**A structural equation model for evaluation of existing ICT before adopting an emerging ICT: a case for South African SMEs**

**Abstract**

The lack of a proper tool that can be used by decision makers in Small medium enterprises to evaluate an existing ICT before adopting an emerging ICT has prompted this study. Literature has shown that, organizations have used financial models to evaluate the financial side of an ICT investment. The objective of the study was to develop a framework that can be used by SME owners (decision makers) to evaluate an existing ICT in their organization which is on the verge of replacement by a new emerging ICT. The paper reviewed adoption models as well as financial models to develop an integrated model that would assist in the evaluation of both financial and non-financial value of an ICT. The financial models reviewed in this paper are; Return on Investment (ROI), Account Rate of Return (ARR), Payback Period (PBK), Net Present Value (NPV), Internal Rate of Return (IRR) and Real Option Value (ROV) while the non-financial models reviewed in this paper are; Updated Information Systems Success Model (ISSM), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT). Using ISSM as the base model, the study developed a conceptual framework that informed this study. A closed-ended online survey questionnaire was developed and used to gather data from 300 individual SME owners. The collected data was Structural equation modeling (SEM). SEM and confirmatory factor analysis (CFA) were used to verify the model’s viability. Due to differences in scale between financial and non-financial factors, the study had to convert and recode using SPSS the financial factors to have the same scale as the non-financial factors. Overall, all factors except NPV were converted to a Likert scale form, NPV had two options, Option 1 coded with a one stood for Positive NPV, and option 2 which was coded with a 0 represented Negative NPV. Results showed support for the model, and were in agreement with both ISSM, TAM, UTAUT and TRA. The factors that were found to have an influence on the evaluation of an existing ICT are; performance experience, effort experience, social factors, technical factors such as hardware, information and software, behavioral intention to continue using and user satisfaction. The factors that were found not to play a role in the evaluation of an existing ICT are; environmental factors, organizational factors and technological factors like software, cloud computing and database. The financial evaluation models and factors were not conclusive because they were not considered in the SEM and CFA analysis due to the reason that NPV was found to have all positive NPVs leading to all of them being recoded to 1. This then made them to be considered non-representative as there were no negative NPVs to be coded with a 0 thereby violating SEMs conditions that an observable variable should be evenly represented. On the same note, PBK could not be considered in SEM on its own, as literature suggest that a latent variable should have at least two observable variables. The results of this study are expected to contribute towards the literature and methodology of establishing factors in necessary in existing ICT evaluation. In practice, SME owners will have a handy tool or model to use whenever they want to evaluate existing ICTs before adopting an emerging ICT. Future research however, should consider looking for other factors that may be relevant in the evaluation of existing ICT. Furthermore, the study recommends that instead of using two financial models, future research should start with at least four models such that when one or two don’t meet SEM expectations there will still be three or two to consider in SEM.