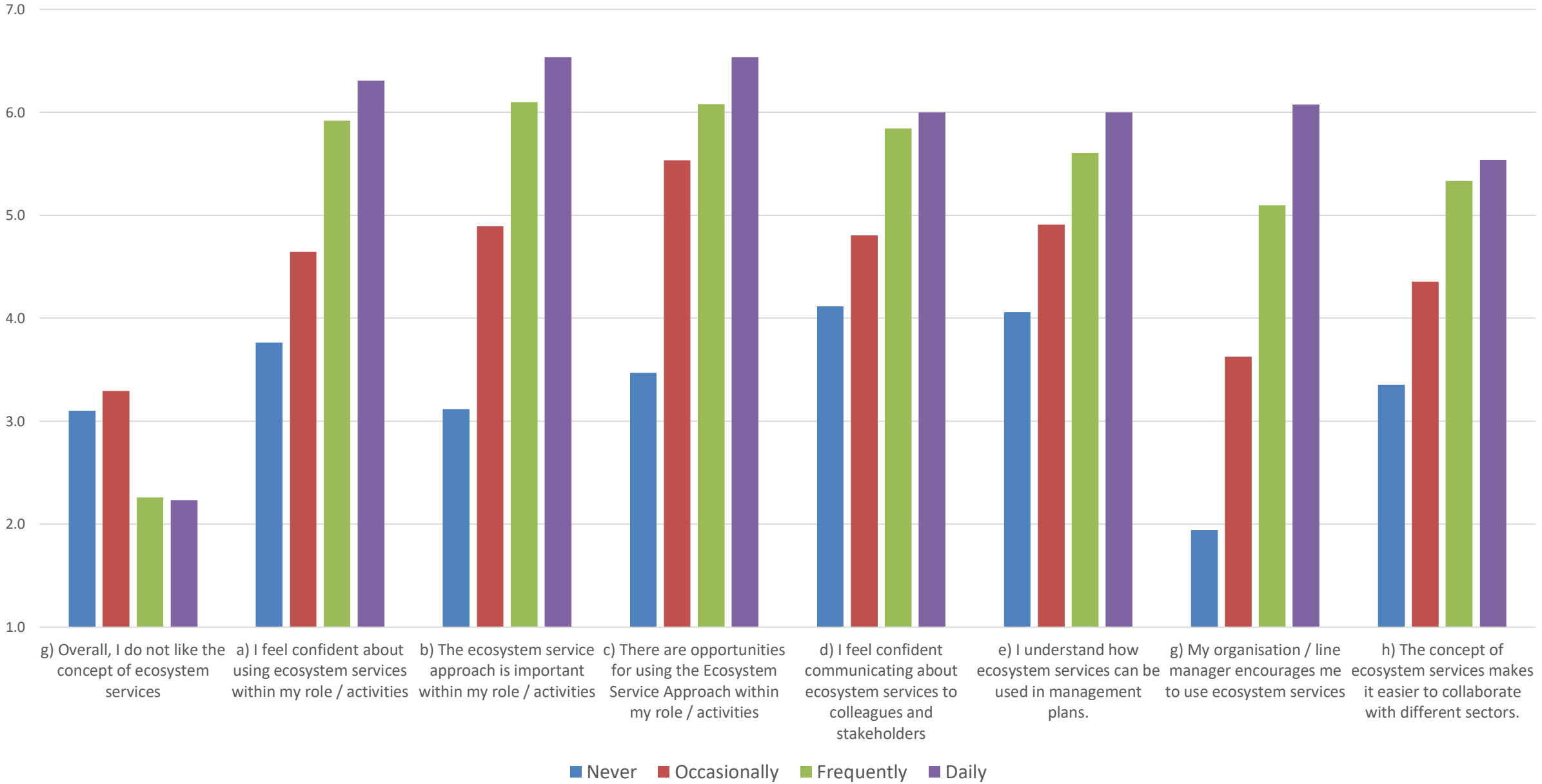
Interactions -> Do perceptions differ depending on a range of factors?


