

Railway Competitiveness 101

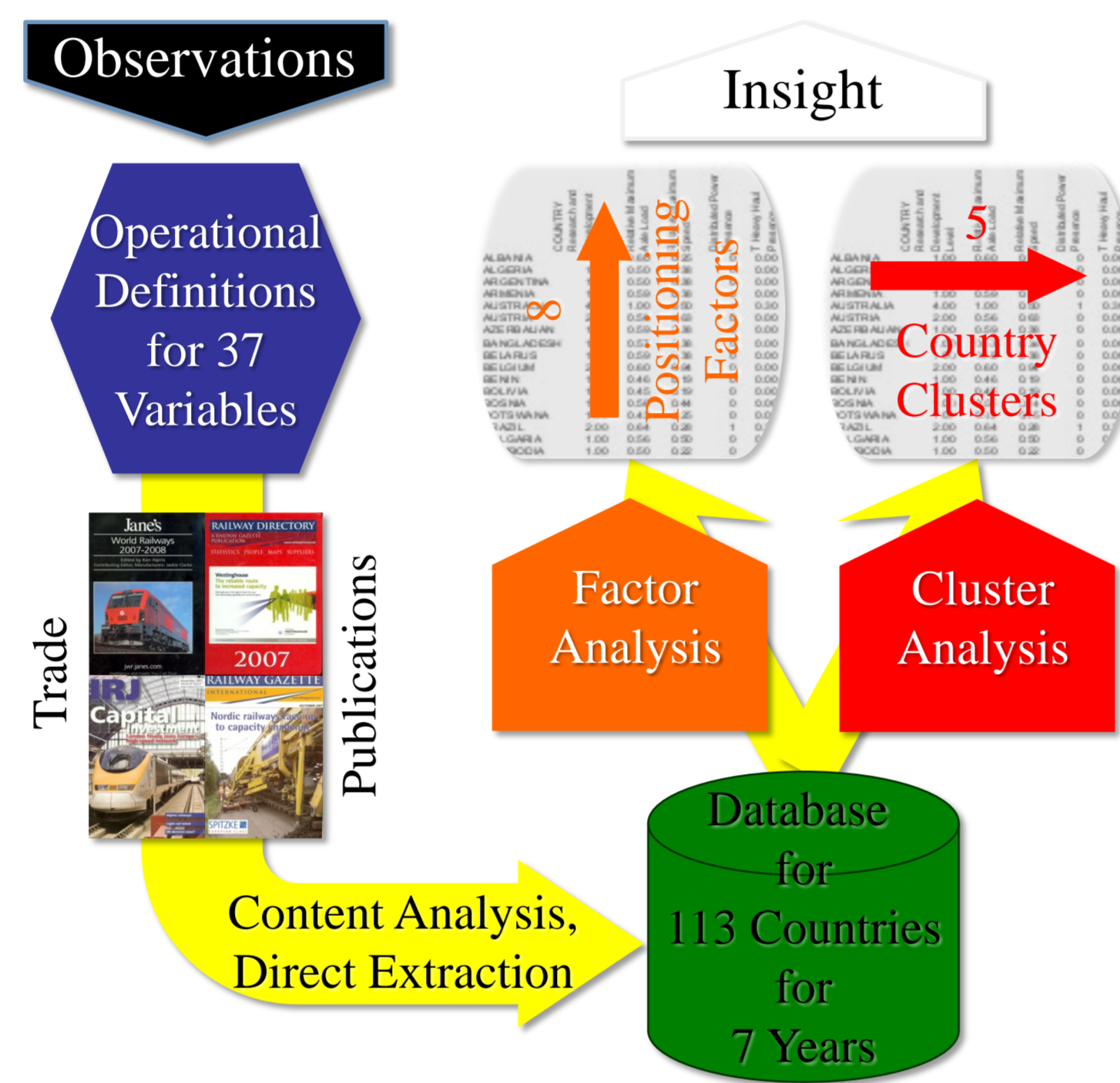
As railway renaissance spreads around the world, railways in some countries are evidently more successful than those in others. The author researched the phenomenon within a paradigm of inherent competitiveness to understand how line haul railways as corporate citizens fit into their economic, political, and social settings (Van der Meulen & Möller, 2006, 2008). This poster reports on application of that research to support formulation of national rail policy in an example country.

