Knowledge exchange in urban environment, public health and ageing

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Suggested citation

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Executive summary

Aim

The aim of this brief report was to discuss: (a) how researchers working in urban environment, public health and ageing commonly disseminate research findings; (b) how research users working in urban environment, public health, and ageing digest research findings; (c) identify any potential differences between these two groups, and (d) provide recommendations for researchers regarding dissemination and knowledge exchange strategies.

Methods

Surveys were sent out to two groups of stakeholders: research users, and researchers. Results were then compared to determine differences, and recommendations for knowledge exchange were based on these findings.

Results

Several significant differences were found between research users and researchers. Research users consistently reported that their organisations need to promote knowledge exchange more, and consistently reported their organisations to have more access to resources than researchers. Significant differences were also found between the ways that researcher users consume research, compared to the way that researchers disseminate research findings. As a result of these findings, and based on some of the qualitative comments made by both research users and researchers, the following recommendations have been made:

About SPACE

The aim of the SPACE (Supportive Environments for Social and Physical Activity, Healthy Ageing & Cognitive Health) research programme is to investigate the impacts, and possible mechanistic pathways, of urban environments on healthy ageing and cognitive health, through the novel integration of multi-omics, lifestyle behaviour and environmental exposures from urban environments. The research is led by the Centre for Public Health, Queen's University Belfast, and involves an interdisciplinary team of researchers from across the university, working alongside stakeholders from policy, practice, and the 3rd sector.

For further information, please visit: www.qub.ac.uk/sites/space/

Overview of recommendations

1 Research organisations review the specific reasons why researchers appear to rate their respective organisations' engagement with promoting knowledge exchange so poorly.

2 Research organisations implement strategies to improve perceptions and/or realities of knowledge exchange promotion, including potentially, financial incentives.

3 Researchers reach out to charitable organisations to communicate their research findings, if they feel that their findings are relevant to specific organisations or sectors. Researchers cannot rely on passive methods of knowledge exchange with the Charity sectors, possibly due to time or resource constraints.

4 Research organisations ensure all researchers have adequate time to commit to knowledge exchange, with accompanying training and financial support. If organisations already provide this, pro-actively advertising this to researchers would be beneficial.

5 Research organisations create an open access knowledge exchange hub – a place where strategies and expert support can be reached easily. If this already exists, proactively advertising this to researchers would be beneficial.

6 The use of academic conferences and/or informal or formal networks should be treated more as networking opportunities rather than being a primary mechanism for knowledge exchange with research users.

7 Researchers are recommended to promote their research through non-academic intermediates, especially if unable to publish research findings open access.

Background

The global population is rapidly ageing and, consequently, the number of individuals living with dementia and mild cognitive impairment (MCI) is increasing. Strategies to prevent cognitive impairment are required, to ensure cognitive function is maintained for those who would be considered as healthy and to minimise cognitive decline in those with MCI. Effective strategies aim to target modifiable risk factors (e.g., physical inactivity, sedentary behaviour, the environment) to reduce neurodegeneration risk and increase cognitive resilience. The aim of the SPACE (Supportive Environments for Social and Physical Activity, Healthy Ageing & Cognitive Health) project is to investigate the impacts, and possible mechanistic pathways, of urban environments on healthy ageing and cognitive health, through the novel integration of multi-omics, lifestyle behaviour and environmental exposures from urban environments.

Knowledge exchange refers to activities which engage non-academic audiences in research. Knowledge exchange is most effective and impactful when it is a two-way interactive process, however currently, we are unsure of the most effective and efficient methods of implementing such a process. Therefore, to ensure that the best methods of effective knowledge exchange are not only established but also implemented, it is imperative that we investigate mutually respectful knowledge-exchange mechanisms. However, in order to do so, we must consider the views of both researchers and research users, and factors enabling knowledge exchange. Impact mechanisms and activities can then be informed and refined, and a communication and engagement strategy implemented.

The aims of this brief report was to discuss: (a) how researchers working in urban environment, public health and ageing commonly disseminate research findings; (b) how research users working in urban environment, public health and ageing consume research findings; (c) identify any potential differences between these two groups, and (d) provide recommendations for researchers regarding dissemination and knowledge exchange strategies. These findings will then inform the communication and dissemination strategy for academic outputs from the SPACE project, to maximise impact of outputs, and ensure they are effective, efficient, and sustainable, exploiting where possible the existing mutual knowledge-exchange mechanisms between researchers and research users.

Methods

Two types of participants were recruited in these surveys: research users and researchers. Research users were defined as those working in the built environment, older adult advocacy groups, business/industry, decision making, and service providers. Researchers were defined as researchers working in the field of built environment/health of older adults (identified through a Scopus search of published work in the last five years).

Participants were then invited to complete one of two knowledge exchange surveys. The survey contained 31 (researcher) or 33 (research user) items, taking approximately 10-15 minutes to complete. Broadly, the surveys covered the following topics: demographic information; promoting knowledge exchange; knowledge exchange resources; communication of academic research; and the impact of COVID-19 on knowledge exchange. The types of questions asked were a combination of Likert scale questions, and participants were also invited to make open ended comments at the end of each section. The survey was hosted on a bespoke platform provided by Queens University Belfast (https://survey.stakeholdernet.org/) and ethical approval was granted by the Engineering and Physical Sciences Faculty Research Ethics Committee (EPW 21_286).

Analysis

Data from the surveys were collated and presented through descriptive characteristics. An ordinal regression was conducted to determine whether research users were more likely to score higher (or lower) up a Likert scale than researchers across comparable questions. Because several regression tests were being carried out (one per question), a Bonferroni correction was applied, with a conservative statistical significance set at $p = <0.002$. The qualitative comments were through a narrative synthesis to explore reasons for differences between groups.

Results

A total of 910 participants (843 research users and 67 researchers) took part in the survey.

Regarding research users, the majority of the sample were male (60.4%), and the majority of the sample were aged 25-34 (51.9%). Regarding sectors of work, 47.1% were based in the private sector, 43% in the public sector, 9.7% in non-profit/charity/NGO organisations, with 0.1% of users being based at a cooperative. Regarding the geographic focus of research users' activities, 45.7% were focussed on towns or cities, 25.5% district or country, 17.1% community/neighbourhoods/villages, 1.4% continental, and 0.7% worldwide. Furthermore, 38.2% of researcher users reported to work in social activity; 38% worked in healthy ageing, 35.3% worked in cognitive health; 32.3% of research users worked in urban planning; 27.9% worked in urban design; 27.6% worked in physical activity; 24.9% in public health; 19.5% in public policy and regulation; 12.8% in community representation; and 11% in education advocacy.

Regarding researchers, most of the participants were female (60.6%), with most respondents reporting that they were aged between 35-44 (25.8%). Most of the respondents reported working in research full time (91.1%) and having a permanent contract of employment (74.2%). Moreover, the majority of researchers reported that they worked on research, and also had teaching responsibilities (55%), with more than 10 years' experience (55.2%).

Further demographic information can be found in Table 1.

Table 1: Demographic information

		Researchers % (n)	Research users % (n)
Gender	Male	37.9% (25)	60.4% (494)
	Female	60.6% (60)	37.7% (308)
	Non-binary	0% (0)	1.6% (13)
	Prefer not to say	1.5% (1)	0.4% (3)
Age	18 to 24	7.6% (5)	4.9% (41)
	25 to 34	19.7% (13)	51.9% (434)
	35 to 44	25.8% (17)	31.4% (263)
	45 to 54	19.7% (13)	8.7% (73)
	55 to 64	18.2% (12)	2.7% (23)
	65+	6 (9.1%)	0.4% (3)
Years of experience	Less than 1 year	4.5% (3)	3.2% (27)
	1-2 years	7.5% (5)	34.8% (291)
	3-6 years	14.9% (10)	47.3% (395)
	7-10 years	17.9% (12)	12.1% (101)
	More than 10 years	55.2% (37)	2.5% (21)

The regression models yielded 12 sets of significant results, which have been outlined below.

