

**IN OBJECT-ORIENTED SYSTEMS, INVESTIGATING THE LINKS BETWEEN  
DESIGN METRICS AND SOFTWARE QUALITY: MINI REVIEW****<sup>1</sup>Shahzad Shamim, <sup>2</sup>Dr.Noopur Goel**

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**ABSTRACT**

One of the objectives of this work is to investigate the links between existing object-oriented (OO) coupling, cohesion, and inheritance measurements and the likelihood of problem identification in system classes during testing. To put it another way, we'd like to learn more about the relationship between existing design measurements in OO systems and the quality of the software produced. The second purpose is to provide a research and analysis technique that will make these types of studies more repeatable and comparable, as well as a methodology for doing so.

In the literature on quality measurement, there is a problem that is prevalent. The findings reveal that many of the measures capture similar dimensions in the data set, implying that they are all founded on the same concepts and ideas. However, it is demonstrated that by combining a subset of measures, accurate models may be created to forecast which fault classifications the majority of the faults will fall into.

The best model predicts fault-prone classes with a proportion of correct classifications of more than 80% and trends more than 90% of faulty classes. The frequency of method invocations and the depth of inheritance hierarchies appear to be the key driving variables of fault-proneness, aside from class size.

***Keywords: Coupling; Cohesion; Inheritance; Object-oriented; Metrics; Measurement; Empirical validation***

