

IPS
NATIONAL COMPETITIVENESS RESEARCH
2009-2010



ANNE MARIE ZWERG-VILLEGAS
Departamento Negocios Internacionales

EL GRUPO DE INVESTIGACIÓN

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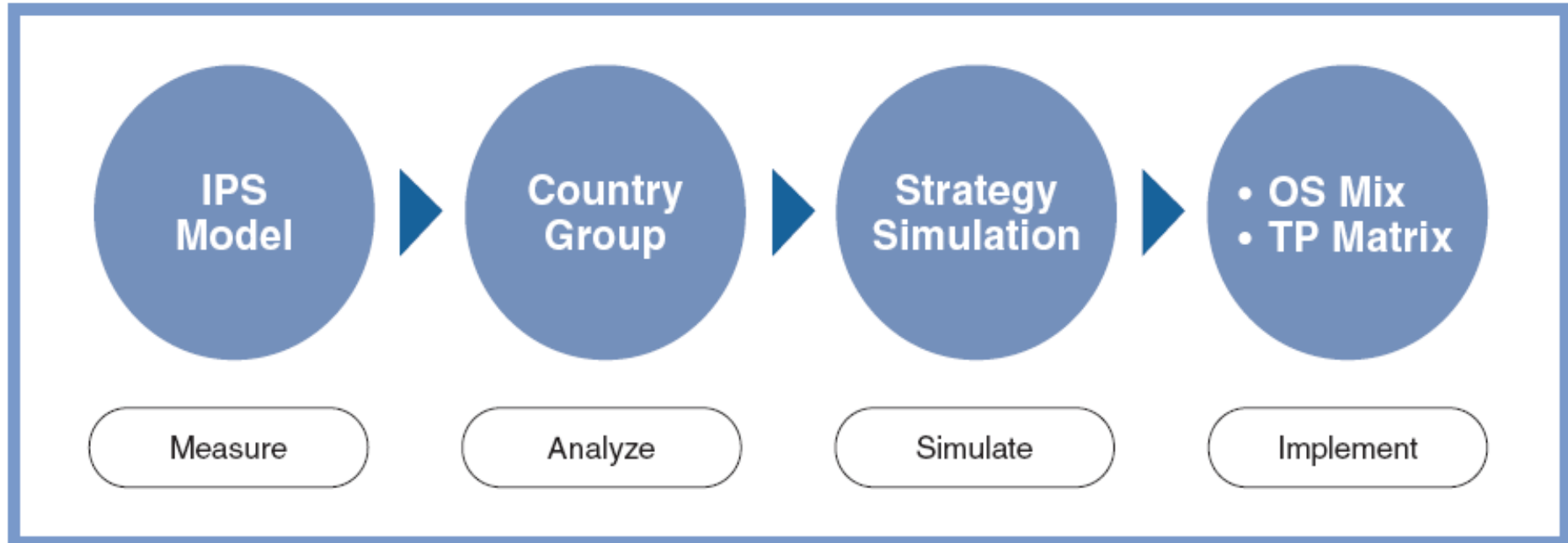
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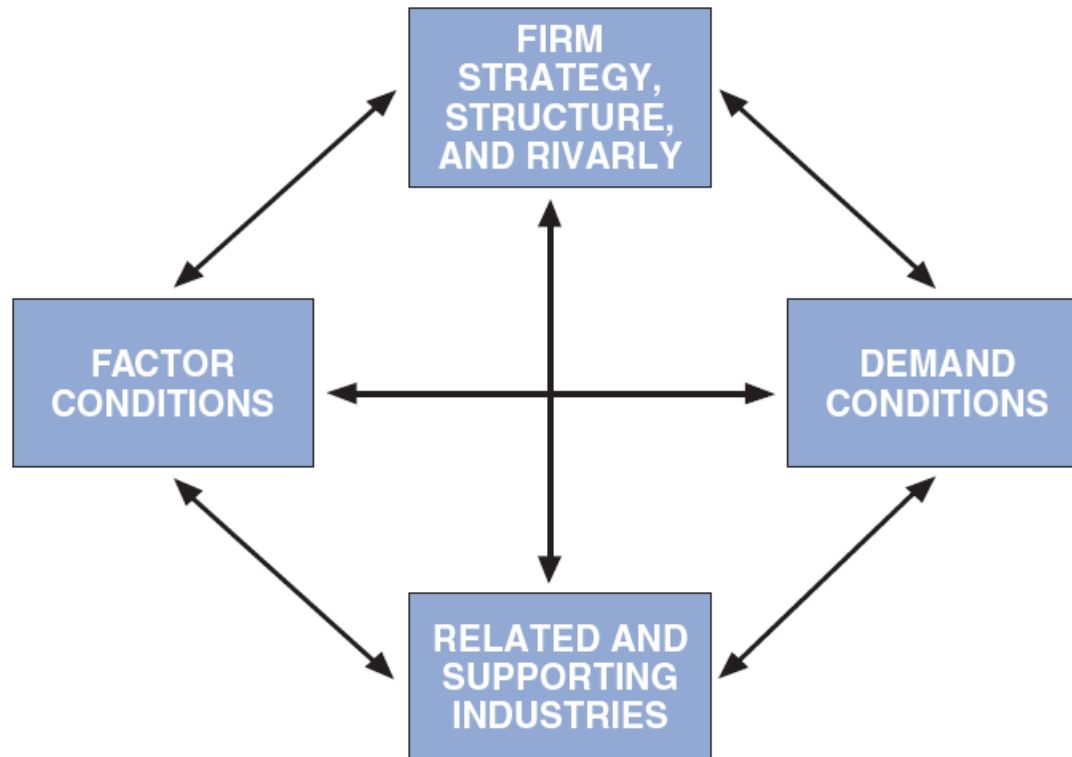
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METODOLOGÍA MASI



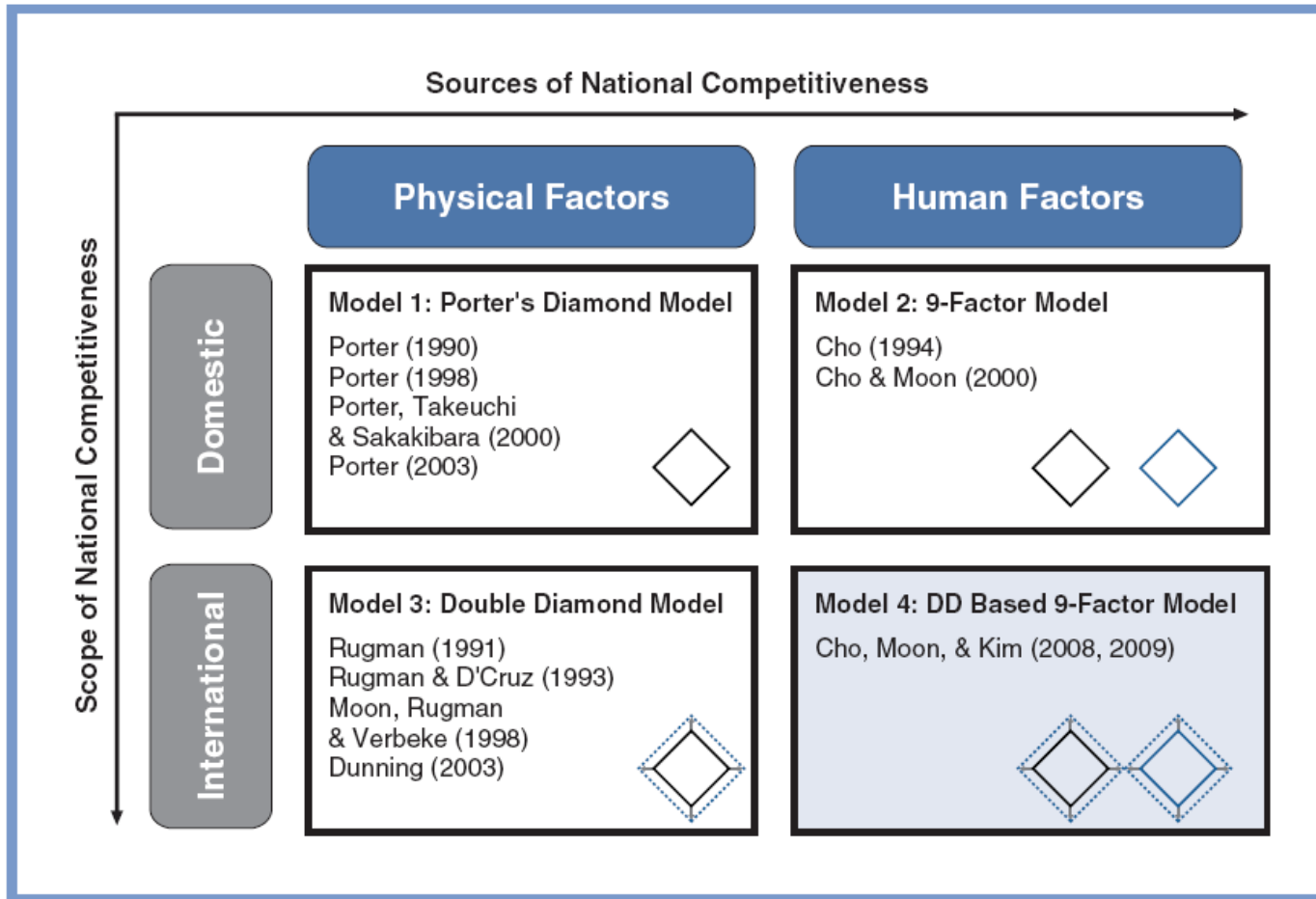
Base para discutir las implicaciones políticas para la mejoría en competitividad

EL DIAMANTE DE PORTER

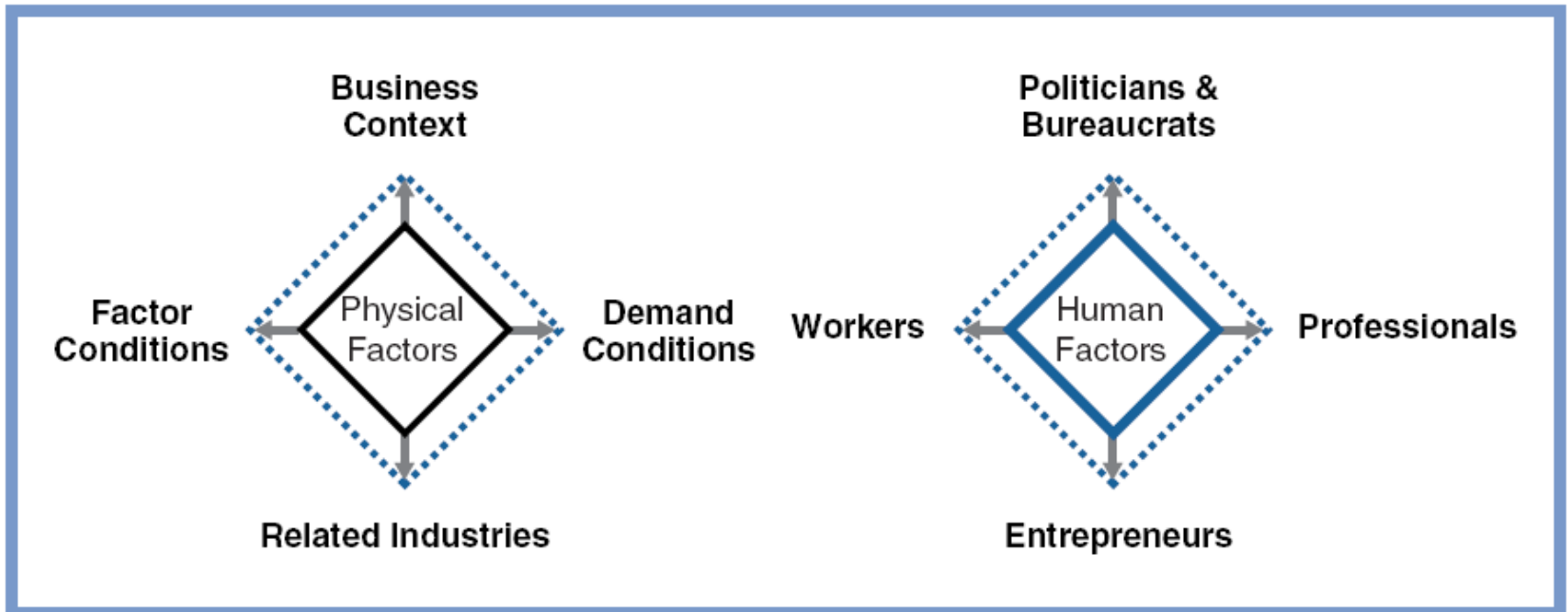


Source: Porter (1990)

FORMACIÓN DEL MODELO IPS



MODELO DD 9-FACTOR (IPS)



- 8 Factores
- 23 Sub-Factores
- 200 criterios

MODELO DD 9-FACTOR (IPS)

Physical Factors		Human Factors	
Factor Conditions	19	Workers	16
Demand Conditions	20	Politicians & Bureaucrats	15
Related Industries	76	Entrepreneurs	11
Business Context	30	Professionals	13
Total	145	Total	55