Promoting knowledge exchange

Regarding the promotion of knowledge exchange, research users were 2.15 times more likely than researchers to report that their organisation promotes engagement with knowledge exchange by promoting direct interaction with relevant research users; 3.02 times more likely to report that their organisation promotes engagement with knowledge exchange by having mechanisms of valuing knowledge exchange (e.g., in performance appraisal, promotion). Furthermore, research users were 3.22 times less likely to report that their organisation promotes engagement with knowledge exchange by maintaining a comprehensive list of researchers outside the organisation that can potentially help with our work than researchers were to report that their organisation promotes engagement with knowledge exchange by maintaining a comprehensive list of potential research users that can benefit from our

research; 3.13 times less likely to report that their organisation promotes engagement with knowledge exchange by using other organisations as intermediaries to engage with research users/researchers. There were no significant differences between other questions asked regarding the promotion of knowledge exchange (see Tables 2 and 3).

Knowledge exchange resources

Regarding questions examining the resources behind knowledge exchange, research users were found to be 2.45 times more likely to have higher levels of resource regarding having time for engaging in knowledge exchange; 2.70 times more likely to report higher levels of resource regarding using other organisations as intermediaries to engage with non-academic audiences; 2.22 times more likely than researchers to rate higher levels of resources regarding awareness of current, emerging, or relevant policy or practitioner networks to facilitate awareness. All other question yielded no significant differences (see Table 4)

Communication of academic research

Regarding the communication/access to academic research, research users were found to be 3.13 more likely to obtain academic research via subscription only databases, websites, or citation indices than researchers are to communicate their research by these means. Furthermore, research users were 2.08 times less likely to obtain academic research from subscription academic journals, accessed via a library, than researchers are to communicate their research findings via subscription academic journals, accessed via a library; 3.03 times less likely to obtain research via academic conferences than researchers are to communicate their findings via academic conferences; 2.17 times less likely to use informal and formal networks to exchange ideas, experiences and best practices than researchers are to actively use informal and formal networks to exchange ideas, experiences, and best practices for translating research; and 2.17 times less likely to ensure that learning on how research is applied to future projects and programmes than researchers are to ensure that learning on knowledge exchange is applied to future research projects. There were no significant differences found in any other communication of research questions (see Tables 5-7)

COVID-19

Half of each group of participants reported that COVID-19 had impacted their approach to knowledge exchange, with no significant differences found between research users and researchers (see Table 8).

Tables

Table 2: Do you agree or disagree with the following statements:

		Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	OR (95%CI)	p-value*
My organisation has specific strategies that guide my approach to knowledge exchange with potential research users	Researchers (n=65)	3.1% (2)	20% (13)	33.8% (22)	33.8% (22)	9.2% (6)	[ref]	0.914
	Research users (n=783)	8.5% (67)	18.1% (143)	25.2% (199)	38.2% (302)	10.1% (80)	1.03 (0.66-1.59)	
My organisation has clear processes for implementing strategies for knowledge exchange with potential research users	Researchers (n=65)	3.1% (2)	26.2% (17)	30.8% (20)	27.7% (18)	12.3% (8)	[ref]	0.863
	Research users (n=791)	7% (55)	13.6% (106)	30% (234)	36.6% (286)	12.8% (100)	1.36 (0.86-2.14)	
My organisation provides the necessary incentives	Researchers (n=34)	5.9% (2)	20.6% (7)	29.4% (10)	26.5% (9)	17.6% (6)	[ref]	0.704
	Research users	6.1%	15.3%	29.1%	35.9%	13.5%	1.13	

| for me to engage in knowledge exchange with potential research users | (n=783) | (48) | (120) | (228) | (281) | (106) | (0.60-2.13) | |

*Bonferroni corrected threshold of significance = 0.002

"My organisation has specific strategies that guide my approach to knowledge exchange with potential research users":
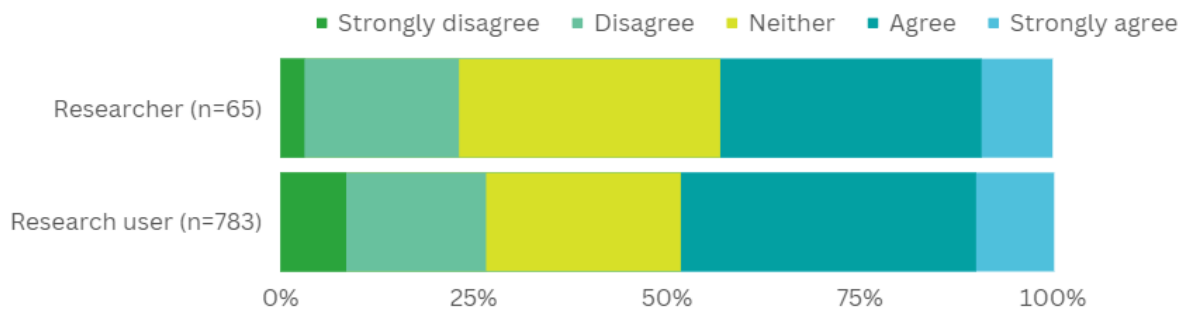
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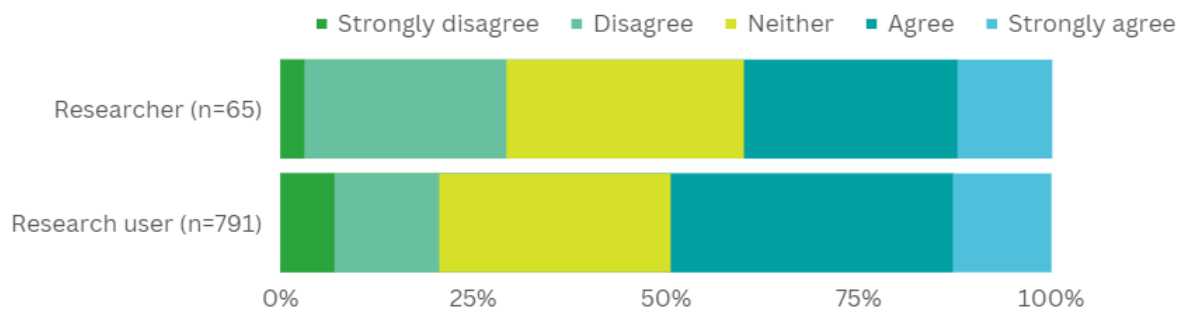
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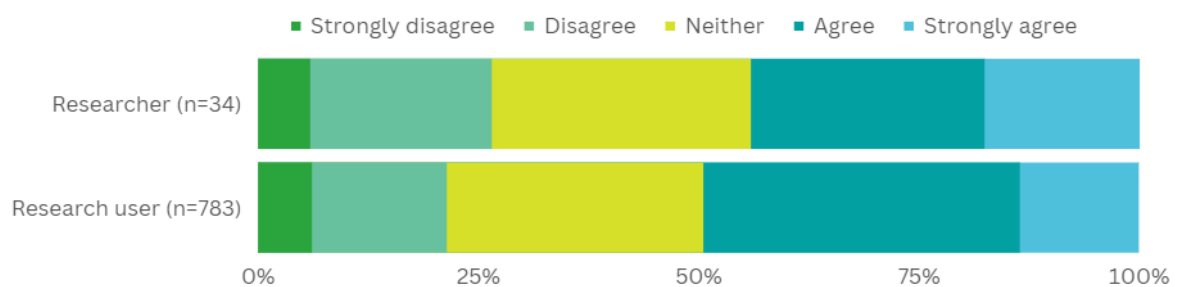
Table 3: My organisation promotes my engagement with knowledge exchange by (choose all that apply):

		Percentage yes (n yes)	OR (95% CI)	p-value*
Promoting direct interaction with relevant research users	Researchers (n=70)	54.3% (38)	[ref]	0.002*
	Research users (n=843)	35% (295)	2.15 (1.31-3.52)	
Maintaining a comprehensive list of potential research users that can benefit from our research	Researchers (n=70)	20% (14)	[ref]	<0.001*
	Research users (n=843)	45.4% (463)	0.31 (0.17-0.56)	
Providing training on how to better promote knowledge exchange	Researchers (n=70)	34.3% (24)	[ref]	0.003
	Research users (n=843)	54.9% (463)	0.47 (0.28-0.78)	
Using other organisations as intermediaries to engage with research users	Researchers (n=70)	21.4% (15)	[ref]	<0.001*
	Research users (n=843)	46.6% (393)	0.32 (0.18-0.57)	
	Researchers (n=70)	31.4%	[ref]	0.182

