



**Agribusiness
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An International Comparison of Models of Cultural and National Identity and their Implications for New Zealand Innovation

**Tiffany Rinne
John Fairweather**

**Research Report No. 325
August 2011**



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**Agribusiness and Economics Research Unit
P O Box 84
Lincoln University
Lincoln 7647
New Zealand**

Ph: (64) (3) 321 8280

Fax: (64) (3) 325 3679

<http://www.lincoln.ac.nz/AERU/>

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Preface

A focus on overseas markets has been an important AERU research topic for many years, reflecting the importance of paying attention to the destination of NZ exports. This report is part of that tradition of learning about, and from, the characteristics of New Zealand's overseas markets, and it gives attention to the cultural and national identity of New Zealand and select European and Asian nations. Special attention is paid to how the notion of being innovative or inventive is integrated (if at all) into cultural and national identity. This report will be of interest to those wishing to learn about the cultural and national identities of the countries studied. It will also be of interest to those wanting to know how the New Zealand identity stands in comparison as well as what this might mean for the New Zealand innovation situation.

Professor Caroline Saunders
Director

Summary

Conclusion:

The research showed little evidence that governmental initiatives seeking to promote innovation as a part of New Zealand national identity were actually embedding the idea into the public's consciousness.

Background and rationale:

Part of the Technology Users' Research Programme required determining what is distinctive about New Zealand cultural/national identity in order to better understand the uniqueness of New Zealand's innovation situation.

Research objectives:

The objective of the research was to devise models of cultural/national identity for selected countries in Europe, Asia and Australasia.

Method:

Data were obtained from New Zealand, Australia, Austria, Czech Republic, Denmark, Estonia, Finland, South Korea, Slovenia and Sweden using either computer-assisted self-interviewing or an internet survey. The questionnaire responses from open-ended questions were analysed both qualitatively and quantitatively.

Results:

Comparing the models of cultural/national identity suggest the following takeaway messages:

- New Zealand has a unique cultural/national identity.
- Although New Zealand lacks a history of scientific achievement and cannot create one over night, the level of emphasis New Zealand places on education can be changed through pointed government initiatives. This may, in turn, help provide a base on which future scientific achievement can be built.
- A history of scientific achievement is not a prerequisite for being innovative. Via directed government programs a country can increase its innovation levels significantly in a relatively short period of time.
- It may be prudent for New Zealand policy-makers to look at South Korean, Finnish and Estonian policy to ascertain how these nation's garnered reputations as being innovative in a relatively short period of time.
- Increasing the caliber and level of technology utilized within New Zealand society and having it become a part of the NZ lifestyle might be of benefit to increasing New Zealander's belief that the nation is innovative.
- As seen in Sweden and Finland, New Zealand only needs one high profile company to gain international recognition as being a highly innovative nation.
- Sweden, Finland, and South Korea are internationally known for innovation, in general. A targetted national and international campaign to boost New Zealand's reputation as being innovative might be beneficial.
- Within the New Zealand mentality/values category, 'a make do' attitude is emphasized. This is the polar opposite of a craftsmanship mentality and is not well suited to innovation which requires a certain attention to detail.
- New Zealand has the very general #8 wire mentality defining the nation as far as science and tech. It may be prudent for New Zealand to find a focal area of technology on which to focus and gain a name for the nation. New Zealand is quite

innovative with respect to agriculture but agriculture lacks the charisma and high profile of medical or IT-type technologies.

- While much can be learned from the innovation policies of other nations, care must be taken when transferring these ideas to New Zealand given the cultural differences between the nations.
- When looking at what innovation initiatives might suit New Zealand from a cultural standpoint, Australia may be an important place to look as it is a nation somewhat similar to New Zealand.

Chapter 1

Introduction: Research Objectives and Literature Review

1.1 Introduction

Recent research in the AERU has focussed on the study of technology users' innovation (TUI). The primary objective of the research was to identify the conditions under which socio-technical networks best foster technology development, adoption and commercialisation, in order to contribute to improved innovation outcomes and innovation governance in New Zealand. The research aim was to increase our fundamental knowledge of (1) technology users as a source of innovation, (2) how socio-technical networks work to help or hinder innovation, (3) the unique technology governance factors in New Zealand and (4) the distinctive cultural qualities of New Zealand innovation.

One research goal was to devise models of national identity, culture and innovation for selected countries. In line with this goal, this report focuses on cross-cultural comparison of cultural and national identity. Through comparison with other nations, one can come to better understand the uniqueness of New Zealand's cultural and national identity situation and what this means for New Zealand innovation.

A culture is a way of life of a group of people - the behaviors, beliefs, values, and symbols that they accept, generally without thinking about them, and that are passed along by communication and imitation from one generation to the next. National identity derives from the image citizens have of their country and the nation's perceived or actual international image in world opinion. As we will discuss in the methods chapter, due to the nature of our sampling and the limited number of questions posed, we focused on ten main areas of cultural and national identity and consolidated them into a single identity model for each nation: defining history, the arts, sports, mentality and values, symbols and important heritage elements, science and technology, internationally defining aspects, geography and size, environment and lifestyle.

In this chapter we will briefly review the literature linking both cultural and national identity with innovation.

1.2 Literature review

Within anthropology, the relationship between culture and technology has been of increasing interest since the 1950s, when researchers began to look at the impacts of technology on culture in non-Western societies (see Godelier 1971). Since then, researchers have moved on to explore how culture influences technology. Anthropologists have looked at culture and its relationship to the uptake of technology in different areas of the world (see Hasan and Ditsa 1999, Herbig and Miller 1992) as well as regional differences in innovation culture (see James 2005, Saxenian 1994). Anthropologists have been well equipped to help decipher the contexts in which technology and science are situated, and the relationship between technology/innovation and culture has been a contemporary concern. According to Budka and Kremser (2004:222), 'The discipline of anthropology, with its particular methods and concepts, is predestined to investigate these new, highly dynamic spaces of socio-cultural interaction.'

The value dimensions defined by Hofstede (1980) offer a measure of one component of culture (cultural values) and have been used by Shane (1992, 1993) and Rinne, Steel and Fairweather (in press) to explore the relationship between culture and innovation. Hofstede identified four criteria that reliably differentiate between cultural values in diverse nations. The first was individualism vs

collectivism. Individualistic societies have loose ties among their members and a high value on their own interests. By contrast collectivist nations tend to have stronger ties between group members, and will place a higher value on communal interests than individual interests. The second dimension was large vs. small power distance. Power distance refers to the ‘...extent to which less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally’ (Hofstede and Bond 1988:10). High power distance nations are more autocratic and individuals are more willing to accept differences in power and wealth. Strong vs. weak uncertainty avoidance is Hofstede’s third cultural value dimension. This dimension is concerned with the manner in which cultures deal with an unpredictable future. The fourth cultural value dimension identified by Hofstede was that of masculine vs. feminine values. Masculine cultures place great value ‘...on achievement, tasks, money, performance, and purposefulness, whereas more feminine cultures emphasize people, the quality of life, helping others, preserving the environment, and not drawing attention to oneself’ (Nakata and Sivakumar 1996: 64). For each country, Hofstede’s dimensions were scored on a scale of 0 to 100.

In Shane’s (1992) cross-national research, low power distance and strong individualism were found to be linked to innovation success as measured by number of patents issued (holding wealth constant). In a follow-up study, using trademarks instead of patents as a proxy for innovation, Shane (1993) found that low power distance, strong individualism and weak uncertainty avoidance were linked to national innovation success (holding wealth constant). Shane’s (1992, 1993) research indicates no relationship between masculinity and innovation. Shane (1993:70) contends: ‘As organizational characteristics reflect societal values, managers might find that the organizational behaviours that promote innovation are easiest to develop in uncertainty accepting, individualistic, non-power distant societies, and these behaviours, in turn, might help to increase national rates of innovation.’

Building on Shane’s work (1992, 1993) but using more sophisticated measures of innovation, Rinne et al. (in press) found Hofstede’s cultural value dimension of power distance and individualism to be closely linked to innovation success as measured by the Global Innovation Index (GII) (INSEAD 2009). The results of Rinne et al. (in press) suggest that the degree to which a culture reduces the barriers between status levels (i.e., places a high value on egalitarianism) is, in some manner, connected to levels of innovation. Similar to Shane’s research findings, Rinne et al. (in press) found no relationship between Hofstede’s masculinity measure and innovation as measured by the GII.

Compared to the world average for Hofstede scores (55 for Power Distance, 43 for Individualism, 64 for Uncertainty Avoidance), New Zealand’s scores on Hofstede’s cultural values (22 for Power distance, 79 for Individualism, 49 for Uncertainty Avoidance) suggest that, from a cultural values perspective, New Zealand is in a good position to be innovative. New Zealand scores above average with respect to individualism and below average with respect to power distance and uncertainty avoidance. However, New Zealand is a mid-tier performer on various innovation indices such as the GII (INSEAD 2009) and the III (Andrew 2009). Further, within the OECD, New Zealand’s GDP per capita is below the OECD average and in less than four decades New Zealand has slipped from the OECD upper decile to 23rd position out of 31 (OECD 2010). Such slippage is usually considered as caused, in whole or in part, by a failure to innovate.

Beyond large-scale quantitative survey-based research linking culture with innovation levels, a review of the literature reveals only one researcher (Smale 2008) utilizing qualitative methodologies to evaluate the associations between New Zealand innovation levels and cultural dimensions. Through purposive sampling of innovators and innovation experts, Smale found a number of cultural beliefs and behaviors which negatively affected national innovation levels. First, Smale found that innovators valued control and were risk averse, the result being a narrow capital structure. Second, Smale notes the presence of a tall poppy syndrome in which there was a tension between individualism and egalitarianism, which militated ‘... against the use of specialists and the emergence of champions’ (Smale 2008:15). Third, Smale found that a satisficing mindset (satisficing refers to

achieving adequacy as opposed to achieving optimization) was present, which combined with a narrow world-view, caused intellectual property protection to be improperly exploited. According to Smale (2008:7), 'A New Zealand centric world view acted as a barrier to deep understanding of markets. A once competitive advantage in practical do-it-yourself 'make and use' innovation, often 'borrowing' others' intellectual property, now represents a barrier to recognising, protecting and using the intellectual property for 'make and sell'.' Fourth, Smale found a short-term orientation among innovators interviewed which acted as a barrier to accumulating the social capital necessary for innovation. Finally, Smale (2008:15) identified a lack of assertiveness and negative attitudes to failure which '... act as a barrier to learning and performance improvement.' It is relevant to note that these hurdles to innovation identified by Smale (2008) point to difficulties in innovation implementation not initiation, which support Nakata and Sivakumar's (1996) contentions that low power distance and high individualism nations, like New Zealand, will be better at innovation initiation rather than the implementation stage.

