Analytical Based Model to Measure Software Engineer's Productivity

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DECLARATION

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Dr. Amal Shehan Perera

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ABSTRACT

In the software engineering industry one of the most central business factors is software developer's productivity, the understanding of the term productivity in the context of software development is not clearly defined, however, which cannot be measured cannot be managed, hence, software engineering companies from startup to enterprise are trying their level best to measure software developer's productivity level.

In order to solve this issue, everyone should have an understanding about software engineer's productivity, and also common as well as important factors which could act as an indicator to software developer productivity should be identified and validated. Considering the nature of the problem, a single factor cannot be considered as an indicator of a developer's productivity. Hence a multifactor model should be identified, validated and fine-tuned to produce better accuracy.

As part of this research, a survey among software developers was conducted in order to build a multifactor model which can be used to measure developer's productivity; the model was validated with real software development data and calibrate to producer more accurate result.

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LIST OF ABBREVIATIONS

Abbreviation	Description
ICT	: Information and Communication Technology
LOC	: Lines of Code
IT	: Information Technology
SLOC	: Source Lines of Code
CNN	: Cyclometric Complexity Number
R&D	: Research and development
MTBF	: Mean Time Between Failures
CAC	: Cronbach’s Alpha Coefficient
SQA	: Software Quality Assurance