



Frontier Markets: Network Analysis of Capital Markets in Developing Nations

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We seek to advance basic research in human network structure of social, communication, and cognitive branches of Network Science in the context of Frontier Markets. Frontier Markets are the equity markets of developing nations typically in Southern and Southwest Asia, Africa, South America and Eastern Europe with the minimal requirements for global investment. The United States military finds itself engaged in these regions due to high instability induced by a lack of transparent global investment processes. Science is currently unavailable for estimating the viability of Frontier Markets and the processes for advancing underdeveloped markets to Frontier Market status. Given the complexity of market structure, Network Science offers the best research approach.

Objective:

The major questions that our Frontier Market Research strives to address are: (1) What metrics of network structure best describe a multidimensional, weighted relationship among Frontier Market actors? (2) What is the relationship between Frontier Market Network Structure and Nation-State stability? (3) Can a Social Network model provide a descriptive model of Frontier Market success/failure?

Approach:

As a three-year effort, this research will initially focus on developing the Social Network graphs of existing markets, establishing structural phenotypes, and creating network-based metrics to describe the differences between existing markets. Concurrently, we will conduct significant travel to Frontier Market regions. The travel will inform market information collection efforts, as well as refine and focus our Social Network based metric development. Our research team's combined social, financial, economic, political, military and corporate experience will conduct the first-ever effort

for building comparative models of Frontier Markets. In addition, our access to the political, social, and corporate contexts will support verification of models against measurable data sets. The Frontier Market framework provides a level of least complexity for the interacting social, cognitive, communication, and information networks that comprise Global Equity Markets and will serve as a foundation for future Network Science studies of Emerging and Developed Markets. Frontier Markets provide economic data sets, human motivations, informal and formal organizations, and relationship data not openly available in other contexts.

Impact:

This research will enable military decision-makers to better understand 'Economics' leg of the DIME approach to Full-Spectrum Operations (Diplomatic, Infrastructure, Military, and Economic). When combined with future research and applications, this project will allow policy makers to enhance economic power projection to traditional diplomacy and military action as a foreign policy option. In an undeveloped nation, achievement of Frontier Market status is the first step for access to global investment. Global investment encouraged by the presence of an open market system can stabilize a region and reduce the potential for military intervention or shorten the requirement for military presence. Through a network based understanding of Frontier Market development and stability, we will discover underlying metrics that describe market state. Through large scale quasi-experiments we will model how Frontier Markets succeed or fail. This research will be the foundational tools for senior military and diplomatic leaders engaged in shaping economic power projection operations and course of action development.