2.2 Ranking and assessment of research programmes

In the second step, the participants of the online consultation were asked to value the importance of the suggested four programmes on the scale 1 to 5 in each of the two selected themes/needs. Note that each programme, even within one group, was evaluated independently on the others, i.e. two or more can get the same value. In Table 1, we present the results of this exercise; the table is split in four parts by the ranks of the appraisal in each theme/need: the first table includes programmes ranked highest (1), the second table the rank 2 programmes, the third table the rank 3 programmes and the fourth table the programmes of lowest rank. The average scores range between 3.6 and 4.1. In general this means that respondents considered the proposed programmes relevant.

Nevertheless we can assert that the average score below 3.8 indicates that more than one third of respondents were not fully satisfied with the respective programme (and vice-versa). Thus those with the average score below 3.8 we marked red. The top-ranked programmes received average scores slightly above 4, the rank 2 programmes exhibit average ranks slightly below 4, except two with the scores 3.8. The rank 3 programmes exhibit basically the same scores as the rank-2 programmes. But most of the rank 4 programmes show red figures i.e. a substantial group of respondents was not entirely happy with them.

Table 1 Respondents evaluation of programmes by group of needs

Most preferred programmes in each group of needs

	Programme	Avg.score	Diff between citizens and experts
Sustainable Economy	Consume less, enjoy more	4.1	**11%**
Equality	Balanced work-life model	4.0	5%
Strengths-Based Education and Experiential Learning	Rethinking (the new) "job market needs"	4.1	1%
Citizenship Awareness and Participation	Empowered citizens	4.0	5%
Harmony with Nature	Top trending: at one with nature	4.3	0%
Holistic Health	Access to equal and holistic health services and resources for all citizens	4.1	0%
Personal Development	(Business) Models for balancing time	4.0	0%
Sustainable Energy	Beyond energy efficiency: reduce consumption through structural design and behaviour	4.2	0%
Unity and Cohesion	Alternative economic model	4.0	3%
Sustainable Food	Good food research	4.2	8%
Green Habitats	Moving together (more collective transports)	4.0	-1%
Life-Long Processes	Deconstruction of age	4.1	**20%**

Second preferred programmes in each group of needs

	Programme	Avg.score	Diff between citizens and experts
Sustainable Economy	Production awareness	4.0	6%
Equality	Social Economy	3.9	5%
Strengths-Based Education and Experiential Learning	Educational ecosystem as a driver of social innovation and local development	4.1	6%
Citizenship Awareness and Participation	The transparency toolbox	3.9	**13%**
Harmony with Nature	Ecological future education	4.2	3%
Holistic Health	Quantitative person-centred health	4.1	6%
Personal Development	Personal and organisational choice management	3.9	0%
Sustainable Energy	Enabling a market for energy prosumers	4.1	1%
Unity and Cohesion	Community building infrastructures	3.8	0%
Sustainable Food	Responsible use of land	4.1	**11%**
Green Habitats	Freedom to choose where we live	3.8	**11%**
Life-Long Processes	Health empowerment through "Everyone's science"	4.0	4%

Third preferred programmes in each group of needs

	Programme	Avg.score	Diff between citizens and experts
Sustainable Economy	From Wall Street to Main Street	4.0	6%
Equality	Empowering diversity in communities	3.9	4%
Strengths-Based Education and Experiential Learning	Design literacy and life skills for all	4.0	**12%**
Citizenship Awareness and Participation	Data for all – Share the power of data.	3.9	**14%**
Harmony with Nature	Transforming technologies for planet and people	3.9	0%
Holistic Health	Finding a balance in a fast-paced life	4.1	-1%
Personal Development	Technology as a means of well-being	3.9	**10%**
Sustainable Energy	Smart energy governance	4.1	-1%
Unity and Cohesion	Evidence-based community building	3.7	3%
Sustainable Food	Good quality food for all	4.0	6%
Green Habitats	Distributed living	3.7	4%
Life-Long Processes	I'm empowered to lead my changes	3.9	6%

Least preferred programmes in each group of needs

	Programme	Avg.score	Diff between citizens and experts
Sustainable Economy	Learning for society	3.8	6%
Equality	Digital Inclusion	3.7	1%
Strengths-Based Education and Experiential Learning	SWOT (Strengths, Weaknesses, Opportunities, Threats) Technological empowerment	3.9	6%
Citizenship Awareness and Participation	"Snakes and Ladders". Connecting scales of issues and actors.	3.7	5%
Harmony with Nature	Urban-rural symbiosis	3.8	3%
Holistic Health	Promoting well-being through relating environments	3.9	0%
Personal Development	Meaningful research for society	3.7	9%
Sustainable Energy	Interconnected open systems	3.9	1%
Unity and Cohesion	Universal basic income – so no-one is left behind	3.6	**28%**
Sustainable Food	Evolving food culture in growing cities	3.8	7%
Green Habitats	The bigger (the cities) the better	3.6	0%
Life-Long Processes	Here, there and everywhere	3.7	**10%**

Notes: red figures - values below the threshold score 3.8, green figures – the difference between the judgement of experts and citizens is more than 10% of the average score.

