The absence of Syariah Court (SC) from the new IIT system has promoted the development of a Syariah-compliant Islamic inheritance transfer (IIT) system for inheritance at Small Estates Distribution Units (SEDUs) using Theory of Inventive Problem Solving (TRIZ). This system is capable of differentiating claim activity path followed by Islamic estates from non-Islamic estates. Ignorance of Islamic inheritance laws and claim procedures among Muslims has attributed to claim delays. Order and precedence relations in the modified TRIZ IIT system become the basis to establish a flow guideline network model for more effective IIT management (i.e. time and cost saving) at SEDUs or SCs. No quantitative approach using the shortest path algorithm has ever been applied to solve the delays in claim activities. Adapting Floyd’s algorithm into the formulation of the IIT Network Flow Programming (IIT-NFP) model has presented the viability of a quantitative approach through the model at minimizing delays in the claim processes. IIT-NFP model’s ability to clearly exhibit precedence relations between activities in a claim process can be used to explain the unique flow of claim activities for both Islamic and non-Islamic estates as well as to help Muslims better manage claim activities. This model has become the foundation for computing the shortest path and minimum total completion time for IIT. Non-normality of data distribution has endorsed the use of $\text{Median} \pm 1.5\times \text{MAD}$ adapted from Leys et al (2013) to flag out extreme outliers and moderate outliers with $b$ as magnitude of $\text{MAD}$. Computational experiments using PHP programming has found thresholds ($b=2$ and $3$) and ($b=1$ and $2$) can best achieve total completion time less than the minimum benchmark of 300 days set by Bakar (2006) at Ipoh and Kuala Kangsar respectively. Shortest paths for all stages were the same in both areas. Identified delayed paths may imply time management issues at SEDUs and Valuation and Property Services Department. Optimization model has rarely been applied to solve Islamic muamalat problems, thus it is recommended for the IIT-NFP model to be applied to zakat and wakaf management besides expanding its use to Islamic and non-Islamic estates under stricter conditions such as testate accounts, jointly-acquired accounts, and also non-Islamic estates which abide by the Federal Laws.

Insurance industry is a regulated industry. Capital adequacy requirement is the most important area in insurance regulation and supervision of an insurer’s insolvency. It is meant to absorb the unexpected losses of an insurance company in order to remain solvent and competitive in the insurance market. In the last two decades, the capital adequacy determination approaches have changed from the traditional “one-size-fit all” approach to risk-based capital (RBC), which reflects insurer’s risk profile. The risk-based capital model generally applies a fixed pre-determined percentage to the annual statement amount of an insurance company. The insurance regulator of each country fixes the pre-determined percentage. However, each risk-based capital model has different risks types and risk charges for determining the capital adequacy. Even though many risk-based capital models have been developed, these models fail to take into account the changing and volatile economic conditions. Therefore, the capital cannot be determined adequately and hence cannot provide safety for the insurers. Additionally, the insolvencies problems due to inadequate capital would also not be resolved. Thus, the question of how much capital is enough is still in doubt. In response to that, this study developed a simulation model for determining dynamic risk charges. This study also aimed to model capital adequacy for determining capital adequacy and capital adequacy ratio. Following that, this study investigated the effects of current economic condition towards dynamic risk charges, capital adequacy and capital adequacy ratio. Finally, this study aimed to identify which dynamic risk charge variables affects the capital adequacy and capital adequacy ratio. The data employed for this study were Kuala Lumpur Composite Index (KLCI), Malaysian Bond Index (MBI), Housing Price Index (HPI), currency rates, bond’s yield, duration and mortality rate for the Malaysian population. Several risk measures were selected to determine the risk charges. Then, a simulation procedure was done to transform the risk charges into the dynamic risk charges. The results show that the dynamic risk charges changed over time and a higher risk charges were recorded during the crisis period. This higher dynamic risk charges led to a higher capital adequacy amount during the crisis period. This study also found that the capital adequacy ratio was lower during the crisis period and a higher ratio during the normal period. This study also found the most significant variables that affected capital adequacy and capital adequacy ratio are corporate conventional bond, MGS bond and stocks. Thus, it can be concluded that the new capital adequacy model is a better approach in determining the adequacy of capital as it reflects the ups and downs of the market conditions and helps in better risk management.