

A Comparative Analysis of the Relationships between Happiness and Business Determinants in Developing and Developed Countries

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Abstract

This paper is based on the assumption that the configurations of business determinants affecting happiness may differ in developing and developed countries. Accordingly, it attempts to compare these configurations as they operate in developing and developed countries at national level. In doing this, it classifies countries into two groups according to certain criteria. It then analyses the relationships between happiness and business determinants by group, using Qualitative Comparative Analysis (QCA). Specifically, this study focuses on discovering the different configurations of business determinants that influence happiness at national level in developing and developed countries. It is hoped that its findings may provide individual countries with policy-related and practical information concerning how their happiness levels may be enhanced through consideration of their own processes of economic development.

INTRODUCTION

It is generally accepted that the ultimate goal of government is to enhance the happiness of its citizens and, at the same time, to strengthen national development. In achieving these two objectives, business organizations in particular have a crucial role to play. Business provides goods and services for human needs. Business determinants which affect business activities at national level influence both national development and the happiness of citizens. It is assumed here that the degree to which happiness levels may be affected by business may be different in developing from in developed countries. It is crucial for policymakers in both developing and developed countries to understand that citizens' happiness levels may be affected by different combinations of business determinants. Against this background, this paper categorizes countries into two groups according to certain criteria, in order to discover the configurations of business determinants associated with happiness, to compare these, and to discover the policy implications for each country.

THEORETICAL DISCUSSION AND RESEARCH QUESTION

Discussions of happiness from a philosophical point of view were initiated by Bentham (Kim et al., 2015). Since then, many studies have been conducted on happiness, and perspectives on it vary from discipline to discipline. In addition, many terms similar to and interconnected with 'happiness' have been created, including 'well-being', 'life satisfaction' and 'quality of life'. The focus in this paper is on happiness. From a psychological point of view, happiness may be defined as an individual's subjective emotions regarding his or her life (Diener et al, 2015), whereas from a sociological point of view it is seen as being determined by objective rather than subjective conditions (Madsen, 2015)). Likewise, happiness is sometimes emphasized by subjective conditions and sometimes by objective ones. At any rate, happiness is one of the ultimate goals which most people pursue to achieve, and represents a positive judgement on one's life. Therefore, a person's quality of life depends on how happy they are (Brülde,2007). Happiness can be defined in different ways, but in general it may be defined as the degree to which a person evaluates the overall quality of his or her present life positively and likes the life he or she leads (Chiu et al., 2011, Veenhoven, 2015). Similarly, happiness can also be defined as an emotion ranging from satisfaction to great joy (Seligman,2002). Since happiness has been defined in so many different ways, however ,it is difficult to ascertain how it is defined in any one specific country. Even so, we can say that all countries' understandings of it have something in common. Here, on the basis of Veenhoven's definition of happiness, we define it as the degree to which a person evaluates the overall quality of his present life positively.

What are the determinants affecting happiness? These have been discussed at different levels, including the micro, the middle-range and the macro level. Dolan et al. (2008) summarized the determinants of happiness after examining 153 papers published in economics and psychology journals (Chiu et al., 2011). They include: relative income; personal characteristics (age, gender ,ethnicity, personality);socially developed characteristics (education, health, type of work, unemployment); how people spend their time (hours worked, commuting, caring for others, community involvement and volunteering, exercise, religious activities); attitudes and

beliefs towards self/others/life (attitude towards our circumstances, trust, political persuasion, religion);relationships (marriage and intimate relationships, having children, seeing family and friends);and the wider economic, social and political environment (income inequality, unemployment rates, inflation, welfare system and public insurance, degree of democracy, climate and the natural environment, safety and deprivation in the area, urbanization). In addition, some research (Tkach and Lyubomirsky, 2006; Sirgy et al., 2008) suggests determinants which may affect happiness at the individual level.

Turning to studies on happiness at the middle-range level, we can observe that these mainly address happiness issues relating to firms or cities within a country. They include studies by Coggbum and Schneider (2003), Michalos and Zumbo (1999), Choi (2014) and the OECD (2015). In these studies the unit of analysis is not the individual but the city or firm, and they deal with the determinants affecting the happiness of local community residents or enterprise employees, so these studies can be called middle-range-level studies.

In addition, there are studies on happiness which deal with its determinants at national level. These include the *World Happiness Report* and the *Happy Planet Index*. These studies analyse the determinants associated with happiness at the national level, comparing the happiness scores of different countries.

Previous studies on happiness determinants may be characterized as follows. First, in many cases they have been conducted at either the macro or the individual level. Secondly, most of the studies conducted at national level have mainly employed quantitative research methods such as regression analysis or the structural equation model, and so they have not uncovered qualitative differences between countries or produced critical information useful to each individual country. In other words, since the majority of this research work has relied on quantitative methods in order to reveal a few significant items of statistical information which can be commonly applied to a number of different countries, those diversely configured combinations of happiness determinants the understanding of which is more useful to individual countries have not been discovered. In addition, most countries have been analysed in an integrated group, not in separate groups based on level of GDP per capita, etc., with the result that it is hard to make distinctions between developing and developed countries. Moreover, few research works have addressed the relationships between happiness and business determinants at national level. But without understanding these, it is difficult to ascertain the strategies by which happiness at national level might be enhanced through supporting and strengthening business activities. Against this background, this research raises a following research question:

What configurations of business determinants affect happiness at a national level in developing and developed countries?; and how do these differ in developing and developed countries?