Promedio móvil a 3 años: 2007, 2008, 2009

FACTORS AND SUB-FACTORS

Main Factors		Sub-factors
Physical Factors	Factor Conditions	Energy Resources
		Other Resources
	Business Context	Strategy & Structure
		Global Mindset
		Business Culture
		Foreign Investment
	Related Industries	Transportation
		Communication
		Finance
		Education
Science & Technology		
Cluster Development		
Demand Conditions	Overall Living Environment	
	Demand Size	
Human Factors	Workers	Demand Quality
		Quantity of Labor Force
	Politicians & Bureaucrats	Quality of Labor Force
		Politicians
	Entrepreneurs	Bureaucrats
		Personal Competence
	Professionals	Social Context
		Personal Competence
		Social Context

SUBFACTORES Y CRITERIOS FACTORES

1.1. Energy Resources

- 1.1.1.a.b Oil production
- 1.1.2.a.b Natural gas production
- 1.1.3.a.b Coal production

1.2. Other Resources

- 1.2.1.a.b Round wood production
- 1.2.2.a.b Sawn wood production
- 1.2.3 Livestock
- 1.2.4 Fish catches
- 1.2.5.a.b Land area
- 1.2.6 Pig iron and crude steel production
- 1.2.7 Aluminum production
- 1.2.8 Cement production
- 1.2.9 Fabrics production
- 1.2.10 Freshwater resources

SUBFACTORES Y CRITERIOS

DEMANDA

2.1. Demand Size

- 2.1.1.a GDP
- 2.1.1.b GDP growth index
- 2.1.2.a GDP per capita
- 2.1.2.b GDP per capita growth index
- 2.1.3 Trade account balance
- 2.1.4 Current account balance
- 2.1.5 Goods: export
- 2.1.6 Goods: import
- 2.1.7 Services: credit
- 2.1.8 Services: debit
- 2.1.9 Trade openness
- 2.1.10 Service openness

2.2. Demand Quality

- 2.2.1 Consumer sophistication-information
- 2.2.2 Consumer sophistication-quality
- 2.2.3 Consumer sophistication-price
- 2.2.4 Consumer sophistication-brands
- 2.2.5 Consumer sophistication-design
- 2.2.6 Consumer sophistication-new products
- 2.2.7 Consumer sophistication on health and environmental issue
- 2.2.8 Consumer sophistication on IPR (Intellectual Property Right)

SUBFACTORES Y CRITERIOS INDUSTRIAS RELACIONADAS

3.1. Transportation

- 3.1.1 Paved road density
- 3.1.2 Vehicles
- 3.1.3.a.b Railway transport
- 3.1.4.a.b Civil aviation
- 3.1.5 Maritime transport
- 3.1.6 International travel
- 3.1.7 International transportation

3.2. Communication

- 3.2.1 Telephone mainlines
- 3.2.2 Mobile phone subscribers
- 3.2.3 Personal computers
- 3.2.4 Internet hosts
- 3.2.5 Internet users
- 3.2.6 Annual investment in telecommunication
- 3.2.7 E-business
- 3.2.8 E-readiness score
- 3.2.9 International voice traffic
- 3.2.10 International communication
- 3.2.11 Cyber international trade

3.3. Finance

- 3.3.1 Capital value
- 3.3.2 Capital accessibility
- 3.3.3 Exchange rate stability
- 3.3.4.a.b Gross domestic savings
- 3.3.5.a.b Gross domestic investment
- 3.3.6.a International reserves
- 3.3.6.b International reserves to imports
- 3.3.7 Access to loans
- 3.3.8 Venture capital availability
- 3.3.9 Credit by banking sectors
- 3.3.10 Financial risk rating
- 3.3.11 Financial market sophistication
- 3.3.12 Financial institution's transparency
- 3.3.13 Stock market capitalization
- 3.3.14 Value traded on stock markets
- 3.3.15 Stock market
- 3.3.16 International capital flow
- 3.3.17 Country credit rating

SUBFACTORES Y CRITERIOS

INDUSTRIAS RELACIONADAS cont.

3.4. Education

3.4.1	Public spending on education
3.4.2	Pupils per teacher (Primary school)
3.4.3	Students per teacher (Secondary school)
3.4.4	Educational system
3.4.5	Secondary enrollment rate
3.4.6	Tertiary enrollment rate
3.4.7	English education
3.4.8	IT training and education
3.4.9	Public schools
3.4.10	Competitiveness of education market

3.5. Science & Technology

3.5.1	Scientists and engineers
3.5.2	Scientific research institutions
3.5.3	Total expenditure on R & D
3.5.4	Government expenditure on R & D
3.5.5	Business expenditure on R & D
3.5.6	Information technology (IT)
3.5.7	New high-technology industries
3.5.8	Patent applications
3.5.9	Patents granted

3.6. Cluster Development

3.6.1	Local supplier quantity
3.6.2	Local supplier quality
3.6.3	Extent of collaboration among clusters

3.7. Overall Living Environment

3.7.1	Human development index
3.7.2.a,b	Tourism receipts from abroad
3.7.3	Personal security (e.g., Crime)
3.7.4	Social safety net
3.7.5	Medical service
3.7.6	Political risk
3.7.7	Quality of life
3.7.8	Globalization
3.7.9	National culture
3.7.10	Public orders
3.7.11	Innovativeness and creativity
3.7.12	Job description and individual roles
3.7.13	Rewards

SUBFACTORES Y CRITERIOS CONTEXTO DE NEGOCIOS

4.1. Strategy & Structure

- 4.1.1 Firm's decision process
- 4.1.2 Firm strategy
- 4.1.3 Corporate governance
- 4.1.4 Firm restructuring
- 4.1.5 Rivalry

4.2. Global Mindset

- 4.2.1 Global standard
- 4.2.2 International changes
- 4.2.3 International competition
- 4.2.4 International brands
- 4.2.5 Equal treatment

4.3. Business Culture

- 4.3.1 Shared value
- 4.3.2 The relationship between labor and management
- 4.3.3 Ethical practices (e.g., Transparent and sound management)
- 4.3.4 Insider trading
- 4.3.5 Corruption perceptions index
- 4.3.6 Health, safety and environmental concerns
- 4.3.7 Social responsibility

4.4. Foreign Investment

- 4.4.1.a.b FDI outward, stock
- 4.4.2.a.b FDI inward, stock
- 4.4.3.a.b FDI outward, flow
- 4.4.4.a.b FDI inward, flow
- 4.4.5.a FDI openness, stock
- 4.4.5.b FDI openness, flow
- 4.4.6.a Portfolio openness, stock
- 4.4.6.b Portfolio openness, flow
- 4.4.7 Government financing from abroad

SUBFACTORES Y CRITERIOS MANO DE OBRA NO CALIFICADA

5.1. Quantity of Labor Force

- 5.1.1 Population
- 5.1.2 Labor force (Total)
- 5.1.3 Life expectancy at birth
- 5.1.4 Employment rate
- 5.1.5 Working hours
- 5.1.6 Monthly compensation for manufacturing workers
- 5.1.7 Wage
- 5.1.8.a.b Output-input index
- 5.1.9 Productivity

5.2. Quality of Labor Force

- 5.2.1 Literacy rate
- 5.2.2 Labor dispute
- 5.2.3 Attitude and motivation
- 5.2.4 Education
- 5.2.5 The openness of labor market
- 5.2.6 Labor union

SUBFACTORES Y CRITERIOS POLÍTICOS Y ENTIDADES PÚBLICAS

6.1. Politicians

- 6.1.1 The legal framework
- 6.1.2 The legislative activity of the parliament
- 6.1.3 The political system
- 6.1.4 Leaders of society
- 6.1.5 Education level
- 6.1.6 International experience
- 6.1.7 Bribery and corruption

6.2 Bureaucrats

- 6.2.1 Gini Index
- 6.2.2 Foreign investment promotion policy (Inward + outward)
- 6.2.3 Government decisions and policy implementations
- 6.2.4 Bureaucracy
- 6.2.5 Leaders of society
- 6.2.6 Education level
- 6.2.7 International experience
- 6.2.8 Bribery and corruption

SUBFACTORES Y CRITERIOS EMPREENDEDORES

| 7.1. Personal Competence

- | 7.1.1 Decision making
- | 7.1.2 The ability to seize opportunities
- | 7.1.3 The entrepreneur's core competence
- | 7.1.4 Entrepreneur's education level
- | 7.1.5 Entrepreneur's international experience
- | 7.1.6 Entrepreneur's competitiveness

| 7.2. Social Context

- | 7.2.1 Availability of entrepreneurs
- | 7.2.2 New business
- | 7.2.3 New ideas
- | 7.2.4 Foreign entrepreneurs
- | 7.2.5 Leaders of society

SUBFACTORES Y CRITERIOS MANO DE OBRA CALIFICADA

8.1. Personal Competence

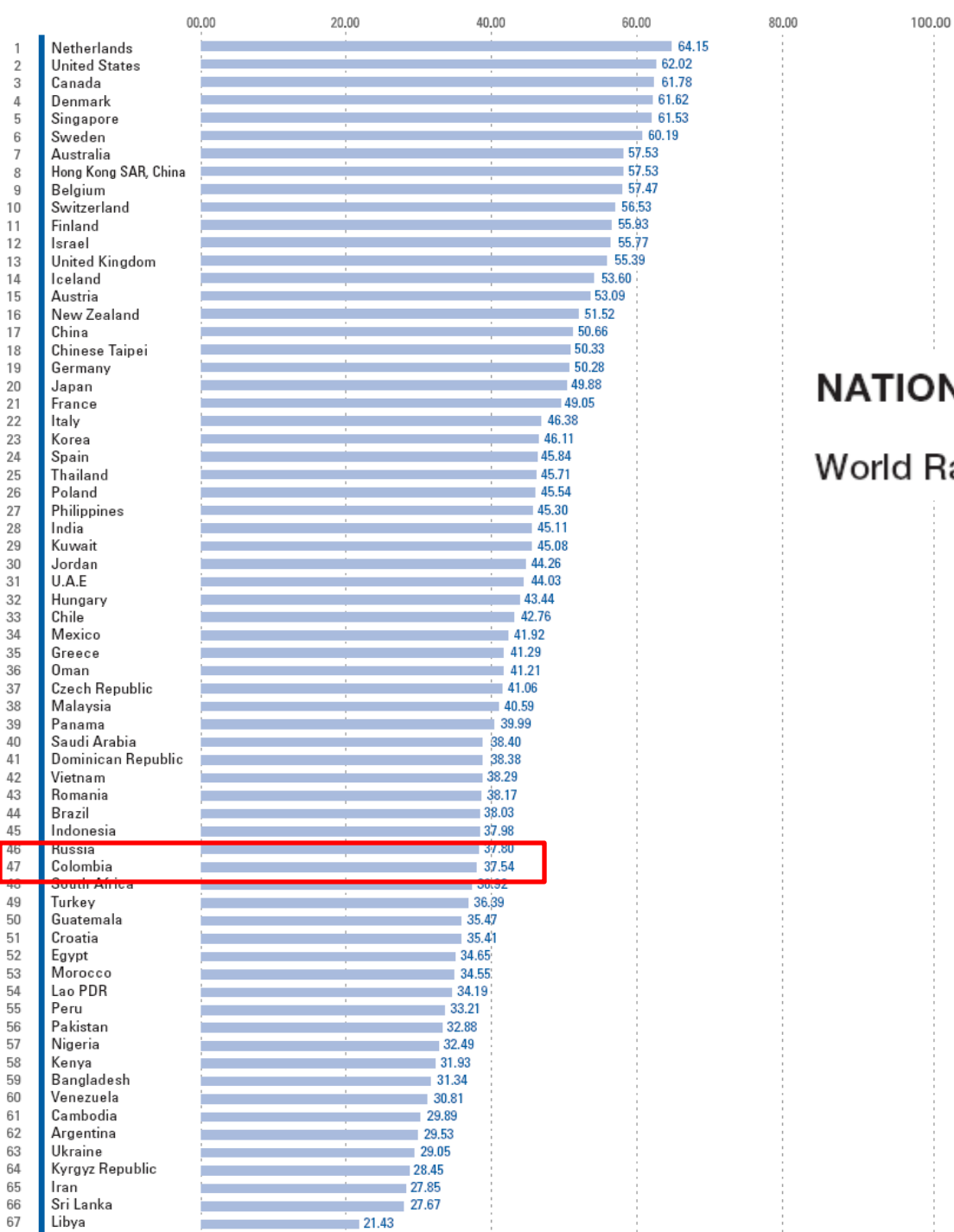
- 8.1.1 Professional's education level
- 8.1.2 Professional manager's international experience
- 8.1.3 Professional's international experience
- 8.1.4 Decision making
- 8.1.5 The ability to manage opportunities
- 8.1.6 The professional manager's core competences (e.g., initiative, drive, leadership etc.)
- 8.1.7 Professional's competitiveness

8.2. Social Context

- 8.2.1 Availability of professionals
- 8.2.2 Professional manager's compensation
- 8.2.3 Professional's compensation
- 8.2.4 Professional's pride
- 8.2.5 Professional job's openness
- 8.2.6 Leaders of society