In addition to culture and its associations with innovation, we also look at national identity. National identity is important to study in the context of innovation because this is one area where culture manifests itself and becomes globally visible. In a global world, how a nation sells itself to and is perceived by the international community can have significant impact on the nation's economy. In addition to the literature on innovation and culture, we also found a limited amount of literature on innovation as a component of national identity or goal for national identity formation. As one of our designated research foci is New Zealand innovation, we will briefly review one article by Skilling (2010) which specifically focuses on innovation as a part of New Zealand's national identity.

When the Labour Party came to power in 1999 as head of a coalition government, the defense and promotion of national identity became a central focus of the party's agenda. According to Skilling (2010), the focus of national identity was fundamentally shaped by the government's desire for economic competitiveness. The official government narrative regarding national identity for New Zealand was openness, diversity and tolerance. Skilling (2010) contends, however, that the focus was really much narrower: creativity, flexibility and innovation. "Labour's construction of a shared purpose and a common identity was fundamentally shaped by a notion of economic competitiveness" (Skilling, 2010, pg. 176). According to Turner (2005), New Zealand has always had one eye on global markets, investors and migrants as a result of the nation's physical location and economic structure. The Labour government argued that international perceptions of New Zealand were outdated and there needed to be more awareness of New Zealand as an innovative country. In order to compete in the 'race to the future' of globalisation, innovation as a part of national identity was deemed necessary.

Skilling's article shows how important innovation is considered to be for national-level success and highlights the potential importance of innovation as a part of national identity in general, and New Zealand national identity in particular. When we later review the cultural/national identity model for New Zealand, we will be in a position to assess the effectiveness of the government's focus on innovation. Did the rhetoric about innovation and economic growth translate into widespread acceptance of innovation as part of New Zealand's national identity?

1.3 Outline of report

In this report, our goal is to better understand New Zealand cultural and national identity through comparison with a select set of other nations, many known for being highly innovative. In Chapter 2, the reasons for selecting our case study countries will be discussed as well as our methods of data collection and analysis. In Chapter 3 we will provide important background information for each of

our case study countries including important historical and economic information. In Chapter 4 we will present our models of cultural/national identity and qualitatively assess what New Zealand can learn from each model. This will be followed by a quantitative comparison of the models in Chapter 5. Conclusions and areas of further research will be discussed briefly in Chapter 6.

Chapter 2 Methods

2.1 Introduction

This chapter describes the countries selected for study. It then explains how each country was surveyed. Surveying in foreign countries can raise problems not usually encountered while surveying in one's home country, and this chapter explains how we had to adapt the methods to suit the conditions we encountered in each country.

2.2 Country selection

A wide range of case-study countries were considered for study. Our early thinking suggested that suitable case-study countries for comparison with New Zealand were those with similarity to New Zealand by virtue of being relatively small, open economies and at some distance from the major markets. Upon further thought additional criteria were added. A more implicit criterion "quality of innovation policies" was used in the selection of a subset of the case-study countries: Austria, Finland, Denmark and Sweden. These countries have a long history of innovation policies and have good availability of policy intelligence in the form of monitoring, analysis and evaluation. Further, some countries were chosen because they are considered 'developing' and have parallels with New Zealand in this regard. Finally, location in the Pacific Rim was another factor used in case-study country selection. Several small but highly innovative Asian nations were selected for inclusion in the study as well as Australia which shares a similar cultural heritage, namely European, with New Zealand.

The list of selected countries is shown in Table 2.1. The table shows the rating of each country in terms of its innovation developmental stage according to PRO INNO Europe. The four categories are: Leader, Follower, Moderate, and Moderate in Transition. This rating system is only available for European nations. The table also shows two international innovation ratings for each country. The first rating is the the Global Innovation Index (GII) (INSEAD 2010) ranking and the second is the International Innovation Index (III) ranking (Andrew et al. 2009). The GII and III represent large-scale indices for comparison of innovation performance taking into account numerous factors influencing innovation. For a more in-depth discussion of these indices please see the literature (Andrew et al. 2009, INSEAD, 2010).

Table 2.1: Countries included in the sample

Location	Country	Rating of development stage of innovation system*	GII Score	III Score
Europe	Denmark	Leader	8	11
	Finland	Leader	11	7
	Sweden	Leader	4	10
	Austria	Follower	22	17
	Czech Republic	Moderate in transition	27	32
	Estonia	Moderate in transition	41	23
	Slovenia	Moderate in transition	29	33
Asia	South Korea		14	2
Australasia	Australia		20	22
	New Zealand		9 (previous year 27)	26
	Total	10		

2.3 Computer-assisted interviews conducted by TUI team member

The initial goal of the TUI programme was to travel to each of the countries of interest and administer computer-assisted self-interviews (CASI). This method had proven effective in New Zealand and formed the basis of a detailed study of New Zealand national and cultural identities and innovation (Rinne and Fairweather, in press).

Local high schools in Austria, Estonia, Slovenia, Sweden, Finland and the Czech Republic were approached. Schools were offered 500 Euro in exchange for soliciting 20 adult volunteers and providing a venue. We chose schools from the middle income bracket in the capital cities of each nation. Schools were contacted via e-mail as well as by phone, and representatives involved with fundraising were sought. The school representative was asked to source prospective participants, an equal number of men and women if possible, from people involved with the school or who lived in the local area.

The qualitative interview portion of our research took on average one and half hours and was scheduled in advance at a designated time and place (namely onsite at the schools) and outside of normal daily activities. The researcher clarified the purpose of the interview upon meeting with respondents and explained that respondents would be asked questions about three domains: culture, national identity and innovation for their country. Participants were assured that there were no right or wrong answers to any of the questions and we asked that they speak freely about their beliefs and opinions.

A total of 42 open ended questions were asked along with a set of demographic questions. For each domain of interest we asked a number of questions. The questionnaire can be found in Appendix 1. It should be noted that sufficient data for analysis were obtained only for Estonia, Slovenia and the Czech Republic. It should also be noted that the Czech sample is comprised of two sets of data. One set consisting of 11 respondents was collected in-country via computer-assisted interviewing where an interviewer was present. The other set of data, consisting of 20 Czech respondents, was collected via e-mail in order to reach a usable sample size. The second set of data was based on the same shortened interview given to Qualtrics respondents (Appendix 2). Table 2.2 shows the demographic information for the three countries for which sufficient data were obtained.

The Estonia interviews were given in English and respondents answered in English. The Slovenian interviews were translated to Slovenian and respondents answered in their own language. The completed interviews were then translated to English. The first set of Czech interviews was in English and respondents answered in both English and Czech, depending on their level of comfort with English. The second set, via e-mail, was translated to Czech and respondents answered in their own language. The completed interviews were then translated to English.

Table 2.2: Demographic information for computer-assisted interview sample

	Slovenia (n=19)	Estonia (n=15)	Czech Republic (1 st set interviews) (n=11)	Czech Republic (2 nd set of interviews) (n=20)
Gender				
Male	6	1	1	6
Female	13	14	9	14
Age				
20-29				
30-39	3	9	2	5
40-49	10	4	8	10
>50	6	2		5
Education				
University Degree	17	15	5	18
Trade/Vocational/Technical				1
Upper High School	1		3	1
Lower High School	1			
Less than High School			2	

2.4 Online surveys

Finding schools and respondents willing to participate in a computer-assisted interview with an interviewer present proved to be more difficult than imagined. Computer-assisted interview times were set up for schools in Finland, Sweden, Denmark and Austria but due to various events (no shows, lack of access to computers etc.) insufficient data were obtained. Even those schools able to source an adequate number of respondents were not able to obtain an equal number of men and women. We decided, therefore, to engage a survey company to source respondents for an online survey. Our chosen company was Qualtrics. In this way we could obtain a larger sample size as well as even out the gender ratio of respondents. Qualtrics required that respondents be able to complete the questionnaire within 20 to 30 minutes. Accordingly, we shortened our questionnaire for the Qualtrics survey.

Qualtrics was used to survey respondents from the European countries for which our first approach did not work: Denmark, Finland, Sweden, and Austria. In addition, we extended the Qualtrics survey to include South Korea and Australia. We tried to include other Asian countries, such as Singapore, Taiwan and Malaysia but Qualtrics was unable to accommodate our request for online interviews in these nations. Finally, in order to ensure that our overseas data was compatible with New Zealand data we included New Zealand in the Qualtrics survey.

Qualtrics solicited volunteers from each country to fill out a questionnaire consisting of 18 open-ended questions about culture, national identity and innovation identity as well as nine demographic questions. The questionnaire can be found in Appendix 2. We requested that the samples include; 1. at least 20 respondents from each of two different age groups (20 to 40 years old and more than 40 years old), 2. equal numbers of men and women, and 3. that respondents be citizens of the nation. In

the end, we often obtained from Qualtrics more responses than the initial 40 targeted, in many cases obtaining over 100 useable responses. Table 2.3 shows the demographic breakdown of our samples. It should be noted that Qualtrics was not always able to provide us with the age distribution and gender distributions we requested although each sample represents a wide range of ages and at least 20 males responded to the survey in each country.

The questionnaires were translated from English into the appropriate language for each country, and all respondents had a choice between responding in English or in their native language. It was estimated that the questionnaire would take respondents approximately 30 minutes to complete on average.

Table 2.3: Demographic information for qualtrics samples

	New Zealand (n=108)	Australia (n=101)	Austria (n=71)	Denmark (n=38)	Finland (n=90)	Sweden (n=164)	South Korea (n=40)
Gender							
Male	36	41	21	24	44	54	20
Female	72	60	50	14	46	110	20
Age							
20-29	14	28	40	23	50	39	6
30-39	37	25	25	10	30	29	15
40-49	30	9	6	3	10	59	14
>50	27	37	0	2	0	37	5
Education							
University Degree	57	43	23	13	19	70	36
Trade/Vocational/Technical	26	36	17	10	23	23	0
Upper High School	23	21	28	12	20	59	4
Lower High School			3	1	20	10	
Less than High School	2	1	0	2	8	2	0

2.5 Data analysis and modeling

Our original research intention when we started with the CASI interviews was to build what an anthropologist would call a cognitive cultural model. Cultural modelling is a qualitative method based on discourse analysis. Cultural models are those presupposed, taken-for-granted models of knowledge and thought that are used in the course of everyday life to guide a person’s understanding of the world and their behaviour (D’Andrade 1984). According to Blount (2002:9), to create a cultural model from respondent discourse:

One works ‘backwards,’ asking questions about how the text was created, in effect asking what the conceptualizations are upon which the text is based. The conceptualizations are the raw materials of the analysis. They reflect the agent’s underlying mental models, the framework with which the world is engaged. The reconstructed mental models of an individual constitute the cognitive architecture upon which the discourse is generated.