RESEARCH DESIGN

Methodology

In this analysis, Qualitative Comparative Analysis (QCA) was employed. QCA is a comparative technique (Vink and VanVliet, 2009) that is used to explain large social events concisely by using a small number of cases (5–55). Although QCA does not provide statistical results for generalization, it is a useful method that categorizes cases in a simple manner according to their characteristics (Rihoux,2006; Poveda, 2013). QCA, developed by Ragin (1987), has not provoked much interest until now. The main aim of the method is to provide meaningful and concise interpretations of the causal patterns operating in the cases that are examined. It aims to discover the various causal conditions or condition factors that can fundamentally affect the result. That is, it begins with the assumption that one outcome does not belong to a set of one variable only, but may belong to a set of many variables (Rihoux, 2006; Wagner and Schneider, 2010). Other characteristics of this methodology are: the use of set theory; Boolean algebra; the formation of a truth table; and a concise approach to research data(Donnelly and Wiechula, 2013). The QCA method takes three broad forms: crisp set QCA (CSQCA), fuzzy set QCA (FSQCA) and multi-value QCA(MVQCA). This research will use CSQCA, since this method processes data by changing independent variables and dependent variables into 0 or 1according to a certain threshold. It is convenient to set a threshold and categorize the independent variables that affect the happiness score of the countries included in this research into 0 and 1. Accordingly, this research will use the CSQCA program and the TOSMANA program.

Variables

This research attempts to discover the configurations of business determinants affecting happiness at a national level, working from a comparative perspective. If happiness is analysed at the level of the individual firm, then the leadership of the employer, the income level of the employees, and working conditions, etc. may be important. However, because this study focuses mainly on identifying how happiness in developing and developed countries is related to business determinants at national level, the following variables are included in the analysis, on the basis of Welsch(2009) and Kim et al. (2015).These variables consist of one dependent variable (happiness) and five independent variables (GDP per capita, hours worked per week, transparency of public policy making, labour–employer cooperation, and Gini coefficient)(Table1).These data are collected at national level.

Table 1. Variables and data source

<i>Variable</i>	<i>Acronym</i>	<i>Explanation</i>	<i>Measurement</i>	<i>Source</i>
happiness	happiness	The degree to which a person evaluates the overall quality of his present life positively.	The average ladder score (the average answer to the Cantril ladder question, which asks people to evaluate the quality of their present lives on a scale of 0–10) for each country, averaged over the years 2014–2016.	Helliwell, Layard and Jeffrey Sachs, <i>World Happiness Report 2017</i>
GDP per capita	gdp	GDP per capita	GDP per capita	<i>Global Competitiveness Report 2016–2017</i>
hours worked	Workhour	Hours worked per week.	Hours worked per week.	International Labour Organization
Transparency	Transparency	Transparency of government policy making.	In your country, how easy is it for companies to obtain information about changes in government policies and regulations affecting their activities? [1 = extremely difficult; 7 = extremely easy]	<i>Global Competitiveness Report 2016–2017</i>
cooperation between worker and employer	Cooperation	Labour–employer cooperation.	In your country, how do you characterize labour–employer relations? [1 = generally confrontational; 7 = generally cooperative]	<i>Global Competitiveness Report 2016–2017</i>
Gini coefficient	Gini	Global Gini Index (distribution of family income).	The index is calculated from the Lorenz curve, in which cumulative family income is plotted against the number of families, ranged from the poorest to the richest.	International Labour Organization

Note. Data regarding the Gini coefficient of each country vary from country to country. The data are somewhat out of date, ranging as they do from 1989 (Sierra Leone) to 2008 (Norway). Since Gini coefficients change slightly over time, using these data does not present any serious problems.

Countries to be analysed

The countries to be analysed are the 126 countries included in the *World Happiness Report 2017* authored by John Helliwell, Richard Layard and Jeffrey Sachs. It is true to say that the happiness scores for each country, and its ranking, may vary by publishing institute and researchers, because they employ different methods and criteria. However, the *World Happiness Report*, which is published by the sponsoring body of the UN, covers many countries to be analysed in this research, so we use its data.

It should also be noted here that not all data (one dependent variable and five independent variables) for the 126 countries included in the Report are available from the relevant archives. Therefore, the countries investigated in this analysis are those

for which all these data are available.

The next issue to be addressed is how to divide countries into *developing countries* and *developed countries*. In general, GDP per capita has been used, but what is problematic is the threshold according to which countries may be allocated to either of the two groups. This research relies on the classification made by the *Global Competitiveness Report 2017*, in which the countries included in the Report are classified into five groups, as shown in Tables 2 and 3. In our own analysis, of the five groups, two groups – transition from stage 2 to stage 3 and stage 3 groups – are included. We assume that the transition group from stage 2 to stage 3 can represent developing countries and the stage 3 group developed countries.