"overall I do not like the concept"
7.0
6.0
5.0
4.0
3.0
2.0
1.0
Under 1 Year
Between 1 and 5 years
Between 5 and 10 years
Between 10 and 20 years
Over 20 years


7
6
5
4
3
2
1
0
a) I feel confident about using ecosystem services within my role / activities
b) The ecosystem service approach is important within my role / activities
c) There are opportunities for using the Ecosystem Service Approach within my role / activities
g) My organisation / line manager encourages me to use ecosystem services
Education/Research
Consultancy R
Govt & Policy
NGO
Industry
Other

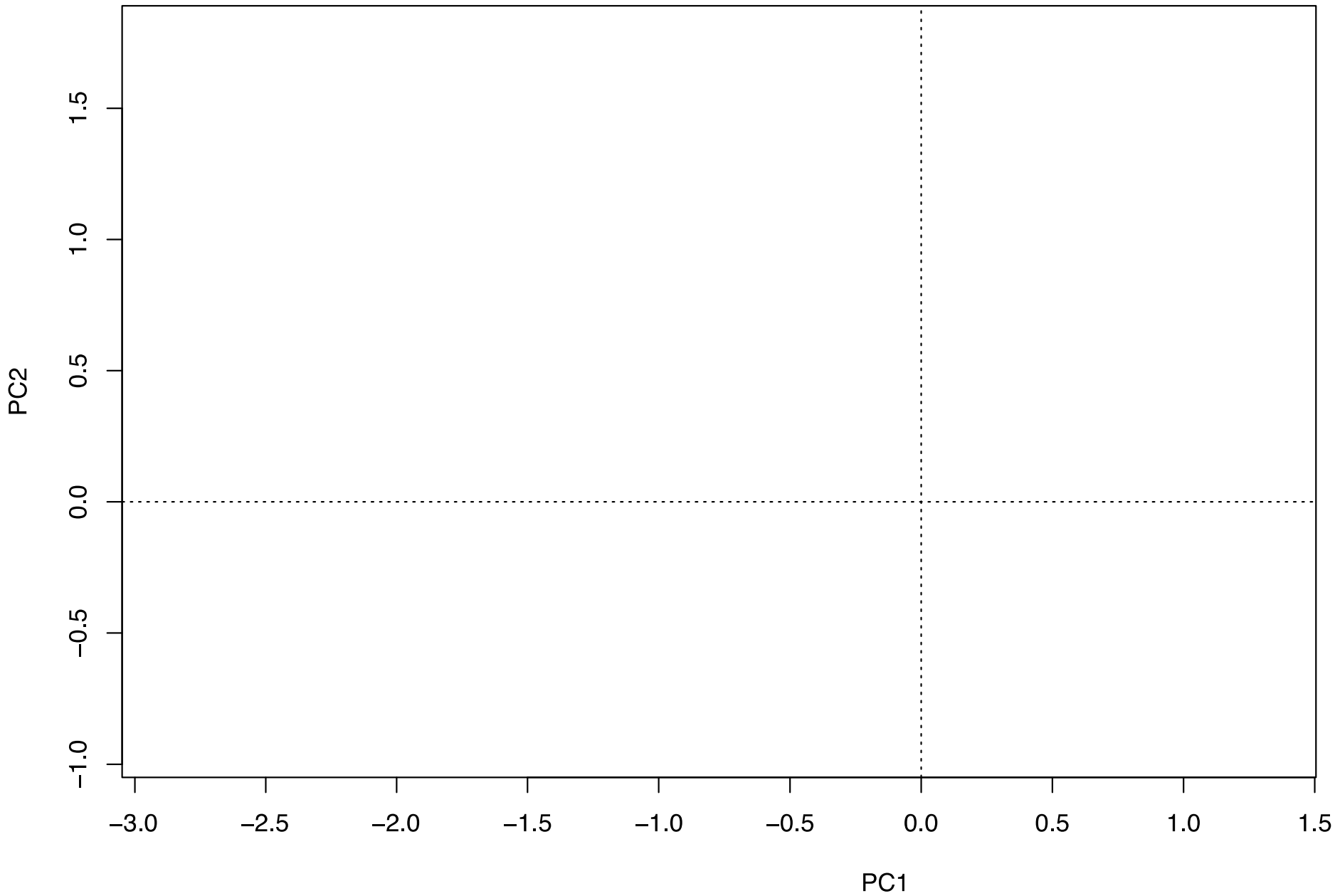

7.0
6.0
5.0
4.0
3.0
2.0
1.0
a) I feel confident about using ecosystem services within my role / activities
b) The ecosystem service approach is important within my role / activities
d) I feel confident communicating about ecosystem services to colleagues and stakeholders
e) I understand how ecosystem services can be used in management plans.
Not at all informed
Understand the basics
Moderately informed
Very informed
High expertise

