Socio-technical analysis result (Tornado) g

	range.date		devs	ml.only.devs	code.only.devs	ml.code.devs	perc.ml.only.devs	perc.code.only.devs	perc.ml.code.devs	sponsored.devs	ratio.sponsored	sponsored.core.devs	ratio.sponsored.core	num.tz	core.global.devs	core.mail.devs	core.code.devs	org.silo	prima.donnas	radio.silence	black.cloud	missing.links		st.congruence	communicability	global.turnover	code.turnover
	2013-0	5 – 2013-	08 119	101	14	4	0.8487	0.1176	0.0336	5	0.0420) 1	0.0556	1	44	42	5	8	0	27	0	8	0.272	27	0.6566	0.0000	0.0000
6	2013-0	8 - 2013-	11 101	89	10	2	0.8812	0.0990	0.0198	3	0.0297	1	0.0833	1	44	42	4	7	0	31	0	7	0.125	60	0.4688	0.7818	1.0000
	3 2013-1	1 - 2014-	01 72	54	14	4	0.7500	0.1944	0.0556	5	0.0694	1 2	0.1111	1	28	26	5	8	0	23	1	8	0.272	27	0.6717	0.9364	0.5333
4	2014-0	1 - 2014-	05 110	91	17	2	0.8273	0.1545	0.0182	5	0.0455	\tilde{b} 2	0.1053	1	47	44	4	9	0	27	0	9	0.000	00	0.6784	0.5275	0.7568
!	5 2014-0	5 - 2014-	08 87	64	19	4	0.7356	0.2184	0.0460	7	0.0805	5 1	0.0435	1	28	26	6	13	0	24	0	13	0.000	00	0.5318	0.9036	0.6667
(5 2014-0	8 - 2014-	11 76	59	12	5	0.7763	0.1579	0.0658	7	0.0921	. 0	0.0000	1	26	25	3	5	0	4	0	6	0.000	00	0.7255	0.7975	0.9500
•	7 2014-1	1 - 2015-	02 85	61	21	3	0.7176	0.2471	0.0353	5	0.0588	3 0	0.0000	1	31	29	5	7	0	6	0	7	0.125	60	0.7292	0.6957	0.6341
8	3 2015-0	2 - 2015-	05 66	44	20	2	0.6667	0.3030	0.0303	9	0.1364	1	0.0455	1	29	23	7	17	0	6	0	17	0.055	66	0.4672	0.9272	0.8261
ć	2015-0	5 - 2015-	08 53	45	7	1	0.8491	0.1321	0.0189	2	0.0377	7 0	0.0000	1	20	20	2	3	0	11	0	3	0.000	00	0.5000	0.9244	1.4000
10	2015-0	8 - 2015-	10 68	46	19	3	0.6765	0.2794	0.0441	8	0.1176	3	0.1364	1	20	18	7	8	0	29	0	8	0.111	.1	0.6717	0.5620	0.4667
1.	2015-1	0 - 2016-	01 63	47	15	1	0.7460	0.2381	0.0159	3	0.0476	0	0.0000	1	22	21	2	2	0	4	0	2	0.000	00	0.8125	0.8244	1.0000
1:	2016-0	1 - 2016-	04 68	53	13	2	0.7794	0.1912	0.0294	7	0.1029) 1	0.0667	1	24	22	4	5	0	2	0	5	0.000	00	0.7067	0.7328	0.9032
				7.	0																						
	core.global.turnover	core.mail.turnover	core.code.turnover	ratio emally anittore	racio.sinci.y.quiccis	m ratio.smelly.devs	global.truck	moil truck	man, or non- oode teniek		closeness.centr	betweenness.centr	degree.centr		global.mod		mail.mod		code.mod		density	mail.only.core.devs	code.only.core.devs	ml.code.core.devs	ratio.mail.only.core	ratio.code.only.core	ratio.ml.code.core
1	0.0000	core.mail	0.0000	0.000	0 0	.2773	0.6303	0.6000	0.7222	2 0	0.0182	Seenness 0.4752	0.5486 degree.centr		[reqola 2659]	0.3	17 18 18 18 18 18 18 18 18 18 18 18 18 18		3823)362	inalionlism 40	ω code.only.	2	0.8889	ratio.code.only.	0.0444
$\frac{1}{2}$	0.0000 0.5909	0.0000 core:mail		0.000	$ \begin{array}{ccc} 0 & 0 \\ 6 & 0 \end{array} $.2773 .3663	0.6303 0.5644	0.6000	0.7222	2 0	0.0182	0.4752 0.5336	0.5486 0.5765	0.	[reqola] .2659 .3653	0.3	3012 2992	0.	3823 0525	0.0)362	mail.only.	code.only.		0.8889 0.9091	76000 760000 760000 760000 760000 76	0.0444 0.0455