Table 2. Income thresholds for stages of development

	Stage 1: Transition from	Transition from Stage1 to Stage 2	Stage 2 Efficiency-driven	Transition from stage 2 to stage 3	Stage 3 Innovation-driven
GDP per capita (US\$) thresholds	<2,000	2,000–2,999	3,000–8,999	9,000–17,000	>17,000
Weight for basic requirements	60%	40–60%	40%	20–40%	20%
Weight for efficiency enhancers	35%	35–50%	50%	50%	50%
Weight for innovation and sophistication factors	5%	5–10%	10%	10–30%	30%

Source: WEF (2017: 320)

Table 3. Classification by each stage of development

Stage 1: Factor-driven (35 economies)	Transition from stage 1 to stage 2* (15 economies)	Stage 2: Efficiency-driven (31 economies)	Transition from stage 2 to stage 3* (20 economies)	Stage 3: Innovation-driven (36 economies)
Bangladesh Benin Burundi Cambodia Cameroon Chad Congo, Democratic Rep Ethiopia Gambia, Ghana Guinea Haiti India Kenya Kyrgyz Republic Lao PDR Lesotho Liberia Madagascar Malawi Mali Mauritania Moldova Mozambique Nepal Pakistan Rwanda Senegal Sierra Leone Tajikistan Tanzania Uganda Yemen Zambia Zimbabwe	Algeria Azerbaijan Bhutan Botswana Brunei Darussalam Honduras Kazakhstan Kuwait Mongolia Nicaragua Nigeria Philippines Ukraine Venezuela Viet Nam	Albania Armenia Bosnia and Herzegovina Brazil Bulgaria Cape Verde China Colombia Dominican Republic Ecuador Egypt El Salvador Georgia Guatemala Indonesia Iran, Islamic Rep Jamaica Jordan Mexico Montenegro Morocco Namibia Paraguay Peru Russian Federation Serbia South Africa Sri Lanka Swaziland Thailand Tunisia	Argentina Chile Costa Rica Croatia Hungary Latvia Lebanon Lithuania Malaysia Mauritius Oman Panama Poland Romania Saudi Arabia Seychelles Slovak Republic Trinidad and Tobago Turkey Uruguay	Australia Austria Bahrain Belgium Canada Cyprus Czech Republic Denmark Estonia Finland France Germany Greece Hong Kong SAR Iceland Ireland Israel Italy Japan Korea, Rep Luxembourg Malta Netherlands New Zealand Norway Portugal Qatar Singapore Slovenia Spain Sweden Switzerland Taiwan, China United Arab Emirates United Kingdom United States

Source: WEF (2017: 320).

As Tables 2 and 3 show, the stage 3 group contains 36 countries, including Australia, and the transition group from stage 2 to stage 3 contains 20 countries, including Argentina. However, because not all of these countries offer data for the six relevant variables, some are excluded. The remaining countries (13 developing and 28 developed) selected for analysis are shown in Table 4.

developed countries– are presented in Table 5.

As Table 5 shows, in terms of mean scores of variables, developed countries are ahead of, better than and higher than developing countries. However, it is also found that there are some variables in which standard deviations in developed countries are higher than those in developing countries, implying that there are big differences between individual developed countries.

ANALYSIS

Descriptive statistics

First, descriptive statistics for the two groups –developing and

Table 4. Countries selected for analysis in this study

<i>Stage level</i>	<i>Countries</i>
Developing countries (13)	Argentina, Costa Rica, Croatia, Hungary, Latvia, Lithuania, Malaysia, Mauritius, Panama, Poland, Romania, Turkey, Uruguay
Developed countries (28)	Australia, Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Iceland, Italy, Japan, Korean Republic, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Singapore, Slovenia, Spain, Sweden, Switzerland, UK

Table 5. Descriptive statistics of dependent and independent variables by developing countries

<i>Variable</i>		<i>Case number</i>	<i>Minimum value</i>	<i>Maximum value</i>	<i>Mean</i>	<i>S. D.</i>
happiness	Developing	13	5.29	7.08	5.99	0.52
happiness	Developed	28	5.20	7.54	8.58	0.76
workhour	Developing	13	38	46	41.07	2.90
workhour	Developed	28	32	44	37.57	3.08
transparency	Developing	13	2.70	5.30	4.04	0.76
transparency	Developed	28	2.80	6.20	4.88	0.91
cooperation	Developing	13	3.30	5.50	4.32	0.67
cooperation	Developed	28	3.50	6.10	5.00	0.78
gdp	Developing	13	10,035	16,386	12,769	2,405.85
gdp	Developed	28	19,563	111,716	46,214.57	22,882.20
gini	Developing	13	28	56	40	8.50
gini	Developed	28	23	53.30	31.31	6.99

Analysis of developing countries

Data for variables

Table 6 presents the raw data for the six variables in developing countries. In terms of happiness score, Costa Rica is the highest at 7.07 and Croatia the lowest at 5.293. In terms of work hours, Turkey is the highest at 46 hours per week and Croatia the lowest at 38 hours. In terms of GDP per capita, Lithuania is the highest at 16,386 US dollars and Costa Rica the lowest at 10,083US dollars. In transparency of public sector policy making, Malaysia is the highest at 5.3 and Mauritius the lowest at 2.7. In terms of cooperation between labour and management, Malaysia is the highest at 5.5 and Uruguay the lowest at 3.3. And in terms of Gini coefficient, Panama is the highest, implying that income inequality is worst in developing countries, whereas Hungary is the lowest, indicating it is the least bad country in terms of income inequality.