Demographics		Work	
Gender	✗	Sector	✓ (some)
Age	✗	Duration in field	✓ (one marginal effect)
Region	N/A	How often they use ES	✓
Education	✗	Their self-reported knowledge on ES	✓

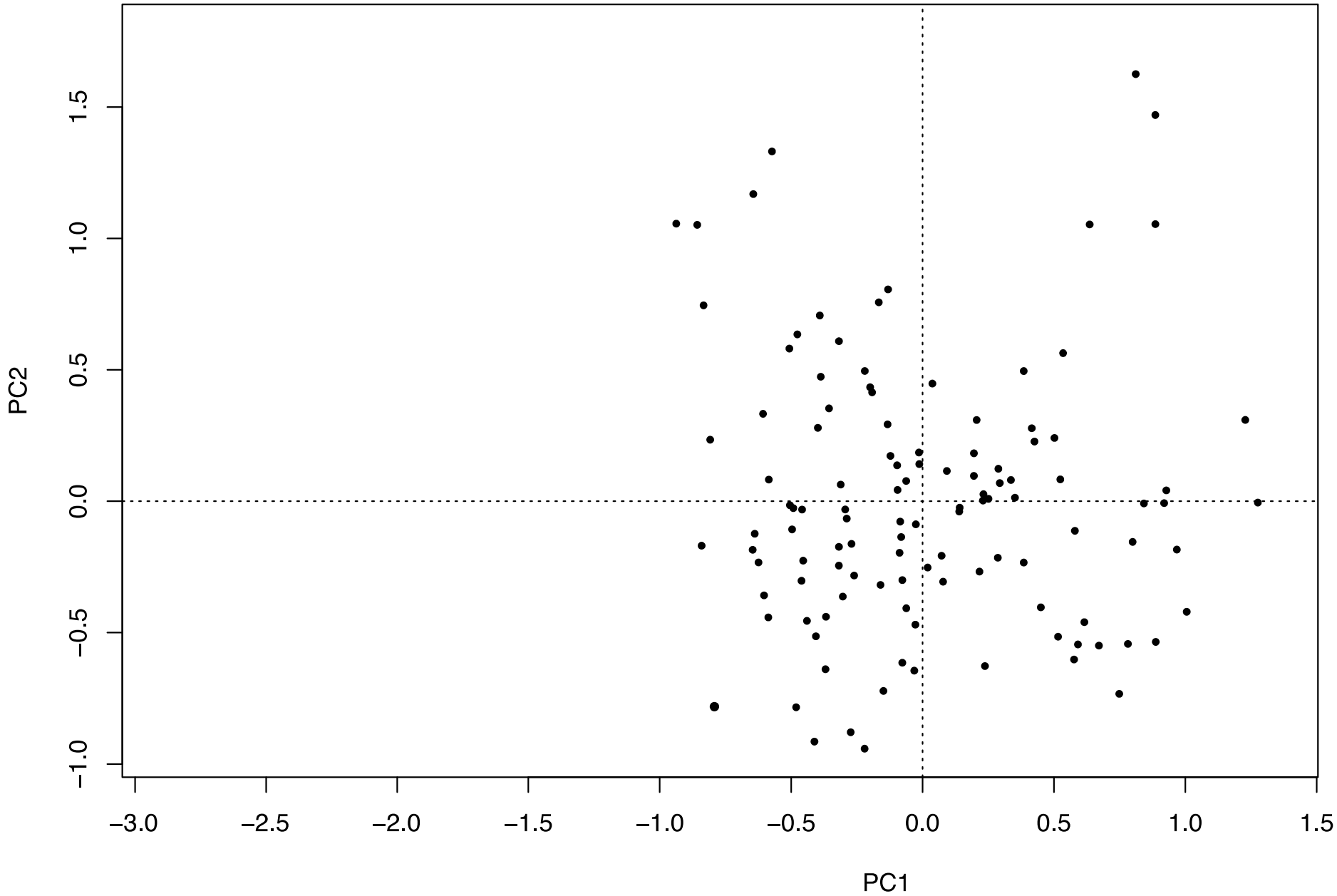

7.0
6.0
5.0
4.0
3.0
2.0
1.0
g) Overall, I do not like the concept of ecosystem services
a) I feel confident about using ecosystem services within my role / activities
b) The ecosystem service approach is important within my role / activities
c) There are opportunities for using the Ecosystem Service Approach within my role / activities
d) I feel confident communicating about ecosystem services to colleagues and stakeholders
e) I understand how ecosystem services can be used in management plans.
g) My organisation / line manager encourages me to use ecosystem services
h) The concept of ecosystem services makes it easier to collaborate with different sectors.
Never
Occasionally
Frequently
Daily

