Socio-technical analysis result (  $\rm VLC$  )

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	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
1	2013 - 05	5 - 2013 - 08	3 131	69	32		0.5267	0.2443	0.2290	29	0.2214	0	0.0000	17	39	38	10	13	0	46	0	26	0.4		0.9098	0.0000	0.0000
2		3 - 2013 - 11		62	3		0.5849	0.0283	0.3868	7	0.0660	0	0.0000	21	40	39	12	2	0	54	0	12	0.7		0.9529	0.7595	0.8113
3		-2014-02		54	9		0.5347	0.0891	0.3762	8	0.0792	0	0.0000	15	35	34	13	4	2	51	1	26	0.6		0.9271	0.5894	0.4835
4	2014-02	2 - 2014 - 05	5 136	54	41	41	0.3971	0.3015	0.3015	14	0.1029	1	0.0122	23	38	36	15	2	4	50	0	21	0.6	557	0.9670	0.4895	0.3566
5	2014-05	5 - 2014 - 08	8 120	35	41	44	0.2917	0.3417	0.3667	16	0.1333	4	0.0471	16	33	31	14	3	4	36	0	20	0.5	349	0.9609	0.5234	0.3114
6	2014-08	3 - 2014-13	1 70	30	12	28	0.4286	0.1714	0.4000	7	0.1000	4	0.1000	18	23	23	12	7	2	28	1	21	0.5	435	0.9098	0.8842	0.9440
7	2014-11	-2015-02	95	51	11	33	0.5368	0.1158	0.3474	10	0.1053	1	0.0227	15	33	32	10	4	0	50	0	19	0.5	128	0.9196	0.4364	0.4762
8	2015-02	2 - 2015 - 05	5 102	58	8	36	0.5686	0.0784	0.3529	22	0.2157	1	0.0227	16	34	35	9	1	0	48	0	10	0.7	500	0.9562	0.6497	0.6136
9	2015 - 05	5 - 2015 - 08	8 62	32	8	22	0.5161	0.1290	0.3548	7	0.1129	1	0.0333	12	21	21	9	4	0	28	0	16	0.6	444	0.9037	0.8902	0.7027
10	2015-08	3 - 2015-13	1 79	43	12	24	0.5443	0.1519	0.3038	10	0.1266	3	0.0833	18	30	27	12	13	0	43	3	23	0.5	306	0.8861	0.4681	0.3333
11	2015-11	- 2016-05	2   57	18	8	31	0.3158	0.1404	0.5439	13	0.2281	0	0.0000	18	20	19	11	0	0	19	0	19	0.6	042	0.9060	0.7647	0.4800
12	2016-02	2 - 2016 - 05	5 75	30	8	37	0.4000	0.1067	0.4933	12	0.1600	1	0.0222	18	29	27	14	12	0	31	1	32	0.5	362	0.8979	0.4091	0.4762
	core.global.turnover	core.mail.turnover	core.code.turnover		ratio.smelly.quitters	ratio.smellv.devs		g100au	mail.truck	code.truck	closeness.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	0.0000	0.0000	0.00		0.4656					0.0118	0.348			0.2354		1791	0.36		0.027		31	3	7	0.7561	0.0732	0.1707
2	0.5063	0.5455	0.0909	0.40		0.5755					0.1399	0.423			0.1445		1563	0.50		0.058		28	1	11	0.7000	0.0250	0.2750
3	0.4533	0.4932	0.2400	0.63		0.6139					0.0293	0.361			0.2985		1440	0.33		0.055		22	1	12	0.6286	0.0286	0.3429
4	0.3836	0.4286	0.2143	0.63		0.4853					0.0108	0.274			0.3446		0976	0.45		0.027		23	2	13	0.6053	0.0526	0.3421
5	0.6479	0.6866	0.4138	0.58		0.4250					0.0111	0.209			0.6039		3637	0.71		0.029		20	3	11	0.5882	0.0882	0.3235
6	0.6429	0.4815	0.5385	0.36		0.5857					0.0307	0.409			0.2100		1972	0.18		0.062		14	3	9	0.5385	0.1154	0.3462
7	0.3571	0.3273	0.6364	0.58		0.5789					0.0176	0.340			0.1164		0825	0.37		0.042		25	3	7	0.7143	0.0857	0.2000
8	0.5672	0.5075	0.6316	0.57		0.5686					0.0258	0.389			0.1861		0964	0.17		0.038		27	1	8	0.7500	0.0278	0.2222
9	0.7273	0.7500	0.3333	0.57		0.6452					0.0394	0.423			0.2282		2769	0.20		0.069	98	12	0	9	0.5714	0.0000	0.4286
10	0.3922	0.4583	0.0952	0.5'		0.6835					0.0433	0.555			0.4086		1313	0.46		0.047	71	19	4	8	0.6129	0.1290	0.2581
11	0.7200	0.7391	0.4348	0.7	115	0.5439			0.71	79	0.0396	0.305			0.1381		2294	0.27	29	0.077	77	9	1	10	0.4500	0.0500	0.5000
12	0.2449	0.2609	0.1600	0.40	074	0.5733	0.613	3 - 0.597	0.68	89	0.0401	0.322	0.57	12 (	0.3460	0.	2714	0.43	808	0.077	75	15	2	12	0.5172	0.0690	0.4138