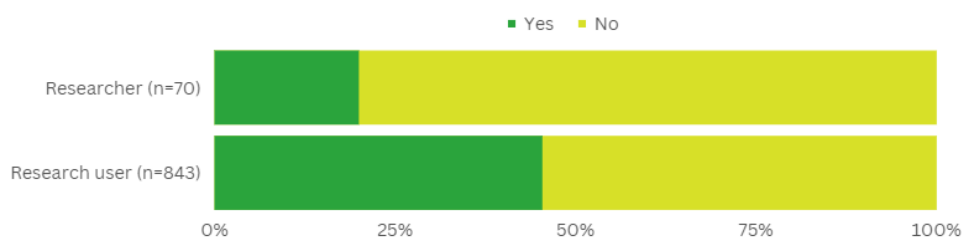|				
Committing resources that help promote knowledge exchange by its researchers		(22)		
	Research users (n=843)	40.1% (338)	0.70 (0.41-1.18)	
Ensuring all research data and research outputs are made freely available, such as through publicly-accessible repository	Researchers (n=70)	32.9% (23)	[ref]	0.157
	Research users (n=843)	25.5% (215)	1.46 (0.87-2.47)	
Having mechanisms of valuing knowledge exchange (e.g. in performance appraisal, promotion)	Researchers (n=70)	31.4% (22)	[ref]	<0.001*
	Research users (n=843)	13.4% (113)	3.02 (1.76-5.21)	

*Bonferroni corrected threshold of significance = 0.002

My organisation promotes my engagement with knowledge exchange by:

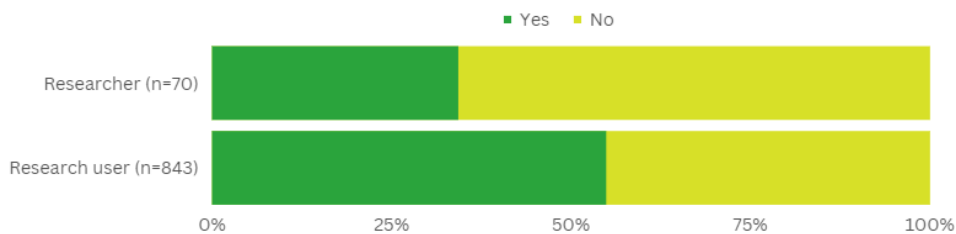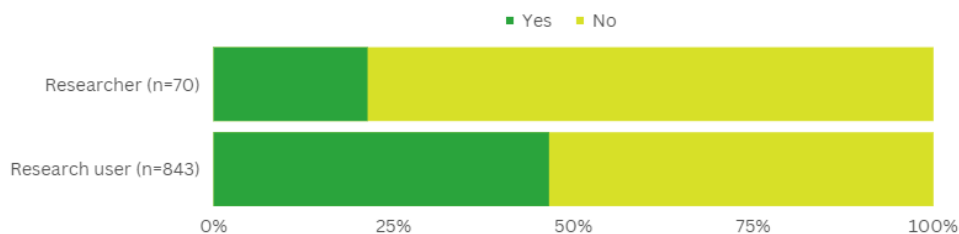"Promoting direct interaction with relevant research users":
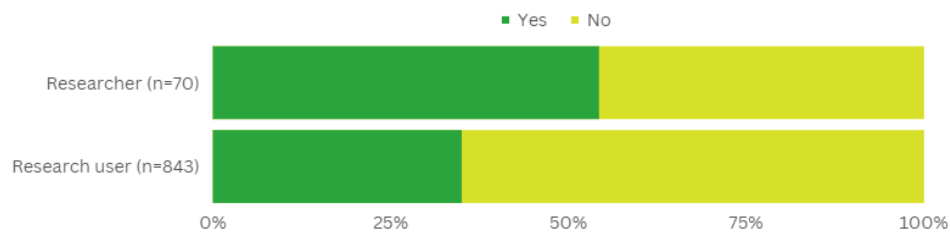
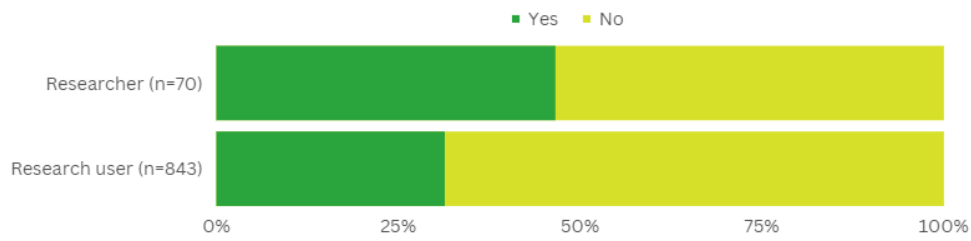"Maintaining a comprehensive list of potential research users that can benefit from our research":

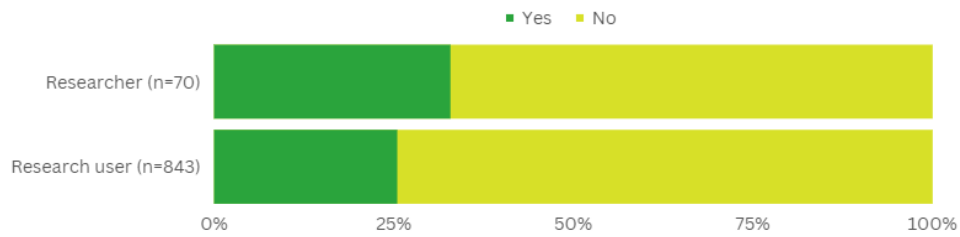"Providing training on how to better promote knowledge exchange":

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"Having mechanisms of valuing knowledge exchange (e.g., in performance appraisal, promotion)":
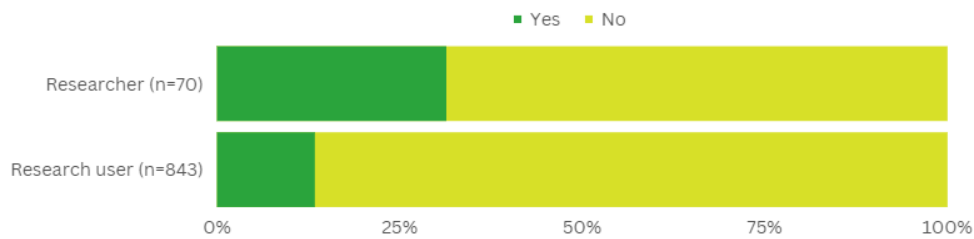
Table 4: Please rate whether you feel the resources provided in your organisation has clear processes for implementing strategies for knowledge exchange with potential research users are adequate in relation to the following aspects of engaging with potential research users

		No resources	Poor resources	Good resources	Very good resources	OR (95% CI)	p-value*
Training provided for knowledge exchange with potential research users	Researchers (n=64)	20.3% (13)	32.8% (21)	35.9% (23)	10.9% (7)	[ref]	0.011
	Research users (n=824)	10% (82)	27.7% (228)	48.7% (401)	13.7% (113)	1.83 (1.15-2.92)	
Financial resources for knowledge exchange with potential research users	Researchers (n=64)	14.1% (9)	40.6% (26)	29.7% (19)	15.6% (10)	[ref]	0.016
	Research users (n=816)	9.2% (75)	25.7% (210)	46.9% (383)	18.1% (148)	1.77 (1.11-2.81)	
Access to practitioners' magazines, databases and other sources of information used by potential research users	Researchers (n=64)	10.9% (7)	32.8% (21)	43.8% (28)	12.5% (8)	[ref]	0.018
	Research users (n=816)	4.5% (37)	25.9% (211)	51.7% (422)	17.9% (146)	1.77 (1.10-2.84)	
Time for engaging in knowledge exchange with potential research users	Researchers (n=64)	17.2% (11)	35.9% (23)	32.8% (21)	14.1% (9)	[ref]	<0.001*