SUBFACTORES Y CRITERIOS EVENTOS FORTUITOS

- | 9.1.1 Chance event (e.g., war, terrorism, energy crisis, major innovations, and other environmental change)
- | 9.1.2 Adjustment to external challenges

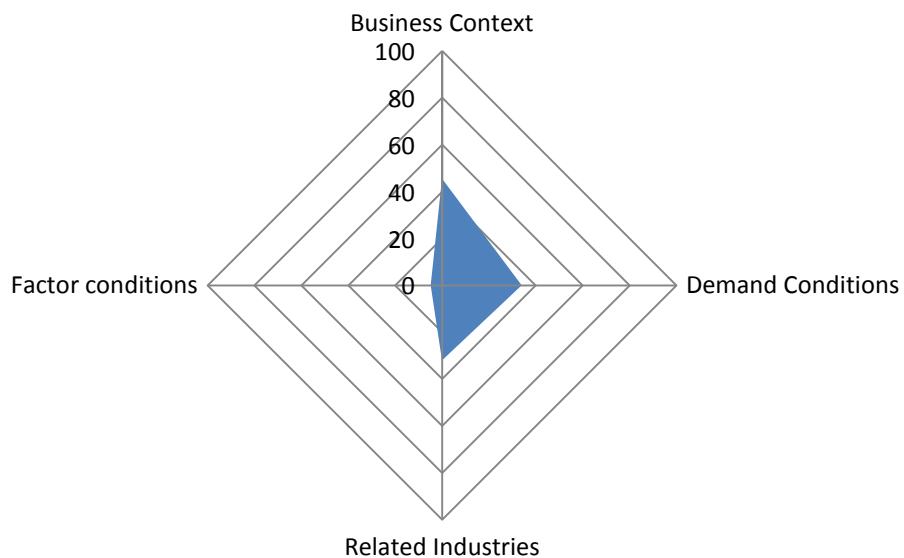


NATIONAL COMPETITIVENESS RESEARCH

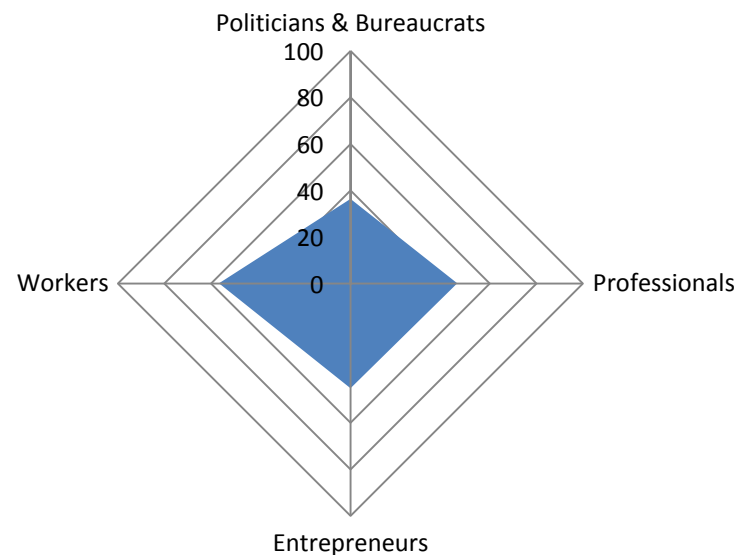
World Rankings

ESTRUCTURA DE COMPETIVIDAD COLOMBIANA

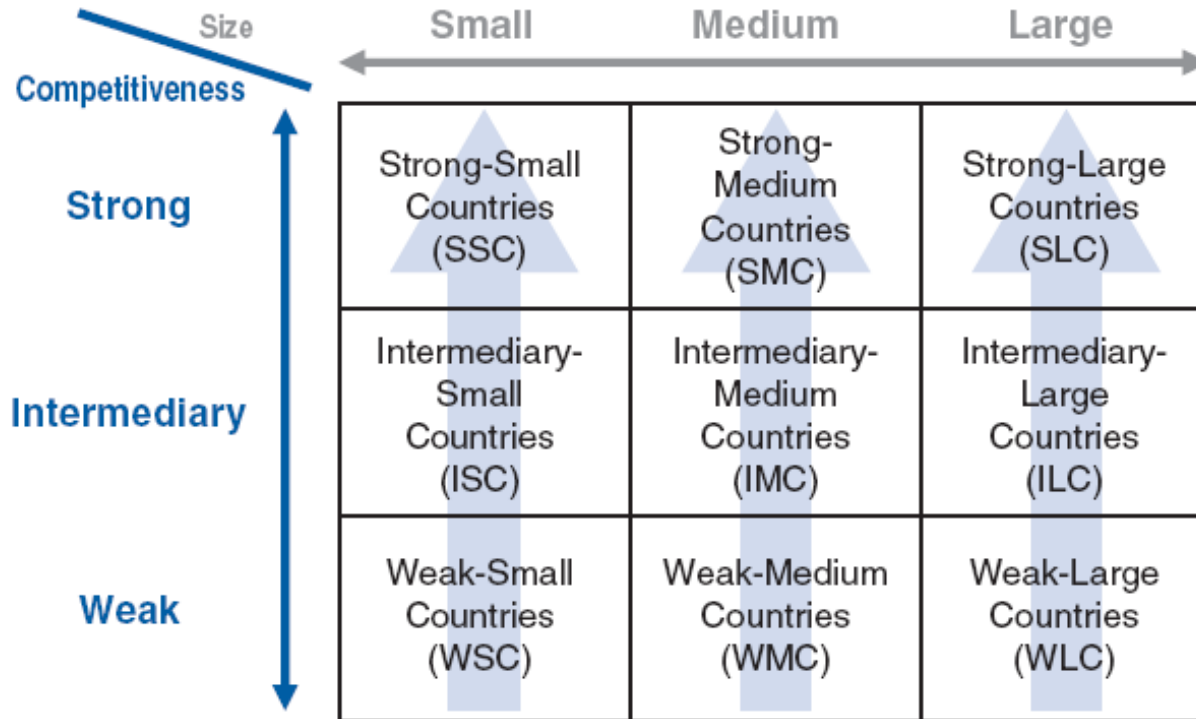
Factores físicos



Factores humanos



TIPOLOGÍA DE GRUPOS DE PAÍSES



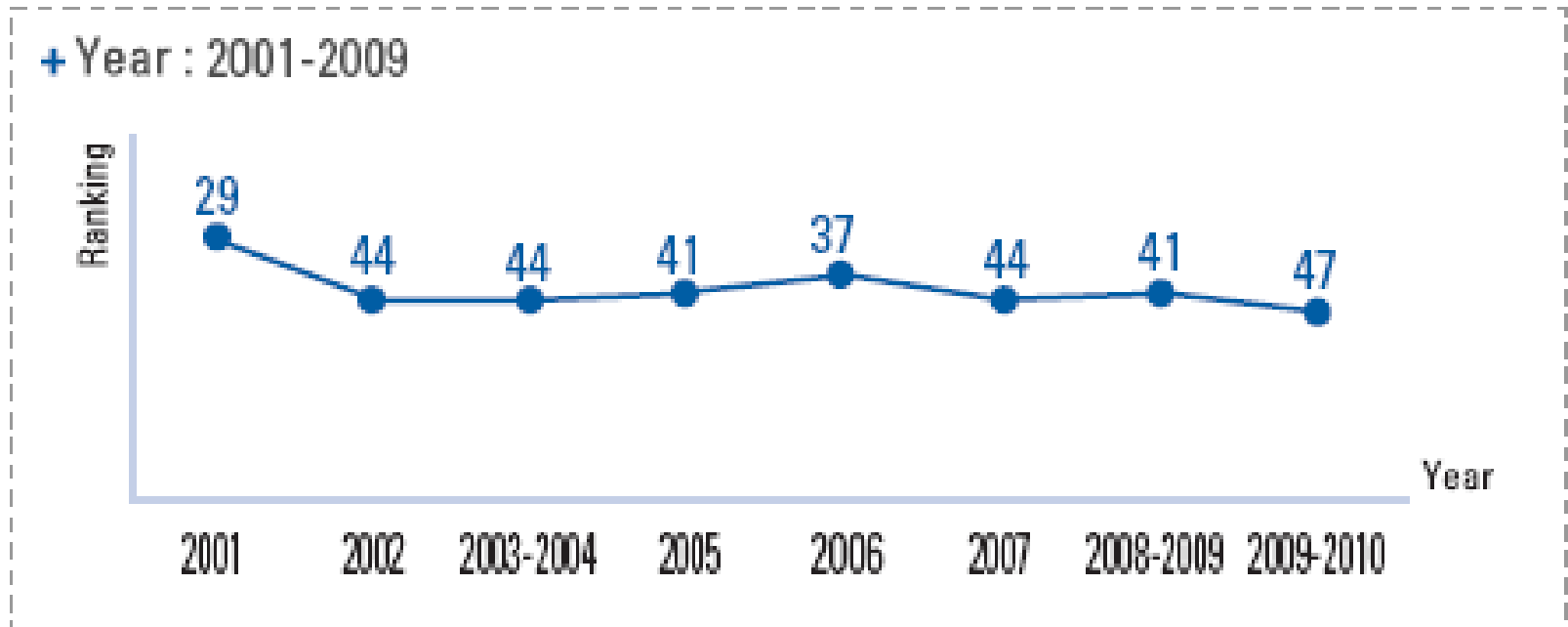
RANKING GLOBAL INTRA-GRUPAL

Large Group			Medium Group			Small Group		
Large	Strong	United States	Medium	Strong	Sweden	Small	Strong	Netherlands
		Canada			Finland			Denmark
		Australia			United Kingdom			Singapore
		China			New Zealand			Hong Kong SAR, China
		Germany			Chinese Taipei			Belgium
		Japan			France			Switzerland
		Philippines			Italy			Israel
	Intermediary	India		Intermediary	Korea		Intermediary	Iceland
		Mexico			Spain			Austria
		Saudi Arabia			Thailand			Kuwait
		Vietnam			Poland			Jordan
		Brazil			Chile			U.A.E.
		Indonesia			Oman			Hungary
		Russia			Malaysia			Greece
	Colombia	Romania		Czech Republic				
	Weak	South Africa		Weak	Morocco		Weak	Panama
		Turkey			Lao PDR			Dominican Republic
		Egypt			Kenya			Guatemala
		Peru			Venezuela			Croatia
		Pakistan			Cambodia			Kyrgyz Republic
Nigeria		Ukraine						
Argentina		Sri Lanka						
Bangladesh								
Argentina								
Iran								
Libya								

Size		Small	Medium	Large
Competitiveness				
Strong	A*	Singapore (+3) Israel (+2)	New Zealand (+3) Chinese Taipei (+3)	Australia (+3) China (+4)
	O*	Netherlands (+1) Denmark (-1) Belgium (0) Switzerland (0) Austria (0)	Sweden (-1) United Kingdom (0)	United States (-1) Canada (+1) Germany (-1)
	L*	Hong Kong (-2)	Finland (-4) France (-4)	Japan (-4)
Intermediary	A*	Dominican Republic (+5)	Italy (+2) Oman (+6)	Philippines (+3) India (+5) Saudi Arabia (+8) Vietnam (+2)
	O*	Kuwait (0) U.A.E. (0) Hungary (0) Greece (0) Czech Republic (-1) Panama (-1)	Korea (-1) Spain (-1) Thailand (0) Poland (0) Malaysia (-1)	Mexico (0) Brazil (-1)
	L*	Jordan (-2)	Chile (-6) Romania (-4)	Indonesia (-5)
Weak	A*			Turkey (+5) Peru (+2) Bangladesh (+3)
	O*	Guatemala (+1)	Morocco (-1) Cambodia (0) Ukraine (0)	Russia (+1) Nigeria (+1) Iran (+1)
	L*	Croatia (-2)	Kenya (-2) Venezuela (-5) Sri Lanka (-6)	Colombia (-6) South Africa (-3) Egypt (-3) Pakistan (-3) Argentina (-3) Libya (-2)