However, in order to obtain much of our international data, we had to shorten our questionnaire to such a degree that cultural modelling was no longer possible. The shortened questionnaire consisted of just 18 open-ended questions making it impossible to serialize, embed and hierarchically organize people's beliefs into what would be considered a cognitive cultural model. There was insufficient raw discourse for such an endeavour.

Instead, we analyzed the available discourse and sorted the items potentially relevant to national innovation into ten key cultural/national identity areas. The areas of cultural/national identity were: defining history, the arts, sports, mentality and values, symbols and important heritage elements, science and technology, internationally defining aspects, geography and size, environment and lifestyle. Because of the limited number of questions posed, we focused on assessing these ten main areas of cultural/national identity. It should be noted, however, that these ten areas are by no means the only aspects of cultural/national identity that potentially exist. A more in-depth study might reveal more. While not as detailed as, nor showing the connections that would be present in a cognitive cultural model, the resulting models of cultural/national identity still provide valuable information about innovation at the national-level and allow for some comparisons to be made between nations.

Chapter 3

Background of the Countries under Investigation Introduction

As not all readers will be familiar with each of the countries included in our analysis, we provide important background information for each nation in this chapter. This information will help set the stage for a better understanding of each nation's cultural/national identity model presented in the subsequent chapter. All the information presented in this chapter (history, statistics, miscellaneous background information) was taken from the CIA World Factbook (2011) in order that the coverage across nations be comparable in content, depth and source. All monetary amounts given are in U.S. dollars.

3.1 Background information for New Zealand

Background in brief

The Polynesian Maori reached New Zealand in about A.D. 800. In 1840, their chieftains entered into a compact with Britain, the Treaty of Waitangi, in which they ceded sovereignty to Queen Victoria while retaining territorial rights. In that same year, the British began the first organized colonial settlement. A series of land wars between 1843 and 1872 ended with the defeat of the native peoples. The British colony of New Zealand became an independent dominion in 1907 and supported the UK militarily in both world wars. New Zealand's full participation in a number of defense alliances lapsed by the 1980s. In recent years, the government has sought to address longstanding Maori grievances.

Geography

New Zealand is located in the South Pacific Ocean, southeast of Australia. The total land area for New Zealand is 267,710 sq km and it is the approximate size of Colorado. The climate is temperate with sharp regional contrasts. The terrain is primarily mountainous with large coastal plains.

People

New Zealand ranks 125th in the world in population size with approximately 4.3 million people. Eighty six per cent of the populous live in urban areas. New Zealand's major cities are Auckland with 1.36 million people and Wellington with 391,000. European is the dominant ethnic group with 56.8 percent of the population of European descent. Asians comprise 8 percent of the population, Maori 7.4 percent, and Pacific islanders 4.6 percent. The literacy rate in New Zealand is 99 percent, school life expectancy (primary to tertiary education) is 19 years and national education expenditures as of (2007) were at 6.2 percent of GDP (world rank 33).

Government

The New Zealand government is a parliamentary democracy and a Commonwealth realm. New Zealand gained its independence from the United Kingdom on 26 September 1907.

Economy

Over the past 20 years the government has transformed New Zealand from an agrarian economy dependent on concessionary British market access to a more industrialized, free market economy that can compete globally. This dynamic growth has boosted real incomes - but left behind some at the bottom of the ladder - and broadened and deepened the technological capabilities of the industrial sector. Per capita income rose for ten consecutive years until 2007 in purchasing power parity terms, but fell in 2008-09. Debt-driven consumer spending drove robust growth in the first half of the decade, helping fuel a large balance of payments deficit that posed a challenge for economic

managers. Inflationary pressures caused the central bank to raise its key rate steadily from January 2004 until it was among the highest in the OECD in 2007-08; international capital inflows attracted to the high rates further strengthened the currency and housing market, however, aggravating the current account deficit. The economy fell into recession before the start of the global financial crisis and contracted for five consecutive quarters in 2008-09. In line with global peers, the central bank cut interest rates aggressively and the government developed fiscal stimulus measures. The economy posted a 1.7 percent decline in 2009, but pulled out of recession late in the year, and achieved 2.1 percent growth in 2010. Nevertheless, key trade sectors remain vulnerable to weak external demand. The government plans to raise productivity growth and develop infrastructure, while reining in government spending.

The 2010 estimate of GDP was 119.2 billion (USD) ranking New Zealand as 63rd in the world. The GDP growth rate is estimated to be 2.1 percent ranking New Zealand as 148th in the world. The per capita GDP in New Zealand is \$28,000 USD ranking New Zealand as 51st in the world. The GDP composition by sector is agriculture (4.6 percent), industry (24 percent) and services (71.4 percent).

The primary agricultural products produced in New Zealand include dairy products, lamb and mutton, wheat, barley, potatoes, pulses, fruits, vegetables, wool, beef and fish. New Zealand's primary industries are food processing, wood and paper products, textiles, machinery, transportation equipment, banking and insurance, tourism and mining. New Zealand's primary exports are dairy products, meat, wood and wood products, fish and machinery. Exports account for \$33.24 billion USD (rank 62nd in the world). Imports include machinery and equipment, vehicles and aircraft, petroleum, electronics, textiles, and plastics. Imports account for \$30.24 billion USD (rank 58th in the world).

The telephone system, both domestic and international, in New Zealand can be characterized as excellent. Television New Zealand operates multiple television networks and cable/satellite T.V. are available. New Zealand has 2.47 million (2010) internet hosts ranking it 33rd in the world. As of 2009 there are an estimated 3.4 million internet users, ranking New Zealand 62nd in the world.

3.2 Background information for Australia

Background in brief

Aboriginal settlers arrived on the continent from Southeast Asia about 40,000 years before the first Europeans began exploration in the 17th century. No formal territorial claims were made until 1770, when Capt. James Cook took possession of the east coast in the name of Great Britain (all of Australia was claimed as British territory in 1829 with the creation of the colony of Western Australia). Six colonies were created in the late 18th and 19th centuries; they federated and became the Commonwealth of Australia in 1901. The new country took advantage of its natural resources to rapidly develop agricultural and manufacturing industries and to make a major contribution to the British effort in World Wars I and II. In recent decades, Australia has transformed itself into an internationally competitive, advanced market economy. It boasted one of the OECD's fastest growing economies during the 1990s, a performance due in large part to economic reforms adopted in the 1980s. Long-term concerns include ageing of the population, pressure on infrastructure, and environmental issues such as frequent droughts.

Geography

Australia is a continent located between the Indian and South Pacific Oceans. The total land area is 7,741,220 sq km, making Australia the 6th largest country in the world. Australia is only slightly smaller than the 48 contiguous US states. Australia's climate is generally arid to semiarid, temperate in the south and east and tropical in the northern region. There is a fertile plain in the southeast but Australia is mostly comprised of low plateaus with deserts.

People

The estimated population of Australia is 21,766,711 as of July 2011, ranking Australia as the 55th most populous country in the world. 89 percent of the population lives in urban areas. Major cities include Sydney (4.49 million), Melbourne (3.853 million), Brisbane (1.97 million), Perth (1.599 million) and Canberra the capital (384,000). The main Australian ethnic groups are whites (92 percent), Asians (7 percent) and aboriginal and other (1 percent). The Australian literacy rate is 99 percent, the school life expectancy is 21 years, and 4.7 percent of GDP is spent on education ranking Australia 80th in the world.

Government

Australia is a federal parliamentary democracy and a Commonwealth realm. Australia gained its independence from the United Kingdom 1 January 1901.

Economy

Australia's abundant and diverse natural resources attract high levels of foreign investment and include extensive reserves of coal, iron ore, copper, gold, natural gas, uranium, and renewable energy sources. A series of major investments, such as the US\$40 billion Gorgon Liquid Natural Gas project, will significantly expand the resources sector. Australia also has a large services sector and is a significant exporter of natural resources, energy, and food. Key tenets of Australia's trade policy include support for open trade and the successful culmination of the Doha Round of multilateral trade negotiations, particularly for agriculture and services. The Australian economy grew for 17 consecutive years before the global financial crisis. Subsequently, the Rudd government introduced a fiscal stimulus package worth over US\$50 billion to offset the effect of the slowing world economy, while the Reserve Bank of Australia cut interest rates to historic lows. These policies - and continued demand for commodities, especially from China - helped the Australian economy rebound after just one quarter of negative growth. The economy grew by 1.2 percent during 2009 - the best performance in the OECD - and by 3.3 percent in 2010. Unemployment, originally expected to reach 8-10 percent, peaked at 5.7 percent in late 2009 and fell to 5.1 percent in 2010. As a result of an improved economy, the budget deficit is expected to peak below 4.2 percent of GDP and the government could return to budget surpluses as early as 2015. Australia was one of the first advanced economies to raise interest rates, with seven rate hikes between October 2009 and November 2010. The GILLARD government is focused on raising Australia's economic productivity to ensure the sustainability of growth, and continues to manage the symbiotic, but sometimes tense, economic relationship with China. Australia is engaged in the Trans-Pacific Partnership talks and ongoing free trade agreement negotiations with China, Japan, and Korea.

Australia has a GDP of 889.6 billion (2010 est.) and ranks 18th in the world. The GDP growth rate is 3.3 percent ranking Australia as 113th in the world. The GDP per capita is 41,300 (2010 est.), ranking Australia 17th in the world. The GDP composition by sector is agriculture (4 percent), industry (24.8 percent), and services (71.2 percent).

The main agricultural products produced by Australia include wheat, barley, sugarcane, fruits, cattle, sheep and poultry. Australia's main industries are mining, industrial and transportation equipment, food processing, chemicals and steel. Australia exports coal, iron ore, gold, meat, wool, alumina, wheat, machinery and transport equipment. Exports are worth \$210.7 billion USD (rank 21st in the world).

Imports include machinery and transport equipment, computers and office machines, telecommunication equipment and parts, crude oil and petroleum products. Imports are worth \$200.4 billion USD (rank 21st in the world).

The telephone system, both domestic and international, in Australia can be characterized as excellent. Australia broadcasting corporation operates multiple television and radio networks and cable/satellite T.V. are available. Australia has 13.361 million (2010) internet hosts ranking it 8th in the

world. As of 2009 there are an estimated 15.81 million internet users, ranking Australia 25th in the world.