$\frac{}{}$	0.0000 0.5909 1.0000	0.0000 0.5714 1.0000	0.0000 0.8889 0.6667	0.0000 0.325 0.395	$ \begin{array}{cccc} 0 & 0 \\ 6 & 0 \\ 1 & 0 \end{array} $.3663 .4167	0.6303 0.5644 0.6111	0.6000 0.5385 0.5517	0.7222 5 0.6667 7 0.7222	2 0	0.0182 0.0202 0.0323	0.4752 0.5336 0.5469	0.5486 0.5765 0.5888	0.	[eqola .2659 .3653 .1625	0.3 0.2 0.1	3012 2992 .838	0. 0.	3823 0525 0112	0.0	0362 0335 0450	inalionlism 40	ω code.only.	2	0.8889	ratio.code.only. ratio.code.only. ratio.code.only.	0.0444 0.0455 0.0333
_	0.0000 0.5909 1.0000 0.4533	0.0000 0.5714 1.0000 0.4857	0.0000 0.8889 0.6667 0.8889	0.000 0.325 0.395 0.395	$ \begin{array}{cccc} 0 & 0 \\ 6 & 0 \\ 1 & 0 \\ 8 & 0 \end{array} $.2773 .3663 .4167 .3000	0.6303 0.5644 0.6111 0.5727	0.6000 0.5385 0.5269	0.7222 5 0.6667 7 0.7222 9 0.7895	2 0	0.0182 0.0202 0.0323 0.0135	0.4752 0.5336 0.5469 0.3858	0.5486 0.5765 0.5888 0.4686	0. 0. 0.	[eqola .2659 .3653 .1625 .3403	0.3 0.2 0.1 0.3	3012 2992 .838 3529	0. 0. 0.	3823 0525 0112 0443	0.0	0362 0335 0450 0269	in view 40 40 43 43	ω code.only.	2	0.8889 0.9091 0.8333 0.9149	0.0667 0.0455 0.1333 0.0638	0.0444 0.0455 0.0333 0.0213
_	0.0000 0.5909 1.0000 0.4533 1.0400	0.0000 0.5714 1.0000	0.0000 0.8889 0.6667	0.0000 0.325 0.395	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$.2773 .3663 .4167 .3000 .4023	0.6303 0.5644 0.6111 0.5727 0.6782	0.6000 0.5385 0.5517 0.5269 0.6176	0.7222 6 0.6667 7 0.7222 0 0.7895 6 0.7391		0.0182 0.0202 0.0323 0.0135 0.0358	0.4752 0.5336 0.5469 0.3858 0.5858	0.5486 0.5765 0.5888 0.4686 0.6656	0. 0. 0.	reqolar .2659 .3653 .1625 .3403 .2556	0.3 0.2 0.1 0.3 0.2	3012 2992 838 3529 2170	0. 0. 0. -0.	3823 0525 0112 0443 2872	0.0 0.0 0.0	0362 0335 0450 0269 0553	viluo: liem 40 40 25	ω code.only.	2	0.8889 0.9091 0.8333	ratio.code.only. ratio.code.only. ratio.code.only.	0.0444 0.0455 0.0333
$\frac{1}{3}$	0.0000 0.5909 1.0000 0.4533 1.0400 0.5926	0.0000 0.5714 1.0000 0.4857 1.0286 0.5490	0.0000 0.8889 0.6667 0.8889 0.6000 1.1111	0.000 0.325 0.395 0.395 0.292 0.461	0 0 6 0 1 0 8 0 1 0 5 0	.3663 .4167 .3000 .4023 .0921	0.6303 0.5644 0.6111 0.5727 0.6782 0.6579	0.6000 0.5388 0.5517 0.5269 0.6176 0.6094	0.7222 0.6667 0.7222 0.7895 0.7391 0.8235	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0182 0.0202 0.0323 0.0135 0.0358 0.0347	0.4752 0.5336 0.5469 0.3858 0.5858 0.5572	0.5486 0.5765 0.5888 0.4686 0.6656 0.5639	0. 0. 0. 0.	.2659 .3653 .1625 .3403 .2556 .3841	0.3 0.2 0.1 0.3 0.2 0.3	3012 2992 838 3529 2170 3534	0. 0. -0. -0.	3823 0525 0112 0443 2872 3099	0.0 0.0 0.0 0.0	0362 0335 0450 0269 0553 0495	Yelloo: Note of the second sec	3 2 4 3 5 1	2 2 1 1 1 2	0.8889 0.9091 0.8333 0.9149 0.8065 0.8846	0.0667 0.0455 0.1333 0.0638 0.1613 0.0385	0.0444 0.0455 0.0333 0.0213 0.0323 0.0769
