

Replication of the results reported by Rausch et al. using their used data
Highlighted numbers are significant effect sizes, (i.e., $p - value < 0.05$)

Project	NC	NA	NLA	NLR	NMF	CX	FT	TD	WD	AX	ACF	BT	PRS1	PRS2	PB	BC	DLF
apache/storm	0.07	0.01	0.02	0.01	0.00	-0.05	0.14	0.21	0.14	0.06	0.08		0.00	0.09	0.25	-0.34	0.21
crate/crate	-0.05	-0.04	-0.05	-0.02	-0.04	-0.04	0.05	0.07	0.04	0.21	0.05		0.12	0.07	0.31	-0.48	0.16
JabRef/jabref	-0.08	-0.03	-0.12	-0.09	-0.11	-0.11	0.14	0.09	0.05	-0.04	0.07	0.14	0.05	0.00	0.51	-0.33	0.14
JakeWharton/butterknife	-0.02	0.01	0.02	0.04	0.01	-0.04	0.18	0.25	0.12	-0.04	0.03	0.12			0.77	-0.4	0.4
jcabi/jcabi-github	0.06	0.06	0.06	0.06	0.06	0.21	0.32	0.33	0.18	-0.28	0.3				0.16	-0.48	0.53
Netflix/Hystrix	0.06	-0.15	0.07	0.06	0.04	0.07	0.11	0.31	0.19	-0.05	0.27	0.14			0.32	-0.44	0.39
openmicroscopy/openmicroscopy	0.01	0.02	-0.02	-0.02	-0.02	-0.02	0.05	0.10	0.03	-0.05	0.04		0.02	0.08	0.32	-0.38	0.23
prestodb/presto	-0.05	-0.04	-0.06	-0.02	-0.05	-0.07	0.05	0.13	0.03	0.01	0.05		0.07	0.00	0.37	-0.42	0.13
ReactiveX/RxAndroid	0.06	0.02	-0.26	-0.2	-0.03	-0.2	0.32	0.33	0.13	-0.17	0.15	0.04	0.00	0.25	0.46	-0.11	0.45
SpongePowered/SpongeAPI	-0.09	-0.02	-0.09	-0.14	-0.09	-0.09	0.12	0.12	0.07	-0.04	0.08				0.37	-0.26	0.24
spring-projects/spring-boot	-0.02	-0.01	-0.07	-0.05	-0.06	-0.08	0.10	0.07	0.03	0.03	0.09	0.10		0.06	0.46	-0.3	0.14
square/okhttp	0.00	0.00	-0.06	-0.02	-0.01	-0.04	0.09	0.15	0.07	0.07	0.07	0.06	0.09	0.02	0.41	-0.43	0.24
square/retrofit	0.02	0.02	-0.09	-0.02	-0.05	-0.08	0.09	0.16	0.05	0.09	0.19	0.15			0.49	-0.27	0.37
wordpress-mobile/WordPress-Android	-0.07	-0.01	-0.09	-0.08	-0.01	-0.07	0.12	0.05	0.03	0.03	0.02	0.06	0.07	0.00	0.65	-0.26	0.11

Our observed results after cleaning the data using our proposed criteria
Highlighted numbers are significant effect sizes, (i.e., $p - value < 0.05$)

Project	NC	NA	NLA	NLR	NMF	CX	FT	TD	WD	AX	ACF	BT	PRS1	PRS2	PB	BC	DLF
apache/storm	0.11	0.10	-0.04	-0.04	-0.01	-0.01	0.10	0.13	0.08	-0.14	0.12		0.04	0.02	0.25	-0.5	0.21
crate/crate	-0.04	-0.03	-0.05	-0.01	-0.02	-0.01	0.03	0.06	0.06	0.16	0.05	0.06	0.06		0.29	-0.54	0.19
JabRef/jabref	-0.05	0.01	-0.06	-0.06	-0.05	-0.05	0.08	0.07	0.05	0.06	0.06	0.14		0.04	0.36	-0.42	0.19
JakeWharton/butterknife	-0.04	0.01	0.04	0.04	0.02	0.01	0.13	0.2	0.14	0.02	0.04	0.09		0.46	0.22	-0.4	0.55
jcabi/jcabi-github	-0.06	-0.05	-0.06	-0.05	-0.05	0.03	0.21	0.27	0.23	0.15	0.12				0.04	-0.29	0.33
Netflix/Hystrix	0.04	0.03	-0.07	-0.03	0.02	-0.01	0.14	0.19	0.13	-0.06	0.15	0.07			0.28	-0.51	0.3
openmicroscopy/openmicroscopy	0.01	0.00	-0.03	-0.05	0	0.01	0.10	0.13	0.05	-0.07	0.05		0.05	0.03	0.22	-0.41	0.23
prestodb/presto	-0.07	-0.02	-0.10	-0.09	-0.10	-0.11	0.08	0.13	0.02	0.00	0.05			0.01	0.29	-0.47	0.2
ReactiveX/RxAndroid	-0.04	0.02	-0.14	-0.13	0.01	-0.10	0.31	0.36	0.13	0.01	0.06	0.11			0.43	-0.37	0.56
SpongePowered/SpongeAPI	-0.11	-0.02	-0.09	-0.14	-0.07	-0.08	0.13	0.09	0.06	-0.06	0.14		0.03	0.06	0.27	-0.34	0.26
spring-projects/spring-boot	-0.01	0.00	-0.02	0.01	0.01	-0.03	0.06	0.06	0.05	0.06	0.06	0.08	0.03	0.18	0.33	-0.44	0.18
square/okhttp	0.02	0.02	-0.04	-0.01	0.03	0.00	0.08	0.15	0.05	0.16	0.03	0.06		0.02	0.17	-0.43	0.23
square/retrofit	-0.02	0.01	-0.04	0.00	-0.01	-0.03	0.15	0.23	0.10	0.09	0.28	0.3		0.21	0.19	-0.23	0.24
wordpress-mobile/WordPress-Android	-0.05	-0.02	-0.07	-0.06	-0.01	-0.10	0.10	0.06	0.04	0.08	0.03	0.14	0.09	0.01	0.53	-0.55	0.28

