Landslide is moving of a debris, rock, or soil mass down the slope and is one of the most common natural disasters in mountainous areas that puts lives and properties of the people at risk (Chakraborty and Pradhan, 2012; Regmi et al., 2014). Landslides occur in smaller scales than other natural disasters do, but have higher distribution and are more dangerous in many cases (Trigila et al., 2015). Landslides lead to evolution of landforms and are considered as the biggest threat in many regions of the world (Pourghasemi et al., 2013). Based on the reports of the Centre for Research on the Epidemiology of Disasters (CRED), landslides are the cause of 17% of all casualties of natural hazards in the world (Pourghasemi et al., 2012a). Some researchers (Goetz et al., 2011; Kanungo et al., 2009) expect this trend to increase in the future with increase in urbanization, deforestation, and change in climate condition. The damage caused by landslides is also predicted to rise in the subsequent decades with population growth, progression of residential areas and infrastructure in high-risk areas, continuing deforestation, and increase in regional precipitation (Regmi et al., 2014).

One of the main approaches to reducing these damages is preparation of Landslide Susceptibility Map (LSM). LSM has a major role in risk mitigation of landslides. Van Western et al. (2006) stated that landslides would more likely occur in the areas with the background of occurrences of landslides.

In the past two decades, considerable research on landslide susceptibility has been carried out worldwide. Many scholars have tried different approaches to preparing LSMs. In addition to crisis planning, LSMs are crucial for identifying the areas prone to the risk of landslides as well as managing and reducing the risk (Holec et al., 2013).

These maps can be provided using an appropriate model by having the landslide data and a set of independent variables (Budimir et al., 2014). There are three main groups of landslide susceptibility methods, including innovative, deterministic, and statistical (Guzzeti et al., 1999). The basis of the innovative models is the opinion of the experts in identifying the weight of each factor. Thus, this type of models has a high potential for error (Dahal et al., 2008; Hojrat and Louto, 2013). Deterministic models are developed on the basis of mathematical relationships. These models are based on the physical laws, which require calculating the relationship between the resistance forces and drivers of the mass movements (Tsangaratos et al., 2013).

Recently, with the advances in the commercial world, remote sensing, and quick access to GIS data in natural hazard mapping, landslide modeling has been improved (Althuwaynee et al., 2012). Many studies on LSM have been conducted using frequency ratio (Pham, 2015; Youssef et al., 2014), Weight of Evidence (WoE) (Youssef et al., 2015), Evidential Belief Function (EBF) (Althuwaynee et al., 2012), Artificial Neural Networks (ANNs) (Hong et al., 2015; Pradhan et al., 2010a,b;

Pradhan and Buchroithner, 2010; Yilmaz, 2010a,b; Lee et al., 2003; Lee et al., 2004), neuro-fuzzy systems (Oh and Pradhan, 2011; Sezer et al., 2011; Tien Bui et al., 2011), fuzzy logic (Akgun et al., 2011; Pradhan, 2010a,b; Pradhan 2011a,b; Pourghasemi et al., 2012b), Analytical Hierarchy Processes (AHPs) (Althuwaynee et al., 2014), Shannon entropy (Pourghasemi et al., 2012a), Logistic Regression (LR) (Pourghasemi et al., 2013), and statistical index (Pourghasemi et al., 2013; Regmi et al., 2013) in Geographic Information System (GIS). Some of these techniques have been used in other fields of study, such as identification of flood-prone areas (Khosravi et al., 2016 a,b).

Zhang et al. (2016) studied landslides in China by combining statistical index and AHP methods to prepare LSMs. They stated that residential areas and sporadic forests with geological units of red layered moderate soft mixture of clastic rocks placed in altitude class of 0-200 m were quite prone to landslide. In Iran, landslides have been most frequently reported in Mazandaran province, Iran (Pourghasemi and Kerle, 2017). Klijanrestagh Watershed, located in Mazandaran, is one of the areas with high risk of landslide due to special physiographic and climatic conditions, geological formations susceptible to the occurrence of landslides, and the existence of many villages in highlands.

As landslides frequently occur in the area under study, this research study was basically aimed at investigating the areas at risk of the occurrence of landslides in the future in order to manage and reduce losses; identifying the major factors of the occurrence of landslides in the area under study using FR, SE, WoE, and EBF; and finally, evaluating the performance of these models in the identification of landslide-prone areas.