$\frac{1}{3}$	0.0000 0.5909 1.0000 0.4533 1.0400 0.5926 0.5965	0.0000 0.5714 1.0000 0.4857 1.0286 0.5490 0.5926	0.0000 0.8889 0.6667 0.8889 0.6000	0.000 0.325 0.395 0.395 0.292	$egin{array}{cccc} 0 & 0 & 0 \\ 6 & 0 & 1 & 0 \\ 8 & 0 & 1 & 0 \\ 5 & 0 & 3 & 0 \\ \end{array}$.2773 .3663 .4167 .3000 .4023 .0921 .1647	0.6303 0.5644 0.6111 0.5727 0.6782	0.6000 0.5385 0.5517 0.5269 0.6176 0.6094	0.7222 6 0.6667 7 0.7222 9 0.7895 6 0.7391 4 0.8235 9 0.7917	2 0 2 0 2 0 6 0 6 0	0.0182 0.0202 0.0323 0.0135 0.0358 0.0347 0.0204	0.4752 0.5336 0.5469 0.3858 0.5858 0.5572 0.3729	0.5486 0.5765 0.5888 0.4686 0.6656	0. 0. 0. 0. 0.	.2659 .3653 .1625 .3403 .2556 .3841 .3195	0.3 0.2 0.1 0.3 0.2 0.3 0.2	3012 2992 838 3529 2170 3534 2852	0. 0. 0. -0. -0.	3823 0525 0112 0443 2872 3099 0872	0.0 0.0 0.0 0.0	0362 0335 0450 0269 0553	Aluo: liem 40 40 25 43 25	3 2 4 3 3 4 3	2 2 1 1 1	0.8889 0.9091 0.8333 0.9149 0.8065	0.0667 0.0455 0.1333 0.0638 0.1613 0.0385 0.0938	0.0444 0.0455 0.0333 0.0213 0.0323 0.0769 0.0625
$\frac{1}{3}$	0.0000 0.5909 1.0000 0.4533 1.0400 0.5926 0.5965 0.8333	0.0000 0.5714 1.0000 0.4857 1.0286 0.5490 0.5926 0.8846	0.0000 0.8889 0.6667 0.8889 0.6000 1.1111 0.5000 0.6667	0.000 0.325 0.395 0.395 0.292 0.461 0.089 0.157	0 0 6 0 1 0 8 0 1 0 5 0 3 0 1 0	.2773 .3663 .4167 .3000 .4023 .0921 .1647 .2879	0.6303 0.5644 0.6111 0.5727 0.6782 0.6579 0.6353 0.5606	0.6000 0.5385 0.5517 0.5269 0.6176 0.6094 0.5469 0.5000	0 0.7222 0 0.6667 7 0.7222 0 0.7895 0 0.7391 4 0.8235 0 0.7917 0 0.6818	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0182 0.0202 0.0323 0.0135 0.0358 0.0347 0.0204 0.0374	0.4752 0.5336 0.5469 0.3858 0.5858 0.5572 0.3729 0.6024	0.5486 0.5765 0.5888 0.4686 0.5639 0.4318 0.5767	0. 0. 0. 0. 0. 0.	.2659 .3653 .1625 .3403 .2556 .3841 .3195 .3156	0.3 0.2 0.1 0.3 0.2 0.3 0.2	3012 2992 .838 3529 2170 3534 2852 3247	0. 0. 0. -0. -0. 0.	3823 0525 0112 0443 2872 3099 0872 2087	0.0 0.0 0.0 0.0 0.0 0.0	0362 0335 0450 0269 0553 0495 0325	Yelloo: Note of the second sec	3 2 4 3 5 1	2 2 1 1 1 2	0.8889 0.9091 0.8333 0.9149 0.8065 0.8846	0.0667 0.0455 0.1333 0.0638 0.1613 0.0385 0.0938 0.2069	0.0444 0.0455 0.0333 0.0213 0.0323 0.0769 0.0625 0.0345
3 4 5 6 7	0.0000 0.5909 1.0000 0.4533 1.0400 0.5926 0.5965 0.8333 0.9388	0.0000 0.5714 1.0000 0.4857 1.0286 0.5490 0.5926 0.8846 0.7907	0.0000 0.8889 0.6667 0.8889 0.6000 1.1111 0.5000 0.6667 1.3333	0.000 0.325 0.395 0.395 0.292 0.461 0.089 0.157 0.309	0 0 6 0 1 0 8 0 1 0 5 0 3 0 1 0	.2773 .3663 .4167 .3000 .4023 .0921 .1647 .2879 .2642	0.6303 0.5644 0.6111 0.5727 0.6782 0.6579 0.6353 0.5606 0.6226	0.6000 0.5385 0.5517 0.5269 0.6176 0.6094 0.5469 0.5000 0.5652	0 0.7222 5 0.6667 7 0.7222 9 0.7895 3 0.7391 4 0.8235 9 0.7917 0 0.6818 2 0.7500	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0182 0.0202 0.0323 0.0135 0.0358 0.0347 0.0204 0.0374	0.4752 0.5336 0.5469 0.3858 0.5858 0.5572 0.3729	0.5486 0.5765 0.5888 0.4686 0.6656 0.5639 0.4318 0.5767 0.7798	0. 0. 0. 0. 0. 0.	.2659 .3653 .1625 .3403 .2556 .3841 .3195 .3156 .2910	0.3 0.2 0.1 0.3 0.2 0.3 0.2 0.3 0.1	3012 2992 838 3529 2170 3534 2852 3247 837	0. 0. 0. -0. -0. 0.	3823 0525 0112 0443 2872 3099 0872 2087 3963	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0362 0335 0450 0269 0553 0495 0325 0387	%luo:liem 40 40 25 43 25 23 27	3 2 4 3 5 1 3 6 6 6 6 9 1 1 3 6 6 6 9 1 1 3 6 6 1 1 3 6 1 1 1 1 1 1 1 1 1 1 1	2 2 1 1 1 2	0.8889 0.9091 0.8333 0.9149 0.8065 0.8846 0.8438	0.0667 0.0455 0.1333 0.0638 0.1613 0.0385 0.0938 0.2069 0.0476	0.0444 0.0455 0.0333 0.0213 0.0323 0.0769 0.0625 0.0345 0.0476