Demographics		N	%
Gender			
	Male	76	48.1
	Female	75	47.5
	Prefer not to say	7	4.4
Age Group			
	18-24	10	6.3
	25-34	34	21.5
	35-44	50	31.6
	45-54	34	21.5
	55-64	18	11.4
	65 or over	12	7.6
UK based			
	Scotland	27	17.1
	England	113	71.5
	Wales	16	10.1
	Northern Ireland	2	1.3
Education			
	GCSE/ O Level or equivalent	1	.6
	A Levels or equivalent	1	.6
	Undergraduate degree	28	17.7
	Postgraduate Masters Qualification	63	39.9
	Postgraduate Doctoral Qualification	54	34.2
	Professional Qualification	11	7.0

Work Related		N	%
Employability Status			
	Employed full time	113	71.5
	Employed part time	23	14.6
	Retired	4	2.5
	Volunteer	1	.6
	Student	9	5.7
	Other	7	4.4
Sector (condensed version)			
	Education/Academic Research	42	26.6
	Consultancy Research	26	16.5
	Govt & policy	41	25.9
	NGO	20	12.7
	Industry (mixed)	15	9.5
	Other	14	8.9
Duration in field			
	Under 1 Year	11	7.0
	Between 1 and 5 years	22	13.9
	Between 5 and 10 years	29	18.4
	Between 10 and 20 years	50	31.6
	Over 20 years	44	27.8


How confident are you in using ecosystem services in a professional manner?
PC2
1.5
1.0
0.5
0.0
−0.5
−1.0
−3.0
−2.5
−2.0
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
PC1

How confident are you in using ecosystem services in a professional manner?



