

Rules Relative Size Scale

Size Matters: Accurate Early Estimating

Project failure rates have been shown to relate strongly to the size of project undertaken, with the largest projects accounting for the highest failure rate.

Rule's Relative Size Scale is a table developed by Grant Rule to provide a quick and easy early range estimate of project size and cost in terms of clothing sizes: Small, Medium, Large, Extra Large. The scale uses benchmark data to provide a valuable and reliable early-stage feasibility check

About the data

Rules Relative Size Scale uses terms familiar from clothing measurements i.e. XXS - XXXL to categorise projects into approximate size ranges (bins). These are easy to apply and to understand, while remaining consistent with the more fine-grained measurements (eg FP or SLOC).

Derived from the ISBSG benchmark data & other sources, these ranges give similar results with any of the ISO standard functional sizing measurement methods – IFPUG, NESMA, MkII & COSMIC.

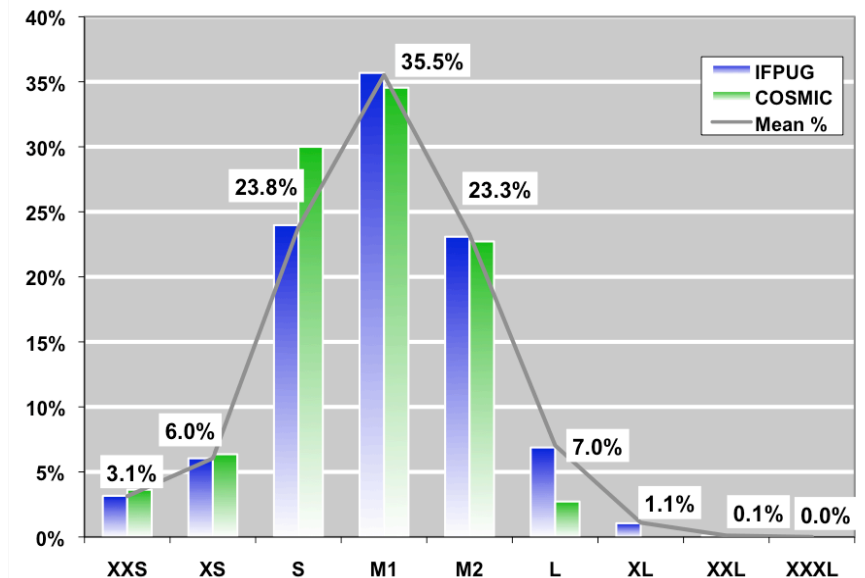
Results from ISBSG are confirmed by comparison with the COCOMO II dataset.

Observations on the distribution of projects:

- The vast majority of projects (>89%) fall into the Small to Large size range.
- Less than 10% of projects produce fewer than 30 function points.
- Projects producing over 3000 function points represent less than 3% of projects.
- Extra-Large (XL) projects take years rather than months. They involve large teams and often suffer from staff attrition.
- There is little data on XXL and XXXL projects; consequently, it is difficult to draw statistically valid conclusions or to contrive reliable cost models or schedules.
- Many XL to XXXL projects fail to fulfil the customer's requirements and never deliver the business benefits that would justify their existence. Many are abandoned prematurely due to budget & schedule over-runs. Beware of becoming involved in such projects.

Distribution of Projects on the Relative Size Scale

Percentage of projects in each size category



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Estimating Using the Relative Size Scale

The Relative Size Scale can be used as a reliable quick reference for estimating effort, staffing and cost early in the system's development life cycle. It encourages the habit of range estimating, can be calibrated to your local environment and enables comparisons between your projects and others of similar size.

Estimates of effort & cost can be derived from the size categories by using benchmark productivity and unit cost figures. The table below gives cost and effort figures for New Development and Enhancement projects in each of the size categories.

The cost figures quoted here are in Pounds Sterling (GBP) valued as at November 2009. For projects performed outside the United Kingdom, such as those using outsourced resources resident offshore, the Full Time Equivalent rate should be adjusted to reflect the fully burdened cost of employing staff in the pertinent environment.

The productivity figure used represents the median performance of software projects. Productivity may be higher (or lower!) in your project. Ask SMS to help you calibrate your local productivity figures

The effort & cost estimates derived cover the software development life-cycle (SDLC) from the end of requirements capture through to the start of user acceptance testing (i.e. first release to user). They incorporate allowances for the effort contributions made by supply-side staff (ie. the project manager, project administration and support staff, developers, testers and quality assurance staff)

The figures do not incorporate any allowance for user training or system roll-out, nor the effort contributed by customer-side stakeholders. No assumptions of any (dis)economies of scale or allowance for other influences on performance have been made.

Distinct pieces of software should be estimated separately

Assumptions & abbreviations

FP = Function Points
SLOC = Source Lines of Code
WH = Work Hour
FTE = Full Time Equivalent
GBP = Great British Pounds

- assumes software language is C++ or Java
- assumes 'typical' conversion of FP to SLOC
- assumes median work hours per FP
- assume efficiency = 80% (ie. 6.4 wh/FTE day)
- assumes no (dis)economies of scale
- assumes full resourcing
- assumes no overhead & no wasted capacity

Size categories & their equivalent function point size		
Relative Size	Category	Function Point Size
Extra-extra-small	XXS	= >0 and <10
Extra-small	XS	= >10 and <30
Small	S	= >30 and <100
Medium1	M1	= >100 and <300
Medium2	M2	= >300 and <1000
Large	L	= >1,000 and <3,000
Extra-large	XL	= >3,000 and <9,000
Extra-extra-large	XXL	= >9,000 and <18,000
Extra-extra-extra-large	XXXL	= > 18,000