Dichotomization

The next step is to dichotomize each variable’s value into 0 or 1, using a threshold for each variable. What matters is objectively deciding upon a threshold dividing each variable into two (value of 0 or 1). In reality, it is difficult to find an objective threshold for dividing each variable into two. For this reason, some studies use the mean score of a variable or its median; however, these statistics are arguable for threshold. Therefore, this study relies on the Tosmana (Tool for Small-N Analysis) program for producing a threshold for each variable. This program produces thresholds of variables using their descriptive statistics, including their minimum and maximum values.

Figure 1 shows that the threshold for the variable ‘happiness’ is 6.19, which is different from its median score of 5.902. The threshold for each variable is produced in the same way as for the variable ‘happiness’.

Table 6. Raw data of variables in developing countries

Country	happiness	workhour	gdp	transparency	cooperation	gini
Argentina	6.599	39	12,873	3.0	3.6	49.0
Costa Rica	7.079	44	10,083	4.4	5.3	48.0
Croatia	5.293	38	13,494	3.5	3.6	29.0
Hungary	5.324	39	13,881	3.4	4.2	28.0
Latvia	5.85	39	15,729	4.5	4.9	36.0
Lithuania	5.902	39	16386	4.5	4.3	36.0
Malaysia	6.084	46	10,804	5.3	5.5	46.1
Mauritius	5.629	39	10,517	2.7	4.8	39.0
Panama	6.452	44	11,147	4.4	4.6	56.1
Poland	5.973	41	14,379	3.6	4.1	34.9
Romania	5.825	39	10,035	3.9	4.1	32.0
Turkey	5.5	46	10,482	4.4	3.9	43.6
Uruguay	6.454	41	16,199	4.9	3.3	45.2

Source: World Happiness Report 2017

Using this threshold, if the value of ‘happiness’ in a country belonging to the developing countries group is lower than its threshold of 6.19, the variable is given the value 0, and if it is higher than 6.19 it is given the value 1. The rest of the variables are treated in the same way, and so are given a value

of either 0 or 1, depending on their original values. Table 7 shows the dichotomization results for the one dependent and five independent variables, based on the dichotomization process using thresholds.

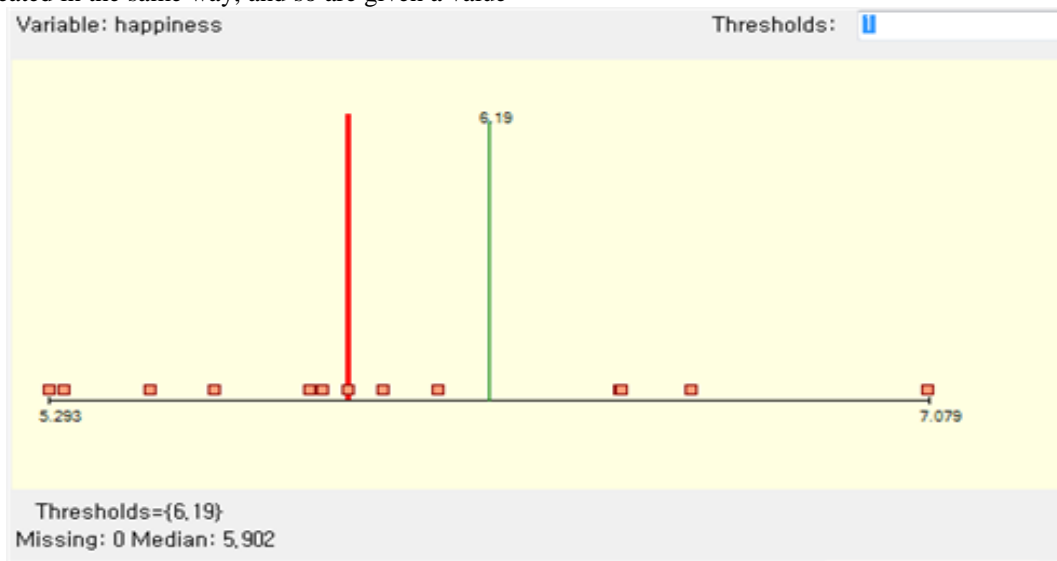


Figure 1. Threshold of the variable ‘happiness’ in the developing countries group

Table 7. Dichotomization of variables in developing countries

<i>country</i>	<i>happiness_1</i>	<i>workhour_1</i>	<i>gdp_1</i>	<i>transparency_1</i>	<i>cooperation_1</i>	<i>gini_1</i>
Argentina	1	0	0	0	0	1
Costa Rica	1	1	0	1	1	1
Croatia	0	0	1	0	0	0
Hungary	0	0	1	0	0	0
Latvia	0	0	1	1	1	0
Lithuania	0	0	1	1	0	0
Malaysia	0	1	0	1	1	1
Mauritius	0	0	0	0	1	0
Panama	1	1	0	1	1	1
Poland	0	0	1	0	0	0
Romania	0	0	0	0	0	0
Turkey	0	1	0	1	0	1
Uruguay	1	0	1	1	0	1

Table 8. Truth table analysis in developing countries

Variable Settings:

Name	Thresholds
happiness	0.19
workhour	42
gdp	13210.5
transparency	4
education	4.2
cooperation	4.4