3 4 5 6 7	0.0000 0.5909 1.0000 0.4533 1.0400 0.5926 0.5965 0.8333 0.9388 0.5000	0.0000 0.5714 1.0000 0.4857 1.0286 0.5490 0.5926 0.8846 0.7907 0.5263	0.0000 0.8889 0.6667 0.8889 0.6000 1.1111 0.5000 0.6667 1.3333 0.2222	0.000 0.325 0.395 0.395 0.292 0.461 0.089 0.157 0.309	0 0 6 0 1 0 8 0 1 0 5 0 3 0 1 0 1 0 9 0	.2773 .3663 .4167 .3000 .4023 .0921 .1647 .2879 .2642 .5588	0.6303 0.5644 0.6111 0.5727 0.6782 0.6579 0.6353 0.5606 0.6226	0.6000 0.5385 0.5517 0.5269 0.6176 0.6094 0.5469 0.5000 0.5652 0.6327	0 0.7222 5 0.6667 7 0.7222 9 0.7895 6 0.7391 4 0.8235 9 0.7917 0.6818 2 0.7500 7 0.6818	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0182 0.0202 0.0323 0.0135 0.0358 0.0347 0.0204 0.0374 0.0818	0.4752 0.5336 0.5469 0.3858 0.5572 0.3729 0.6024 0.6789 0.4477	0.5486 0.5765 0.5888 0.4686 0.6656 0.5639 0.4318 0.5767 0.7798 0.5900	0. 0. 0. 0. 0. 0. 0.	.2659 .3653 .1625 .3403 .2556 .3841 .3195 .3156 .2910 .2227	0.3 0.2 0.1 0.3 0.2 0.3 0.2 0.3 0.1 0.1	3012 2992 838 3529 2170 3534 2852 3247 837 169	0. 0. -0. -0. 0. -0.	3823 0525 0112 0443 2872 3099 0872 2087 3963 0728	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0362 0335 0450 0269 0553 0495 0325 0387 0856	%luo:liem 40 45 43 25 23 27 22 19 16	3 2 4 3 5 1 3 6 6 6 6 9 1 1 3 6 6 6 9 1 1 3 6 6 1 1 3 6 1 1 1 1 1 1 1 1 1 1 1	2 2 1 1 1 2	0.8889 0.9091 0.8333 0.9149 0.8065 0.8846 0.8438 0.7586	0.0667 0.0455 0.1333 0.0638 0.1613 0.0385 0.0938 0.2069 0.0476 0.2174	0.0444 0.0455 0.0333 0.0213 0.0323 0.0769 0.0625 0.0345 0.0476 0.0870
3 4 5 6 7 8 9	0.0000 0.5909 1.0000 0.4533 1.0400 0.5926 0.5965 0.8333 0.9388	0.0000 0.5714 1.0000 0.4857 1.0286 0.5490 0.5926 0.8846 0.7907	0.0000 0.8889 0.6667 0.8889 0.6000 1.1111 0.5000 0.6667 1.3333	0.000 0.325 0.395 0.395 0.292 0.461 0.089 0.157 0.309	0 0 6 0 1 0 8 0 1 0 5 0 3 0 1 0 1 0 9 0 6 0	.2773 .3663 .4167 .3000 .4023 .0921 .1647 .2879 .2642	0.6303 0.5644 0.6111 0.5727 0.6782 0.6579 0.6353 0.5606 0.6226	0.6000 0.5385 0.5517 0.5269 0.6176 0.6094 0.5469 0.5000 0.5652 0.6327	0 0.7222 5 0.6667 7 0.7222 9 0.7895 6 0.7391 4 0.8235 9 0.7917 0 0.6818 2 0.7500 7 0.6818 6 0.8750	2 0 2 0 3 0 6 0 6 0 6 0 8 0 8 0 9 0	0.0182 0.0202 0.0323 0.0135 0.0358 0.0347 0.0204 0.0374 0.0818 0.0267 0.0245	0.4752 0.5336 0.5469 0.3858 0.5572 0.3729 0.6024 0.6789	0.5486 0.5765 0.5888 0.4686 0.6656 0.5639 0.4318 0.5767 0.7798	0. 0. 0. 0. 0. 0. 0. 0.	.2659 .3653 .1625 .3403 .2556 .3841 .3195 .3156 .2910	0.3 0.2 0.1 0.3 0.2 0.3 0.2 0.3 0.1 0.1	3012 2992 838 3529 2170 3534 2852 3247 837	0. 0. -0. -0. 0. -0. 0.	3823 0525 0112 0443 2872 3099 0872 2087 3963	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0362 0335 0450 0269 0553 0495 0325 0387	%luo:liem 40 40 25 43 25 23 27 22 19	3 2 4 3 5 1 3 6 1	2 2 1 1 1 2 2 1 1	0.8889 0.9091 0.8333 0.9149 0.8065 0.8446 0.7586 0.9048	0.0667 0.0455 0.1333 0.0638 0.1613 0.0385 0.0938 0.2069 0.0476	0.0444 0.0455 0.0333 0.0213 0.0323 0.0769 0.0625 0.0345 0.0476