3.3 Background information for Austria

Background in brief

Once the center of power for the large Austro-Hungarian Empire, Austria was reduced to a small republic after its defeat in World War I. Following annexation by Nazi Germany in 1938 and subsequent occupation by the victorious Allies in 1945, Austria's status remained unclear for a decade. A State Treaty signed in 1955 ended the occupation, recognized Austria's independence, and forbade unification with Germany. A constitutional law that same year declared the country's "perpetual neutrality" as a condition for Soviet military withdrawal. The Soviet Union's collapse in 1991 and Austria's entry into the European Union in 1995 have altered the meaning of this neutrality. A prosperous, democratic country, Austria entered the EU Economic and Monetary Union in 1999.

Geography

Austria is located in central Europe, just north of Italy and Slovenia. Austria's land area is 83,871 sq km, ranking it 113th in the world as far as land area. Austria lacks a coastline. Austria's climate is temperate with cold winters and moderate summers. The terrain in the west and south is mostly mountainous (the Alps). In the north and east the terrain is flat or gently sloping. The population is mostly concentrated in the eastern lowlands because of the steep slopes, poor soils and cold temperatures found elsewhere.

People

As of 2010, the population of Austria was estimated to be 8,217,280, ranking it 92nd in the world as far as population. 68 percent of the population lives in urban areas. The major city is Vienna (the capital) with 1.693 million. Austrians make up 91.1 percent of Austria's population with former Yugoslavs representing 4 percent, Turks 1.6 percent, Germans 0.9 percent and others/unspecified 2.4 percent. The literacy rate is 98 percent. The school life expectancy is 15 years and national expenditure on education is 5.4 percent of GDP, ranking Austria 50th in the world.

Government

Austria is a federal republic. The republic was proclaimed 12 November 1918. The Austrian Empire was proclaimed 11 August 1804.

Economy

Austria, with its well-developed market economy and high standard of living, is closely tied to other EU economies, especially Germany's. Its economy features a large service sector, a sound industrial sector, and a small, but highly developed agricultural sector. Following several years of solid foreign demand for Austrian exports and record employment growth, the international financial crisis and global economic downturn in 2008 led to a sharp but brief recession. Austrian GDP contracted 3.9 percent in 2009 but saw positive growth of about 2 percent in 2010. Unemployment has not risen as steeply in Austria as elsewhere in Europe, partly because its government has subsidized reduced working hour schemes to allow companies to retain employees. Stabilization measures, stimulus spending, and an income tax reform pushed the budget deficit to 3.5 percent of GDP in 2009 and 4.7 percent in 2010, from only about 1.3 percent in 2008. The international financial crisis caused difficulties for Austria's largest banks whose extensive operations in central, eastern, and southeastern Europe faced large losses. The government provided bank support - including in some instances, nationalization - to prevent insolvency and possible contagion. In the medium-term all large Austrian banks will need additional capital. Even after the global economic outlook improves, Austria will need to continue restructuring, emphasize knowledge-based sectors of the economy, and

encourage greater labor flexibility and labor participation to offset growing unemployment and Austria's aging population and low fertility rate.

Austria's GDP is 332.6 billion (2010 est.) ranking it 36th in the world. The GDP growth rate is 2 percent ranking Austria 151st in the world. GDP per capita is 40,300 (20th in the world). The composition of GDP by sectors is: agriculture 1.5 percent, industry 29.4 percent, and services 69.1 percent.

The primary agricultural products produced by Austria are grains, potatoes, wine, fruit, dairy products, cattle, pigs, poultry and lumber. The main industries are construction, machinery, vehicles and parts, food, metals, chemicals, lumber and wood processing, paper and paperboard, communications equipment and tourism. Exports account for \$157.4 billion USD and include machinery and equipment, motor vehicles and parts, paper and paperboard, metal goods, chemicals, iron and steel, textiles and foodstuffs. Imports account for 156 billion and include machinery and equipment, motor vehicles, chemicals, metal goods, oil and oil products, and foodstuffs.

The telephone system, both domestic and international, in Austria can be characterized as highly developed and efficient. Commercial television and radio services were introduced in the 1990s. Cable and satellite T.V. are available. Austria has 3.266 million (2010) internet hosts ranking it 29th in the world. As of 2009 there are an estimated 6.143 million internet users, ranking Austria 43rd in the world.

3.4 Background information for the Czech Republic

Background in brief

At the close of World War I, the Czechs and Slovaks of the former Austro-Hungarian Empire merged to form Czechoslovakia. During the interwar years, having rejected a federal system, the new country's leaders were frequently preoccupied with meeting the demands of other ethnic minorities within the republic, most notably the Sudeten Germans and the Ruthenians (Ukrainians). On the eve of World War II, the Czech part of the country was forcibly annexed to the Third Reich, and the Slovaks declared independence as a fascist ally of Nazi Germany. After the war, a reunited but truncated Czechoslovakia (less Ruthenia) fell within the Soviet sphere of influence. In 1968, an invasion by Warsaw Pact troops ended the efforts of the country's leaders to liberalize Communist Party rule and create "socialism with a human face." Anti-Soviet demonstrations the following year ushered in a period of harsh repression known as "normalization." With the collapse of Soviet-backed authority in 1989, Czechoslovakia regained its freedom through a peaceful "Velvet Revolution." On 1 January 1993, the country underwent a "velvet divorce" into its two national components, the Czech Republic and Slovakia. The Czech Republic joined NATO in 1999 and the European Union in 2004.

Geography

The Czech Republic is located in central Europe between Germany, Poland, Slovakia and Austria. The Czech Republic's total land area is 78,867 sq km (115th in the world for land area) and the nation is completely landlocked. The climate is temperate with cool summers and cold winters. The terrain in the west consists of rolling plains, hills and plateaus with low mountains surrounding the area. The east is very hilly. It should be noted that some of the oldest and most significant land routes in Europe go through the Czech Republic.

People

The population of the Czech Republic is 10, 190,213 (2011 est.) ranking the nation 82nd in the world. 74 percent of the population lives in urban areas. Prague is the nation's major city with 1.162 million people. The majority of the population is Czech (90.4 percent) with Moravian (3.7 percent), Slovak (1.9 percent) and others (4 percent) making up the rest of the population. The literacy rate is 99

percent. School life expectancy is 15 years and the nation spends 4.6 percent of GDP on education (rank 84th in the world).

Government

The Czech Republic has a parliamentary democracy. Independence was gained 1 January 1993 when Czechoslovakia split into the Czech Republic and Slovakia. Czechoslovakia declared its independence from the Austro-Hungarian Empire 28 October 1918 and this is the day Czechs generally celebrate as Independence Day.

Economy

The Czech Republic is a stable and prosperous market economy, which harmonized its laws and regulations with those of the EU prior to its EU accession in 2004. While the conservative, inward looking Czech financial system has remained relative healthy, the small, open, export-driven Czech economy remains very sensitive to changes in the economic performance of its main export markets, especially Germany. When Western Europe and Germany fell into recession in late 2008, demand for Czech goods plunged, leading to double digit drops in industrial production and exports. As a result, real GDP fell 4.1 percent in 2009, with most of the decline occurring during the first quarter. Real GDP, however, has slowly recovered with positive quarter-on-quarter growth starting in the second half of 2009 and continuing throughout 2010. The auto industry remains the largest single industry and, together with its suppliers, accounts for as much as 20 percent of Czech manufacturing. The Czech Republic produced more than a million cars for the first time in 2010, over 80 percent of which were exported. Foreign and domestic businesses alike voice concerns about corruption, especially in public procurement. Other long term challenges include dealing with a rapidly aging population, funding an unsustainable pension and health care system, and diversifying away from manufacturing and toward a more high-tech, services-based, knowledge economy.

The Czech Republic's GDP is 262.8 billion, ranking the nation 45th in the world. The GDP growth rate is 2.3 percent (rank 145th in the world) and GDP per capita is \$25,600 (rank 54th in the world). The GDP composition by sector is agriculture 2.2 percent, industry 38.3 percent, and services 59.5 percent.

The primary agricultural products produced by the Czech Republic are wheat, potatoes, sugar beets, hops, fruit, pigs and poultry. The nation's primary industries are motor vehicles, metallurgy, machinery and equipment, glass, and armaments. Exports account for \$116.5 billion USD and consist of machinery and transport equipment, raw materials and fuel and chemicals. Imports represent 109.2 billion dollars and include machinery and transport equipment, raw materials and fuels and chemicals.

Privatization and modernization of the nation's telecommunications got a late start but is showing advancement. Mobile telephone use has increased sharply. There are 130 television broadcasters operating more than 350 channels. There are 4 publicly operated t.v. stations. The Czech Republic has 3.494 million (2010) internet hosts ranking it 25th in the world. As of 2009 there are an estimated 6.681 million internet users, ranking the nation 40th in the world.

3.5 Background information for Denmark

Background in brief

Once the seat of Viking raiders and later a major north European power, Denmark has evolved into a modern, prosperous nation that is participating in the general political and economic integration of Europe. It joined NATO in 1949 and the EC (now the EU) in 1973. However, the country has opted out of certain elements of the European Union's Maastricht Treaty, including the European Economic and

Monetary Union (EMU), European defense cooperation, and issues concerning certain justice and home affairs.

Geography

Denmark is located in Northern Europe and borders both the Baltic and North seas. The nation includes several major islands. The total area of Denmark is 43,094 sq km, ranking it 133rd in the world as far geographical size. The climate is temperate with mild, windy winters and cool summers. The terrain varies from low and flat to gently rolling plains.

People

The population of Denmark is 5,529,888 (2011 est.), ranking Denmark 110th in the world. Approximately 87 percent of the population lives in urban areas. The major city is Copenhagen (the capital) with 1.174 million. The major ethnic groups are Scandinavian, Inuit, Faroese, German, Turkish, Iranian and Somali. The literacy rate is 99 percent. School life expectancy is 17 years and the nation's expenditures on education are 7.9 percent of GDP, ranking Denmark 12th in the world.

Government

The government of Denmark is a constitutional monarchy. Denmark became a constitutional monarchy on 5 June 1849. It was unified and Christianized in ca. 965.