Truth Table:

v1:	workhour_1	v2:	gdp_1			
v3:	transparency_1	v4:	cooperation_1			
v5:	gini_1					
O:	happiness_1	id:	country			
v1	v2	v3	v4	v5	O	id
0	0	0	0	1	1	Argentina
1	0	1	1	1	C	CostaRica,Malaysia,Panama
0	1	0	0	0	0	Croatia,Hungary,Poland
0	1	1	1	0	0	Latvia
0	1	1	0	0	0	Lithuania
0	0	0	1	0	0	Mauritius
0	0	0	0	0	0	Romania
1	0	1	0	1	0	Turkey
0	1	1	0	1	1	Uruguay

Result:

$$\text{workhour}_1 * \text{gdp}_1 * \text{transparency}_1 * \text{cooperation}_1 + \text{GINI}_1 * \text{workhour}_1 * \text{GDP}_1 * \text{TRANSPARENCY}_1 * \text{cooperation}_1 + \text{GINI}_1$$

(Argentina) (Uruguay)

Note. The value 1 means that a value of a variable is higher than a threshold produced by the Tosmana program, and with the value 0 it is vice versa. In addition, an upper-case letter for a variable means that it is 1 or higher than the threshold, and a lower-case letter means that it is 0 or lower than the threshold. Moreover, * means AND in set theory, and + means OR.

Truth table

The next step is to produce a truth table using the dichotomization results for the variables. Here, we use the Tosmana program for producing truth tables. Table 8 shows the results of truth table analysis in relation to the configurations of business determinants affecting happiness in developing countries.

As Table 8 indicates, there are two configurations of business conditions associated with a high level of happiness in the developing countries group. The first is the combination of low work hours per week, low GDP per capita, low labour–employer cooperation and high Gini coefficient. Argentina is included in this configuration. The second configuration is the combination of low work hours, high GDP per capita, high transparency, low labour–employer cooperation and high Gini coefficient. Uruguay is included in this configuration. What these two configurations indicate is that, if a country meets either the first configuration or the

second configuration, its happiness level may be relatively high. It means also that a country whose happiness level is low can try to benchmark that configuration which is closer to its own case in terms of independent variables. What is particularly interesting in this analysis result is that the two configurations applicable to the developing countries group have something in common: low work hours per week.

As is explained below, if the five independent variables are combined to either the first or the second type, the happiness level of a country may be high, with it belonging to the high happiness country group:

$$\text{workhour}_1 * \text{gdp}_1 * \text{transparency}_1 * \text{cooperation}_1 * \text{GINI}_1 + \text{workhour}_1 * \text{GDP}_1 * \text{TRANSPARENCY}_1 * \text{cooperation}_1 * \text{GINI}_1$$

The truth table analysis is presented in Figure 2 using the Tosmana Venn diagram visualization program.

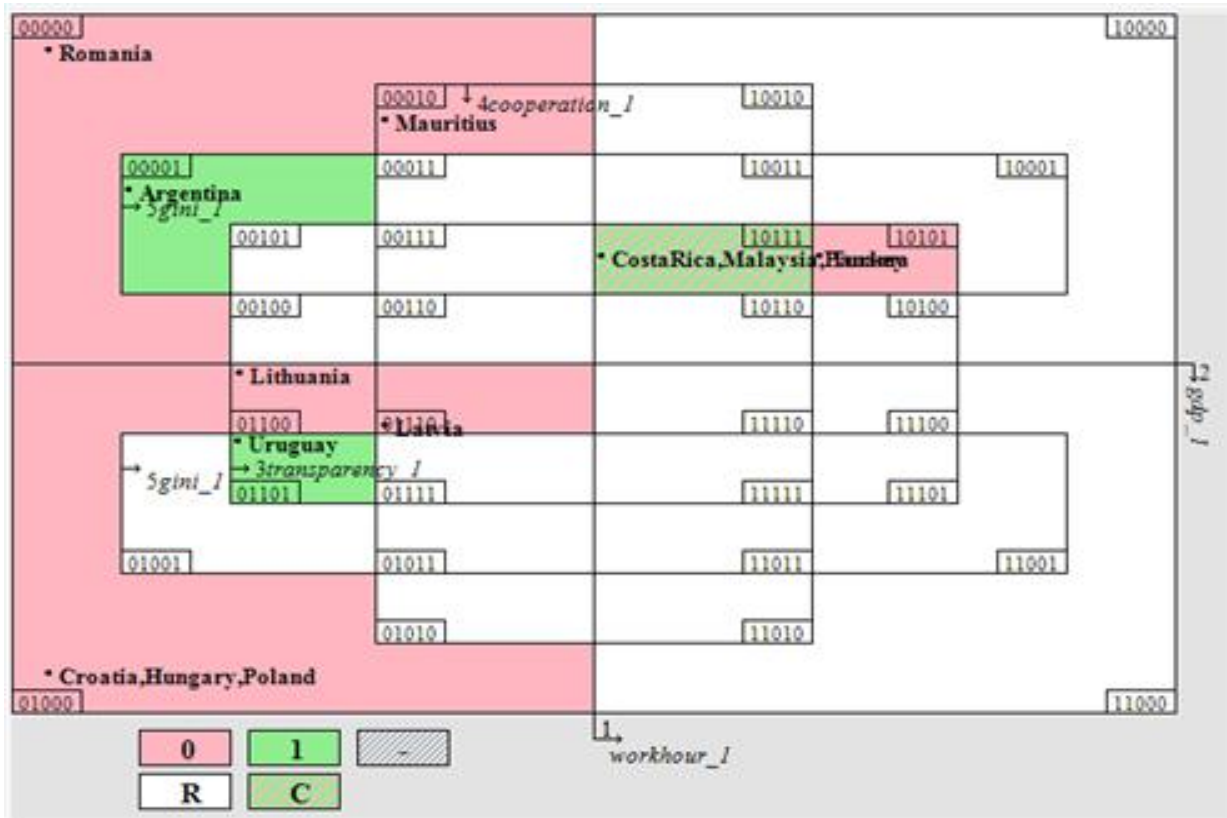


Figure 2 Configurations of business determinants in the developing countries group