Advancers, Ordinaries, and Laggards in 2009

COMPETITIVIDAD COLOMBIANA



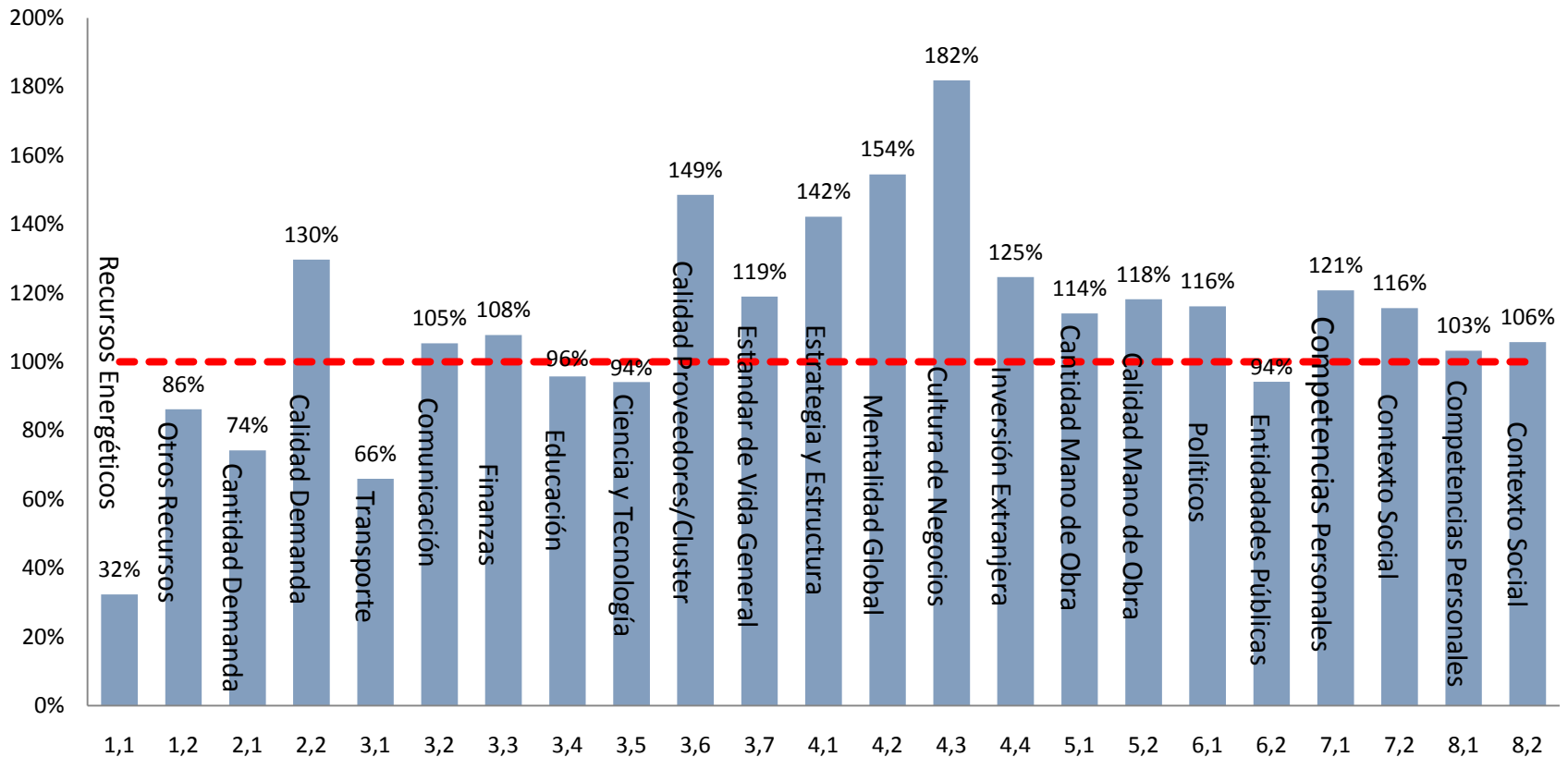
POSICIÓN RELATIVA INTRA-GRUPAL

1.1~1.2: Factores
5.1~5.2: Mano de Obra

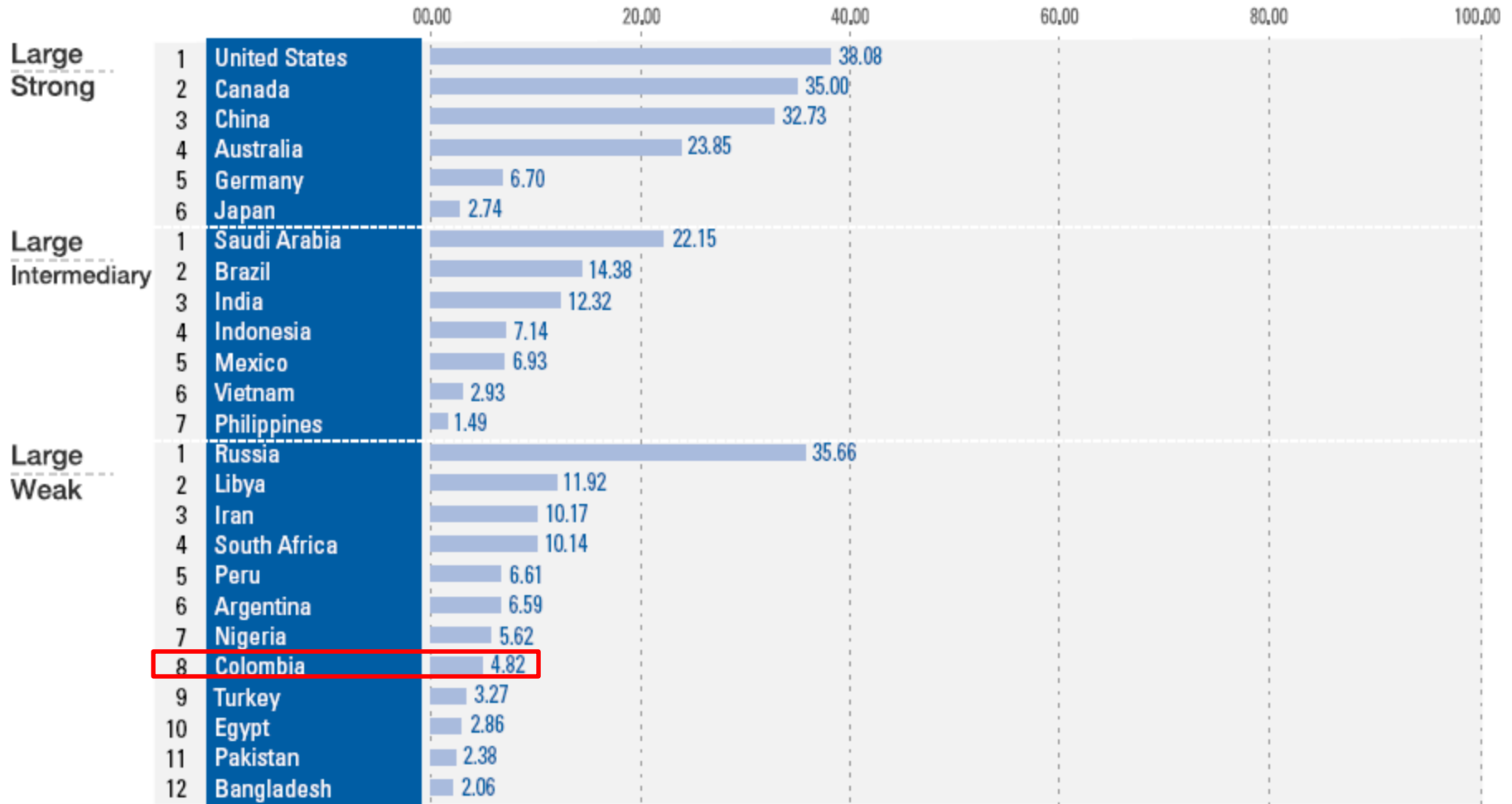
2.1~2.2: Demanda
6.1~6.2: Políticos y Burocráticos

3.1~3.7: Industrias Relacionadas
7.1~7.2: Emprendedores

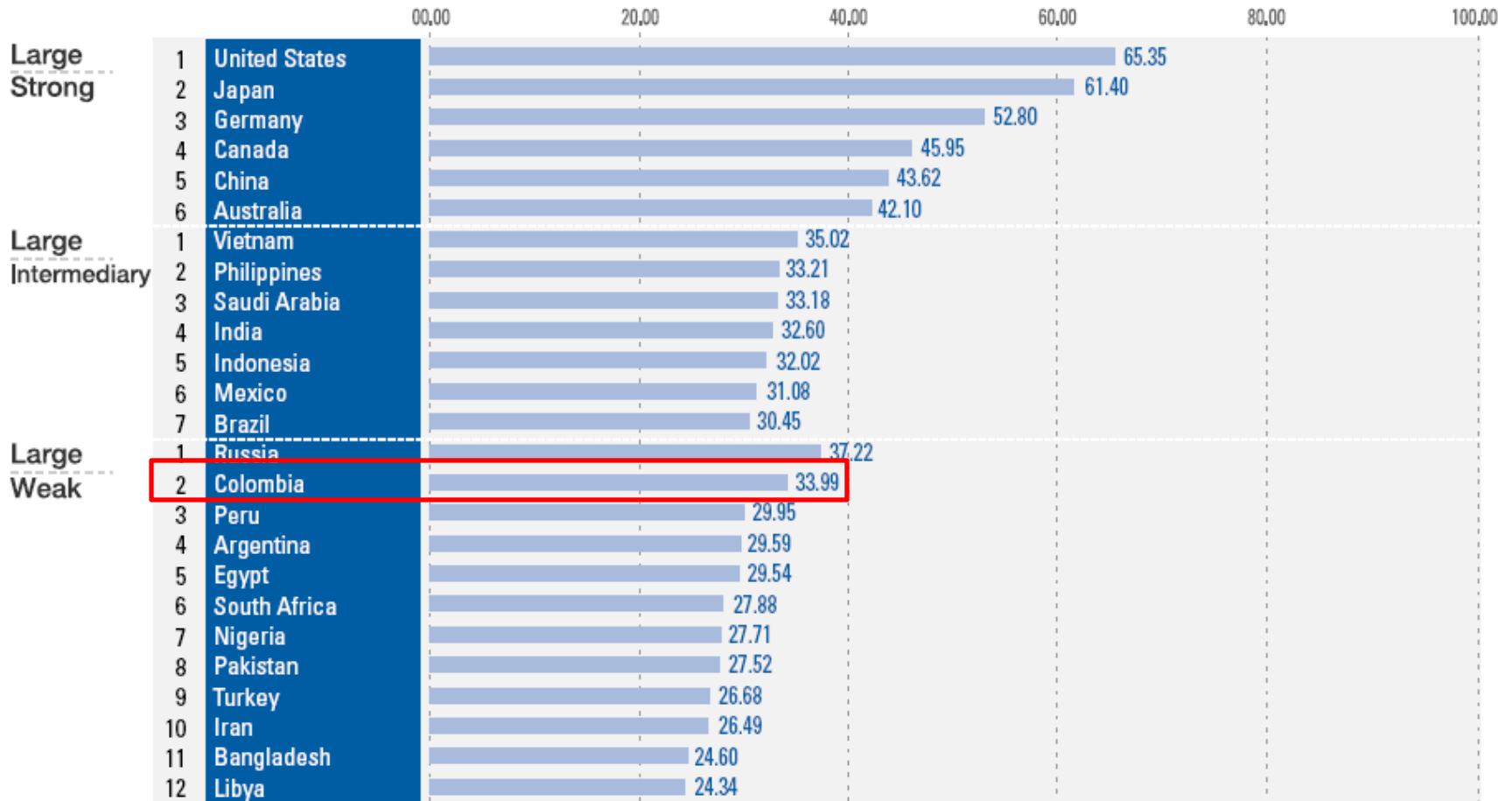
4.1~4.4: Contexto de Negocios
8.1~8.2: Profesionales