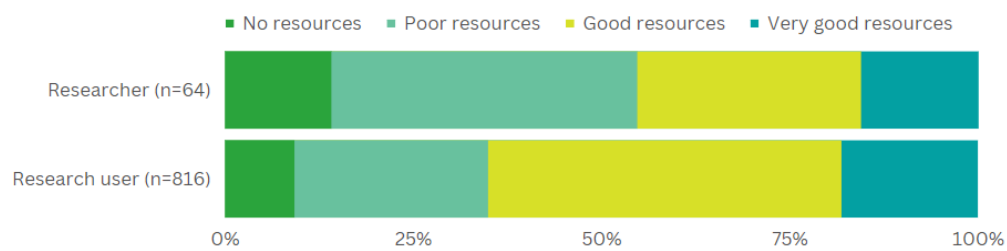|							
	Research users (n=814)	5.2% (42)	24.9% (203)	52% (423)	17.9% (146)	2.45 (1.54-3.95)	
Using other organisations as intermediaries to engage with non-academic audiences	Researchers (n=63)	27% (17)	20.6% (13)	38.1% (24)	14.3% (9)	[ref]	<0.001*
	Research users (n=814)	4.3% (35)	25.9% (211)	51.6% (420)	18.2% (148)	2.70 (1.68-4.34)	
Awareness of current, emerging or relevant policy or practitioner networks to facilitate awareness	Researchers (n=61)	11.5% (7)	39.3% (24)	34.4% (21)	14.8% (9)	[ref]	0.001*
	Research users (n=809)	4.1% (33)	25% (202)	52.8% (427)	18.2% (147)	2.22 (1.37-3.61)	

*Bonferroni corrected threshold of significance = 0.002

Please rate whether you feel the resources provided in your organisation has clear processes for implementing strategies for knowledge exchange with potential research users are adequate in relation to the following aspects of engaging with potential research users:
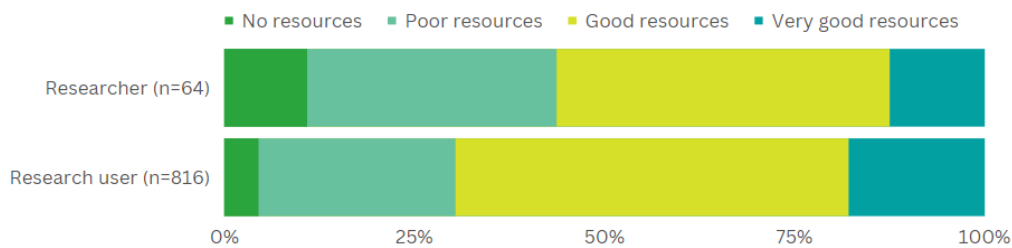
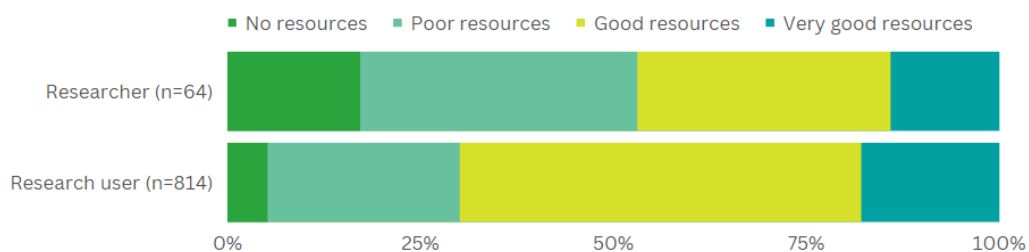"Training provided for knowledge exchange with potential research users"
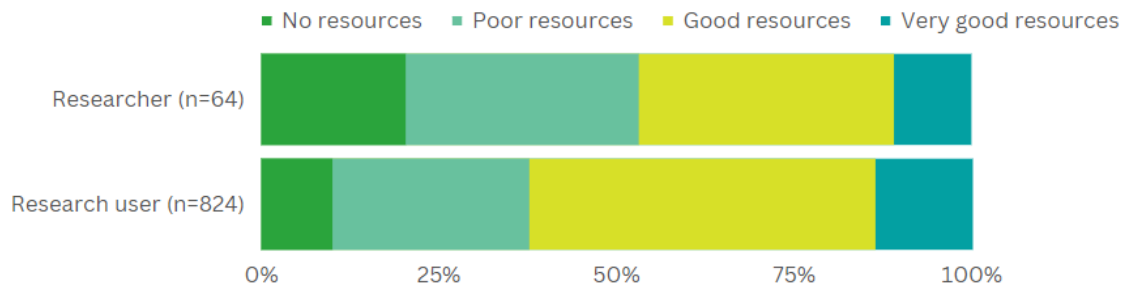
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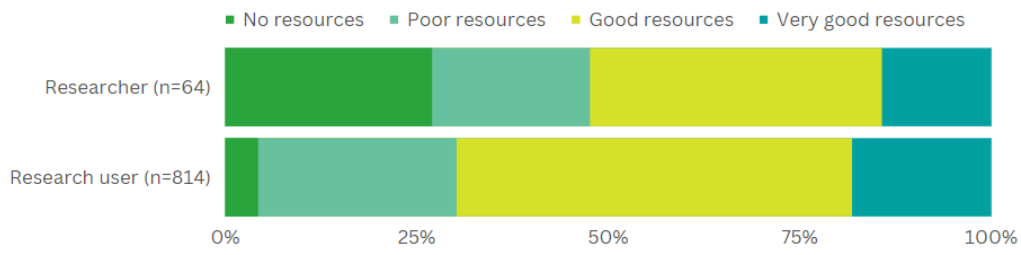"Access to practitioners' magazines, databases and other sources of information used by potential research users"

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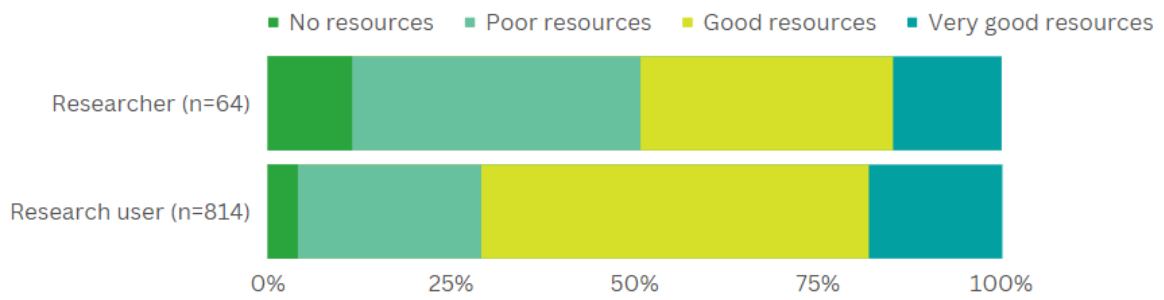"Awareness of current, emerging or relevant policy or practitioner networks to facilitate awareness"

Table 5: I communicate academic research via:

		Never	Sometimes	Often	Always	OR (95% CI)	p-value*
University/research institute websites	Researchers (n=64)	9.4% (6)	28.1% (18)	42.2% (27)	20.3% (13)	[ref]	0.043
	Research users (n=839)	8.7% (73)	40.9% (343)	39.6% (332)	10.8% (91)	0.62 (0.39-0.99)	
Free research websites and online data bases (such as Figshare, Academia.edu)	Researchers (n=66)	21.2% (14)	27.3% (18)	33.3% (22)	18.2% (12)	[ref]	0.157
	Research users (n=829)	5.3% (44)	38.1% (316)	42.1% (349)	14.5% (120)	1.40 (0.88-2.22)	
Subscription only databases, websites or citation indices	Researchers (n=65)	26.2% (17)	33.8% (22)	27.7% (18)	12.3% (8)	[ref]	<0.001*
	Research users (n=831)	5.3% (44)	30.7% (255)	46.7% (388)	17.3% (144)	3.13 (1.95-5.02)	
	Researchers (n=66)	4.5%	22.7%	37.9%	34.8%	[ref]	0.002*