Analysis of developed countries

Data for the variables

Table 9 shows the raw data for the variables included in the analysis of the developed countries group.

Table 9. Descriptive statistics for dependent and independent variables by developed countries

Country	happiness	workhour	gdp	transparency	cooperation	gini
Australia	7.284	34	61,219	4.9	4.3	30.5
Austria	7.006	36	51,307	5.0	5.7	26.0
Belgium	6.891	37	47,722	4.4	4.7	28.0
Cyprus	5.621	38	26,115	4.4	4.7	29.0
Czech Republic	6.609	39	19,563	3.9	4.7	26.0
Denmark	7.522	34	60,564	4.8	6.1	24.0
Estonia	5.611	39	19,671	5.0	5.0	34.0
Finland	7.469	36	49,497	5.9	5.1	29.5

France	6.442	36	44,538	4.4	3.8	32.7
Germany	6.951	36	47,590	5.1	5.2	27.0
Greece	5.227	41	21,653	3.4	4.0	33.0
Hong Kong	5.472	44	39,871	6.0	5.5	53.3
Iceland	7.504	40	51,262	5.1	5.4	25.0
Italy	5.964	37	35,823	2.8	3.6	32.0
Japan	5.92	39	36,332	5.5	5.7	38.1
Korean Republic	5.838	44	28,101	3.3	3.5	31.3
Luxembourg	6.863	38	111,716	5.9	5.6	26.0
Malta	6.527	38	24,876	4.5	4.8	26.0
Netherlands	7.377	32	51,373	5.5	5.6	30.9
New Zealand	7.314	33	43,837	6.0	5.5	36.2
Norway	7.537	34	97,013	5.7	6.0	25.0
Portugal	5.195	38	22,130	4.0	4.5	38.5
Singapore	6.572	44	56,319	6.2	6.0	48.1
Slovenia	5.758	39	24,019	4.1	4.0	24.0
Spain	6.403	37	30,278	4.0	4.2	32.0
Sweden	7.284	36	58,491	5.4	5.7	23.0
Switzerland	7.494	37	87,475	5.9	6.1	33.7
UK	6.714	36	45,653	5.5	5.2	34.0

As Table 9 shows, in terms of happiness Norway is highest at 7.537 and Portugal lowest at 5.195. In work hours, Korea and Singapore are highest at 44 hours per week and the Netherlands lowest at 32. In terms of GDP per capita, Luxembourg is highest at 111,716 US dollars and the Czech Republic lowest at 19,563 US dollars. In transparency of public sector policymaking, Singapore is highest at 6.2 and Italy lowest at 2.80. In terms of cooperation between labour and management, Denmark and Switzerland are highest at 6.1 and Korea lowest at 3.50. In Gini coefficient, Hong Kong is

highest and Sweden lowest.

Dichotomization

As with the developing countries group, it is necessary for all the variables to be dichotomized into value 0 or 1. For example, in the case of the happiness variable, as Figure 3 shows its threshold is 6.37, slightly lower than its median of 6.6615, meaning that if the value of the happiness variable in the developed countries group is higher than 6.37 it is given

the value 1, and if it is lower than 6.37 its given the value 0. The other variables are also dichotomized into 0 or 1 in the same way as before.

Table 10 shows the dichotomized results for the variables included in the analysis of the group of 28 developed countries.