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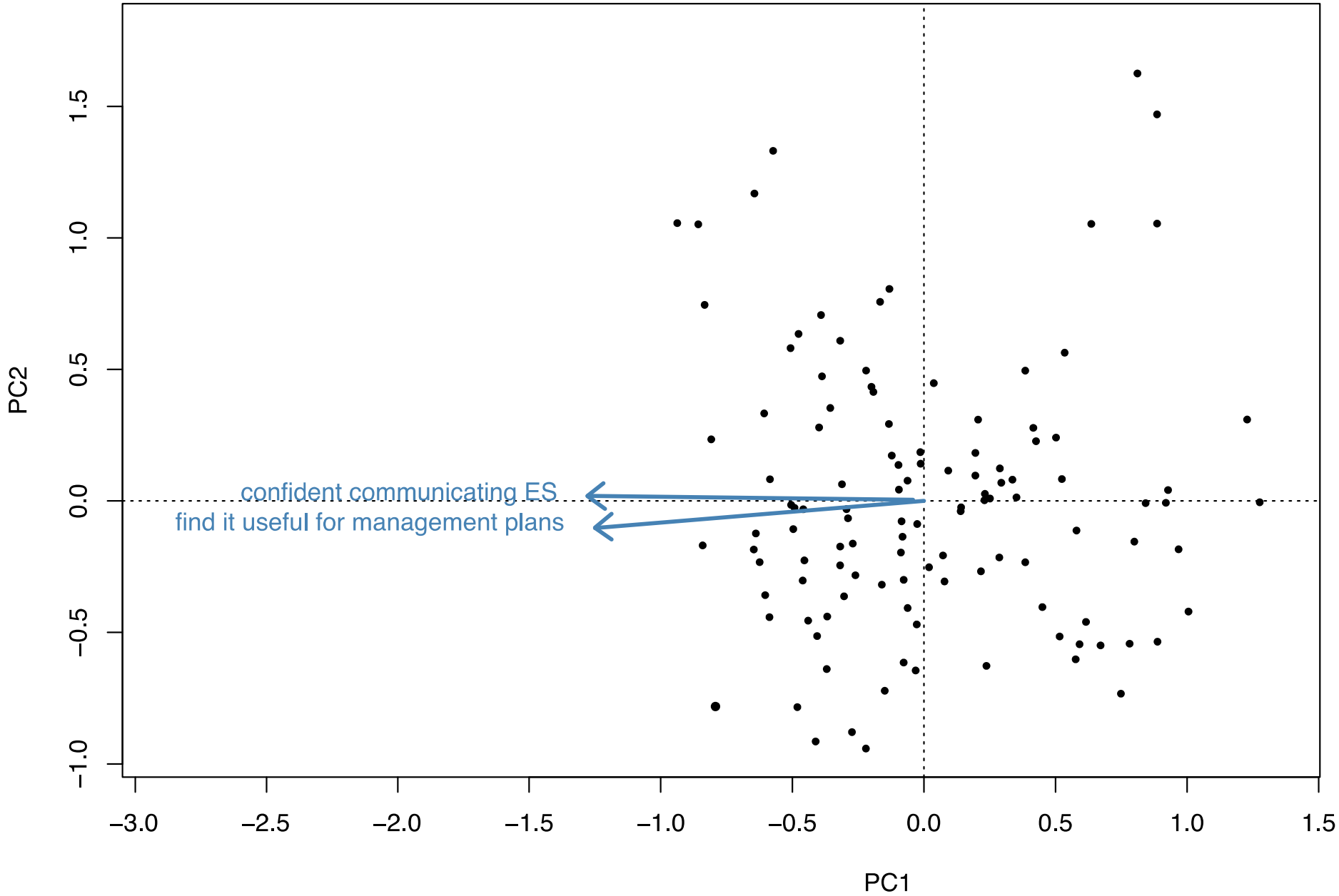
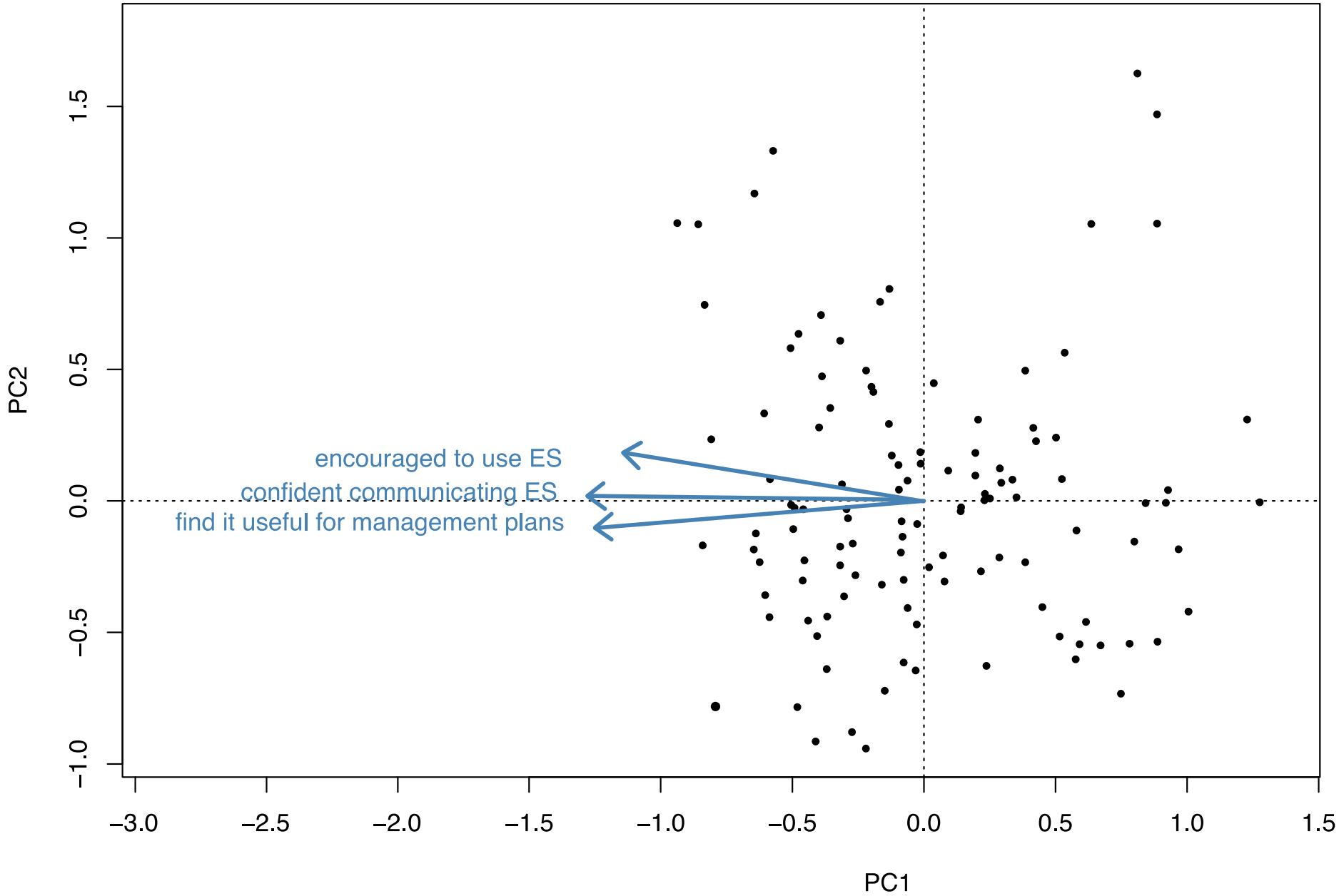