		(3)	(15)	(25)	(23)		
Subscription academic journals, accessed via a library	Research users (n=820)	4.5% (37)	31.2% (256)	47.1% (386)	17.2% (141)	0.48 (0.30-0.77)	
Open access journals	Researchers (n=66)	3% (2)	24.2% (16)	45.5% (30)	27.3% (18)	[ref]	0.078
	Research users (n=817)	4.3% (35)	31.3% (256)	46.4% (379)	18% (147)	0.66 (0.41-1.05)	
Social media (Facebook, Twitter etc.)	Researchers (n=66)	6.1% (4)	30.3% (20)	34.8% (23)	28.8% (19)	[ref]	0.419
	Research users (n=817)	3.8% (31)	31.6% (258)	47.6% (389)	17% (139)	0.83 (0.52-1.32)	
Non-academic intermediaries, including government, NGOs/charities, thinktanks and organisations such as WHO	Researchers (n=66)	22.7% (15)	24.2% (16)	42.4% (28)	10.6% (7)	[ref]	0.003
	Research users (n=824)	5.2% (43)	30.2% (249)	48.7% (401)	15.9% (131)	2.02 (1.27-3.21)	
Academic conferences	Researchers (n=66)	3%	9.1%	56.1%	31.8%	[ref]	<0.001*

|		(2)	(6)	(37)	(21)		
	Research users (n=821)	4.5% (37)	33% (271)	46.4% (381)	16.1% (132)	0.33 (0.21-0.53)_	
Directly to potential research users	Researchers (n=66)	3% (2)	30.3% (20)	33.3% (22)	33.3% (22)	[ref]	0.075
	Research users (n=823)	5.1% (42)	31.6% (260)	45.8% (377)	17.5% (144)	0.66 (0.41-1.04)	

*Bonferroni corrected threshold of significance = 0.002
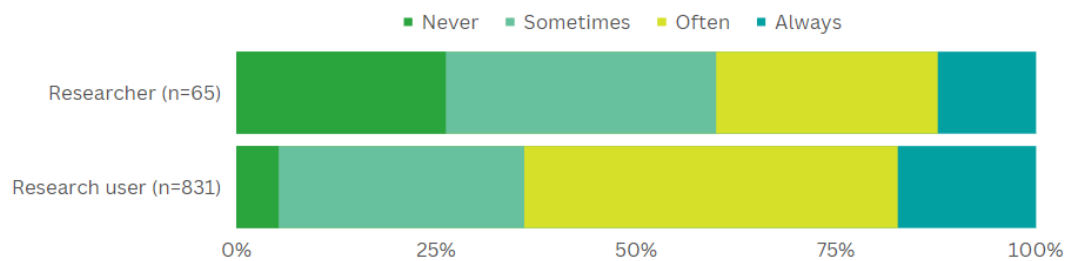
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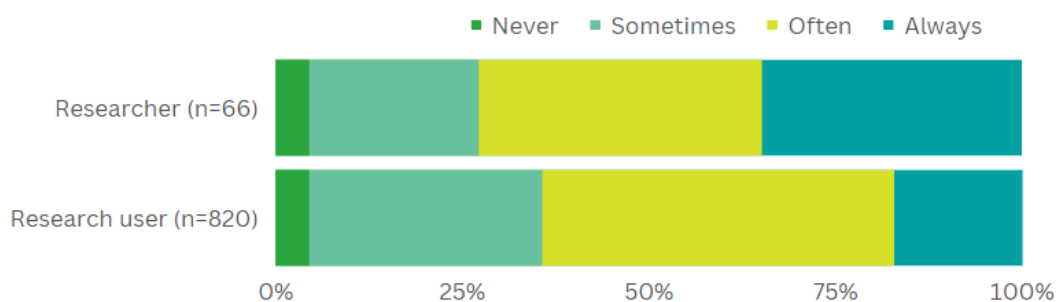
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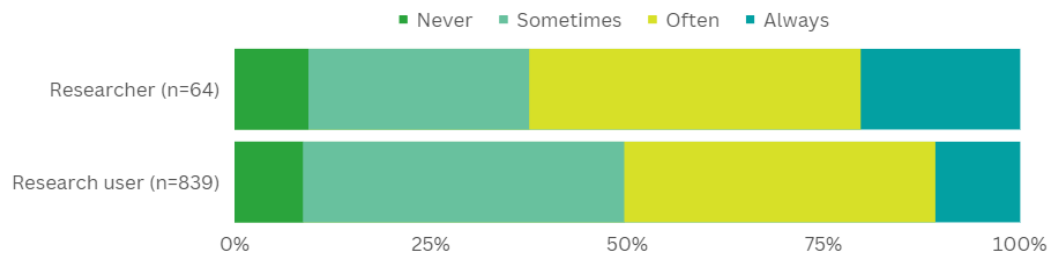
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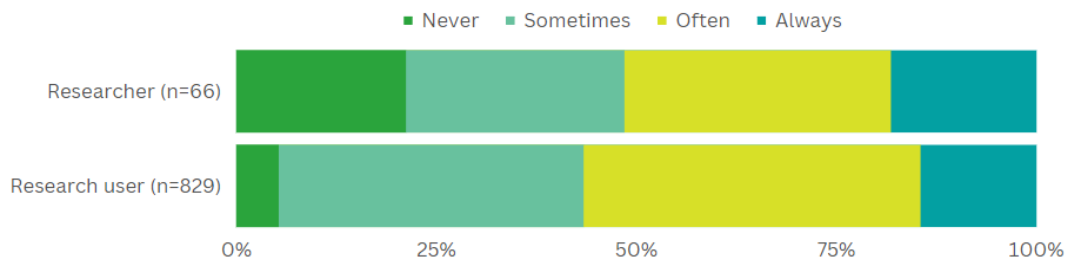
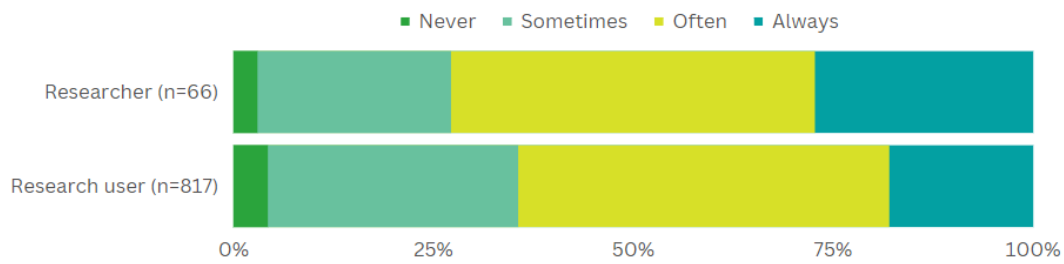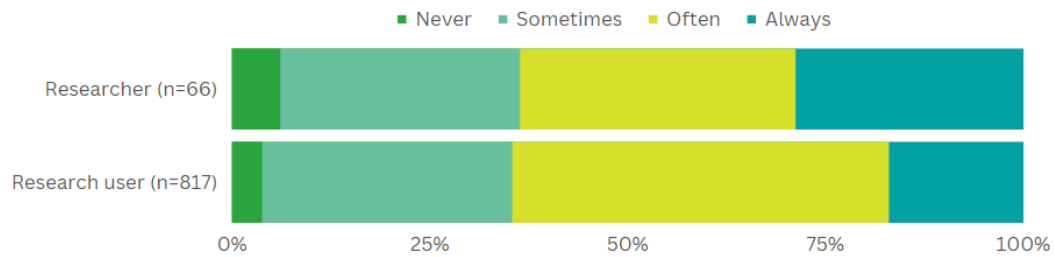"Subscription only databases, websites or citation indices":