Community smells: Pearson's correlation (Tornado)

							/	α		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Cai			I I CIG	01011	(-	'I IICC	10	,						
		devs	ml.only.devs	code.only.devs	ml.code.devs	perc.ml.only.devs	perc.code.only.devs	perc.ml.code.devs	sponsored.devs	ratio.sponsored	sponsored.core.devs	${\rm ratio.sponsored.core}$	num.tz	core.global.devs	core.mail.devs	core.code.devs	org.silo	prima.donnas	radio.silence	black.cloud	missing.links	st.congruence	communicability	global.turnover	code.turnover
	org.sile	0.22	0.07	0.63	0.24	-0.45	0.43	0.18	0.67	0.52	0.37	0.30	-	0.26	0.13	0.83	-	-	0.25	0.03	1.00	0.12	-0.54	0.14	-0.47
-	ima.donna		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	adio.silence		0.60	0.01	0.21	0.32	-0.34	-0.01	-0.11	-0.31	0.69	0.72	-	0.55	0.57	0.37	0.25	-	-	0.22	0.23	0.48	-0.32	-0.30	-0.39
	black.cloud		-0.11	-0.09	0.35	-0.07	-0.04	0.42	-0.08	-0.05	0.33	0.38	-	-0.04	-0.04	0.10	0.03	-	0.22	-	0.02	0.79	0.11	0.36	-0.37
n	nissing.link	s = 0.22	0.07	0.62	0.28	-0.45	0.43	0.22	0.69	0.54	0.35	0.28	-	0.25	0.13	0.82	1.00	-	0.23	0.02	-	0.11	-0.53	0.15	-0.47
			core.global.turnover	core.mail.turnover	core.code.turnover	ratio.smelly.quitters	ratio.smelly.devs	global.truck	mail.truck	code.truck	closeness.centr	betweenness.centr	degree.centr	global.1	,	•		density	mail.only.core.devs	code.only.core.devs	ml.code.core.devs	ratio.mail.only.core	ratio.code.only.core	ratio.ml.code.core	
		org.silo	0.37	0.56	-0.46	-0.39	0.45	-0.30	-0.28	-0.54	-0.17	0.32	0.17	-0.26	6 -0.01	0.40	6.0-	36	0.14	0.87	-0.14	-0.56	0.69	-0.33	
	_	a.donnas	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	
		io.silence	0.06	0.12	-0.23	0.24	0.82	-0.09	0.12	-0.53	-0.29	0.15	0.33						0.56	0.29	0.25	-0.08	0.13	-0.13	
		ack.cloud	0.47	0.51	-0.10	0.19	0.30	-0.12	-0.13	-0.14	-0.00	0.16	0.11	-0.70					-0.02	0.17	-0.24	-0.06	0.13	-0.24	
	miss	sing.links	0.36	0.55	-0.44	-0.37	0.43	-0.29	-0.26	-0.52	-0.17	0.34	0.18	-0.23	0.02	0.4	5 -0.3	36	0.14	0.86	-0.12	-0.56	0.68	-0.30	