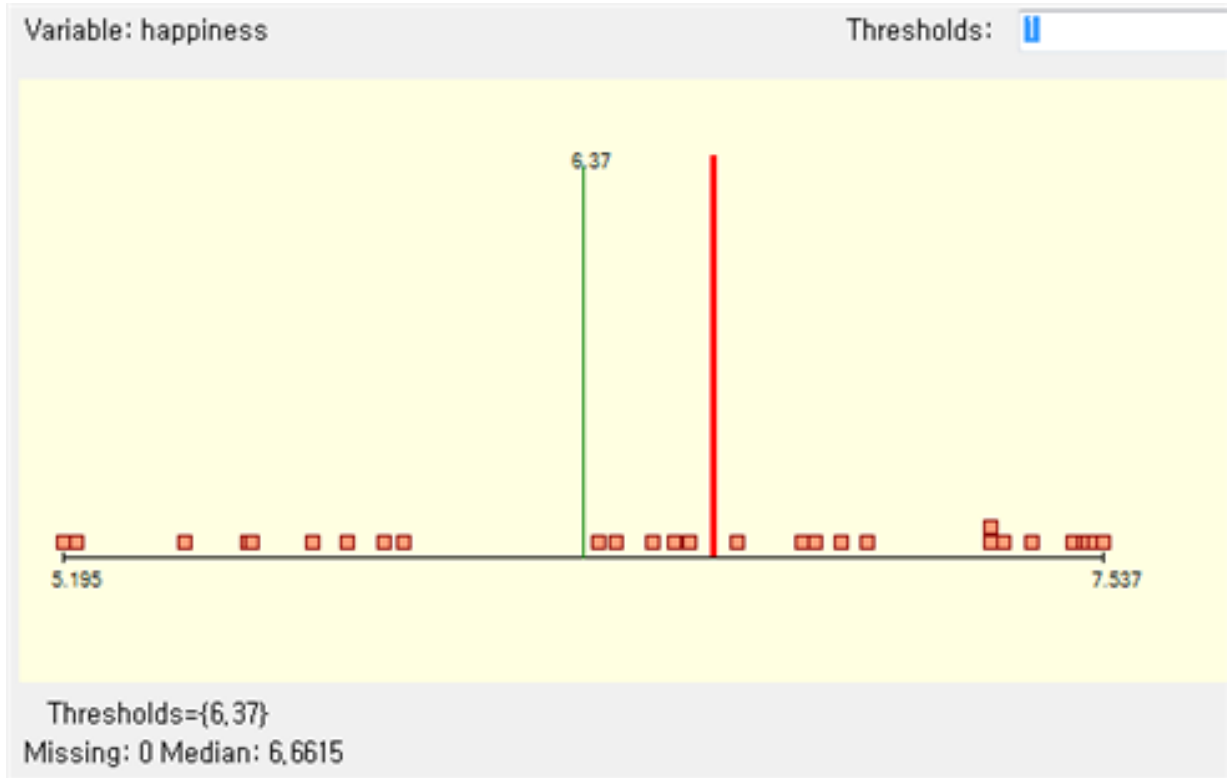


Figure 3. Threshold of variable ‘happiness’ in developed countries group

Table 10. Dichotomization of variables in developed countries

<i>country</i>	<i>happiness_1</i>	<i>workhour_1</i>	<i>gdp_1</i>	<i>transparency_1</i>	<i>cooperation_1</i>	<i>gini_1</i>
Australia	1	0	1	1	0	0
Austria	1	0	1	1	1	0
Belgium	1	0	1	0	0	0
Cyprus	0	1	0	0	0	0
Czech Republic	1	1	0	0	0	0
Denmark	1	0	1	1	1	0
Estonia	0	1	0	1	1	0
Finland	1	0	1	1	1	0

<i>country</i>	<i>happiness_1</i>	<i>workhour_1</i>	<i>gdp_1</i>	<i>transparency_1</i>	<i>cooperation_1</i>	<i>gini_1</i>
France	1	0	0	0	0	0
Germany	1	0	1	1	1	0
Greece	0	1	0	0	0	0
Hong Kong	0	1	0	1	1	1
Iceland	1	1	1	1	1	0
Italy	0	0	0	0	0	0
Japan	0	1	0	1	1	1
Korean Republic	0	1	0	0	0	0
Luxembourg	1	1	1	1	1	0
Malta	1	1	0	0	0	0
Netherlands	1	0	1	1	1	0
New Zealand	1	0	0	1	1	0
Norway	1	0	1	1	1	0
Portugal	0	1	0	0	0	1
Singapore	1	1	1	1	1	1
Slovenia	0	1	0	0	0	0
Spain	1	0	0	0	0	0
Sweden	1	0	1	1	1	0
Switzerland	1	0	1	1	1	0
UK	1	0	1	1	1	0

Continued table 10.....

Table 11. Truth table analysis in developed countries

Truth Table:

v1:	workhour_1	v2:	gdp_1
v3:	transparency_1	v4:	cooperation_1
v5:	gini_1		

O:	happiness_1	id:	country
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v1	v2	v3	v4	v5	O	id
0	1	1	0	0	1	Australia
0	1	1	1	0	1	Austria,Denmark,Finland,Germany,Netherlands,Norway,Sweden,Switzerland,UnitedKingdom
0	1	0	0	0	1	Belgium
1	0	0	0	0	C	Cyprus,CzechRepublic,Greece,KoreaRep.,Malta,Slovenia
1	0	1	1	0	0	Estonia
0	0	0	0	0	C	France,Italy,Spain
1	0	1	1	1	0	HongKong,Japan
1	1	1	1	0	1	Iceland,Luxembourg
0	0	1	1	0	1	NewZealand
1	0	0	0	1	0	Portugal
1	1	1	1	1	1	Singapore

Result

workhour_1 + GDP_1 + cooperation_1 + gini_1 +	workhour_1 + TRANSPARENCY_1 + COOPERATION_1 + gini_1 +	WORKHOUR_1 + GDP_1 +
TRANSPARENCY_1 + COOPERATION_1		
(Australia+Belgium)	(Austria,Denmark,Finland,Germany,Netherlands,Norway,Sweden,Switzerland,UnitedKingdom+NewZealand)	
(Iceland,Luxembourg+Singapore)		

Truth table

The next step is to produce a truth table explaining the combinations of business determinants affecting happiness in developed countries. The results of the truth table analysis produced by the Tosmana program are presented in Table 11.