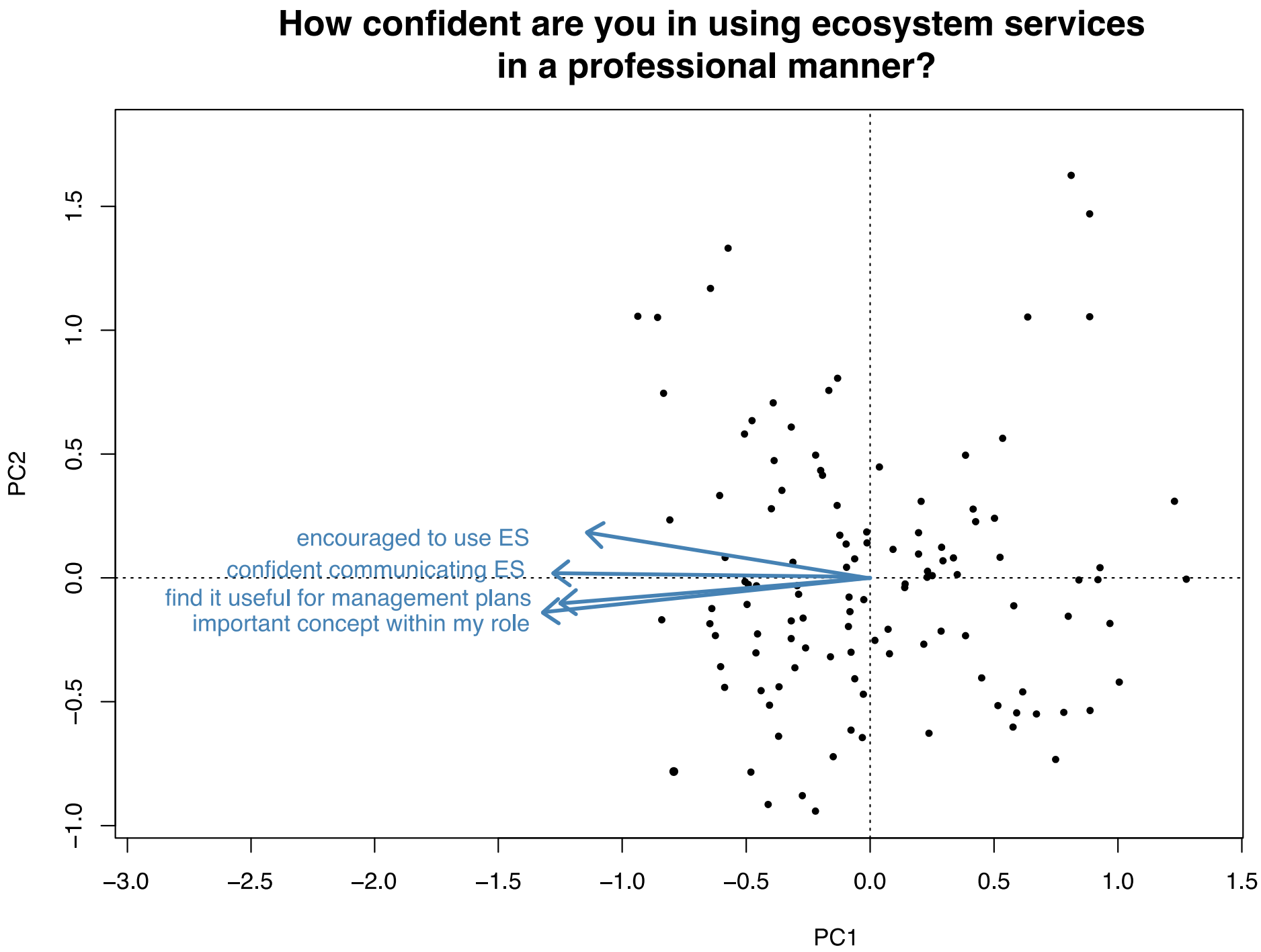
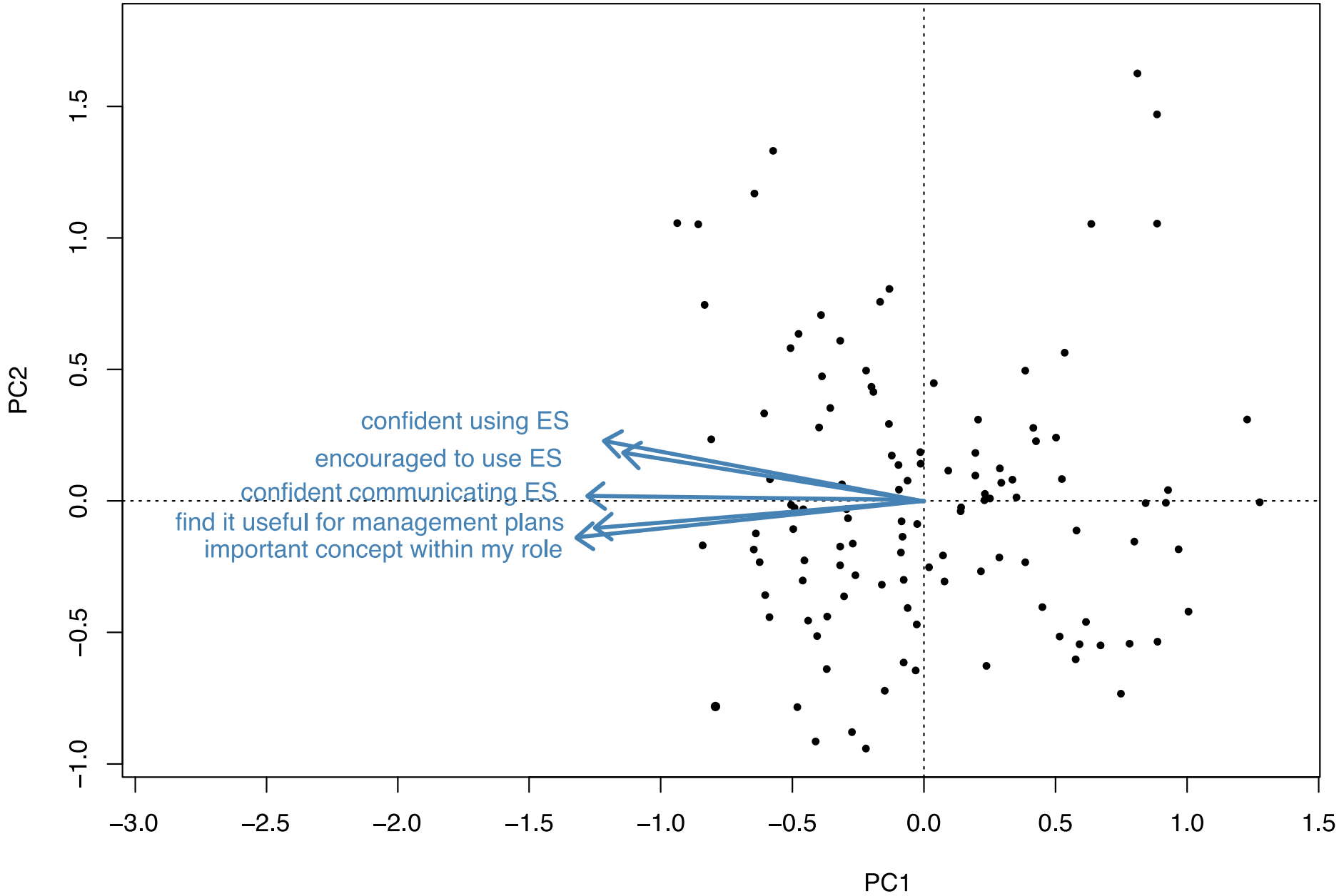