## Community smells: Pearson's correlation ( VLC )

								·							•								
	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
org.silo	-0.03	0.08	0.05	-0.41	0.17	0.09	-0.31	0.21	0.12	0.20	0.35	-0.03	0.06	-0.01	0.07	-	-0.28	-0.03	0.84	0.70	-0.69	-0.66	-0.38
prima.donnas	0.50	-0.04	0.74	0.55	-0.55	0.73	-0.16	-0.04	-0.35	0.46	0.16	0.30	0.21	0.17	0.71	-0.28	-	0.09	-0.17	0.12	-0.02	0.60	-0.17
radio.silence	0.73	0.92	0.14	0.43	0.64	-0.12	-0.64	0.17	-0.36	-0.28	-0.32	0.25	0.91	0.91	0.07	-0.03	0.09	-	0.00	-0.17	0.24	0.51	-0.42
black.cloud	-0.28	-0.09	-0.18	-0.44	0.21	-0.09	-0.18	-0.27	-0.13	0.37	0.59	0.05	-0.10	-0.19	0.19	0.84	-0.17	0.00	-	0.50	-0.45	-0.61	-0.28
missing.links	-0.00	-0.18	0.21	-0.03	-0.30	0.26	0.07	0.06	0.04	0.04	0.05	0.04	-0.02	-0.12	0.50	0.70	0.12	-0.17	0.50	-	-0.72	-0.50	-0.51
		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.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	
OI	·g.silo	-0.54	-0.53	-0.43	ratio.smelly.quitters	ratio.	-0.24	-0.62	-0.24	-0.15	0.39 petweenness	0.10	0.26	0.07	0.11	-0.02	.de	code.only.core.	-0.29	90.0 ratio.mail.only.	0.57	-0.28	
prima.de	onnas	-0.54 0.06	-0.53 0.08	-0.02	etio.smelly.quitters	0.18 -0.54	-0.24 0.73	-0.62 0.09	-0.24 0.45	-0.15 -0.38	0.39 -0.58	0.10 -0.67	0.26 0.63	0.07 0.20	0.11 0.46	-0.02 -0.46	0.07 mail.only.core.de	code.only.core.	-0.29 0.58	61.0- 61.0-	0.57 0.16	-0.28 0.13	
prima.de radio.s	onnas ilence	-0.54 0.06 -0.53	-0.53 0.08 -0.44	-0.02 -0.18	-0.45 0.00 0.00	0.18 -0.54 -0.05	-0.24 0.73 0.07	-0.62 0.09 0.62	-0.24 0.45 0.40	-0.15 -0.38 0.17	0.39 -0.58 0.12	0.10 -0.67 -0.14	0.26 0.63 -0.04	0.07 0.20 -0.67	0.11 0.46 0.27	-0.02 -0.46 -0.64	0.07 -0.01 0.90	0.61 0.19 0.12	-0.29 0.58 -0.00	0.06 -0.19 ratio.mail.only.	0.57 0.16 -0.11	-0.28 0.13 -0.76	
prima.de	onnas ilence cloud	-0.54 0.06	-0.53 0.08	-0.02	etio.smelly.quitters	0.18 -0.54	-0.24 0.73	-0.62 0.09	-0.24 0.45	-0.15 -0.38	0.39 -0.58	0.10 -0.67	0.26 0.63	0.07 0.20	0.11 0.46	-0.02 -0.46	0.07 mail.only.core.de	0.61 0.19 0.12	-0.29 0.58	61.0- 61.0-	0.57 0.16	-0.28 0.13	