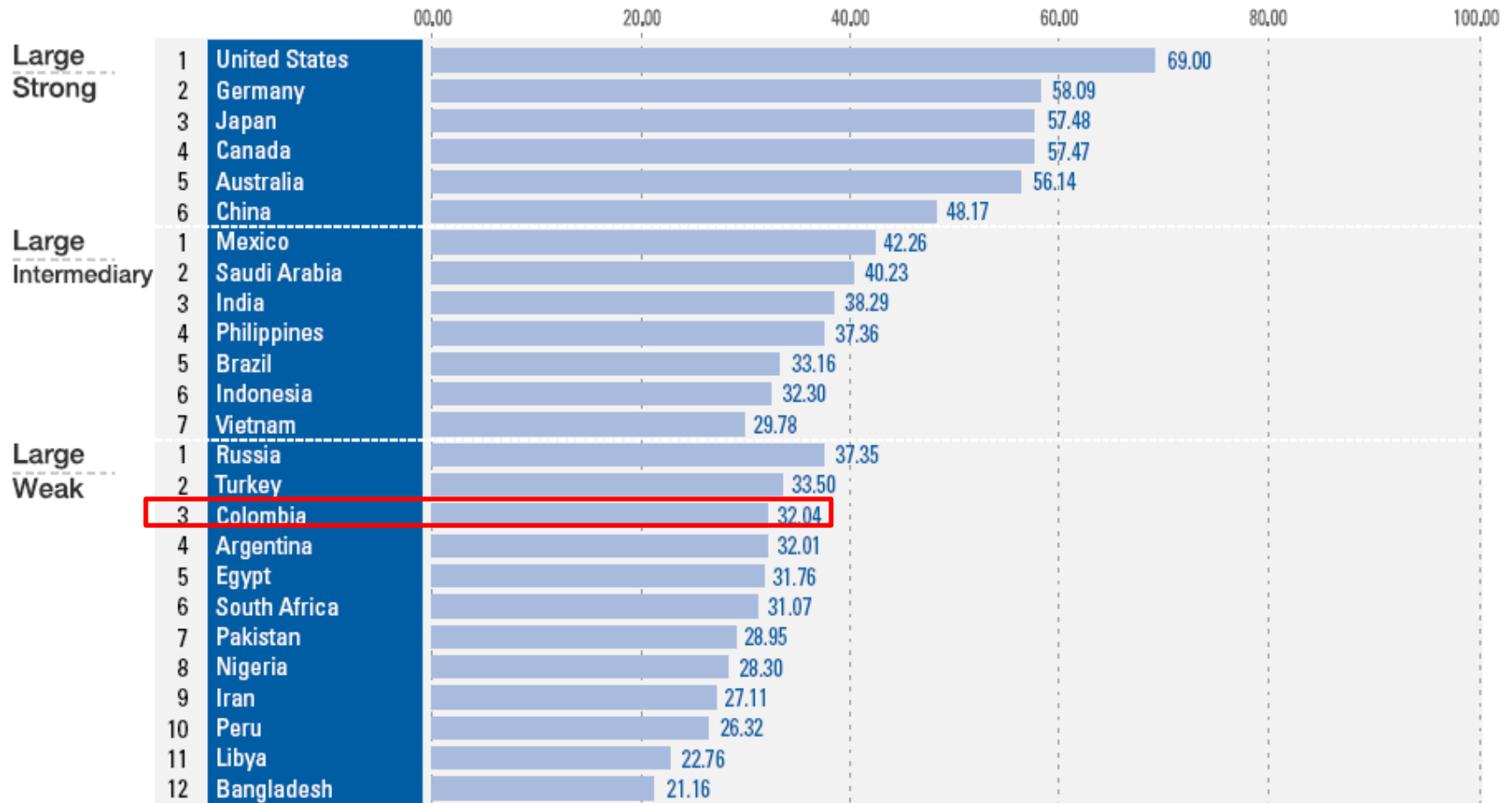
CONDICIONES DE FACTORES



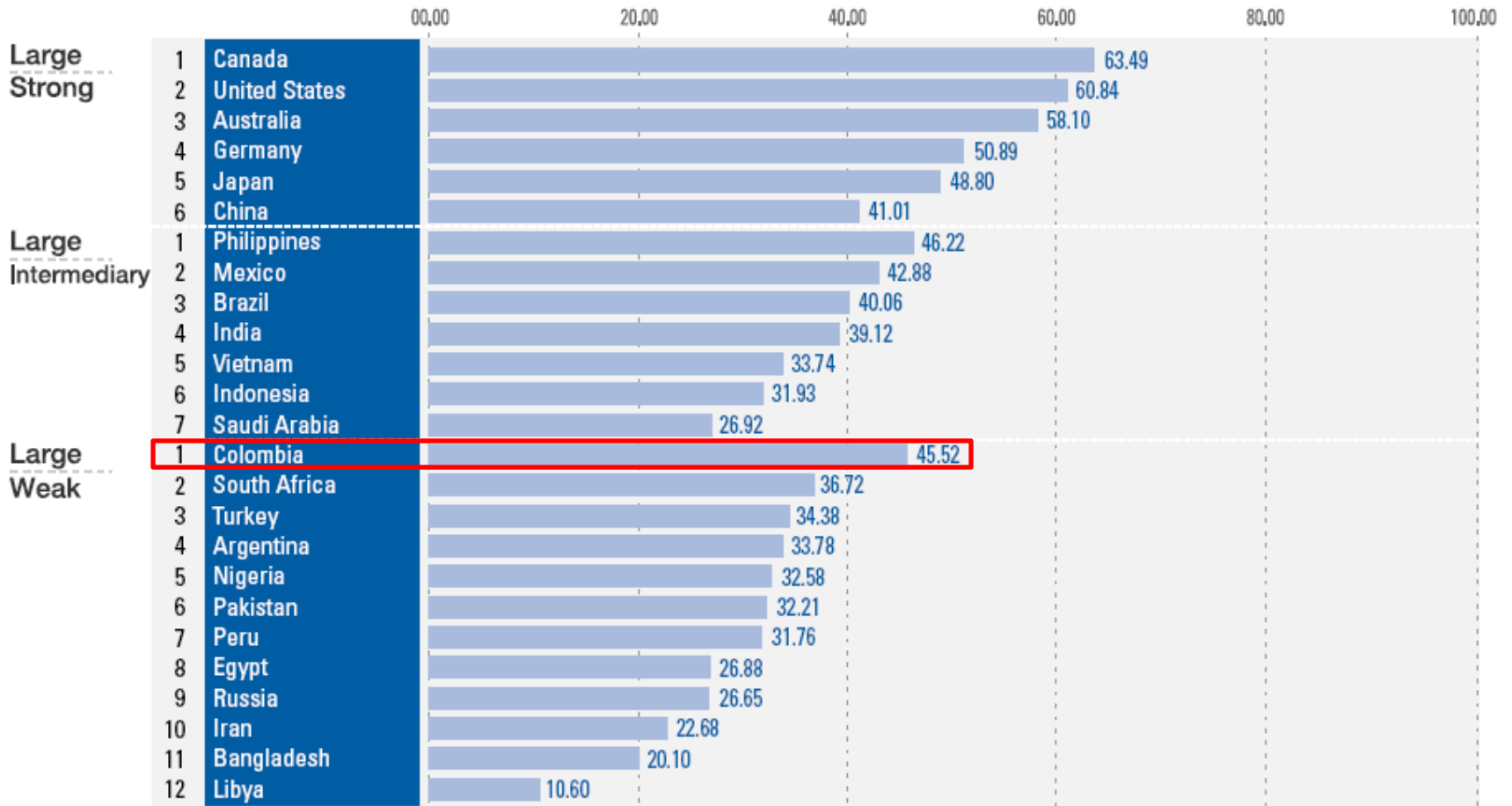
CONDICIONES DE DEMANDA



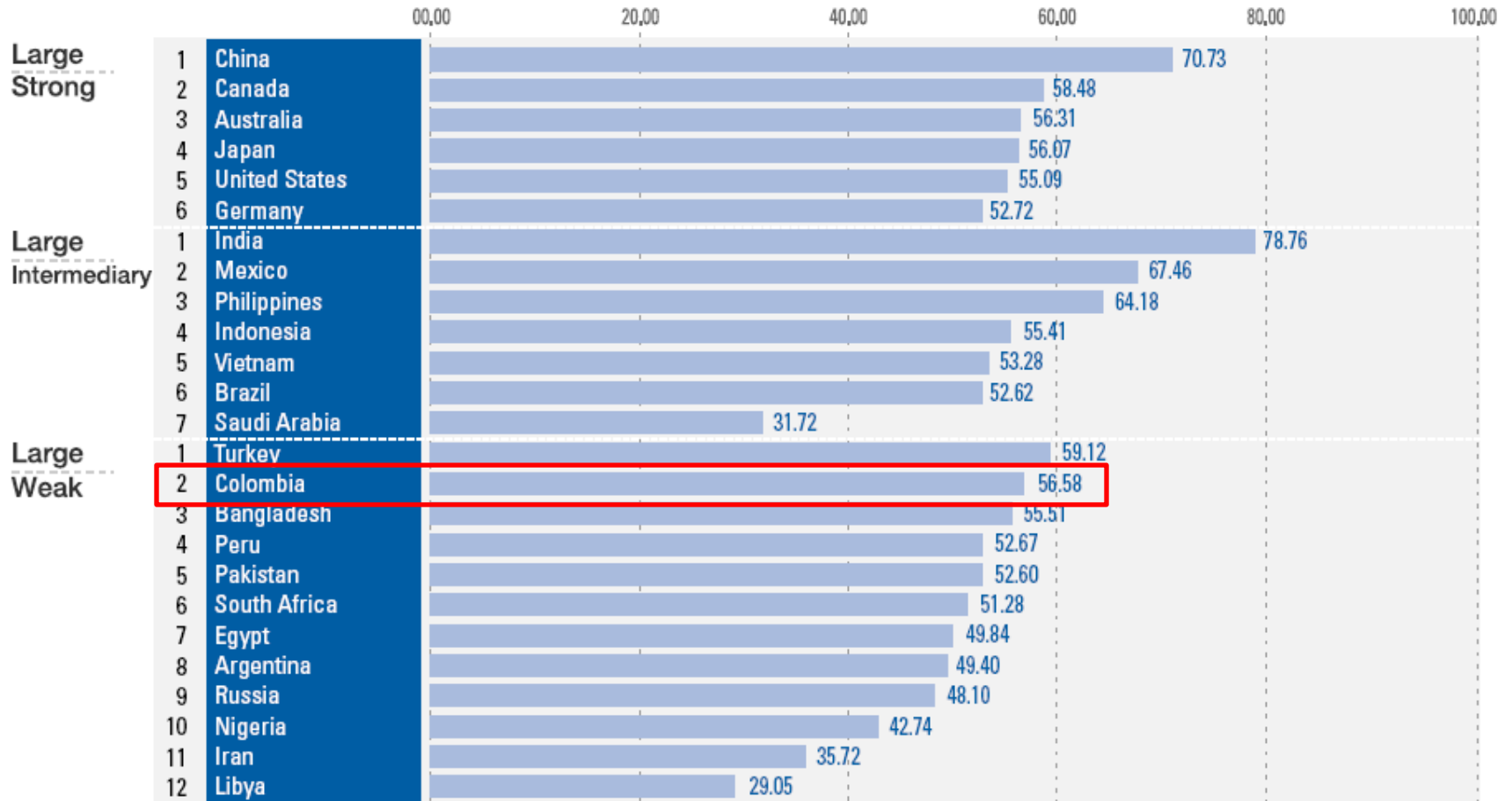
INDUSTRIAS RELACIONADAS



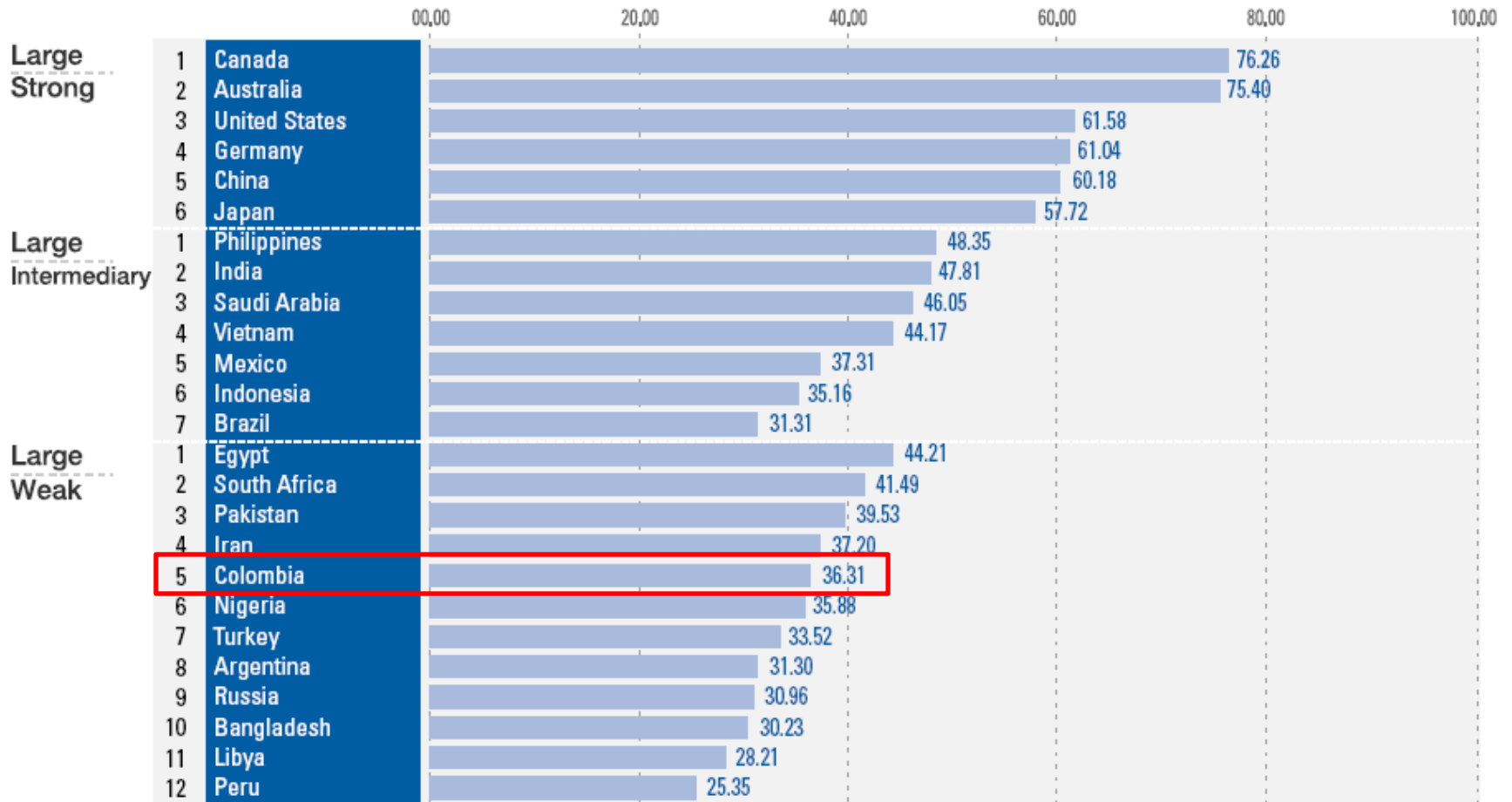
CONTEXTO DE NEGOCIOS



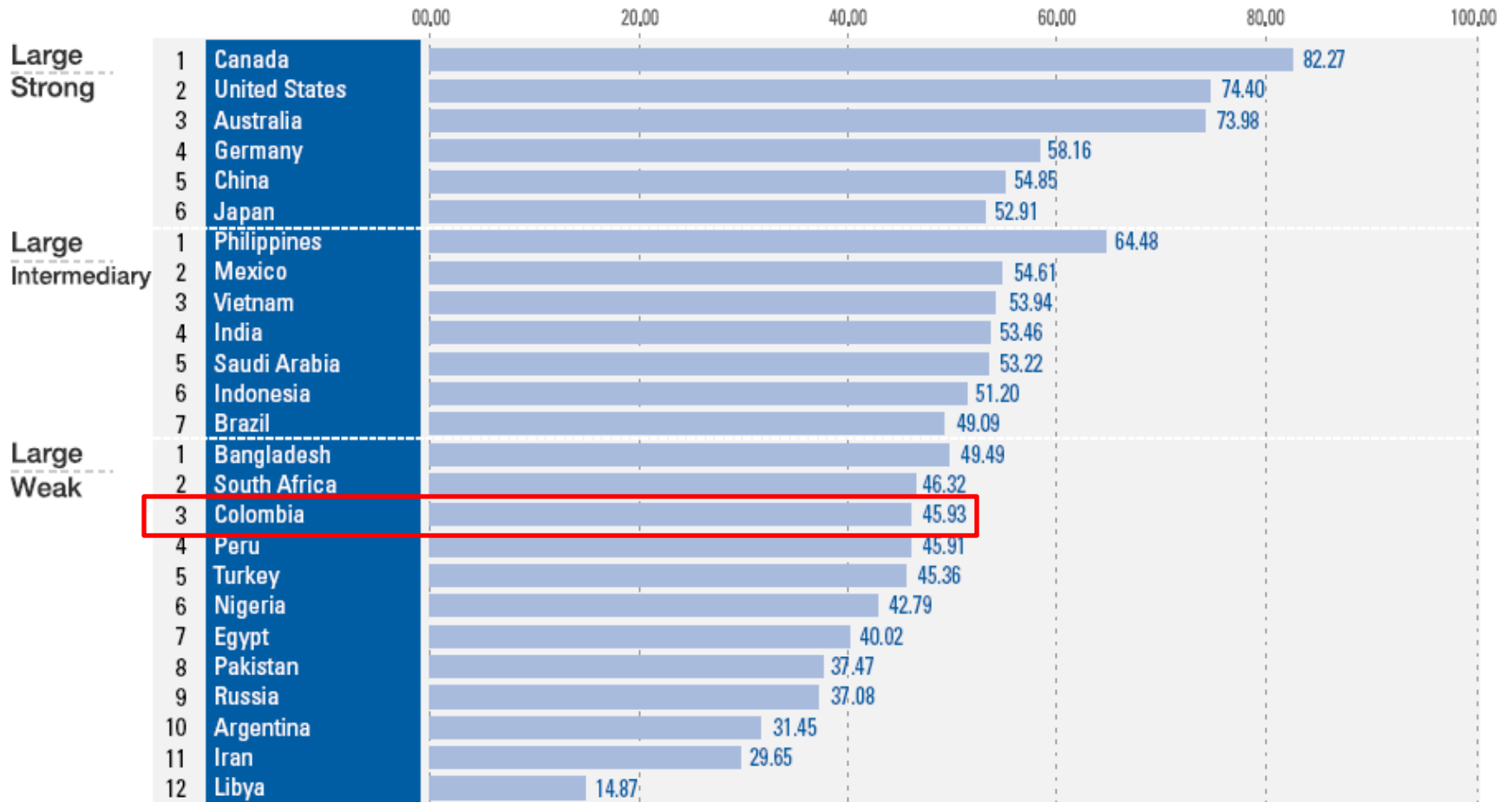
MANO DE OBRA NO CALIFICADA



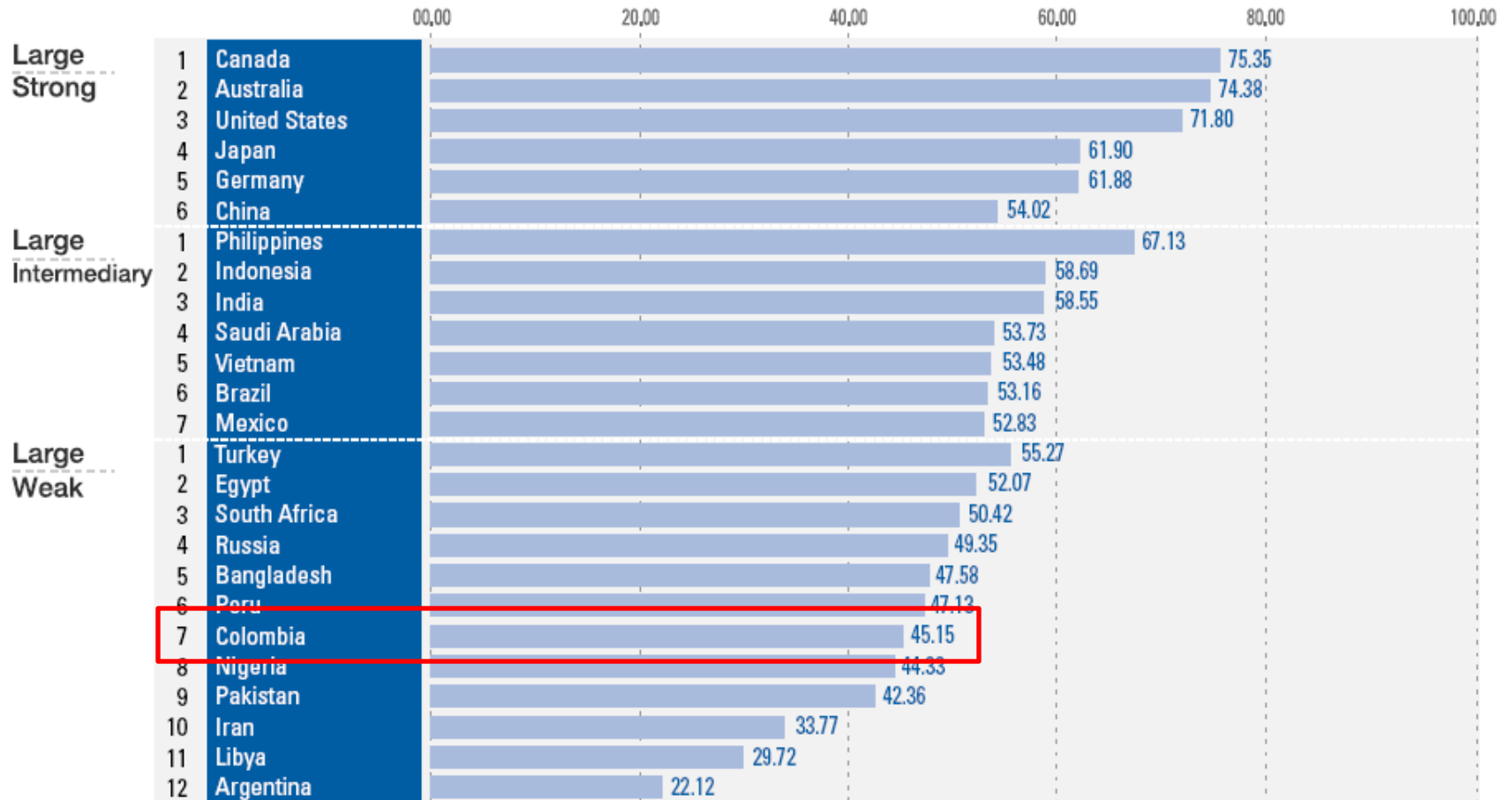
POLÍTICOS Y ENTIDADES PÚBLICAS



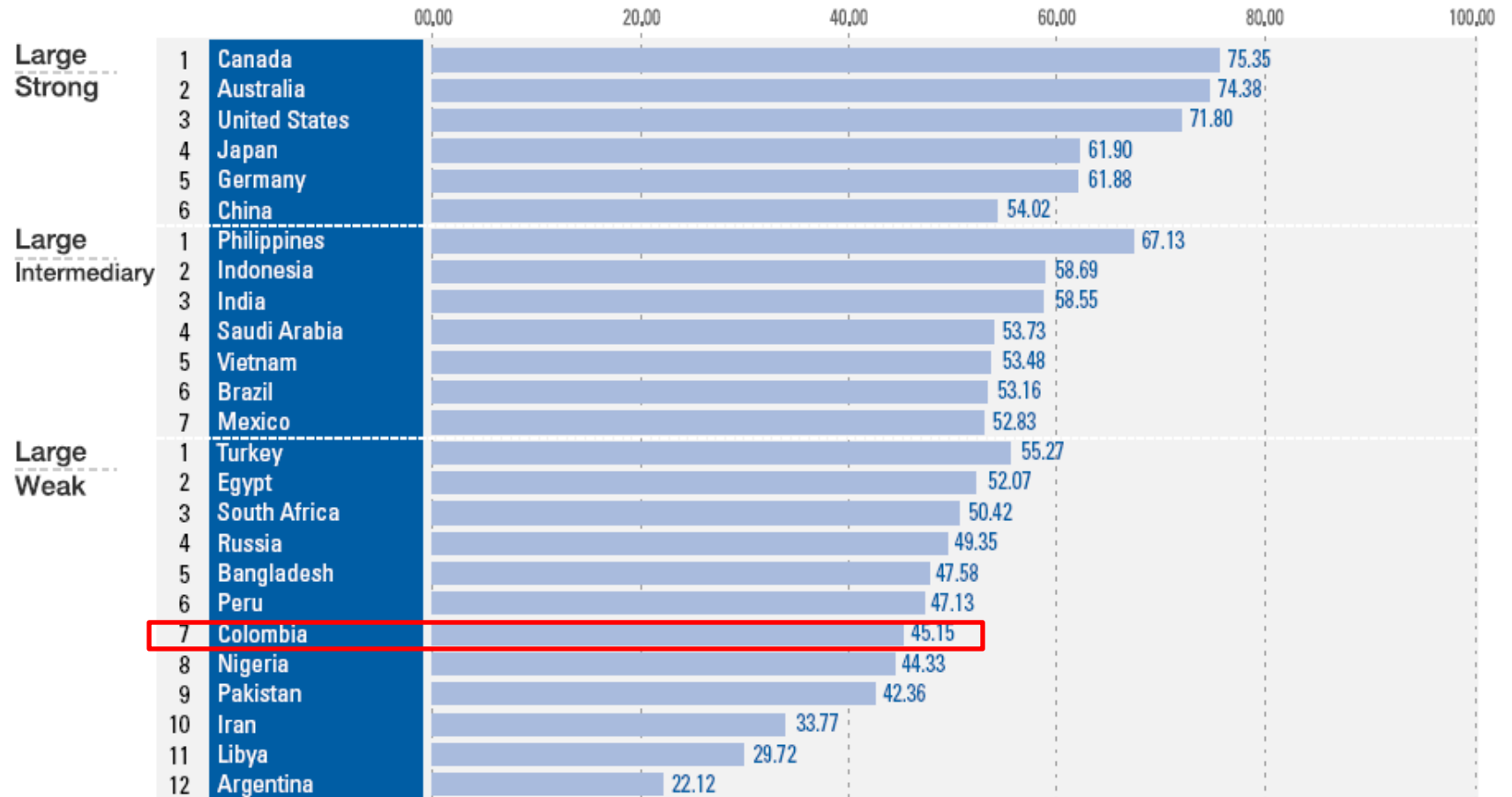
EMPRENDEDORES



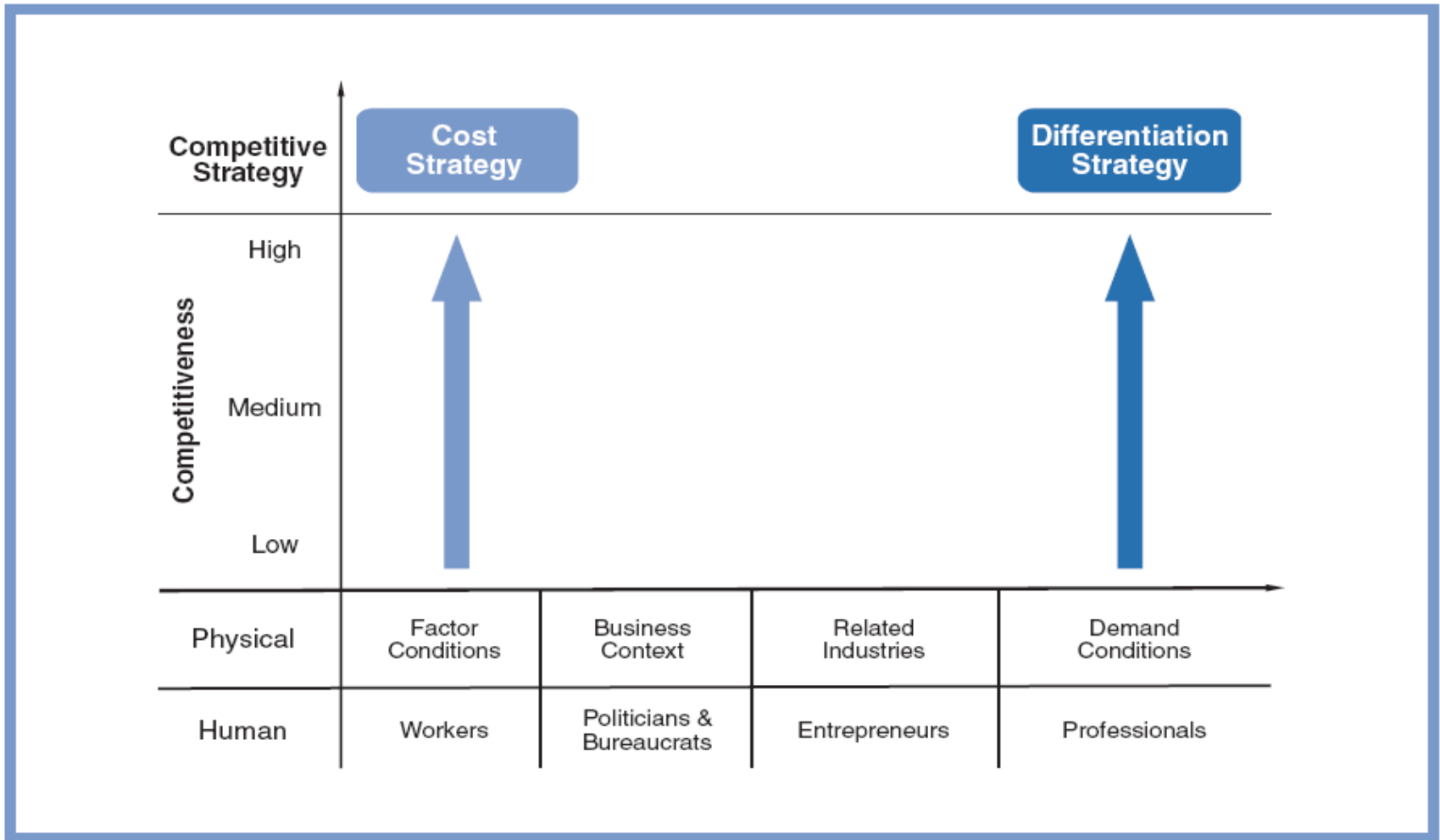
MANO DE OBRA CALIFICADA



EVENTOS FORTUITOS

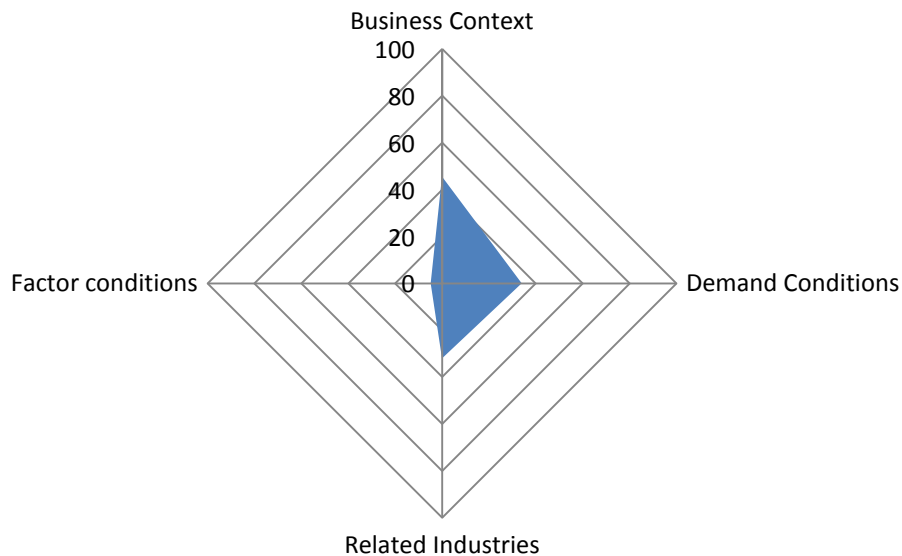


ESTRATEGIA COMPETITIVA DE NACIONES

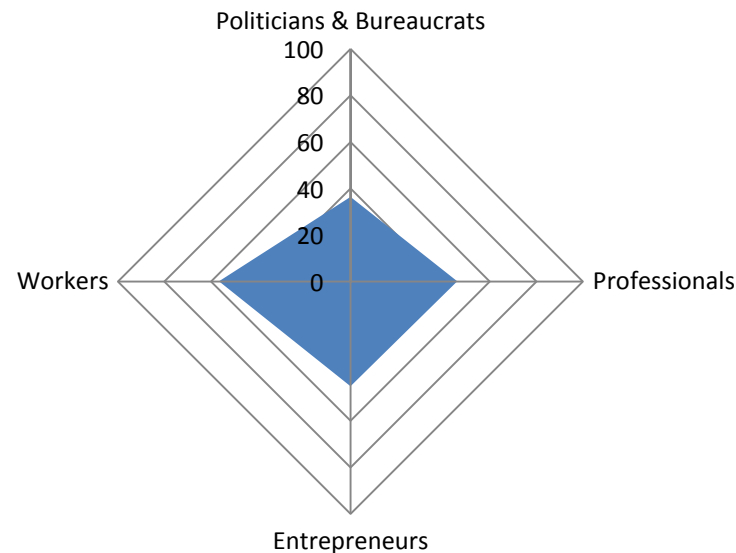


ESTRUCTURA DE COMPETIVIDAD COLOMBIANA

Factores Físicos



Factores Humanos