Multivariate statistical research

The research questions were:

- What interventions support competitive and sustainable railway positioning?
- What countries serve as role models for particular positioning interventions?

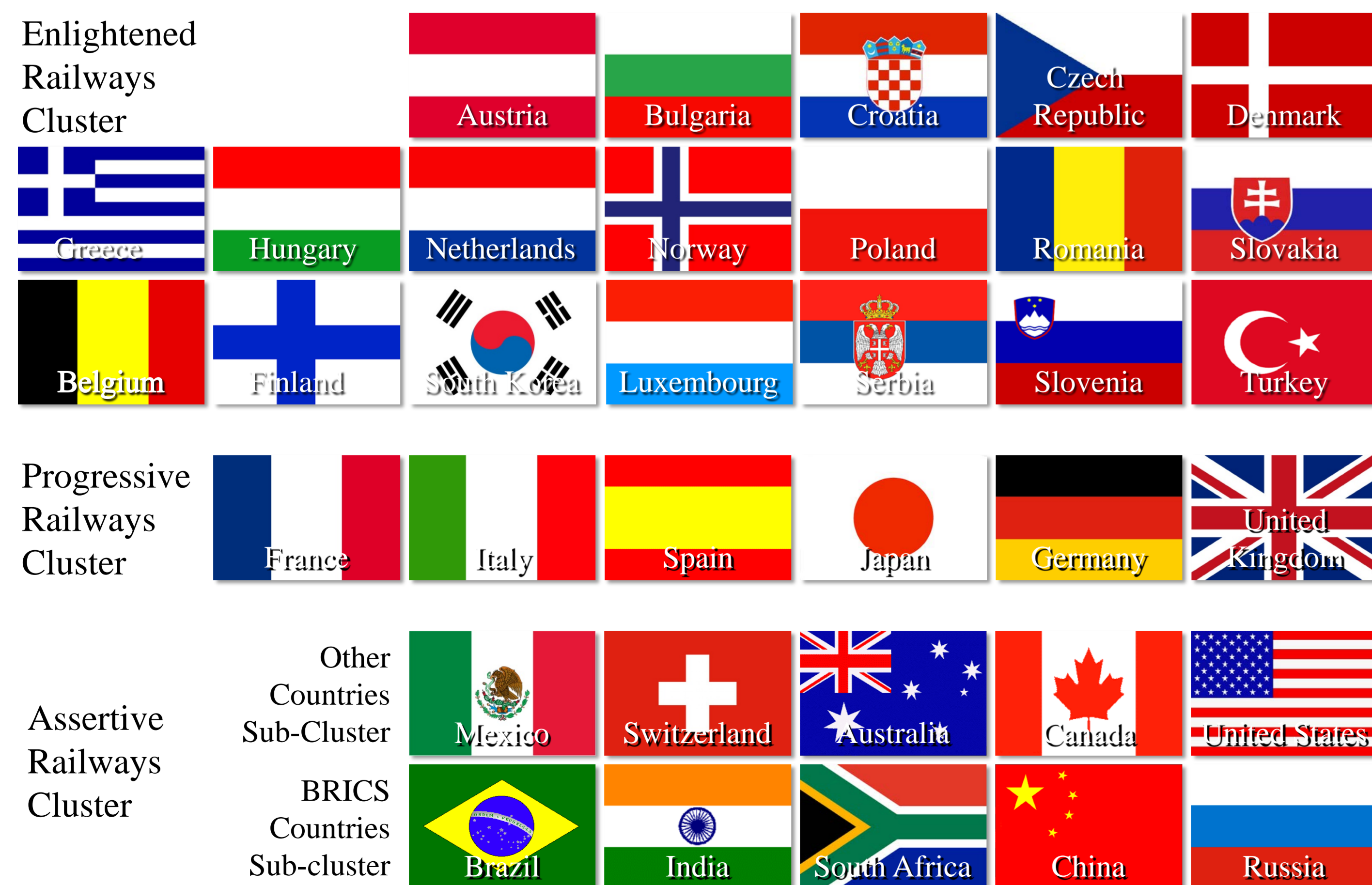
The observations measured corporate citizenship in Business-, Competitiveness-, Contribution-, Networkability-, Ownership-, Society-, Sustainability-, and Time groups. Competitiveness was represented by rail's genetic technologies Supporting (heavy axle load), Guiding (high speed) and Coupling (long trains) that support railway renaissance through new growth in Heavy Haul, Ultra High Speed, and Heavy Intermodal markets. Urban rail responds to different drivers and interventions and was therefore excluded from that research.