Breakage ratios for **Time of the Day** – using the data used by Rausch et al.
Highlighted numbers represent higher breakage ratios.

Project / Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Day	Night
jcabi/jcabi-github	0.08	0.20	0.33	0.50	0.00	0.50	1.00	0.00	0.33	0.51	0.50	0.46	0.28	0.28	0.42	0.35	0.14	0.14	0.22	0.46	0.25	0.00	0.00	0.17	0.31	0.30
openmicroscopy/openmicroscopy	0.03	0.10	0.11	0.07	0.07	0.19	0.21	0.09	0.17	0.10	0.09	0.10	0.11	0.10	0.12	0.14	0.07	0.08	0.14	0.07	0.10	0.11	0.12	0.09	0.11	0.09
prestodb/presto	0.28	0.45	0.39	0.46	0.12	0.26	0.26	0.25	0.23	0.34	0.23	0.21	0.22	0.18	0.19	0.21	0.19	0.21	0.23	0.25	0.21	0.25	0.30	0.25	0.23	0.31
square/okhttp	0.22	0.19	0.10	0.24	0.40	0.30	0.27	0.24	0.29	0.15	0.33	0.13	0.13	0.26	0.24	0.26	0.16	0.23	0.19	0.22	0.20	0.19	0.14	0.16	0.21	0.23

Breakage ratios for **Time of the Day** – after cleaning the data using our proposed criteria.
Highlighted numbers represent higher breakage ratios.

Project / Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Day	Night
openmicroscopy/openmicroscopy	0.02	0.03	0.03	0.02	0.03	0.15	0.09	0.05	0.12	0.14	0.13	0.10	0.13	0.09	0.17	0.16	0.12	0.09	0.12	0.12	0.12	0.12	0.11	0.10	0.12	0.05
prestodb/presto	0.38	0.47	0.36	0.46	0.20	0.33	0.26	0.26	0.22	0.29	0.24	0.22	0.22	0.18	0.22	0.24	0.21	0.20	0.26	0.23	0.25	0.27	0.27	0.27	0.24	0.35
square/okhttp	0.19	0.17	0.05	0.18	0.09	0.18	0.21	0.20	0.33	0.16	0.27	0.15	0.14	0.28	0.15	0.21	0.18	0.21	0.17	0.14	0.12	0.17	0.13	0.11	0.19	0.14
square/retrofit	0.00	0.02	0.00	0.00	0.00	0.00	0.08	0.18	0.10	0.02	0.00	0.00	0.02	0.00	0.02	0.02	0.06	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.03	0.00

Breakage ratios for **Day of Week** – using the data used by Rausch et al.
Highlighted numbers represent higher breakage ratios.

Project / Day	Mon 0	Tue 1	Wed 2	Thu 3	Fri 4	Sat 5	Sun 6	Weekend	Weekday
No significance.									

Breakage ratios for **Day of Week** – after cleaning the data using our proposed criteria.
Highlighted numbers represent higher breakage ratios.

Project / Day	Mon 0	Tue 1	Wed 2	Thu 3	Fri 4	Sat 5	Sun 6	Weekend	Weekday
crate/crate	0.40	0.44	0.37	0.41	0.41	0.28	0.35	0.32	0.39
JabRef/jabref	0.12	0.13	0.11	0.13	0.09	0.12	0.09	0.10	0.11
JakeWharton/butterknife	0.03	0.25	0.10	0.11	0.16	0.00	0.08	0.04	0.11
jcabi/jcabi-github	0.14	0.14	0.17	0.17	0.13	0.11	0.14	0.13	0.14
spring-projects/spring-boot	0.07	0.08	0.09	0.09	0.07	0.09	0.12	0.10	0.08

Breakage ratios for **Build type** – using the data used by Rausch et al.
Highlighted numbers represent higher breakage ratios.