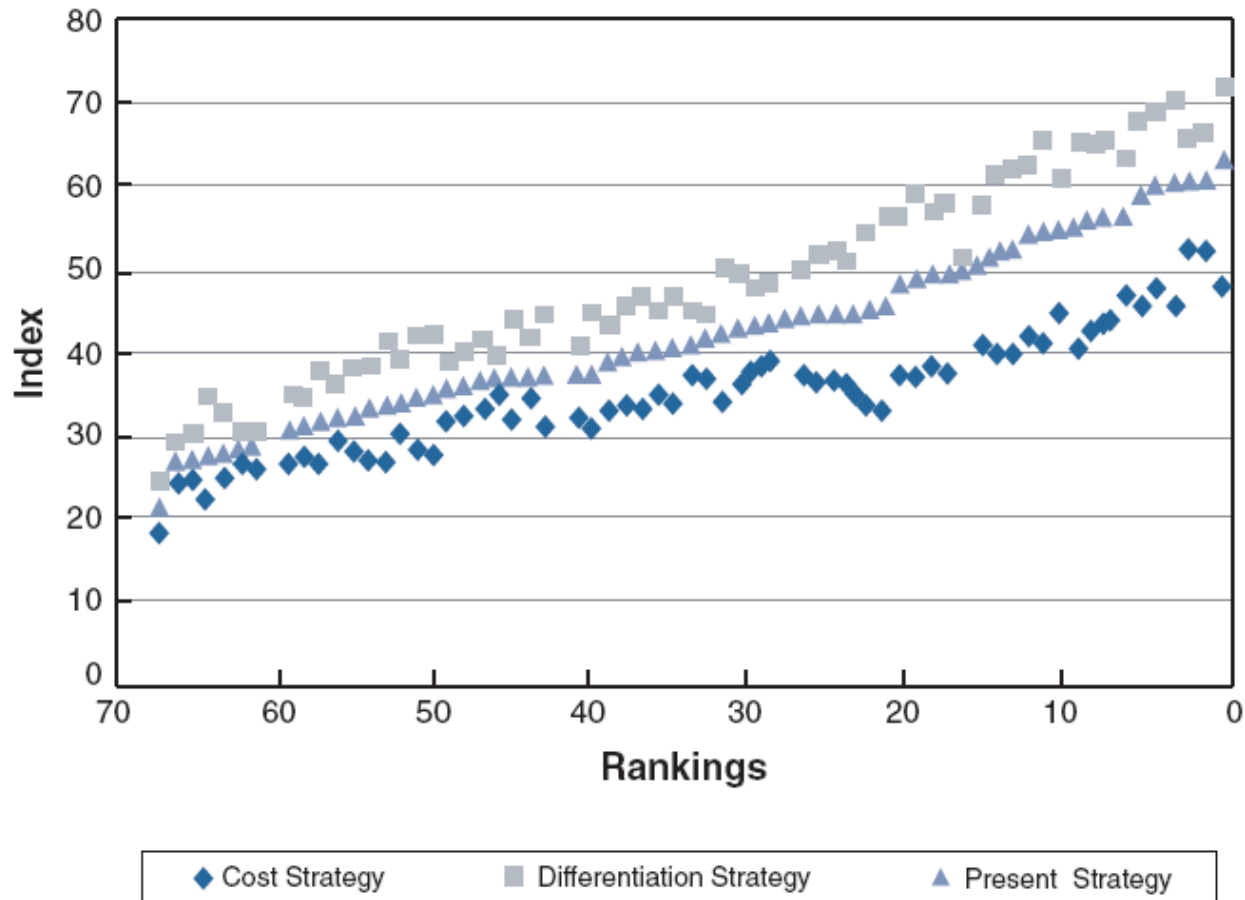
SIMULACIÓN DE ESTRATEGIA ÓPTIMA

Main Factors		Weights		Sub-factors	Weights	
		C*	D*		C*	D*
Physical Factors	Factor Conditions	32/120	4/120	Energy Resources	1/2	1/2
				Other Resources	1/2	1/2
	Business Context	16/120	8/120	Strategy & Structure	1/4	1/4
				Global Mindset	1/4	1/4
				Business Culture	1/4	1/4
				Foreign Investment	1/4	1/4
	Related Industries	8/120	16/120	Transportation	1/7	1/7
				Communication	1/7	1/7
				Finance	1/7	1/7
				Education	1/7	1/7
Science & Technology				1/7	1/7	
Cluster Development				1/7	1/7	
Demand Conditions	4/120	32/120	Overall Living Environment	1/7	1/7	
			Demand Size	3/4	1/4	
			Demand Quality	1/4	3/4	
			Quantity of Labor Force	3/4	1/4	
Human Factors	Workers	32/120	4/120	Quality of Labor Force	1/4	3/4
				Politicians & Bureaucrats	3/4	1/4
	Politicians & Bureaucrats	16/120	8/120	Bureaucrats	1/4	3/4
				Entrepreneurs	3/4	1/4
	Entrepreneurs	8/120	16/120	Social Context	1/4	3/4
				Professionals	3/4	1/4
	Professionals	4/120	32/120	Social Context	1/4	3/4

*C: Cost Strategy, D: Differentiation Strategy

Proceso jerárquico analítico: herramienta multi-criteria de toma decisiones(Sureshandar & Leisten, 2006)

SIMULACIÓN DE ESTRATEGIA ÓPTIMA



SIMULACIÓN DE ESTRATEGIA ÓPTIMA

		CSI ¹⁾	DSI ²⁾	CSI-PSI ⁴⁾	DSI-PSI ⁵⁾
Size	Pearson Correlation	0.354**	-0.012	0.433**	-0.434**
	Sig. (2-tailed)	0.003	0.922	0.001	0.000
	N	67	67	67	67
Competitiveness (PSI ³⁾)	Pearson Correlation	0.942**	0.985**	-0.777**	0.578**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000
	N	67	67	67	67