Economy

This thoroughly modern market economy features a high-tech agricultural sector, state-of-the-art industry with world-leading firms in pharmaceuticals, maritime shipping and renewable energy, and a high dependence on foreign trade. Denmark is a member of the European Union (EU); Danish legislation and regulations conform to EU standards on almost all issues. Danes enjoy among the highest standards of living in the world and the Danish economy is characterized by extensive government welfare measures and an equitable distribution of income. Denmark is a net exporter of food and energy and enjoys a comfortable balance of payments surplus, but depends on imports of raw materials for the manufacturing sector. Within the EU, Denmark is among the strongest supporters of trade liberalization. After a long consumption-driven upswing, Denmark's economy began slowing in 2007 with the end of a housing boom. Housing prices dropped markedly in 2008-09. The global financial crisis has exacerbated this cyclical slowdown through increased borrowing costs and lower export demand, consumer confidence, and investment. The global financial crises cut Danish GDP by 0.9 percent in 2008 and 5.2 percent in 2009. Historically low levels of unemployment rose sharply with the recession but remain below 5 percent, based on the national measure, about half the level of the EU; harmonized to OECD standards the unemployment rate was about 8 percent at the end of 2010. Denmark made a modest recovery in 2010 in part because of increased government spending. An impending decline in the ratio of workers to retirees will be a major long-term issue. Denmark maintained a healthy budget surplus for many years up to 2008, but the budget balance swung into deficit during 2009-10. Nonetheless, Denmark's fiscal position remains among the strongest in the EU. Despite previously meeting the criteria to join the European Economic and Monetary Union (EMU), so far Denmark has decided not to join, although the Danish krone remains pegged to the euro.

The GDP of Denmark is 201.4 billion (2010 est.), ranking it 52nd the world. GDP growth is 1 percent (2010 est.), ranking Denmark 176th in the world. The GDP per capita is 36,700 (2010 est.) (28th in the world). The GDP composition by sector is agriculture 1.1 percent, industry 22.8 percent, and services 76.1 percent.

The agricultural products produced within Denmark are barley, wheat, potatoes, sugar beets, pork, dairy and fish. The industries are iron, steel, nonferrous metals, chemicals, food processing, machinery and transportation equipment, textiles and clothing, electronics, construction, furniture

and other wood products, shipbuilding and refurbishment, windmills, pharmaceuticals, and medical equipment. Denmark exports \$99.37 billion worth of materials a year (world rank 35th). Exports include machinery and instruments, meat and meat products, dairy products, fish, pharmaceuticals, furniture and windmills. Denmark imports \$90.83 billion worth of materials each year. Imports include machinery and equipment, raw materials and semimanufactures for industry, chemicals, grain and foodstuffs, and consumer goods.

The telecommunication system in Denmark is considered to be excellent. There is a strong public sector television presence and satellite/cable T.V. are available. Denmark has 4.145 million (2010) internet hosts ranking it 22nd in the world. As of 2009 there are an estimated 4.75 million internet users, ranking Denmark 48th in the world.

3.6 Background information for Estonia

Background in brief

After centuries of Danish, Swedish, German, and Russian rule, Estonia attained independence in 1918. Forcibly incorporated into the USSR in 1940 - an action never recognized by the US - it regained its freedom in 1991 with the collapse of the Soviet Union. Since the last Russian troops left in 1994, Estonia has been free to promote economic and political ties with the West. It joined both NATO and the EU in the spring of 2004.

Geography

Estonia and is located in Eastern Europe. It borders Latvia, Russia, the Baltic Sea and the Gulf of Finland. Estonia is 45, 228 sq km in size, ranking it 132nd in the world. The climate is maritime with moderate winters and cool summers. The terrain is marshy in the lowlands, hilly in the south and flat in the north.

People

The population of Estonia is 1,282,963 (est. 2011), ranking it 154th in the world. Approximately 69 percent of the population lives in urban areas. The major city is Tallinn (the capital) with 399,000 people. The major ethnic groups in Estonia are Estonians 68.7 percent, Russians 25.6 percent, Ukrainian 2.1 percent, Belarusian 1.2 percent, Finn 0.8 percent and other 1.6 percent. The literacy rate is estimated to be 99.8 percent. School life expectancy is 16 years and the nation spends 5 percent of GDP on education, ranking it 65th in the world.

Government

Estonia is a parliamentary republic. Independence from the Soviet Union was declared 20 August 1991.

Economy

Estonia, a 2004 European Union entrant, has a modern market-based economy and one of the higher per capita income levels in Central Europe and the Baltic region. Estonia's successive governments have pursued a free market, pro-business economic agenda and have wavered little in their commitment to pro-market reforms. The current government has followed relatively sound fiscal policies that have resulted in balanced budgets and very low public debt. The economy benefits from strong electronics and telecommunications sectors and strong trade ties with Finland, Sweden, and Germany. Tallinn's priority has been to sustain high growth rates - on average 8 percent per year from 2003 to 2007. Estonia's economy slowed down markedly and fell sharply into recession in mid-2008, primarily as a result of an investment and consumption slump following the bursting of the real estate market bubble. GDP dropped nearly 14 percent in 2009, among the world's highest rates of contraction. Rising exports to Sweden and Finland lead an economic recovery in 2010, but

unemployment stands above 17 percent. Estonia joined the OECD in December 2010 and adopted the euro in January 2011.

Estonia's GDP is 24.65 billion, ranking it 113th in the world. The growth rate of GDP is 2.4 percent (144th in the world). GDP per capita is \$19,000 (ranked 64th on the world). The GDP composition by sector is agriculture 2.5 percent, industry 28.7 percent, and services 68.8 percent.

The agriculture products produced by Estonia are grain, potatoes, vegetables, livestock, dairy and fish. The main industries are engineering, electronics, wood and wood products, textiles, information technology, and telecommunications. Estonia exports \$11.5 billion worth of materials (rank 82nd in the world). Exports include machinery and electrical equipment, wood and wood products, metals, furniture, vehicles and parts, food products and beverages, textiles and plastics. Estonia imports \$12.17 billion worth of materials. Imports include machinery and electrical equipment, mineral fuels, chemical products, foodstuffs, plastics, and textiles.

Telecommunications is generally excellent. Internet is widely available. A large percentage of the population does their taxes online and online voting was used in the 2005 elections. There are 2 publically owned T.V. stations and cable T.V. service has wide penetration with half of Estonian households connected. Estonia has 729, 543 (2010) internet hosts ranking it 48th in the world. As of 2009 there are an estimated 4 971,700 internet users, ranking Estonia 102nd in the world.

3.7 Background information for Finland

Background in brief

Finland was a province and then a grand duchy under Sweden from the 12th to the 19th centuries, and an autonomous grand duchy of Russia after 1809. It won its complete independence in 1917. During World War II, it was able to successfully defend its freedom and resist invasions by the Soviet Union - albeit with some loss of territory. In the subsequent half century, the Finns made a remarkable transformation from a farm/forest economy to a diversified modern industrial economy; per capita income is now among the highest in Western Europe. A member of the European Union since 1995, Finland was the only Nordic state to join the euro system at its initiation in January 1999. In the 21st century, the key features of Finland's modern welfare state are a high standard of education, equality promotion, and national social security system - currently challenged by an aging population and the fluctuations of an export-driven economy.

Geography

Finland is located in North Europe. It borders Sweden and Russia as well as the Baltic Sea, Gulf of Bothnia and the Gulf of Finland. The total land area of Finland is 338,145 sq km, ranking Finland 64th in the world. The climate is cold temperate and potential subarctic in some areas. The temperature is moderated by the North Atlantic current, Baltic Sea and many lakes. Finland's terrain is mostly low, flat to rolling plains.

People

The population of Finland is 5,259,250, ranking Finland 113th in the world. Approximately 85 percent of the population lives in urban areas. The major city (the capital) is Helsinki with 1.107 million. Finland's primary ethnic groups are Finns 93.4 percent, Swedes 5.6 percent, Russians 0.5 percent, Estonians 0.3 percent, Roma 0.1 percent and Sami 0.1 percent. The literacy rate is 100 percent. School life expectancy is 17 years and national expenditure on education is 5.4 percent of GDP.

Government

Finland is a republic. Independence from Russia was obtained 6 December 1917.

Economy

Finland has a highly industrialized, largely free-market economy with per capita output roughly that of Austria, Belgium, the Netherlands, and Sweden. Trade is important with exports accounting for over one third of GDP in recent years. Finland is strongly competitive in manufacturing - principally the wood, metals, engineering, telecommunications, and electronics industries. Finland excels in high-tech exports such as mobile phones. Except for timber and several minerals, Finland depends on imports of raw materials, energy, and some components for manufactured goods. Because of the climate, agricultural development is limited to maintaining self-sufficiency in basic products. Forestry, an important export earner, provides a secondary occupation for the rural population. Finland had been one of the best performing economies within the EU in recent years and its banks and financial markets avoided the worst of global financial crisis. However, the world slowdown hit exports and domestic demand hard in 2009, with Finland experiencing one of the deepest contractions in the euro zone. A recovery of exports, domestic trade, and household consumption stimulated economic growth in 2010. The recession left a deep mark on general government finances and the debt ratio, turning previously strong budget surpluses into deficits. Despite good growth prospects, general government finances will remain in deficit during the next few years. The great challenge of economic policy will be to implement a post-recession exit strategy in which measures supporting growth will be combined with general government adjustment measures. Longer-term, Finland must address a rapidly aging population and decreasing productivity that threaten competitiveness, fiscal sustainability, and economic growth.

The GDP of Finland is 187.6 billion (ranked 56th in the world). The GDP growth rate is 3.2 percent (118th in the world). GDP per capita is \$35,300 (ranked 35th in the world). GDP composition by sector is agriculture 2.6 percent, industry 29.1 percent, and services 68.2 percent.

The major agricultural products produced by Finland are barley, wheat, sugar beet, potatoes, dairy and fish. The major industries are metals and metal products, electronics, machinery and scientific instruments, shipbuilding, pulp and paper, foodstuffs, chemicals, textiles and clothing. Finland exports \$73.53 billion in materials (40th in the world). Exports include electrical and optical equipment, machinery, transport equipment, paper and pulp, chemicals, basic metals and timber. Finland imports \$69.11 billion in materials (39th in the world). Imports include foodstuffs, petroleum and petroleum products, chemicals, transport equipment, iron and steel, machinery, textile yarn and fabrics, and grains.

Telecommunications is generally excellent. Internet is widely available. There is a mix of publically and privately owned T.V. stations. Cable and satellite T.V. are available. Finland has 4.394 million (2010) internet hosts. As of 2009 there are an estimated 4.393 million internet users.

