2018

Development of a regression model for prediction of cost variation of building construction projects in Tanzania.

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Master of Engineering Management (Project Management)

University of Dar es Salaam, School of Education, 2018.

Development of regression model for prediction of cost variation of building construction projects in Tanzania focused developing a multiple regression model for prediction, identifying significant drivers and validating the cost of variation on selected building projects. The study deployed factor analysis of Principal Component Analysis to establish the covariance of the drivers causing variation and reduced 30 identified drivers to 19. Further, two model types containing six independent variables of cost related to building elements were developed. Cost Variation and Final Cost of the project were the dependent variables for the study. Results identified five groups of significant drivers of cost variation. As for model type 1, Y1 frame and service installation significantly related to cost variation (*p value*=0.000 and 0.009) whereas in Y2, all the six variables significantly related to final cost of a project. In model type 2, Y1, all variables except external works were significant whereas in Y2, three variables were significant. Further the relationship between variables had not changed for the two models, save for magnitude, likewise all the models are good (*p value*=0.000), and can be used for prediction. It is concluded that, there is a substantial difference between actual costs of variation and estimated, also drivers with high loading on the group be on the watch out. Moreover model type 2, Y1 is favored for prediction of cost variation because it comprises all six variables identified to theoretically determine cost variation, and the variables explain cost variation by 99%.