A Monte Carlo Simulation Approach in Assessing Risk and Uncertainty Involved in Estimating the Expected Earnings of an Organization: A Case Study in Nigeria

H.I. Okagbue, S.O. Edeki*, A.A. Opanuga

Department of Mathematics, College of Science & Technology, Covenant University, Otta, Nigeria

*Corresponding Author’s Email: soedeke@yahoo.com

Abstract: This work provides a simulation-based approach of assessing the risk and uncertainty involved in estimating the expected earnings of an organization. The procedure involves using Monte Carlo Simulation (MCS) in creating various possible outcomes and scenarios. The MCS is found to be more effective than single point estimates or guesswork. Hence, it is an efficient and useful tool in risk management analysis. The analysis of the output of the simulation reveals that the expected earnings is a little bit lower than the most likely forecasted value of N30m but there is 37% chance that the expected earnings might drop below or rise above the estimated value by margin of N10.9m and the wide range of possible outcomes make the venture to be very risky as uncertainties in unit sales, unit price or variable cost can push the earnings to assume any value within the wide range. It is also observed that a large increase in the unit sales and a moderate increase in the unit price will increase the expected revenue which will in turn increase the earnings. The regression analysis gives almost the same result as MCS.

Keywords: Monte Carlo Simulation, Risk Analysis, Expected Earnings

REFERENCES