Unfortunately, the survey does not provide explanation for the low scores. We can only guess that in some cases the participating citizens might be discouraged by the programme title like “The bigger (the cities) the better”, in some other cases it was not easy to understand the programme. The latter might be a particular case of the programme “Universal basic income – so no-one is left behind” from the theme/need Unity and Cohesion which was ranked by expert as top (the score 4.6) while citizens appraised it with the lowest average score 3.59.

The difference between the judgements of citizens and experts is generally low, only in less than one fifth of cases the difference exceeds 10%.

2.3 General view on proposed programmes

Ranking programmes across needs by average scores is limited since respondents of the citizen citizen consultation worked with programmes within two needs only. Keeping this in mind we we nevertheless ordered the programmes by the average scores of importance and divided them them in three equal groups by ranks (Table 3). The most preferred programmes (rank 1-16) are marked red, the second group by importance is marked green and the last one is left white (colours in the first column, the colours in the second column refer to the classes of needs/themes). We can see that while programmes of the individualistic and globalisation related related needs are largely ranked high, there is only one programme of the specific needs (deconstruction of age) in the group of the most preferred programmes. More in this respect is is presented in

Table 2 (built upon Table 3). Any of the proposed programmes of four themes/needs (Citizenship Awareness and Participation, Personal Development, Unity and Cohesion and Green Habitats) did not qualify for the top group (red), while three themes/

Table 2 The presence of programmes in the importance groups by needs

Need	# in the upper 1/3	# in the middle 1/3	# in the lower 1/3	Need scores	Adjusted need scores
Sustainable Economy	1	2	1	12	3.72
Equality	1	1	2	10	2.51
Strengths-Based Education and Experiential Learning	2	2	**0**	16	3.14
Citizenship Awareness and Participation	**0**	2	2	8	1.50
Harmony with Nature	2	1	1	14	2.39
Holistic Health	3	1	**0**	18	2.96
Personal Development	**0**	2	2	8	1.26
Sustainable Energy	3	1	**0**	18	2.55
Unity and Cohesion	**0**	1	3	6	0.80
Sustainable Food	3	0	1	16	2.03
Green Habitats	**0**	1	3	6	0.51
Life-Long Processes	1	2	1	12	0.91