## Community smells: Pearson's correlation - p-values ( VLC )

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		devs	ml.only.devs	code.only.devs	m oodo down	nerc mlonly devs	perc.code.only.devs	perc.ml.code.devs	sponsored.devs	ratio snonsored	2	sponsored.core.devs	ratio.sponsored.core	num.tz	core.global.devs	Lions on on	CO16:111a11: ueva	core.code.devs	org.silo	prima.donnas	radio.silence	111.11.11	black.cloud	missing.links	st.congruence	communicability	global.turnover	code.turnover
org.	.silo	0.92	0.80	0.87	0.19	0.59	0.78	0.32	0.52	0.72	2 0	54 0	.27	0.93	0.86	0.9	7 0.	83	- (	0.38	0.93	0.0	0 0.	01	0.01	0.02	0.25	0.70
prima.don		0.10	0.89	0.01	0.06	0.06	0.01	0.62	0.90	0.26			.62	0.35	0.52	0.60	0.	01 0.	.38	-	0.78	0.63	3 0.	71	0.95	0.04	0.62	0.37
radio.sile		0.01	0.00	0.66		0.02		0.03	0.61				.32	0.44	0.00					0.78	-	1.00	0 0.	59	0.45	0.09	0.19	0.68
black.cle	oud	0.41	0.80	0.59					0.42	0.7	0.5		.06	0.89	0.77					0.63	1.00			12	0.17	0.04	0.41	0.57
missing.li	inks	0.99	0.58	0.50	0.92	0.34	0.41	0.84	0.86	0.90	0.8	89 0	.89	0.90	0.95	0.72	2 0.	10 0.	.01 (	0.71	0.59	0.13	2	-	0.01	0.10	0.11	0.23
				core.global.turnover	core.mail.turnover	core.code.turnover	${ m ratio.smelly.quitters}$	${ m ratio.smelly.devs}$	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	liem oiter	ratio.	ratio.code.only.core	ratio.ml.code.core	
		org.si									0.45	0.65	0.2				0.82	0.74	0.96				0.36	0.8			38	
	_	a.donn									0.15	0.22	0.0				0.53	0.14	0.14				0.05	0.5			70	
		o.silen									0.20	0.60	0.7				0.02	0.39	0.02				0.99	0.0			00	
		.ck.clo									0.04	0.98	0.0				0.70	0.83	0.76				0.63	0.6			69	
	miss	ing.lin	$.\mathrm{ks}=0$	.08 (	0.14	0.25	0.81 (	0.84	0.84 (	0.14	0.62	0.23	0.6	51 - 0.	.70 (	0.22	0.47	0.48	0.69	0.5	66 0.	.19	0.43	0.2	9 0.	18 0.	61	

## Community smells: Spearman's correlation ( VLC )

		devs.	y.devs	devs.	ml.only.devs	le.only.devs	code.devs	ed.devs	onsored	ed.core.devs	sponsored.core		bal.devs	il.devs	e.devs	,	onnas	silence	pnc	links	congruence	nunicability	urnover
	devs	ml.only	code.only.	ml.code	perc.	perc.cod	perc.ml.	sponsor	ratio.sp	sponsor	ratio.	num.tz	core.global	core.mail.	core.cod	org.silo	prima.d	radio	black.cloud	missing.links	st.	comr	global.t
org.silo	-0.07	-0.01	0.32	-0.47	0.11	0.23	-0.28	-0.13	-0.02	0.25	0.31	-0.12	-0.05	-0.08	0.05	-	-0.14	-0.12	0.81	0.71	-0.70	-0.60	-0.37
prima.donnas	0.40	-0.05	0.66	0.52	-0.53	0.54	-0.03	0.06	-0.39	0.39	0.18	0.12	0.16	0.09	0.69	-0.14	_	0.11	0.01	0.24	0.10	0.61	-0.02
radio.silence	0.70	0.83	0.01	0.55	0.61	-0.39	-0.41	-0.00	-0.55	-0.36	-0.42	0.06	0.88	0.87	0.16	-0.12	0.11	-	-0.08	-0.07	0.23	0.58	-0.36
black.cloud	-0.29	-0.24	0.19	-0.30	0.12	0.04	0.13	-0.31	-0.14	0.27	0.30	0.09	-0.18	-0.25	0.30	0.81	0.01	-0.08	-	0.79	-0.41	-0.59	-0.28
missing.links	0.08	-0.11	0.44	-0.02	-0.30	0.33	-0.06	0.13	0.05	0.02	-0.08	0.15	0.03	-0.03	0.55	0.71	0.24	-0.07	0.79	-	-0.56	-0.34	-0.53
		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.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	
	g.silo	-0.40	core.mail.turnov	-0.26 core.code.turno	-0.47	28.0 ratio.smell	-0.16	-0.55	-0.33	closeness 0.12	0.31	0.09	0.44	0.11	0.11	-0.05	mail.only.core.devs	09.0 code.only.core.	ml.code.core.devs	60.0 ratio.mail.only.	99 ratio.code.only.	ratio.ml.code.	
prima.do	onnas	-0.40 0.05	-0.52 core.mail.turnov	-0.26 0.03	-0.47 0.23	0.37 -0.28	-0.16 0.67	-0.55 0.08	-0.33 0.32	0.12 -0.59	0.31 -0.46	0.09	0.44 0.47	0.11 0.12	0.11 0.22	-0.05 -0.37	-0.07	0.60 code.only.core.	0.57	0.09 ratio.mail.only.	0.56 0.26	-0.22 0.17	
prima.do radio.si	onnas ilence	-0.40 0.05 -0.53	-0.52 -0.05 -0.31	-0.26 0.03 -0.30	-0.47 0.23 0.12	0.37 -0.28 0.00	-0.16 0.67 0.01	-0.55 0.08 0.73	-0.33 0.32 0.43	0.12 -0.59 -0.18	0.31 -0.46 0.13	0.09 -0.59 -0.16	0.44 0.47 -0.08	0.11 0.12 -0.68	0.11 0.22 0.35	-0.05 -0.37 -0.53	-0.07 $0.82$	0.60 0.18 -0.03	$0.57 \\ 0.12$	0.09 -0.20 0.75	0.56 0.26 -0.22	-0.22 0.17 -0.61	
prima.do	onnas ilence cloud	-0.40 0.05	-0.52 core.mail.turnov	-0.26 0.03	-0.47 0.23	0.37 -0.28	-0.16 0.67	-0.55 0.08	-0.33 0.32	0.12 -0.59	0.31 -0.46	0.09	0.44 0.47	0.11 0.12	0.11 0.22	-0.05 -0.37	-0.07	0.60 code.only.core.	0.57	0.09 ratio.mail.only.	0.56 0.26	-0.22 0.17	