A research design to extract insight from observations

Research findings

Factor analysis found eight factors, or positioning interventions: Positioning Passenger Rail, Exploiting Opportunities, Positioning Freight Rail, Exploring Horizons, Pursuing Competition, Aligning Assets, Greening the Image, and Constraining Downside. Cluster analysis found five clusters, or frames of reference: Strategically-challenged Fortuitous- and Insecure Railways (not illustrated); and aspirational Enlightened-, Progressive-, and Assertive Railways.



Aspirational railway positioning clusters

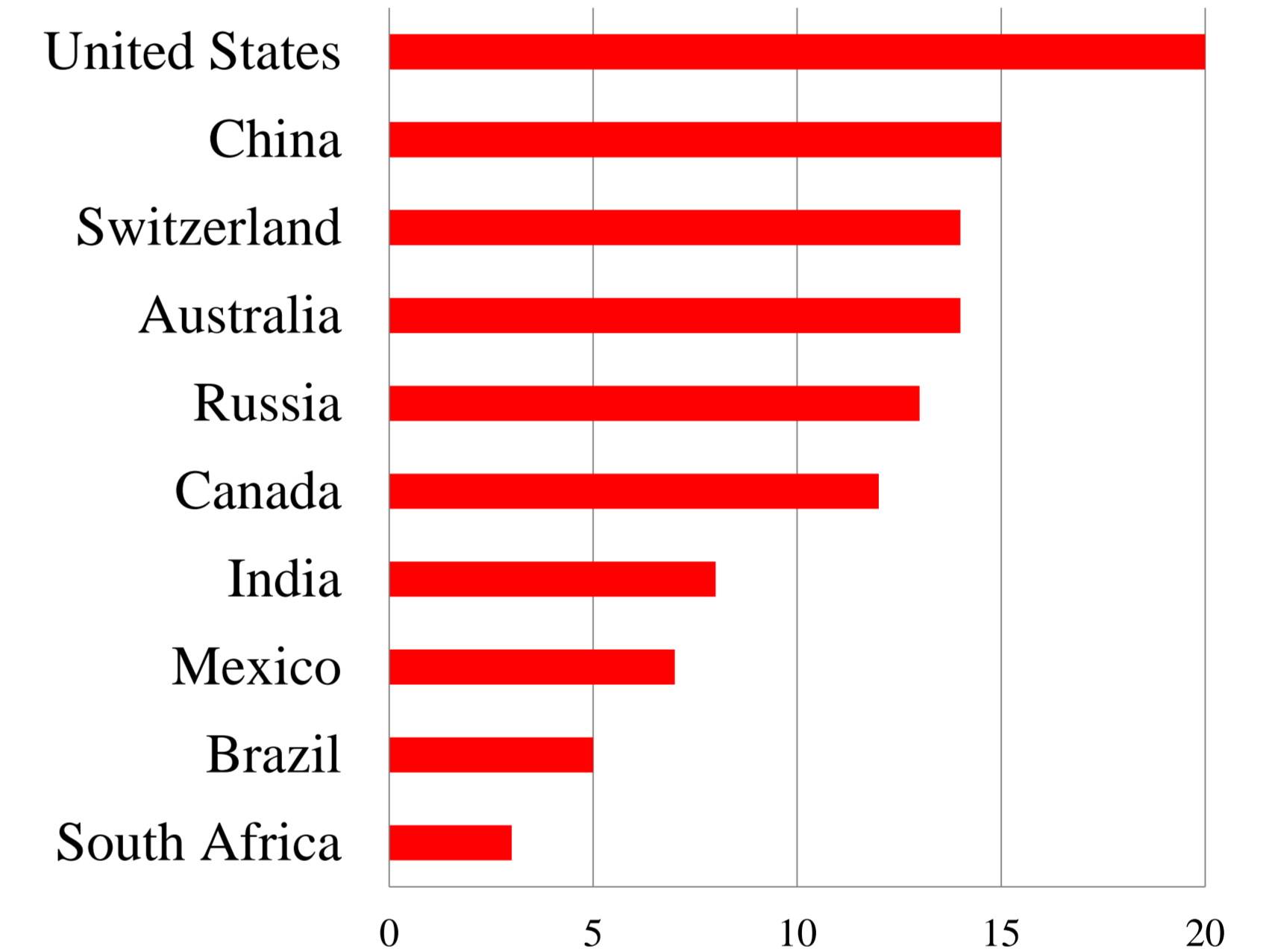
An application example



A number of challenges and historic events have caused South Africa's narrow gauge railways to lag behind the railway renaissance: They no longer compete effectively against other transport modes in delivering the national freight- and passenger transport task; and are hard put to fully support exports into global markets. Although the country clusters with Assertive Railways, the bar chart below revealed weakness relative to other cluster members. South Africa is therefore developing a rail policy that rests appropriately on findings described herein, and publication of a Green Paper for public comment is imminent. Key research-based high-level features of the proposed policy are (Makaepa, 2013):

- Positioning Freight Rail—increase inherent competitiveness through investment in a standard gauge high performance core network to support new traffic growth in Heavy Intermodal (double stacked containers) and encourage private sector participation in Heavy Haul.
- Exploiting Opportunities—establish rational, symbiotic relations between rail infrastructure and the national transport task.