			(Com	mun	ity s	\mathbf{mell}	ls: P	ears	on's	corr	ela	tion	n - p	-val	lues	(To	ornac	do)					
	devs	ml.only.devs	code.only.devs	ml.code.devs	perc.ml.only.devs	perc.code.only.devs	perc.ml.code.devs	sponsored.devs	ratio.sponsored	sponsored.core.devs	ratio.sponsored.core	num.tz	core.global.devs	core mail devs	7	core.code.devs	org.silo prima.donnas	radio.silence	black.cloud	missing.links	st.congruence	communicability	global.turnover	${\rm code.turnover}$
org.silo	0.49	0.82	0.03	0.45	0.15	0.16	0.58	0.02	0.08	0.24	0.34	-	0.42	0.68	0.0	0		0.43	0.94	0.00	0.71	0.07	0.67	0.14
prima.donnas	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	-	-	-	-	-
radio.silence	0.04	0.04	0.97	0.51	0.32	0.28	0.98	0.74	0.33	0.01	0.01	-	0.06	0.05	0.24	4 0.4	-	-	0.51	0.47	0.12	0.30	0.37	0.24
black.cloud	0.77	0.75	0.80	0.29	0.84	0.91	0.20	0.81	0.89	0.32	0.25	-	0.91	0.92	0.70	6 0.9	94 -	0.51	-	0.95	0.00	0.75	0.28	0.26
missing.links	0.50	0.83	0.03	0.37	0.14	0.17	0.48	0.01	0.07	0.26	0.37	-	0.43	0.69	0.00	0.0	00 -	0.47	0.95	-	0.74	0.08	0.67	0.15
		${\it core.global.turnover}$		core.code.turnover	ratio.smelly.quitters	ratio.smelly.devs	global.truck	mail.truck	code.truck	closeness.centr	betweenness.centr		degree.centr	global.mod	mail.mod	code.mod	density	mail.only.core.devs	code.only.core.devs	ml.code.core.devs	ratio.mail.only.core	ratio.code.only.core	ratio.ml.code.core	
	org.silo	0.26	0.08	0.16	0.24	0.14	0.35	0.38	0.07	0.60	0.31	0.5	59 0	0.42	0.98	0.13	0.25	0.66	0.00	0.66	0.06	0.01	0.29	
prima.		-	- 0.70	0.50	- 0.40	-			-	- 0.05	- 0.05	0.0	-	-	-	-	- 0.41	-	- 0.00	- 0.44	-	- 70		
radio.	silence	0.85	0.73	0.50	0.48	0.00	0.78	0.72	0.08	0.35	0.65	0.2	29 ()).11 (0.17	0.85	0.41	0.06	0.36	0.44	0.80	0.70	0.70	

