

Section 03: Computational Sciences (Applied to Social, Legal, and Life Sciences)

**SciForum**
MOL2NET**Complex Network Analysis of General Tax Law**Aliuska Duardo-Sanchez, e-mail: aliuska.duardo@ehu.eus*Department of Public Law, Faculty of Law, University of Basque Country (UPV/EHU),
48940, Leioa, Spain*

Abstract. The General Tax Act /Act 58/2003 (GTA) is the backbone of the Spanish tax system. On the other hand, the analysis of complex social networks allows us to study the structure-property relationships in different complex political systems. In this paper, we built, for the first time, a complex network (GTAN) that encodes the GTA structure. This involves analyzing the hierarchical structure of the GTA, explicit citations between the different parts of the Act, and any alterations during its lifetime. The GTAN has 1923 nodes (Law > titles > chapters > articles > etc.) and 2400 links (norm structure or citation relationships). We calculated node centralities of articles to study the topology of the network and compare GTAN with Erdős-Renyi random networks. This opens a new gate to the study legal norms and political systems combining the classical theoretical studies with Social Network Analysis methods.

Keywords: Spain General Tax Act; Social Networks Analysis