As the above truth table analysis indicates, six configurations of business determinants explaining high level of happiness (having the value 1 in the ‘o’ [output] column) in the developed countries group have been discovered. These six conditions can be simplified into three, as follows. The first type is a combination in which work hours are low, GDP is

high, cooperation between labour and management is low, and Gini coefficient is low. Australia and Belgium are included in the first type. The second type is a combination in which transparency in public sector policy making is high, labour–employer cooperation is high, and Gini coefficient is low. Austria, Denmark, Finland, Germany, the Netherlands, Norway, Sweden, Switzerland, the UK and New Zealand are included in type 2. The third type is a combination in which work hours are high, GDP per capita is high, transparency is high and cooperation is high. Type 3 includes Iceland,

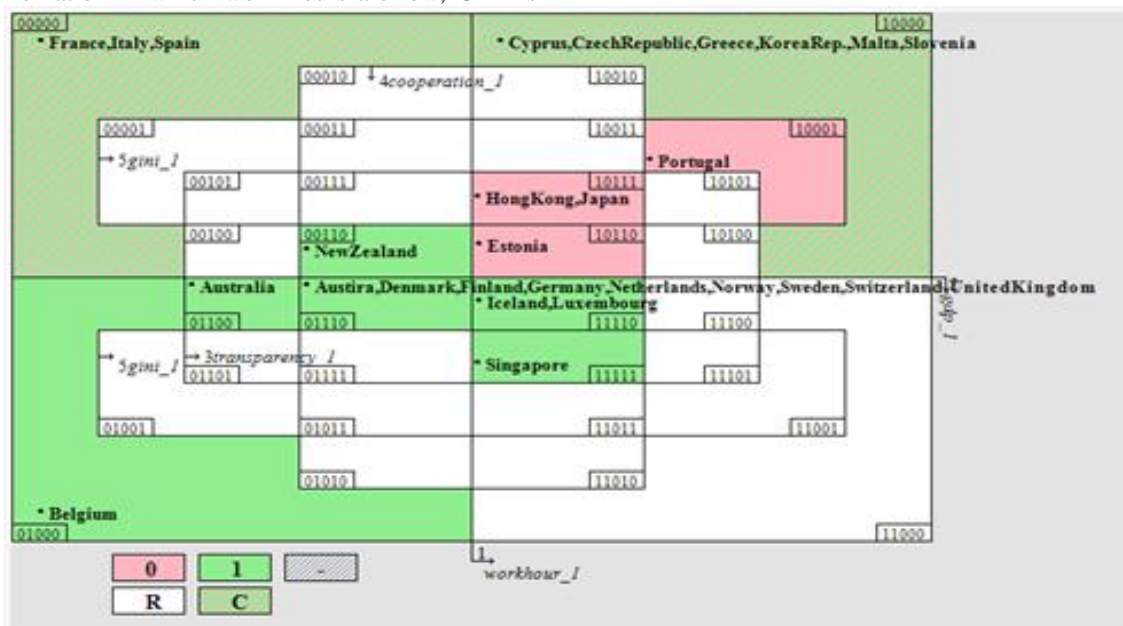


Figure 4. Configurations of business determinants in the developed countries group

Luxembourg and Singapore. The simplified conditions for the combinations in the developed countries group are as follows:

$workhour_1 * GDP_1 * cooperation_1 * gini_1 + workhour_1 * TRANSPARENCY_1 * COOPERATION_1 * gini_1 + WORKHOUR_1 * GDP_1 * TRANSPARENCY_1 * COOPERATION_1$

The conditions for the combinations of business determinants influencing happiness in the developed countries group are

presented in the Venn diagram represented in Figure4.

Comparison of developing and developed countries

Table 12 compares the configurations of business determinants influencing happiness in developing and developed countries.

Table 12. Comparison of developing and developed countries groups in terms of configurations of business determinants

Developmental process	Configuration	Country
Developing countries	Type 1: $workhour * gdp * transparency * GINI$	Argentina
Developing countries	Type 2: $workhour * GDP * TRANSPARENCY * cooperation * GINI$	Uruguay
Developed countries	Type 1: $workhour * GDP * cooperation * gini$	Australia, Belgium
Developed countries	Type 2: $workhour * TRANSPARENCY * COOPERATION * gini$	Austria, Denmark, Finland, Germany, Netherlands, Norway, Sweden, UK, New Zealand
Developed countries	Type 3: $WORKHOUR * GDP * TRANSPARENCY * COOPERATION$	Iceland, Luxembourg, Singapore

Note. Variables given in lower case have values lower than a threshold, and those given in upper case have values higher than a threshold.

As outlined above, in developing countries we found two configurations explaining high levels of happiness, and in developed countries we found three simplified configurations. What is particularly interesting in this analysis is that, in order for a happiness level in developing and developed countries to be higher, work hours per week needs to be lower. In type 3 in developed countries, the value of the workhour variable is high, meaning that in this situation countries wishing to create high levels of happiness should also have, at the same time, high GDP per capita, high transparency and high labour–employer cooperation. In this regard, it can be assumed that reducing work hours really matters in respect of elevating happiness levels, in both developing and developed countries.

CONCLUSIONS

This research categorized countries into two groups, developing countries and developed countries, on the basis of the World Economic Forum’s classification. It then attempted to discover the configurations of business conditions affecting happiness, using QCA. It is hoped that the research results may have useful policy-related and practical implications for policymakers in the area of happiness and business.

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