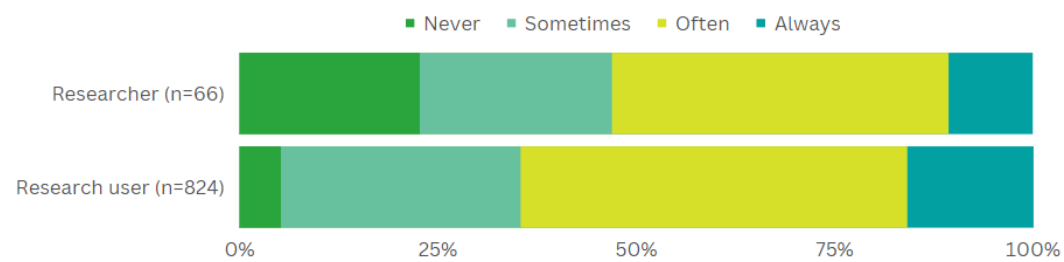"Subscription academic journals, accessed via a library":
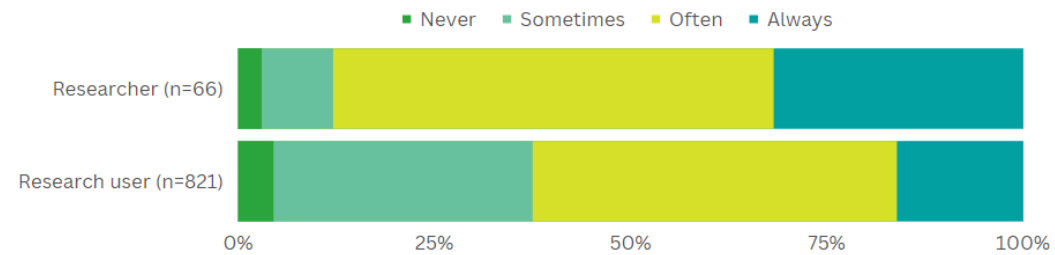
"Open access journals":

"Social media (Facebook, Twitter etc.)":

"Non-academic intermediaries, including government, NGOs/charities, thinktanks and organisations such as WHO":

"Academic conferences":

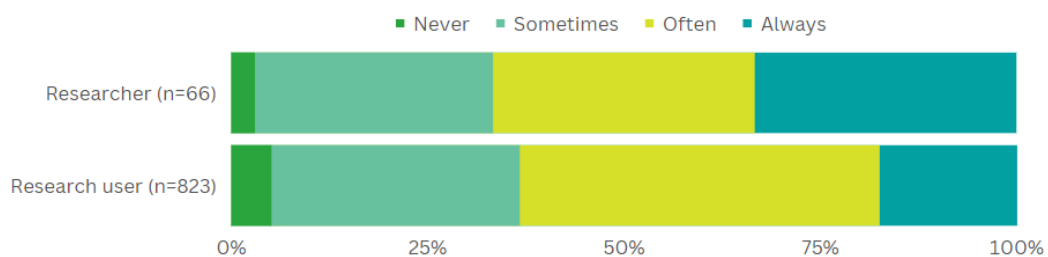"Directly to potential research users":

Table 6: I am able to communicate my research by:

		Never	Sometimes	Often	Always	OR (95% CI)	p-value*
Effectively producing reports for non-academics at the end of research projects	Researchers (n=65)	3.1% (2)	33.8% (22)	40% (26)	23.1% (15)	[ref]	0.008
	Research users (n=833)	7.2% (60)	38.4% (320)	45.3% (377)	9.1% (76)	0.53 (0.33-0.85)	
Actively using informal and formal networks to exchange ideas, experiences, and best practices for translating research	Researchers (n=66)	3% (2)	21.2% (14)	51.5% (34)	24.2% (16)	[ref]	0.001*
	Research users (n=824)	6.2% (51)	35.6% (293)	45.1% (372)	13.1% (108)	0.46 (0.29-0.74)	
Working with potential research users on training and capacity building for acquiring, assessing, adapting and applying academic research	Researchers (n=66)	10.6% (7)	31.8% (21)	30.3% (20)	27.3% (18)	[ref]	0.956
	Research users (n=823)	6.2% (51)	30.9% (255)	46.7% (385)	16.2% (134)	0.85 (0.60-1.52)	
	Researchers (n=66)	6.1%	39.4%	30.3%	24.2%	[ref]	0.468

Working with potential research users to interpret the implications of academic research for policy and practice and co-design communication materials		(4)	(26)	(20)	(16)		
	Research users (n=823)	4.7% (39)	29.9% (246)	49.6% (408)	15.8% (130)	1.19 (0.75-1.89)	

*Bonferroni corrected threshold of significance = 0.002

I am able to communicate my research by:

"Effectively producing reports for non-academics at the end of research projects":
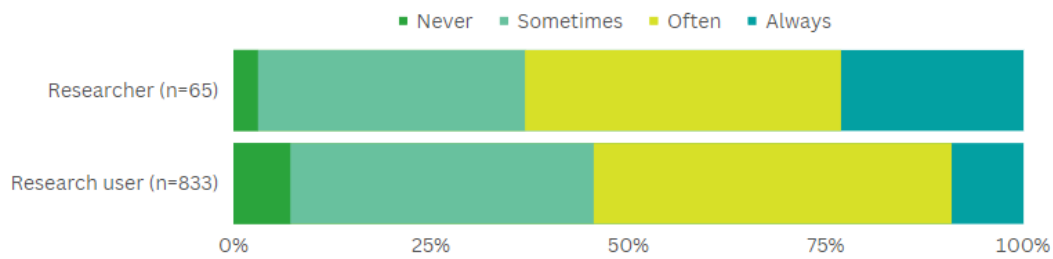
"Actively using informal and formal networks to exchange ideas, experiences, and best practices for translating research":
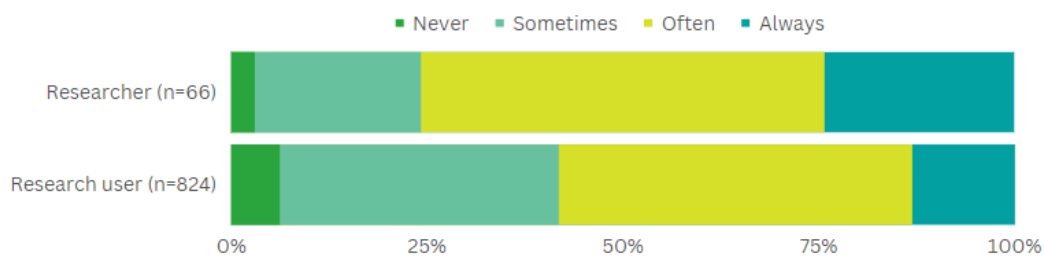
"Working with potential research users on training and capacity building for acquiring, assessing, adapting and applying academic research":
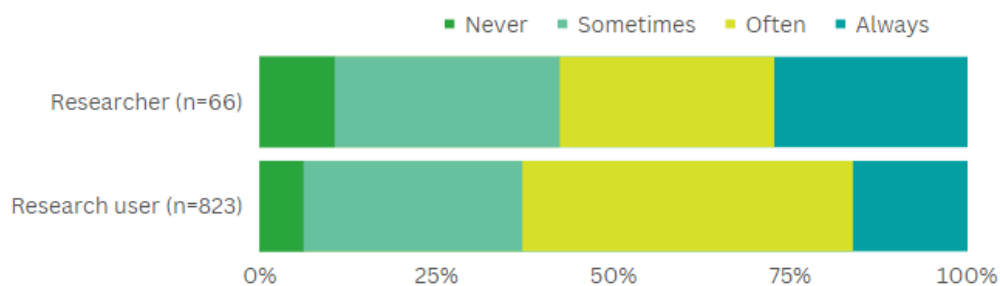
"Working with potential research users to interpret the implications of academic research for policy and practice and co-design communication materials":
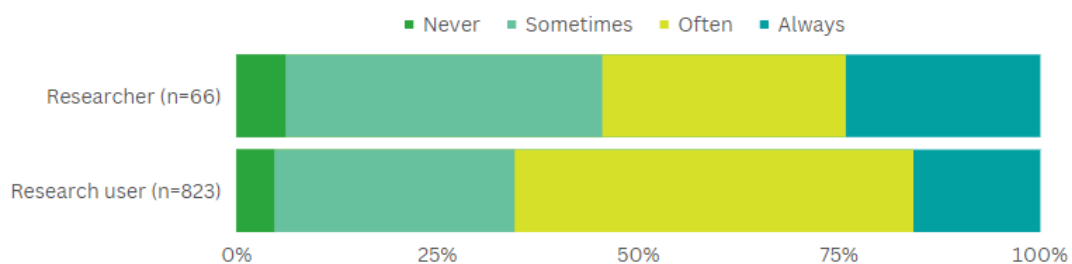
Table 7: I try to improve my knowledge exchange practice by:

