

## Abstract

Crime is one among the most challenging problems in most developing countries in which unemployment is among the causes. Not all kind of crimes can be eradicated indeed; this paper is intended to contribute on eradication of unemployment-related crimes in the developing countries by proposing a deterministic mathematical model of unemployment-crime dynamics including vocational training and employment as control measures for crime. The study adopts the epidemiological model concepts on model formulation and model analysis while considering unemployment as main driver of crime. The basic properties of the model are analyzed, and well-posed of the model is established by using the Lipschitz condition. The next-generation matrix is used to obtain the criminal reproduction number which help to derive the conditions for local and global stability of the model. Moreover, the existence of backward and forward bifurcation when the crime reproduction number is equal to one was analyzed by center manifold theory. Simulations of the model are carried out to validate the theoretical part of the model and demonstrate vocational training, and employment strategies are more effective in combating crime when applied simultaneously. The findings suggest that unemployment problem should be addressed in order to reduce the number of unemployed individuals in joining the criminal activities.