Source: Table 3

Table 3 The order of programmes by the average importance scores only

Rank	Need	Programme Title	Nr. of resp.	Avg. imp.	Disper-sion
1	Harmony with Nature	Top trending: at one with nature	590	**4.28**	0.76
2	Harmony with Nature	Ecological future education	590	**4.20**	0.83
3	Sustainable Food	Good food research	439	**4.18**	0.79
4	Sustainable Energy	Beyond energy efficiency: reduce consumption through structural	491	**4.16**	0.84
5	Holistic Health	Access to equal and holistic health services and resources for all	570	**4.11**	0.95
6	Sustainable Energy	Enabling a market for energy prosumers	491	**4.11**	0.88
7	Holistic Health	Quantitative person-centred health	570	**4.10**	0.92
8	Holistic Health	Finding a balance in a fast-paced life	570	**4.09**	0.91
9	Sustainable Food	Responsible use of land	439	**4.09**	0.82
10	Strengths-Based	Rethinking (the new) "job market needs"	679	**4.09**	0.91
11	Strengths-Based	Educational ecosystem as a driver of social innovation and local	679	**4.08**	0.79
12	Life-Long Processes	Deconstruction of age	262	**4.05**	0.82
13	Sustainable Economy	Consume less, enjoy more	1073	**4.05**	0.97
14	Sustainable Energy	Smart energy governance	491	**4.05**	0.93
15	Equality	Balanced work-life model	870	**4.04**	0.90
16	Sustainable Food	Good quality food for all	439	**4.03**	0.96
17	Sustainable Economy	Production awareness	1073	**4.03**	0.92
18	Citizenship	Empowered citizens	650	**4.00**	0.90
19	Unity and Cohesion	Alternative economic model	461	**3.99**	1.12
20	Strengths-Based	Design literacy and life skills for all	679	**3.99**	0.90
21	Personal Development	(Business) Models for balancing time	544	**3.99**	0.87
22	Sustainable Economy	From Wall Street to Main Street	1073	**3.99**	1.03
23	Life-Long Processes	Health empowerment through "Everyone's science"	262	**3.98**	1.09
24	Green Habitats	Moving together (more collective transports)	293	**3.96**	0.95
25	Citizenship	The transparency toolbox	650	**3.94**	0.94
26	Harmony with Nature	Transforming technologies for planet and people	590	**3.93**	1.11
27	Life-Long Processes	I'm empowered to lead my changes	262	**3.91**	0.94
28	Personal Development	Personal and organisational choice management	544	**3.91**	0.93
29	Equality	Social Economy	870	**3.90**	0.92
30	Holistic Health	Promoting well-being through relating environments	570	**3.89**	0.99
31	Sustainable Energy	Interconnected open systems	491	**3.89**	0.90
32	Strengths-Based Education and	SWOT (Strengths, Weaknesses, Opportunities, Threats) Technological empowerment	679	**3.88**	1.04
33	Personal Development	Technology as a means of well-being	544	**3.86**	0.97
34	Equality	Empowering diversity in communities	870	**3.85**	1.00
35	Citizenship	Data for all – Share the power of data.	650	**3.85**	0.92
36	Unity and Cohesion	Community building infrastructures	461	**3.82**	1.06
37	Harmony with Nature	Urban-rural symbiosis	590	**3.82**	1.08
38	Sustainable Economy	Learning for society	1073	**3.79**	1.04
39	Sustainable Food	Evolving food culture in growing cities	439	**3.76**	1.10
40	Green Habitats	Freedom to choose where we live	293	**3.76**	1.04
41	Personal Development	Meaningful research for society	544	**3.74**	1.08
42	Citizenship	"Snakes and Ladders". Connecting scales of issues and actors.	650	**3.73**	1.02
43	Unity and Cohesion	Evidence-based community building	461	**3.70**	1.15
44	Green Habitats	Distributed living	293	**3.68**	1.33
45	Equality	Digital Inclusion	870	**3.67**	1.07
46	Life-Long Processes	Here, there and everywhere	262	**3.65**	1.20
47	Unity and Cohesion	Universal basic income – so no-one is left behind	461	**3.61**	1.36
48	Green Habitats	The bigger (the cities) the better	293	**3.60**	1.39

Note: The table is divided in three parts: the most preferred programmes (red), the medium preferred programmes (green) and the least preferred ones (white)

needs (Holistic Health, Sustainable Energy and Sustainable Food) came in the top group with three programmes. We also see that programmes of very popular themes do not have the highest average scores.

The judgement on programme provides reflection on the importance of the need. In order to provide more insight in the relationship between themes/needs and programmes we generated an overall need score: each programme in the upper third gets 5, programmes of the middle third get 3 and the rest get 1 point. Summing the points over programmes yields a value which we call "need score". The highest need scores get Holistic Health and Sustainable Energy followed by Sustainable Food and Harmony with Nature. On the other end there are Personal Development, Green Habitats and Unity and Cohesion. These need scores undoubtedly comprise the quality of the specification of programmes and the level of understanding them by respondents (including the influence of the respondents background).

Combining these qualities with the relative "popularity" of needs (representing social demand for research in the need area - theme) we yield adjusted need scores. Needs ordered by adjusted scores are presented in Table 4. The theme/need Sustainable economy stays the most demanded by citizens for research. In spite of some reshufflings, specific themes remain at the bottom of the interest.

Table 4 Needs ordered by the Adjusted Need Score

need	# respondents	Need scores	Adjusted need score
Sustainable Economy	1073	12	3.72
Strengths-Based Education and Experiential Learning	679	16	3.14
Holistic Health	570	18	2.96
Sustainable Energy	491	18	2.55
Equality	870	10	2.51
Harmony with Nature	590	14	2.39
Sustainable Food	439	16	2.03
Citizenship Awareness and Participation	650	8	1.50
Personal Development	544	8	1.26
Life-Long Processes	262	12	0.91
Unity and Cohesion	461	6	0.80
Green Habitats	293	6	0.51

Source: Table 3

Turning our attention to the average scores, the graph in Figure 4 suggests that lower average scores are caused by larger dispersion of judgements (programme importance

scores). Therefore, the distribution of scores is skewed and towards higher values. The distribution is of course individual in each case, some generalisation/abstraction of those distributions is presented in Figure 5).

