As knowledge economy age comes, knowledge instead of traditional productive essentials like land and capital, becomes the most important determinant for businesses to retain their competitive advantage. Generally speaking, knowledge and other intangible assets are regarded as intellectual capital in businesses. It will be a crucial issue for businesses to manipulate intangible intellectual capital and to create benefit in a knowledge economy age. Thus far, financial and quantitative indicators are generally applied in most intellectual capital evaluation models. Besides conventional explicit financial indicators, the composition of intellectual capital contains several implicit core abilities such as human resource, customer, processes and product development. Due to characters of intellectual capital like abstract and non-quantity, it is hard for conventional evaluation models to evaluate them according to general financial data efficiently. That is one of primary reasons for businesses managing their intellectual capital so difficultly. Using nature linguistic term, fuzzy set theory can be applied to process abstract and non-quantitative evaluative value. In this study, the nature linguistic term based on fuzzy set theory is applied to represent the evaluative value of non-quantitative and subjective qualitative indicators. On the other hands, general quantitative indicators are also incorporated into the integrated intellectual capital fuzzy evaluation model. A model combining Efficient algorithm for Fuzzy Weighted Average (EFWA) with Analytic Hierarchy Process (AHP) is proposed to evaluate the degree of intellectual capital management. It is applicable for businesses to integrate those considerable components and improve the efficiency of performance evaluation for intellectual capital. In order to demonstrate the validity of the proposed intellectual capital evaluation model, an experimental evaluation process is taken in a high technology company. Furthermore, an easy, flexible, and accessible integrated intellectual capital fuzzy evaluation system is built to save the time and effort for experts processing the computation in the proposed evaluation model. According to experimental results, both accuracy and feasibility of this proposed intellectual capital evaluation model are demonstrated.