		Never	Sometimes	Often	Always	OR (95% CI)	p-value*
Ensuring that learning on knowledge exchange is applied to my future research projects	Researchers (n=66)	3% (2)	27.3% (18)	40.9% (27)	28.8% (19)	[ref]	0.001*
	Research users (n=824)	6.2% (51)	39% (321)	41.3% (340)	13.6% (112)	0.46 (0.28-0.74)	
Ensuring investment in future impact on the basis of past experience, such as adjusting the amount of budget spent on knowledge exchange	Researchers (n=66)	9.1% (6)	24.2% (16)	47% (31)	19.7% (13)	[ref]	0.094
	Research users (n=821)	7.9% (65)	38.1% (313)	38.6% (317)	15.3% (126)	0.67 (0.42-1.07)	
Engaging in dialogue with potential research users about how I could best meet and develop their research needs	Researchers (n=66)	4.5% (3)	31.8% (21)	40.9% (27)	22.7% (15)	[ref]	0.375
	Research users (n=812)	6.3% (51)	33.1% (269)	43% (349)	17.6% (143)	0.81 (0.51-1.29)	

*Bonferroni corrected threshold of significance = 0.002

I try to improve my knowledge exchange practice by:

"Ensuring that learning on knowledge exchange is applied to my future research projects":
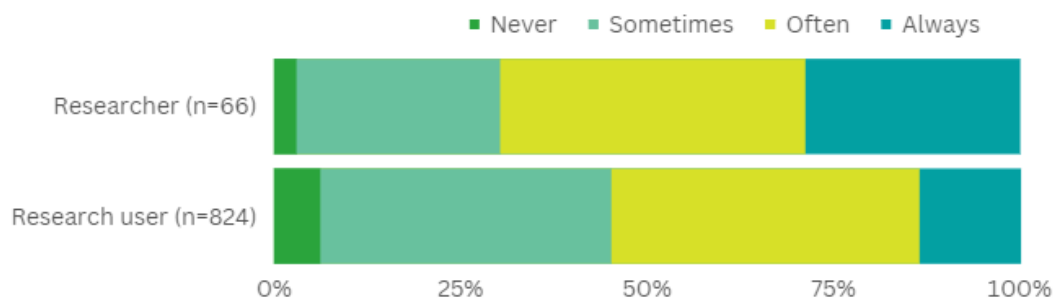
"Ensuring investment in future impact on the basis of past experience, such as adjusting the amount of budget spent on knowledge exchange":
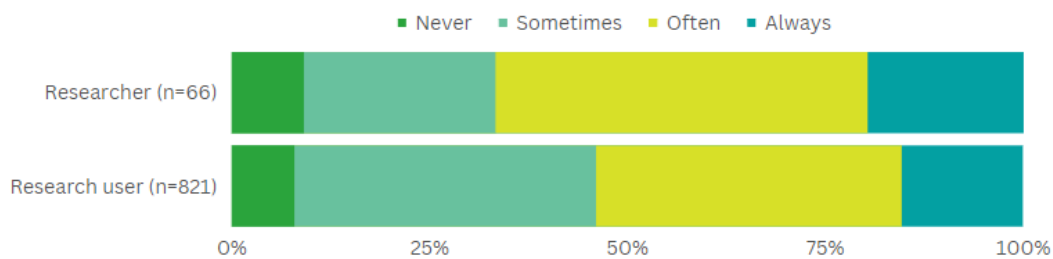
"Engaging in dialogue with potential research users about how I could best meet and develop their research needs":
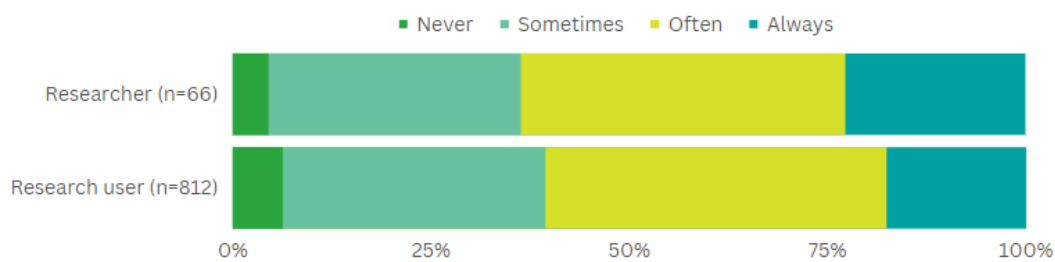
Table 8: Has your approach to knowledge exchange changed as a consequence of the COVID-19 pandemic?

	Percentage yes (n)	OR (95% CI)	p-value*
Researchers (n=67)	49.3% (33)	[ref]	1.000
Research users (n=828)	50% (414)	1.00 (0.61-1.65)	

*Bonferroni corrected threshold of significance = 0.002

"Has your approach to knowledge exchange changed as a consequence of the COVID-19 pandemic?"
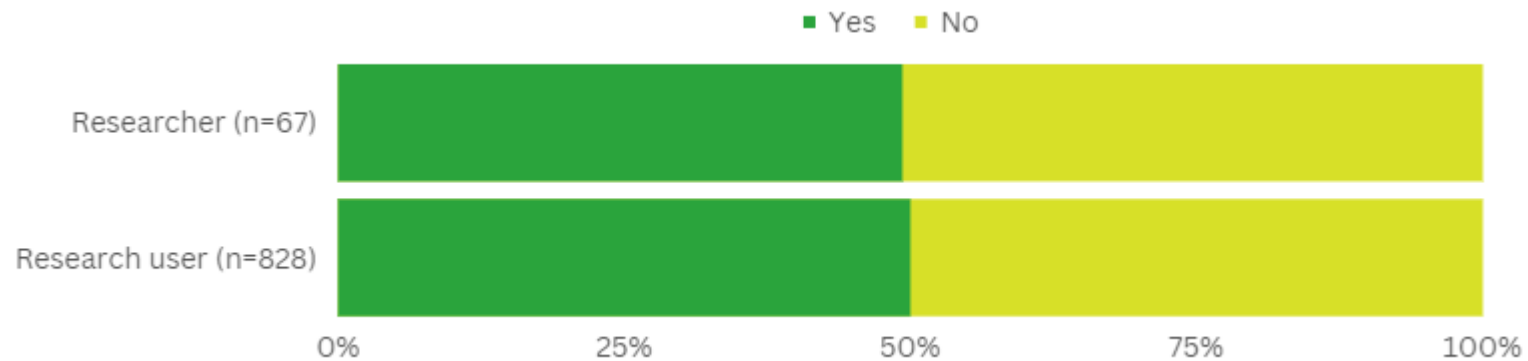
Discussion and Recommendations

This report aimed to describe differences in knowledge exchange practices between research users and researchers, with a view to informing future, more equitable, knowledge exchange.