0.64

 $0.74 \quad 0.02$

0.29

 $0.72 \quad 0.89$

 $0.58 \quad 0.47 \quad 0.96 \quad 0.15 \quad 0.25 \quad 0.67 \quad 0.00$

 $0.95 \quad 0.61$

 $0.48 \quad 0.87 \quad 0.70 \quad 0.47$

 $0.71 \quad 0.06 \quad 0.01 \quad 0.34$

 $0.67 \quad 1.00$

0.70

 $0.11 \quad 0.77 \quad 0.58$

black.cloud 0.14

 $0.37 \quad 0.73$

missing.links 0.27 0.08 0.17 0.26 0.16 0.36 0.41 0.08 0.61 0.28

Community smells: Spearman's correlation (Tornado)

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	devs	ml.only.devs	${ m code.only.devs}$	m ml.code.devs	perc.ml.only.devs	perc.code.only.devs	perc.ml.code.devs	${\rm sponsored.devs}$	ratio.sponsored	sponsored.core.devs	ratio.sponsored.core	num.tz	core.global.devs	core.mail.devs	core.code.devs	org.silo	prima.donnas	radio.silence	black.cloud	missing.links	st.congruence	communicability	global.turnover	code.turnover
org.silo	0.43	0.22	0.60	0.37	-0.39	0.28	0.31	0.57	0.33	0.66	0.49	-	0.52	0.40	0.83	-	-	0.48	0.15	1.00	0.29	-0.50	0.04	-0.64
prima.donnas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
radio.silence	0.55	0.45	0.02	0.13	0.25	-0.32	0.01	-0.13	-0.40	0.61	0.61	-	0.40	0.41	0.37	0.48	-	-	0.10	0.48	0.47	-0.52	-0.20	-0.30
black.cloud	0.00	0.00	-0.10	0.36	0.00	0.00	0.40	-0.10	0.00	0.37	0.41	-	0.05	0.15	0.15		-	0.10	-	0.15	0.55	-0.05	0.50	-0.40
missing.links	0.44	0.23	0.59	0.39	-0.39	0.27	0.33	0.57	0.33	0.64	0.47	-	0.52	0.41	0.82	1.00	-	0.48	0.15	_	0.29	-0.50	0.05	-0.63
		core.global.turnover	core.mail.turnover	core.code.turnover	ratio.smelly.quitters	ratio.smelly.devs	global.truck	mail.truck	code.truck	closeness.centr	betweenness.centr	dearee centr		global.mod	mail.mod	code.mod	density	mail.only.core.devs	code.only.core.devs		IIII.code.core.de	ratio.mail.only.core		ratio.ml.code.core
org.		0.21	0.41	-0.47	-0.26	0.68	-0.26	-0.19	-0.50	-0.02	0.32	0.30) -0.	52 -	0.05	0.44	-0.28	0.40	0.86	-0.10	0 -0.4	16 0.6	7 -0.5	8
prima.don		-	_	-	_	_	_	_	_	_	_		-	-	_	_	-	-	-		-	_	-	-
radio.sile		-0.05	0.00	-0.12	0.11	0.79	-0.20	-0.02	-0.59	-0.41	0.18	0.4			0.46	-0.00	-0.27	0.41	0.28					
black.cl		0.40	0.40	-0.05	0.20	0.40	-0.20	-0.10	-0.20	0.10	0.10	0.20			0.30	-0.10	-0.10	0.15	0.20	-0.2				
missing.li	ınks	0.22	0.39	-0.44	-0.22	0.67	-0.25	-0.18	-0.48	-0.02	0.35	0.33	2 -0.	b1 -(0.05	0.42	-0.29	0.41	0.85	-0.0	7 -0.4	15 0.6	5 -0.5	<u>5</u>