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

1) CSI: Cost Strategy Index

2) DSI: Differentiation Strategy Index

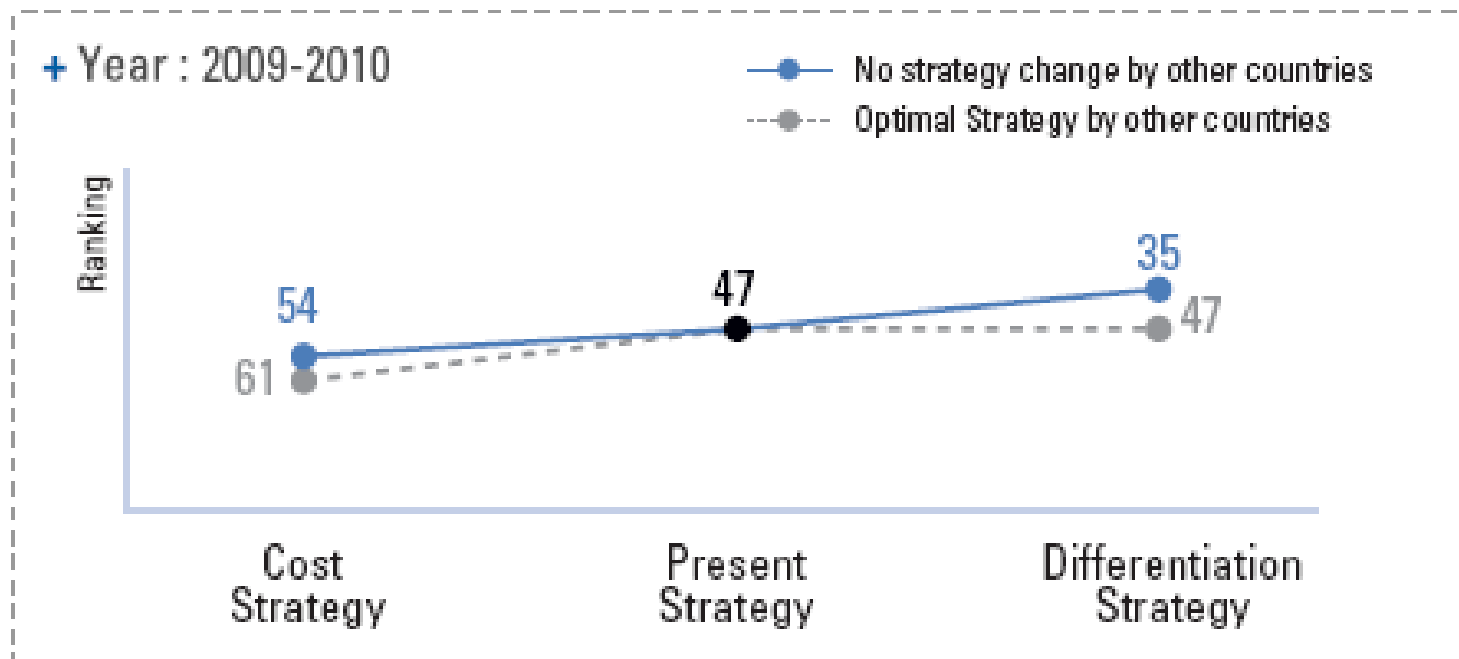
3) PSI: Present Strategy Index

4) CSI-PSI: Cost Strategy Index - Present Strategy Index

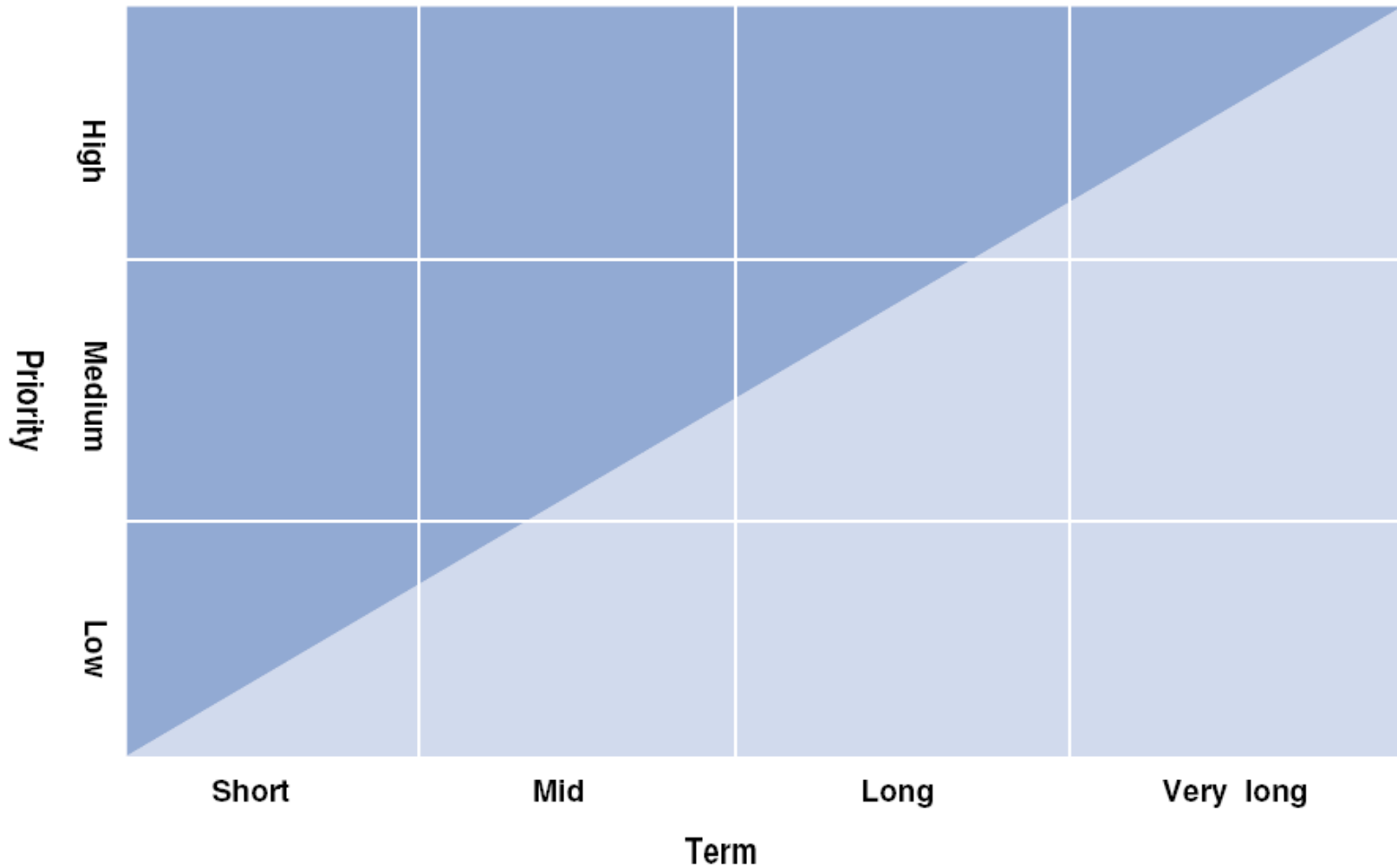
5) DSI-PSI: Differentiation Strategy Index - Present Strategy Index

CSI-PSI y DSI-PSI: correlación negativa ($r = 0.908$), ($p \leq 0.001$)

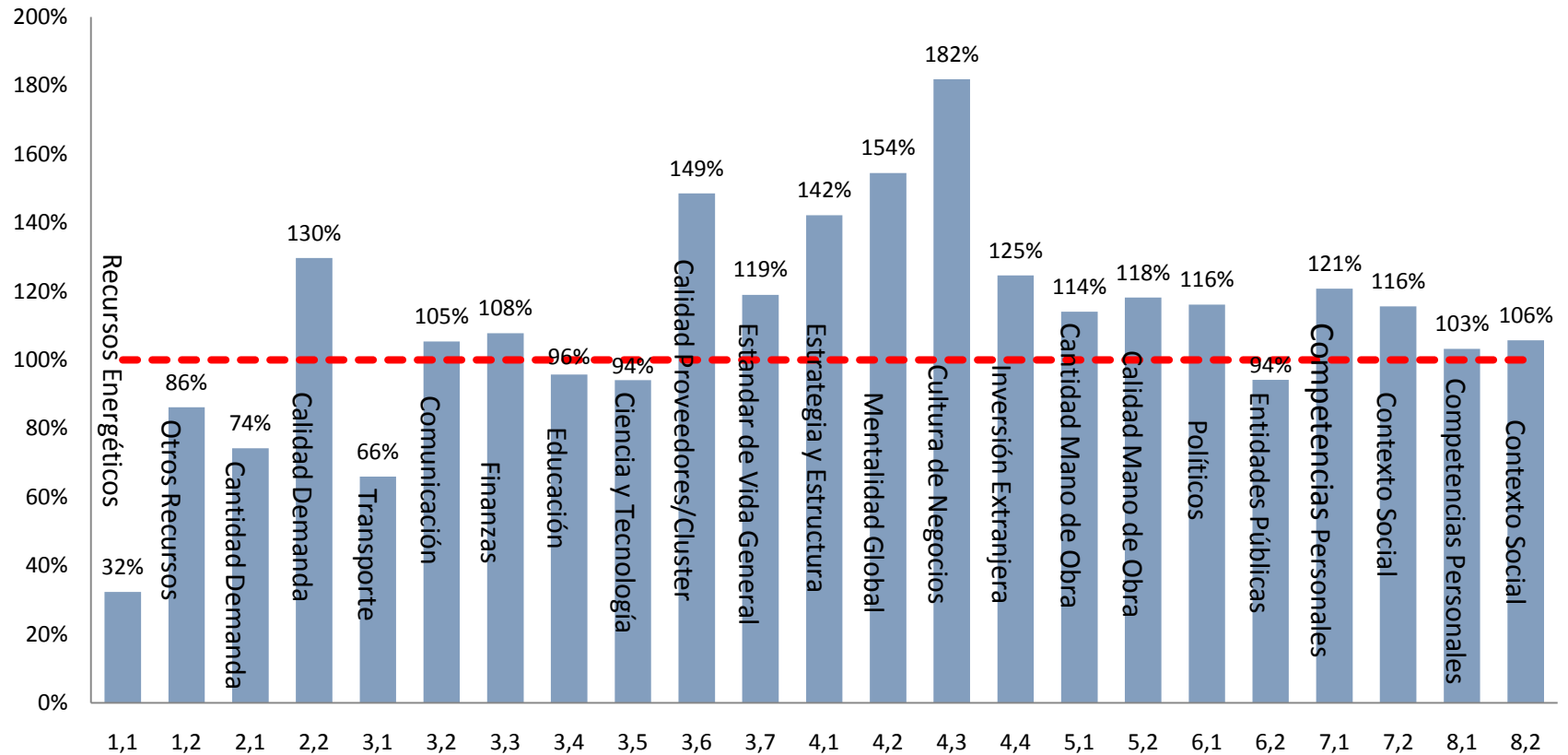
SIMULACIÓN DE ESTRATEGIA ÓPTIMA COLOMBIA



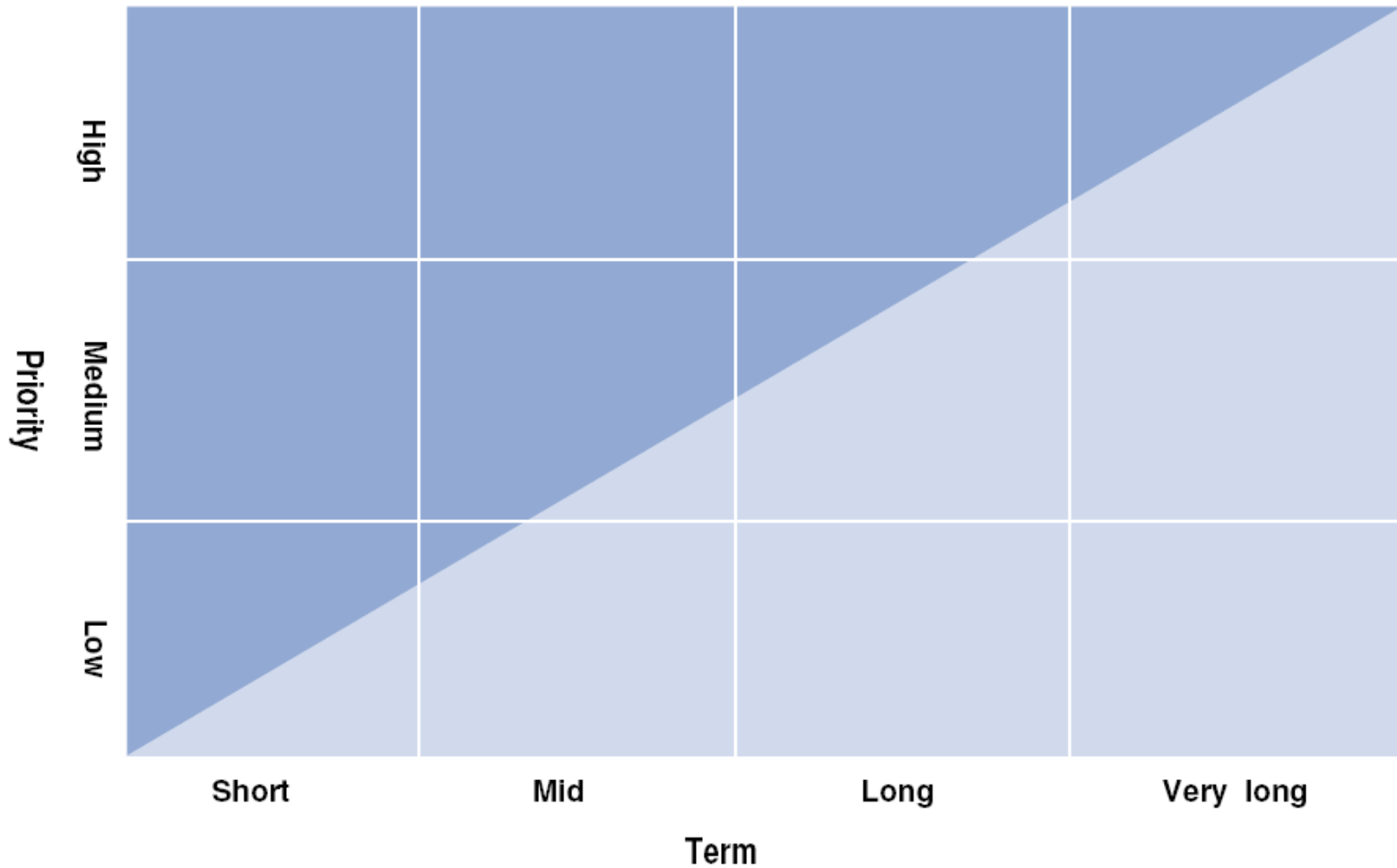
MATRIZ TÉRMINO-PRIORIDAD



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GRACIAS

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