3.8 Background information for Korea

Background in brief

An independent Korean state or collection of states has existed almost continuously for several millennia. Between its initial unification in the 7th century - from three predecessor Korean states - until the 20th century, Korea existed as a single independent country. In 1905, following the Russo-Japanese War, Korea became a protectorate of imperial Japan, and in 1910 it was annexed as a colony. Korea regained its independence following Japan's surrender to the United States in 1945. After World War II, a Republic of Korea (ROK) was set up in the southern half of the Korean Peninsula while a Communist-style government was installed in the north (the DPRK). During the Korean War (1950-53), US troops and UN forces fought alongside soldiers from the ROK to defend South Korea from DPRK attacks supported by China and the Soviet Union. An armistice was signed in 1953, splitting the peninsula along a demilitarized zone at about the 38th parallel. Thereafter, South Korea achieved rapid economic growth with per capita income rising to roughly 17 times the level of North

Korea. In 1993, KIM Young-sam became South Korea's first civilian president following 32 years of military rule. South Korea today is a fully functioning modern democracy. President Lee Myung-bak has pursued a policy of global engagement since taking office in February 2008, highlighted by Seoul's hosting of the G-20 summit in November 2010. Serious tensions with North Korea have punctuated inter-Korean relations in recent years, including the North's sinking of the South Korean warship Cheonan in March 2010 and its artillery attack on South Korean soldiers and citizens in November 2010.

Geography

South Korea is located in Eastern Asia and occupies the southern half of the Korean Peninsula. South Korea borders the Sea of Japan and the Yellow Sea. The total land area of South Korea is 99,720 sq km (ranked 108th in the world). The climate is temperate with heavy rainfall during summer. The terrain is mostly mountains and hills although there are wide coastal plains in the west and south.

People

The population of South Korea is 48,754,657 (ranked 26th in the world). Approximately 83 percent of the population lives in urban areas. Major cities include Seoul (the capital) with 9.778 million, Busan with 3.439 million, Incheon with 2.572 million, Daegu with 2.458 million and Daejeon with 1.497 million. South Korea is homogenous with respect to ethnicity although approximately 20,000 Chinese live in S. Korea. The literacy rate is 97.9 percent. School life expectancy is 17 years and the nation spends 4.2 percent of GDP on education.

Government

South Korea is a republic. It gained independence from Japan 15 August 1945.

Economy

Since the 1960s, South Korea has achieved an incredible record of growth and global integration to become a high-tech industrialized economy. Four decades ago, GDP per capita was comparable with levels in the poorer countries of Africa and Asia. In 2004, South Korea joined the trillion dollar club of world economies, and currently is among the world's 20 largest economies. Initially, a system of close government and business ties, including directed credit and import restrictions, made this success possible. The government promoted the import of raw materials and technology at the expense of consumer goods, and encouraged savings and investment over consumption. The Asian financial crisis of 1997-98 exposed longstanding weaknesses in South Korea's development model including high debt/equity ratios and massive short-term foreign borrowing. GDP plunged by 6.9 percent in 1998, and then recovered by 9 percent in 1999-2000. Korea adopted numerous economic reforms following the crisis, including greater openness to foreign investment and imports. Growth moderated to about 4-5 percent annually between 2003 and 2007. With the global economic downturn in late 2008, South Korean GDP growth slowed to 0.2 percent in 2009. In the third quarter of 2009, the economy began to recover, in large part due to export growth, low interest rates, and an expansionary fiscal policy, and growth exceeded 6 percent in 2010. The South Korean economy's long term challenges include a rapidly aging population, inflexible labor market, and overdependence on manufacturing exports to drive economic growth.

South Korea's GDP is \$1.467 trillion (13th in the world). The GDP growth rate is 6.1 percent (ranked 38th in the world). GDP per capita is \$30,200 (44th on the world). The GDP composition by sector is agriculture 3 percent, industry 39.4 percent and services 57.6 percent.

South Korea's primary agricultural products are rice, root crops, barley, vegetables, fruit, cattle, pigs, chickens, dairy, eggs and fish. Primary industries are electronics, telecommunications, automobile production, chemicals, shipbuilding and steel. South Korea exports \$466.3 billion (ranked 7th in the world) in materials. Exports include semiconductors, wireless telecommunications equipment, motor vehicles, computers, steel, ships, and petrochemicals. Korea imports \$417.9 billion (10th in the

world). Imports include machinery, electronics and electronics equipment, oil, steel, transport equipment, organic chemicals and plastics.

South Korea has an excellent domestic and international telecommunication system. There are multiple national television networks with 2 of 3 publically operated. Cable and satellite T.V. are available. There are 291,329 internet hosts (2010 est.) and 39.4 million internet users.

3.9 Background information for Slovenia

Background in brief

The Slovene lands were part of the Austro-Hungarian Empire until the latter's dissolution at the end of World War I. In 1918, the Slovenes joined the Serbs and Croats in forming a new multinational state, which was named Yugoslavia in 1929. After World War II, Slovenia became a republic of the renewed Yugoslavia, which though Communist, distanced itself from Moscow's rule. Dissatisfied with the exercise of power by the majority Serbs, the Slovenes succeeded in establishing their independence in 1991 after a short 10-day war. Historical ties to Western Europe, a strong economy, and a stable democracy have assisted in Slovenia's transformation to a modern state. Slovenia acceded to both NATO and the EU in the spring of 2004; it joined the eurozone in 2007.

Geography

Slovenia is located in south Central Europe between Austria and Croatia. Slovenia's total land area is 20,273 sq km (ranked 154th in the world). Slovenia has a Mediterranean climate on the coast and a continental climate elsewhere. Summers are mild to hot and winters are cold in the eastern plateaus and valleys. Regarding terrain, Slovenia has a coastal strip along the Adriatic. Otherwise it is comprised of mixed mountains and valleys. Some of Europe's major transit routes run through Slovenia.

People

The population of Slovenia is estimated to be 2,000,092 (ranked 145th in the world). Approximately 50 percent of the population lives in urban areas. Ljubljana (capital) is the major city with 260,000 people. The major ethnic group within Slovenia is Slovene 83.1 percent followed by Serb 2 percent, Croat 1.8 percent, Bosniak 1.1 percent and other/unspecified 12 percent. The literacy rate is 99.7 percent. School life expectancy is 17 years and the nation spends 5.2 percent of GDP on education.

Government

Slovenia is a parliamentary republic. Independence from Yugoslavia was obtained 25 June 1991.

Economy

Slovenia became the first 2004 European Union entrant to adopt the euro (on 1 January 2007) and has become a model of economic success and stability for the region. With the highest per capita GDP in Central Europe, Slovenia has excellent infrastructure, a well-educated work force, and a strategic location between the Balkans and Western Europe. Privatization has lagged since 2002, and the economy has one of highest levels of state control in the EU. Structural reforms to improve the business environment have allowed for somewhat greater foreign participation in Slovenia's economy and have helped to lower unemployment. In March 2004, Slovenia became the first transition country to graduate from borrower status to donor partner at the World Bank. In December 2007, Slovenia was invited to begin the accession process for joining the OECD. Despite its economic success, foreign direct investment (FDI) in Slovenia has lagged behind the region average, and taxes remain relatively high. Furthermore, the labor market is often seen as inflexible, and legacy industries are losing sales to more competitive firms in China, India, and elsewhere. In 2009, the world recession caused the economy to contract - through falling exports and industrial production - by

more than 8 percent, and unemployment to rise above 9 percent. Although growth resumed in 2010, the unemployment rate continued to rise, topping 10 percent.

Slovenia's GDP is \$56.81 billion (88th in the world). The GDP growth rate is 1 percent (2010 est.) (178th in the world). GDP per capita is \$28,400 (50th in the world). GDP composition by sector is agriculture 2.4 percent, industry 31 percent, and services 66.6 percent.

The main agriculture products produced by Slovenia are potatoes, hops, wheat, sugar beets, corn, grapes, cattle, sheep and poultry. The main industries are ferrous metallurgy and aluminium products, lead and zinc smelting, electronics, trucks, automobiles, electric power equipment, wood products, textiles, chemicals and machine tools. Slovenia exports \$24.97 billion worth of materials (rank 65th in the world). Exports include manufactured goods, machinery and transport equipment, chemicals and food. Slovenia imports \$25.96 billion worth of materials (rank 62nd in the world). Imports include machinery and transport equipment, manufactured goods, chemicals, fuels and lubricants, and food.

The telecommunications network in Slovenia is well developed. There is a mix of public and private T.V. stations and 60 percent of households are connected to multi-channel cable T.V. Slovenia has 137,494 internet hosts and 1.298 million internet users.

3.10 Background information for Sweden

Background in brief

A military power during the 17th century, Sweden has not participated in any war for almost two centuries. An armed neutrality was preserved in both world wars. Sweden's long-successful economic formula of a capitalist system interlarded with substantial welfare elements was challenged in the 1990s by high unemployment and in 2000-02 and 2009 by the global economic downturns, but fiscal discipline over the past several years has allowed the country to weather economic vagaries. Sweden joined the EU in 1995, but the public rejected the introduction of the euro in a 2003 referendum.

Geography

Sweden is located in Northern Europe between Finland and Norway. It borders the Baltic Sea and Gulf of Bothnia. Sweden's total land area is 450,295 sq km (rank 55th in the world). The climate is temperate in the south and subarctic in the north. In the south winters are cold and summers are cool. The terrain is mostly flat with gently rolling lowlands but there are some mountains in the west. Sweden is strategically located along the Danish Straits linking the Baltic and North Seas.

People

The population of Sweden is 9,088,728 (2011 est.) (rank 90th in the world). Approximately 85 percent of the population lives in urban areas. The major city is Stockholm (capital) with 1.279 million. The major ethnic groups are Swedes, Finns and Sami which are indigenous and Finns, Yugoslavs, Danes, Norwegians, Greeks and Turks who are immigrants. The literacy rate is 99 percent. School life expectancy is 16 years and the government spends 6.7 percent of GDP on education.

Government

Sweden is a constitutional monarchy. Sweden achieved independence 6 June 1523.

Economy

Aided by peace and neutrality for the whole of the 20th century, Sweden has achieved an enviable standard of living under a mixed system of high-tech capitalism and extensive welfare benefits. It has a modern distribution system, excellent internal and external communications, and a skilled labor

force. In September 2003, Swedish voters turned down entry into the euro system concerned about the impact on the economy and sovereignty. Timber, hydropower, and iron ore constitute the resource base of an economy heavily oriented toward foreign trade. Privately owned firms account for about 90 percent of industrial output, of which the engineering sector accounts for 50 percent of output and exports. Agriculture accounts for little more than 1 percent of GDP and of employment. Until 2008, Sweden was in the midst of a sustained economic upswing, boosted by increased domestic demand and strong exports. This and robust finances offered the center-right government considerable scope to implement its reform program aimed at increasing employment, reducing welfare dependence, and streamlining the state's role in the economy. Despite strong finances and underlying fundamentals, the Swedish economy slid into recession in the third quarter of 2008 and growth continued downward in 2009 as deteriorating global conditions reduced export demand and consumption. Strong exports of commodities and a return to profitability by Sweden's banking sector drove the strong rebound in 2010.