- Positioning Passenger Rail—increasing speed and, although outside the scope of this research, also renewing urban rail rolling stock and infrastructure.

Note how the BRIC countries as natural reference sites, suggested an investment-led approach, and restrained interventions such as open access and parallel competition, although they might be appropriate later in time.



Assertive Railways ranked by number of high-scoring variables

Discussion and conclusions

The outcome represents an exemplary nexus between global strategic research findings, and application thereof to a country requiring a scientifically grounded foundation for its forthcoming railway policy. This approach zoomed in from the global population of railway positioning examples, through an appropriate set of reference countries, to a suite of interventions tailored to the specific challenges in the target country. It avoids the risks of choosing reference sites and interventions because they have worked elsewhere, without understanding their drivers and limits. The outcome suggests other settings that could benefit from similar insight, e.g. Europe's admirable passenger rail performance while freight rail appears hard put to increase its market share.

Main references

1. Van der Meulen, R.D. & Möller, L.C. (2006), "Railway globalization: Leveraging insight from developed- into developing regions", in *Proc. World Congress on Railway Research* [CD-ROM], Montréal.
2. Van der Meulen, R.D. & Möller, L.C. (2008), "Ultimate interoperability: Line-haul railways as global corporate citizens", in *Proc. World Congress on Railway Research*, PN.1.2, Seoul.
3. Makaepa, N. (2013), "Innovation through the National Rail Policy", in *Downloads of the Transport Forum* (www.transportsig.com), Johannesburg, October 3.