

APPENDIX

Appendix 1

Rank distribution of knowledge fields across the regions of the Northwestern Russia by the coefficient of scientific specialization of R&D performed, 2016–2022

Knowledge field	Group 1		Group 2				Group 3			
	Saint Petersburg	Leningrad Oblast	Murmansk Oblast	Arhangelsk Oblast	Kaliningrad Oblast	Republic of Karelia	Komi Republic	Vologda Oblast	Novgorod Oblast	Pskov Oblast
<i>Represented in at least three regions among top 5 knowledge fields</i>										
Agricultural sciences	42	4	-	-	5	-	-	2	1	7
History and archeology	8	-	18	11	19	2	2	6	2	4
Geosciences and related environmental sciences	28	14	3	7	15	1	5	21	-	-
Economics and business	36	9	16	12	23	5	8	4	16	2
Social and economic geography	6	-	-	-	3	-	3	15	-	5
<i>Represented in 1-2 regions among top 5 knowledge fields</i>										
Biological sciences	14	6	5	9	14	4	12	22	-	6
Other natural and exact sciences	4	5	-	-	-	-	6	11	-	-
Construction and architecture	3	-	6	1	25	-	16	10	-	-
Materials technologies	16	16	14	23	4	-	21	3	-	-
Energy and environmental management	34	8	2	22	2	19	24	29	-	-
Fundamental medicine	18	2	-	5	12	10	7	38	-	-
Other agricultural sciences	1	3	-	-	-	-	-	-	-	-
Social sciences	37	-	-	10	-	-	4	1	-	-
Art history	13	-	-	-	-	-	-	28	5	3
Natural and exact sciences	20	13	17	3	7	7	11	37	15	-
Mathematics	21	18	21	24	11	3	28	18	6	-
Physics and astronomy	9	1	19	18	10	-	20	35	17	11
Chemical sciences	19	7	7	4	30	20	9	34	-	-
Environmental biotechnologies	41	-	1	-	20	-	-	-	-	-
Clinical medicine	29	21	-	17	-	13	14	-	3	-
Health sciences	15	-	12	14	32	9	27	33	4	8
Livestock and dairy farming	45	-	-	2	-	-	17	24	-	-
Sociological sciences	32	-	4	8	13	-	10	8	-	-
Media and mass communications	5	-	-	-	16	-	-	-	-	-
Other social sciences	30	-	-	-	-	-	-	27	7	1
Humanitarian sciences	38	-	-	-	-	-	-	5	-	-
Languages and literature	7	-	-	16	-	14	1	9	11	-
Philosophy, ethics, religious studies	25	-	11	-	1	-	-	26	-	-
Other humanities	2	-	-	-	-	15	-	14	-	-
<i>Not present among top 5 knowledge fields in any regions</i>										
Computer and information sciences	11	17	8	20	6	11	22	12	9	-
Technics and technology	22	19	-	-	27	-	-	30	12	13
Electrical engineering, electronic engineering, information technology	10	15	9	21	28	6	18	17	14	10
Mechanics and mechanical engineering	40	10	-	25	31	-	29	13	18	-
Chemical technology	43	-	13	19	-	-	26	32	-	-

Medical technology	23	11	-	-	18	18	13	23	10	12
Industrial biotechnology	12	-	-	-	-	-	-	-	-	-
Nanotechnology	24	12	-	-	26	12	15	-	-	-
Other technologies	33	20	20	-	24	-	-	19	13	14
Agriculture, forestry, fisheries	17	-	10	6	22	8	25	31	-	9
Veterinary sciences	44	-	-	-	-	17	-	16	-	-
Other agricultural sciences	27	-	-	-	17	-	-	20	-	-
Psychological sciences	31	-	-	13	29	-	-	25	-	-
Educational sciences	26	-	15	15	8	-	19	7	8	-
Law	35	-	-	-	9	-	-	36	-	-
Political sciences	39	-	-	-	21	16	23	-	-	-

Note: cells with ranks from 1 to 5 are highlighted in gray. Rank 1 corresponds to the field of knowledge with the highest value of the scientific specialization coefficient. The “-” sign indicates that R&D was not carried out in this research area during the period under review.