Sweden's GDP is \$354 billion (33rd in the world). The GDP growth rate is 4.1 percent (81st in the world). GDP per capita is \$39,000 (23rd in the world). GDP composition by sector is agriculture 1.7 percent, industry 26.1 percent, and services 72.2 percent.

The agricultural products Sweden produces are barley, wheat, sugar beets, meat and milk. The primary industries are iron and steel, precision equipment, wood pulp and paper products, processed foods and motor vehicles. Sweden's exports \$162.6 billion in materials (27th in the world). Exports include machinery, motor vehicles, paper products, pulp and wood, iron and steel products, and chemicals. Sweden imports \$158.6 billion in materials (27th in the world). Imports include machinery, petroleum and petroleum products, chemicals, motor vehicles, iron and steel, foodstuffs, and clothing.

Telecommunications in Sweden are excellent. Sweden is ranked among leading countries for fixed-line, mobile-cellular, internet and broadband penetration. There are both public and private T.V. stations and cable/satellite T.V. is available. There are 4.396 million internet hosts in Sweden and 8.298 million internet users.

Chapter 4

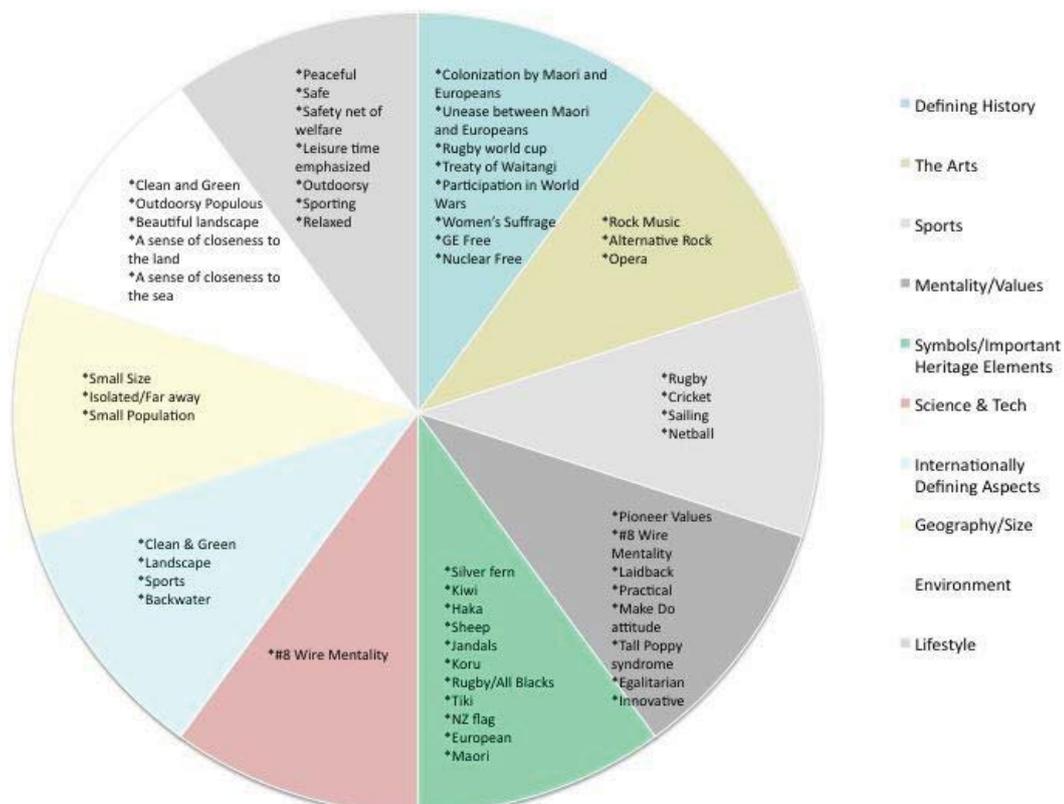
Cultural and National Identity Models: Qualitative Data

4.1 Introduction

In this chapter, we present a cultural/national identity model for each country investigated. Each figure shows ten categories of cultural/national identity, and within each category the relevant elements derived from the interview data are listed. Each figure is colour coded to enable the category to be identified easily. By comparing New Zealand cultural/national identity with those of other nations, lessons can be learned. In this chapter the models will be presented and any potential messages regarding New Zealand’s innovation landscape that might be garnered via comparison will be highlighted. As the ‘Takeaway Points’ from the international models were often found in more than one model, these messages will be presented in one ‘Takeaway Points’ section (rather than after each individual model) in order to avoid being repetitive.

4.2 New Zealand Cultural/National Identity Model

Figure 4.1: New Zealand Cultural/National Identity

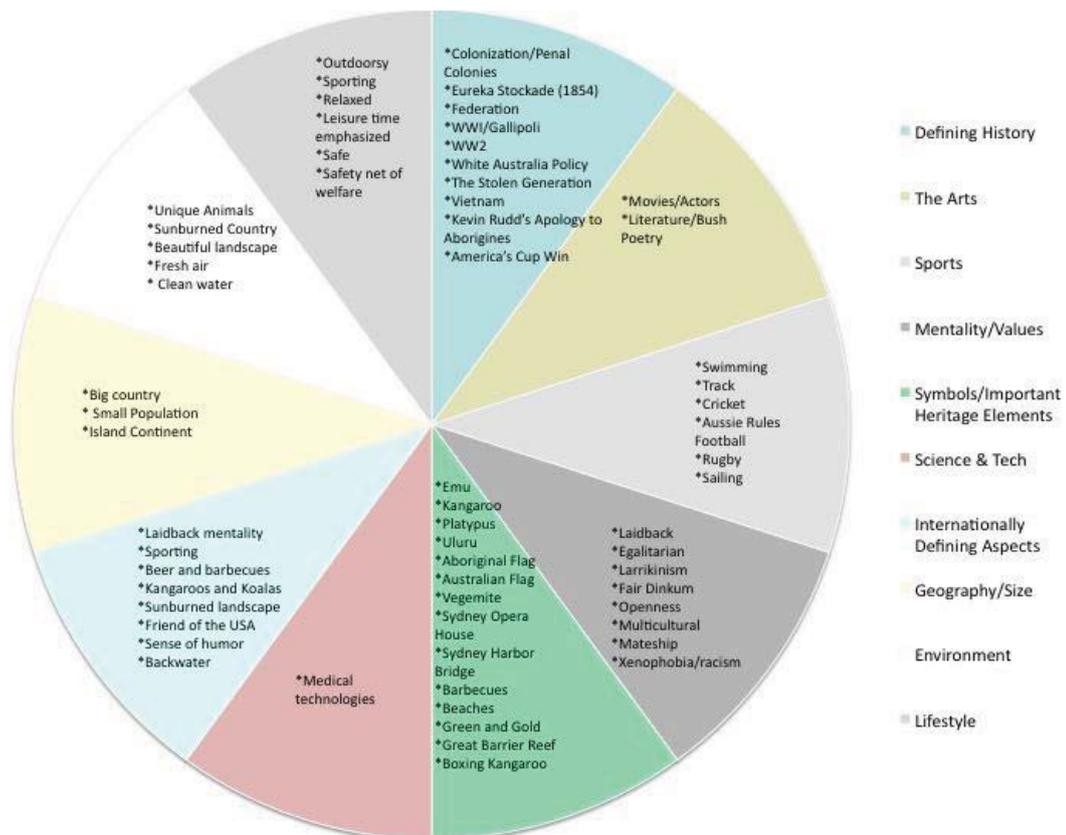


- Within the mentality and values section, New Zealand shows a number of characteristics suggesting that New Zealand would be an innovative nation including a #8 wire mentality (being able to make something out of nothing) and the belief that kiwi’s are in general quite innovative.
- The idea of being a #8 Wire nation is part of New Zealand’s science and technology identity.

- New Zealand’s landscape, being clean and green, sports and New Zealand as a backwater are elements believed to define New Zealand within the international community. Innovation is not a defining aspect.
- As New Zealand’s clean/green identity and sport identity define the nation within the international community these would be optimal areas for New Zealand to innovate it. In this way the nation could build upon the nation’s already existing strengths.

4.3 Australia Cultural/National Identity Model

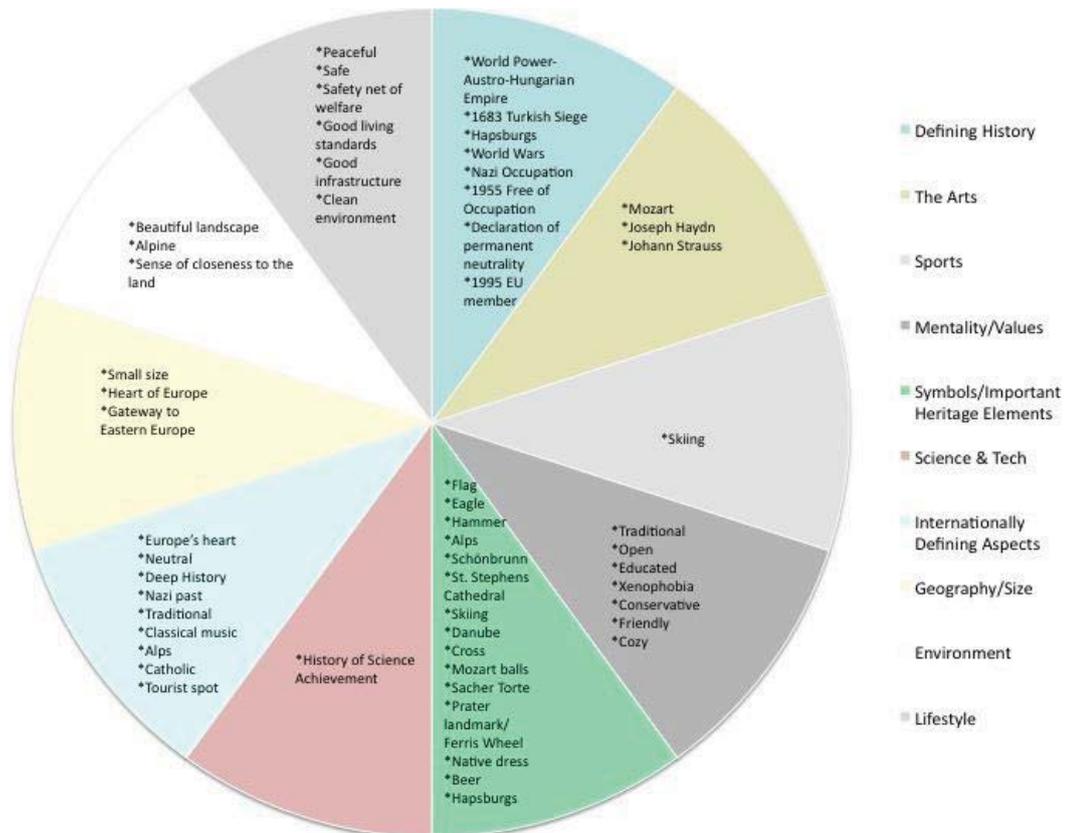
Figure 4.2: Australian Cultural/National Identity



- Medical technologies are the primary component of the Australian science and tech identity.