Community smells: Spearman's correlation - p-values (Tornado)

				\sim	OIIIII	IUIII	U y 51.		. БР	carn	iiaii ,	o COI	101	aur	<i>)</i> 11 –	\mathbf{P}_{-}	aruc	, b (-	101110	\mathbf{u}	,				
		devs	ml.only.devs	code.only.devs	ml.code.devs	perc.ml.only.devs	perc.code.only.devs	perc.ml.code.devs	sponsored.devs	ratio.sponsored	sponsored.core.devs	ratio.sponsored.core	num.tz	core.global.devs	ore mail deve		core.code.devs	org.silo prima.donnas	radio.silence	black.cloud	missing.links	st.congruence	communicability	global.turnover	code.turnover
org	.silo	0.16	0.49	0.04	0.24	0.21	0.39	0.33	0.05	0.29	0.02	0.11	_	0.08	0.19	0.0	00		0.11	0.66	0.00	0.36	0.10	0.90	0.03
prima.don		-	-	-	-	-	-	-	-	-	-	-	_	-		-	-		_	-	-	-	-	-	-
radio.sile	ence	0.07	0.15	0.95	0.68	0.43	0.31	0.98	0.68	0.20	0.03	0.04	-	0.20	0.19	0.2	23 0.	11 -	-	0.77	0.11	0.12	0.08	0.55	0.36
black.cl	loud	1.00	1.00	0.77	0.28	1.00	1.00	0.22	0.77	1.00	0.27	0.21	-	0.88	0.66	0.6	55 0.	66 -	0.77	-	0.66	0.08	0.88	0.12	0.22
missing.li	inks	0.15	0.48	0.04	0.21	0.21	0.39	0.29	0.05	0.30	0.02	0.13	-	0.08	0.19	0.0	0.00	00 -	0.11	0.66	-	0.37	0.10	0.88	0.04
			core.global.turnover	core.mail.turnover	core.code.turnover	m ratio.smelly.quitters	ratio.smelly.devs	global.truck	mail.truck	code.truck	closeness.centr	betweenness.centr		degree.centr	global.mod	mail.mod	code.mod	density	mail.only.core.devs	code.only.core.devs	ml.code.core.devs	ratio.mail.only.core	ratio.code.only.core	ratio.ml.code.core	
	О	rg.silo	0.53	0.21	0.14	0.45	0.01	0.42	0.56	0.10	0.94	0.31	0.	34 (0.09	0.87	0.15	0.37	0.19	0.00	0.76	0.13	0.02	0.05	
-		lonnas	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
		silence	0.87		0.72	0.76	0.00	0.54	0.94	0.04	0.18	0.58	0.			0.14	0.99	0.39	0.19	0.38	0.27	0.82	0.60	0.77	
		.cloud	0.22		0.88	0.56	0.22	0.56	0.77	0.55	0.77	0.77	0.			0.37	0.77	0.77	0.66	0.55	0.48	0.55	0.55	0.37	
n	nissing	$_{ m g.links}$	0.52	0.23	0.17	0.52	0.02	0.43	0.57	0.12	0.96	0.27	0.	31 (0.09	0.89	0.18	0.36	0.19	0.00	0.82	0.14	0.02	0.06	