Project / Build type	INTEGRATION	MERGE	PR	PR_MERGE	PUSH
JabRef/jabref	0.11	0.12	0.19	0.04	0.12
spring-projects/spring-boot	0.25	0.11	0.26	0.11	0.14
square/retrofit	0.00		0.13	0.01	0.04
wordpress-mobile/WordPress-Android	0.05	0.06	0.03	0.02	0.05

Breakage ratios for **Build type** – after cleaning the data using our proposed criteria.
Highlighted numbers represent higher breakage ratios.

Project / Build type	INTEGRATION	MERGE	PR	PR_MERGE	PUSH
crate/crate	0.55	0.53	0.39	0.54	0.40
JabRef/jabref	0.10	0.21	0.16	0.04	0.09
spring-projects/spring-boot	0.21	0.12	0.19	0.09	0.16
square/okhttp	0.05		0.12	0.19	0.18
square/retrofit	0.00		0.16	0.00	0.01
wordpress-mobile/WordPress-Android	0.08	0.10	0.02	0.01	0.11

Breakage ratios for **Commit frequency** – using the data used by Rausch et al.
Highlighted numbers represent lower breakage ratios.

Project / Commit frequency	DAILY	WEEKLY	MONTHLY
JabRef/jabref	0.14	0.10	0.09
jcabi/jcabi-github	0.27	0.51	
Netflix/Hystrix	0.28	0.75	0.83
SpongePowered/SpongeAPI	0.09	0.06	0.24
spring-projects/spring-boot	0.13	0.12	0.25
square/okhttp	0.02	0.01	0.00

Breakage ratios for **Commit frequency** – after cleaning the data using our proposed criteria.
Highlighted numbers represent lower breakage ratios.

Project / Commit frequency	DAILY	WEEKLY	MONTHLY
apache/storm	0.55	0.56	0.89
crate/crate	0.40	0.48	
JabRef/jabref	0.11	0.18	0.15
JakeWharton/butterknife	0.42	0.67	0.75
Netflix/Hystrix	0.26	0.22	0.17
prestodb/presto	0.10	0.09	0.41
SpongePowered/SpongeAPI	0.15	0.08	0.17
spring-projects/spring-boot	0.01	0.01	0.00
square/retrofit	0.08	0.03	

Breakage ratios for **File type categories** – using the data used by Rausch et al.
Highlighted numbers represent higher breakage ratios.

Project / File type categories							
JabRef/jabref	system: 0.11	system+documentation: 0.09	system_resources: 0.08	system+test: 0.20	test: 0.17	tangled: 0.21	
jcabi/jcabi-github	build_config: 0.35	system: 0.24	system+test: 0.09	test: 0.17	unknown: 0.37	documentation: 0.50	
ReactiveX/RxAndroid	build_config: 0.10	documentation: 0.00	properties: 0.08	system: 0.06	system+test: 0.00	tangled: 0.22	
SpongePowered/SpongeAPI	build_config: 0.07	build_config+properties: 0.04	system+build_config: 0.08	documentation: 0.00	system: 0.08	system+test: 0.21	
spring-projects/spring-boot	build_config: 0.11	documentation: 0.09	system: 0.14	system+test: 0.16	test: 0.15	tangled: 0.18	
wordpress-mobile/WordPress-Android	build_config: 0.07	system+system_resources: 0.07	system_resources: 0.03	system: 0.04	system+unknown: 0.11	tangled: 0.15	

Breakage ratios for **File type categories** – after cleaning the data using our proposed criteria.
Highlighted numbers represent higher breakage ratios.

Project / File type categories							
apache/storm	documentation: 0.48	system+documentation: 0.49	system: 0.61	system+test: 0.57	tangled: 0.55	build_config: 0.66	
JabRef/jabref	system: 0.12	system+documentation: 0.04	system_resources: 0.10	test: 0.15	tangled: 0.13	system+test: 0.15	
jcabi/jcabi-github	build_config: 0.19	system+test: 0.08	documentation: 0.05	test: 0.17	unknown: 0.19	system: 0.20	
openmicroscopy/openmicroscopy	system: 0.09	documentation+unknown: 0.04	system+test: 0.08	tangled: 0.13	unknown: 0.13	webapp: 0.15	
prestodb/presto	build_config: 0.26	system+documentation: 0.25	documentation: 0.19	system: 0.25	tangled: 0.27	system+build_config: 0.35	
ReactiveX/RxAndroid	system: 0.00	documentation: 0.03	properties: 0.14	system+test: 0.03	tangled: 0.20	build_config: 0.22	
SpongePowered/SpongeAPI	build_config: 0.05	system+build_config: 0.11	documentation: 0.00	system: 0.08	test: 0.19	system+test: 0.22	
spring-projects/spring-boot	build_config: 0.13	documentation: 0.13	system: 0.15	test: 0.16	tangled: 0.17	system+test: 0.19	
square/retrofit	build_config: 0.02	build_config+documentation: 0.00	documentation: 0.00	system+test: 0.01	tangled: 0.01	system: 0.06	
wordpress-mobile/WordPress-Android	build_config: 0.10	system+system_resources: 0.13	system_resources: 0.09	system: 0.08	unknown: 0.14	tangled: 0.20	