How confident are you in using ecosystem services in a professional manner?

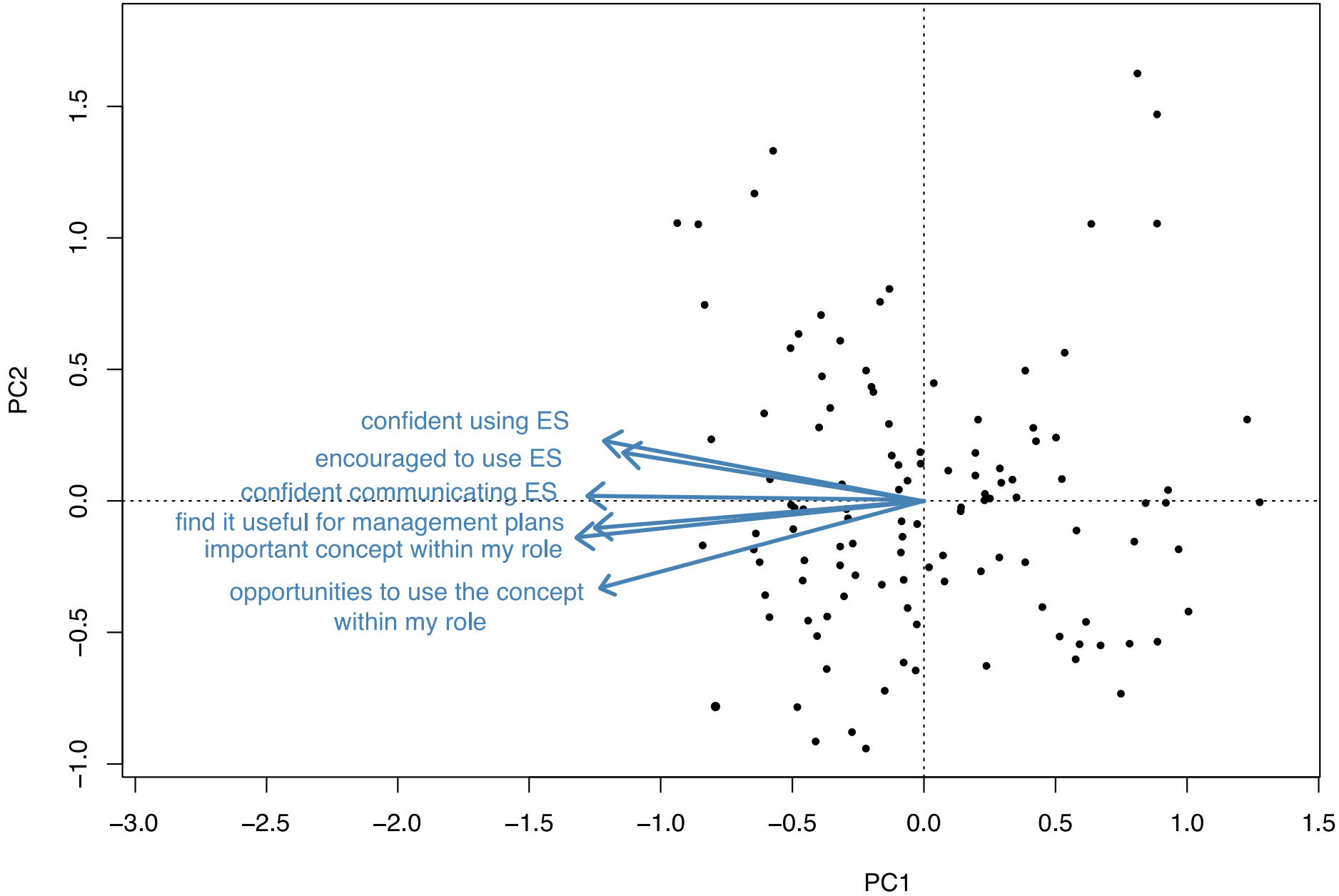



How confident are you in using ecosystem services in a professional manner?
encouraged to use ES
confident communicating ES
find it useful for management plans
important concept within my role
PC1
PC2
−3.0
−2.5
−2.0
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
−1.0
−0.5
0.0
0.5
1.0
1.5

How confident are you in using ecosystem services in a professional manner?



How confident are you in using ecosystem services in a professional manner?



How confident are you in using ecosystem services in a professional manner?