TABLE I
CONTRIBUTOR-LEVEL∗, SECO-LEVEL†, AND/OR COMPANY-LEVEL♯ METRICS USED IN OUR STUDY.

RQs.	Metrics	Description
RQ1 — Diversity	Gender (GD)†	Proportion of new contributors who self-declare as Male (m), Female (f) or non-binary (n) [20].
	Technical (TD)∗	The number of different project teams (technology) new contributors are involved in [41].
	Corporate (CD) ♯	The number of sponsoring companies that contribute commits to the SECO [2] [34].
RQ2 — Productivity	Density (Den)∗	Commit density, i.e., the median proportion of contributed churn over the submitted commits [42].
	Time to first commit (TFC)∗	Number of days it takes for contributors to have their first commit accepted and merged into the codebase. [34]
	Retention (Rt)∗	The proportion of contributors, per category, still contributing to the codebase after N days [8] [34].
	Patch Acceptance Rate (PAR)∗	Probability of a contributor's contribution (‡pull-request; PR) to be accepted (higher values are better) [34]: $$PAR = \frac{\#Accepted\_PRs}{\#Submitted\_PRs} \quad (1)$$
RQ3 — Quality	Effort (Eft)∗	A measure of the number of ‡pull request versions (attempts) necessary before a contribution is accepted (lower values are better; minimum value of 1) [34]: $$Eft = \frac{Median\_\#Attempts}{\#Actual\_Commits} \quad (2)$$
	Bug-Inducing commits (SZZ)∗,♯	Percentage of submitted commits that introduce bugs [43].

‡Pull-request (GitHub) or change-request (Gerrit)