Figure 4 The relationship between the average scores and their dispersions

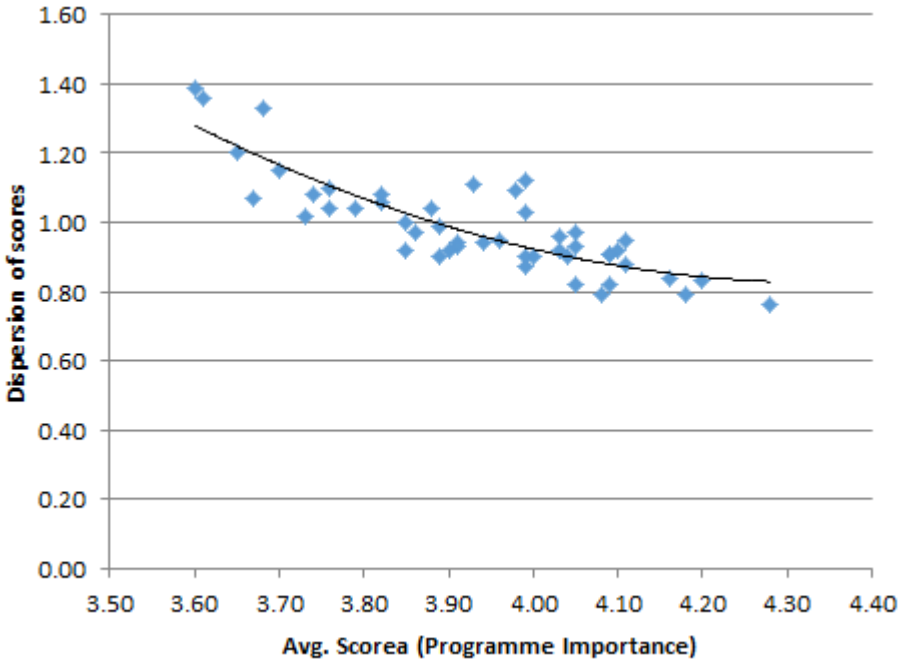
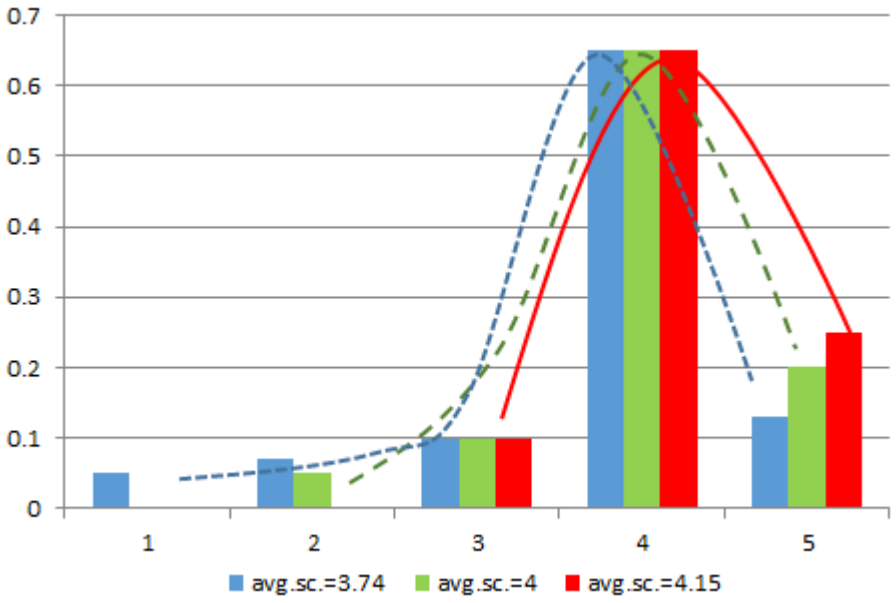


Figure 5 The distribution of scores - generalisation



In these charts we plotted distributions for average scores 3.74, 4 and 4.15 more or less related to the three groups of programmes introduce at the beginning of this paragraph. We

can see that the judgements are concentrated to the programme importance score 4, i.e. the modus of the distributions is the same and the probability (relative frequency) of this score is also the same 0.65. The difference rests in the distribution of the other answers. The relative frequency of the score 5 is between 12 to 25% and thus the share of judgements considering the programme important or very important is between 77 to 90%. It means in turn that averages of the scores do not reflect the distribution wel[2]l and the judgements on the social importance of the programmes based on the averages must be taken with reserve (interpreted carefully in the light of what has been explained above).

[2] modus will be more appropriate or sum of frequencies for 4 and 5.