Promoting knowledge exchange

Several significant differences were found regarding how researchers and users' organisations promotes, with the majority of significant findings indicating that research users are more likely to score positively in regards to promoting direct interaction with researchers; maintaining lists of potential researchers that can benefit them; using other organisations as intermediaries to engage with researchers; and having mechanisms of valuing knowledge exchange. When asked how engagement is encouraged in their organisations, several researchers commented negatively about their organisations, for example:

- o 'No form of engagement is encouraged' *Researcher*
- o 'My organisation takes no active steps in promoting my engagement with knowledge exchange' *Researcher*
- o 'It is always encouraged when high admins speak!' *Researcher*
- o 'There's a significant different between 'promoting' something on paper, and meaningfully supporting it to happen. Overall, the challenge is that workloads, politics, and poor processes, make this far more difficult that it needs to be.' *Researcher*

Whereas when research users were asked the same question about how engagement is encouraged, evidence emerged of already existing structures:

- o 'The leader will give us a raise [if engagement is successful]' *Research user*
- o 'Members who actively participate in this organization have the opportunity to participate in the annual selection of outstanding employees.' *Research user*
- o 'My organization provides me with a platform' *Research user*

These comments, as well as the results of the regression models, suggest that, although research users' organisations appear to promote research engagement and have structures in place to promote this, structures and policies may not actively applied in researchers' organisations. Although there are several potential reasons for these differences, further research is needed to determine what these specific differences are.

It is recommended, however, that researchers' organisations take this into consideration, and aim to do the following:

> Research organisations review the specific reasons why researchers appear to rate their respective organisations' engagement with promoting knowledge exchange so poorly.

> Research organisations implement strategies to improve perceptions and/or realities of knowledge exchange promotion, including potentially, financial incentives.

Knowledge exchange resources

The results regarding how organisations promote knowledge exchange are echoed in the results regarding knowledge exchange resources. For example, research users were more than twice as likely to have a more positive answer to the following questions, when compared to researchers:

- o Having time for engaging in knowledge exchange
- o Using other organisations as intermediaries to engage with researchers/users
- o Awareness of current, emerging, or relevant policy, or practitioners' networks to facilitate awareness

Although there were few qualitative comments regarding this section, there were some negative comments from researchers:

- o 'I do not think that in general there is adequate support or structure for communicating research to the appropriate users. In my case when that happened it was through personal initiative and personal contacts as there was an

absence of formal communication channels. In one case my design recommendations, made in my PhD, were appropriated without credit and re-published by a group of practitioners and considerably less experienced researchers. This may be a peculiarly Irish issue.' *Researcher*

o '[Regarding knowledge exchange] We are expected to figure this out ourselves.' *Researcher*

Whereas research users provided a mix of positive and negative comments:

o 'There are many opportunities for communication and learning in my organisation' *Research user*

o 'When needed, my organization reaches out to academic researchers on an issue by issue basis' *Research user*

o 'My organisation aims to build long-term relationships with academic researchers who may be useful to our work.' *Research user*

o 'Our organisation relies totally on voluntary labour so we tend to rely on academic research reaching out to us' *Research user*

It appears that some organisations rely on researchers to reach out to them (as it the case with the comment from a charity organisation worker), whereas other organisations appear to have a more developed structure of communication with researchers. Although further research is warranted to confirm these findings, it is recommended that:

> Researchers reach out to charitable organisations to communicate their research findings, if they feel that their findings are relevant to specific organisations or sectors. Researchers cannot rely on passive methods of knowledge exchange with the Charity sectors, possibly due to time or resource constraints.

Possible reasons for this perceived lack of resources from researchers are varied, however could be lack of structured time for knowledge exchange. As highlighted by the previous section, researchers have indicated that they do not feel that adequate structures are in

place for knowledge exchange, which could also mean that they do not find the time to engage in knowledge exchange (potential because of other commitments, or a feeling that their institution does not value knowledge exchange). Further research is warranted to determine reasons for these perceived lack of resources from researchers. Some recommendations for short-term solutions to this perceived lack of resources could be:

> Research organisations should ensure all researchers have adequate time to commit to knowledge exchange, with accompanying training and financial support. If organisations already provide this, pro-actively advertising this to researchers would be beneficial.

> Research organisations create an open access knowledge exchange hub – a place where strategies and expert support can be reached easily. If this already exists, proactively advertising this to researchers would be beneficial.

Communication of academic research

When comparing how researchers communicate their findings versus how research users access research content, the regression analyses yielded some interesting results. On the one hand, research users were over three times more likely to obtain research via subscription only databases, websites, or citation indices than researchers were to communicate research via the same channels. One the other hand, research users were more than two times less likely to obtain research via subscription only academic journals accessed by a library than researchers were to disseminate findings through this channel. These results are likely to be the case because researchers do not typically directly publish research into databases – instead research is automatically indexed into databases on their behalf by journals and by databases. Further research is warranted to determine if this is the case.

The finding that research users are more than two times less likely to access research via subscription only journals adds to the evidence that, to facilitate effective knowledge exchange, research papers should be published open access wherever possible. Although not statistically significant with our conservate significance threshold, it was also found that research users were more likely to access research via non-academic intermediaries,

including government, NGO/charities, think tanks and organisations such as the WHO. This suggestive finding could be a solution if researchers do not have the means to publish their articles open access.

Evidence supporting this approach can also be found in another significant result from the regression analysis: research users were more than two times less likely to use informal and formal networks to exchange ideas, experiences, and best practices for translating research, as well as being over three times less likely to obtain research findings from academic conferences. It is not recommended, however, that researchers stop attending academic conferences or using informal or formal networks, instead it is recommended that:

> The use of academic conferences and/or informal or formal networks should be treated more as networking opportunities rather than being a primary mechanism for knowledge exchange with research users.

Moreover, researchers highlighted the discrepancies between open access publishing and the publication of abstracts from academic conferences, further strengthening this recommendation:

> Researchers are recommended to promote their research through non-academic intermediaries, especially if unable to publish research findings open access.

o   'While open access publication is now often mandatory for funded research, this is still not always consistent with publication offered through academic conferences, which can be through subscription only databases or publications as high impact journals often are. This inevitably results in academics talking to one another.'
Research user

COVID-19

Both researchers and research users were asked if their approach to knowledge exchange had changed as a result of the COVID-19 pandemic, with roughly half of each group equally responding 'yes' and 'no'. When asked to provide more details about how the pandemic had

changed their approach, there were similar responses from both researchers and research users:

- o 'More online platforms used' *Researcher*
- o 'Increase in knowledge exchange [sic] through leveraging virtual meeting tools.' *Research user*

Strengths and limitations

The surveys covered a wide range of issues related to knowledge exchange for researchers and research users, and open, qualitative questions ensured that additional views from stakeholders could be gathered. Researchers were recruited by identification of experts within the area of urban environment, public health, and ageing, ensuring that the sample of researchers captured research professionals in the relevant area. However, social media was employed for the recruitment of research users, and participation in the survey was incentivised, which may explain the high participation rate. It may also suggest that the sample of research users was less reliable to be professionals in urban environment, public health and ageing, than that of researchers. The surveys yielded high numbers of participants; however, the results and recommendations of this report should be considered within its limitations. Firstly, the differences between sample sizes limit the certainty of the results. Although we reduced the possibility of type 1 error by having a conservative p-value, these results should be treated as exploratory, and the resulting recommendations also treated as such.

Conclusion

Knowledge exchange is most effective when it is a two-way interactive process, however, our surveys among researchers and research users in the field of urban environment, public health and ageing found differences in the approaches to knowledge exchange from both groups, several of which were significant. As a result, we have made a series of recommendations which could improve practices and result in more equitable, mutually beneficial knowledge exchange between these two groups, which could result in more significant impacts for both researchers and research users.

Glossary

Dissemination

Refers to the process of sharing research findings with stakeholders and wider audiences, or, getting the findings of your research to the people who can make use of them.

Impact

Impact is the change, effect or benefit brought about in the economy or society because of research or expertise.

Knowledge exchange

Defined by the ESRC as a two-way exchange between researchers and research users, to share ideas, research evidence, experiences and skills. It refers to any process through which academic ideas and insights are shared, and external perspectives and experiences are brought into academia.

Researcher

An individual, or group, who has conducted and produced academic or scientific research. For example, a research staff member in a university.

Research user

An individual, or group, who is interested in the outcome or outputs from academic or scientific research. For example, a third-sector organisation such as a charity.