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

					_	0111	IIGII	i Uj	111011	· ~	PCG			COI	1010	1010		P	aia	, 22	• -	• •						
		devs	ml.only.devs	code.only.devs	-7	micone; deva	perc.mr.omy.gevs	ie.oii	perc.ml.code.devs	sponsored.devs	ratio.sponsored	sponsored.core.devs	ratio.sponsored.core	nım tz		core.giobal.devs	core.mail.devs	core.code.devs	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	org.siro	prima.donnas	radio.silence	black.cloud	missing.links	st.congruence		global.turnover	code.turnover
org.	.silo	0.82	0.97	0.31	0.13	2 0.7	3 0.4	8 0.	38 0.6	8 0.	96 0	.44 (	0.33	0.72	0.8	8 0	.80	0.88		- 0.0	67 0	.71 (	0.00	0.01	0.01	0.04	1 0.27	0.71
prima.don		0.20	0.87	0.02	0.09	0.0	8 0.0	7 0.5	0.8	6 0.			0.57	0.70		1 0	.78	0.01	0.6		- 0	.74 (	0.97	0.45	0.76	0.04	0.96	0.43
radio.sile		0.01	0.00	0.99									0.18	0.86			.00	0.62	0.7				0.81	0.84	0.48			0.89
black.cl		0.39	0.48	0.57	0.3'								0.37	0.80			.47	0.37	0.0			.81	-	0.00	0.22			0.86
missing.li	inks	0.81	0.74	0.15	0.9	5 0.3	4 0.2	9 0.	0.6	8 0.	87 0	.95 (	0.80	0.65	0.9	3 0	.92	0.07	0.0	1 0.4	45 O	.84 (	0.00	-	0.06	0.28	3 0.10	0.21
				core.global.turnover	core.mail.turnover	core.code.turnover	ratio.smelly.quitters	${ m ratio.smelly.devs}$	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.si				0.44	0.14	0.24	0.61	0.06	0.30	0.70			0.78	0.15	0.7		.73	0.87	0.98	0.04					0.49	
	_	.donn				0.94	0.50	0.39	0.02	0.80	0.31	0.05			0.05	0.12	0.7		.50	0.23	0.84	0.57					0.60	
		o.silen				0.37	0.73	0.99	0.98	0.01	0.16	0.57			0.61	0.80	0.0		.26	0.08	0.00	0.91	0.7				0.04	
		ck.clo				0.29	0.39	0.06	0.22	0.14	0.01	0.22			0.80	0.16	0.9		.98	0.47	0.39	0.17					0.78	
	miss	ing.lin	ks = 0	.10 - 0	0.05	0.27	0.86	0.98	0.80	0.23	0.57	0.83	0.	.51 (	0.48	0.03	0.6	54 0	.50	0.85	0.78	0.12	0.4	15   0	.63 (	0.10	0.85	