4.4 Austria Cultural/National Identity Model

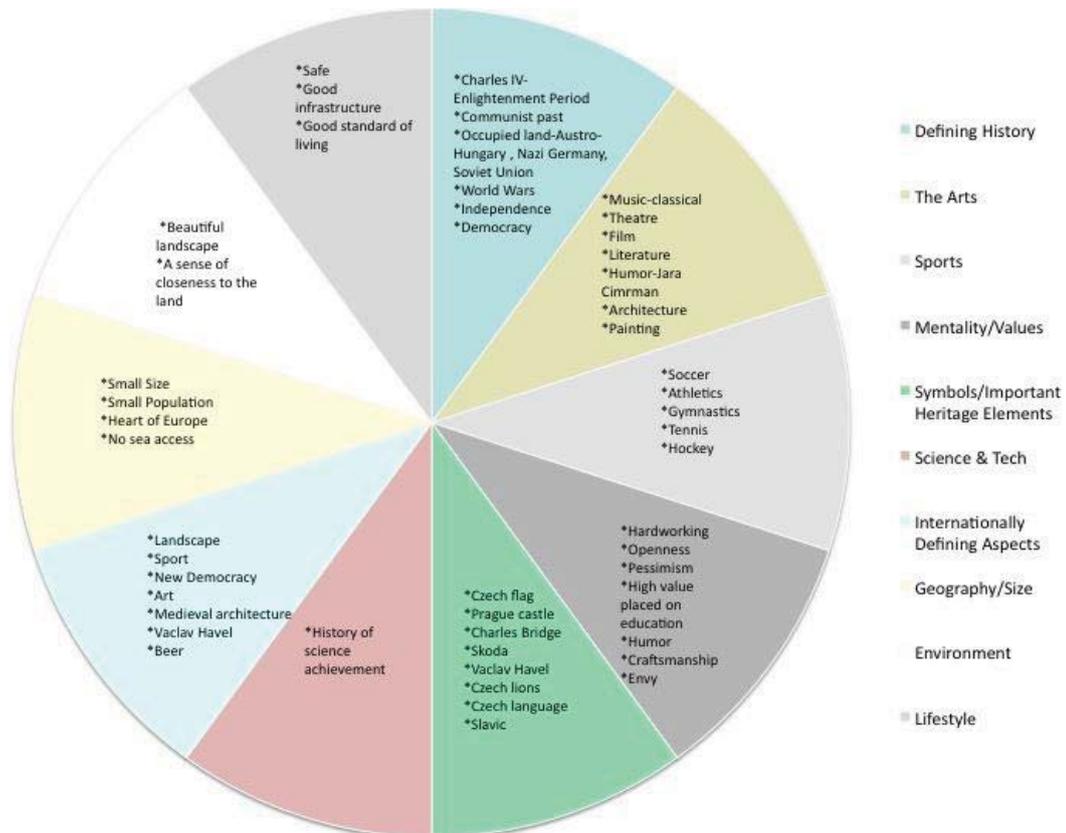
Figure 4.3: Austrian Cultural/National Identity



- With respect to innovation, Austria has a history of scientific achievement to draw upon. Education is also highly valued. Together these create an environment conducive to scientific achievements.

4.5 Czech Cultural/National Identity Model

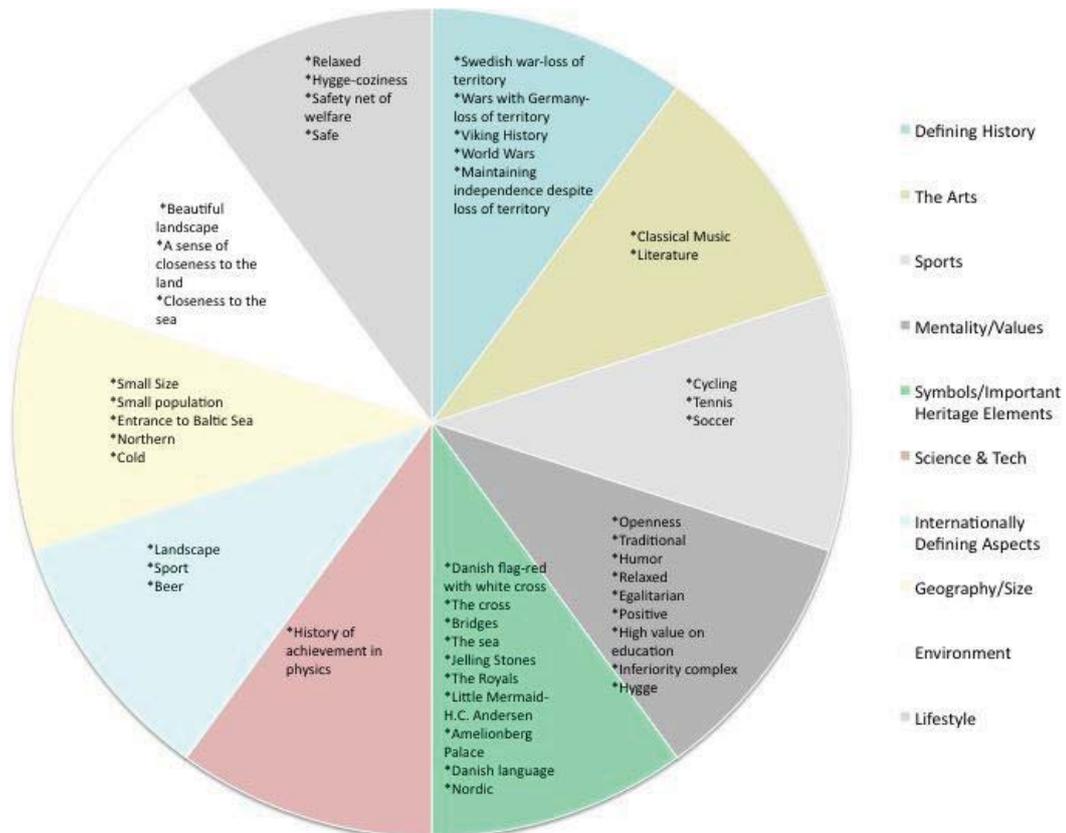
Figure 4.4: Czech Cultural/National Identity



- With respect to innovation, the Czech Republic has a history of scientific achievement to draw upon. Education is also highly valued. Together these create an environment conducive to scientific achievements.
- Within the mentality/values category, craftsmanship is emphasized, pointing to the production of high quality products.

4.6 Denmark Cultural/National Identity Model

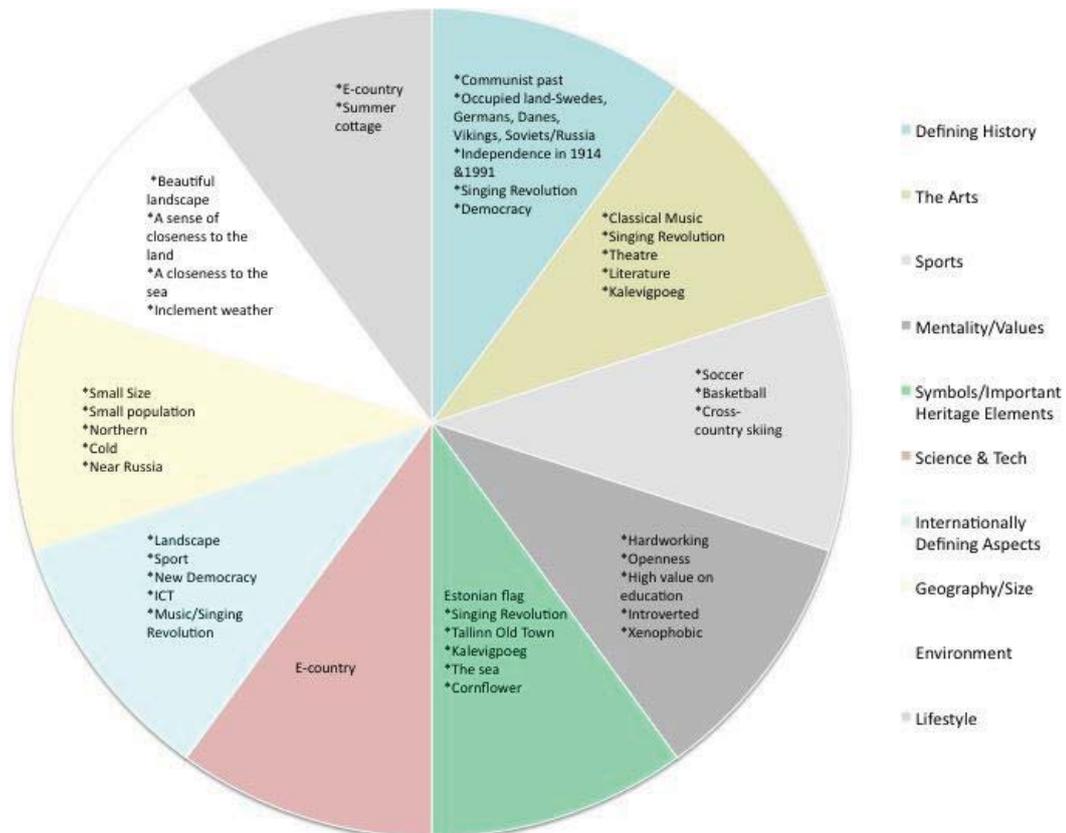
Figure 4.5: Danish Cultural/National Identity



- With respect to innovation, Denmark has a history of achievement in physics to draw upon. Education is also highly valued. Together these create an environment conducive to scientific achievement.

4.7 Estonia Cultural/National Identity Model

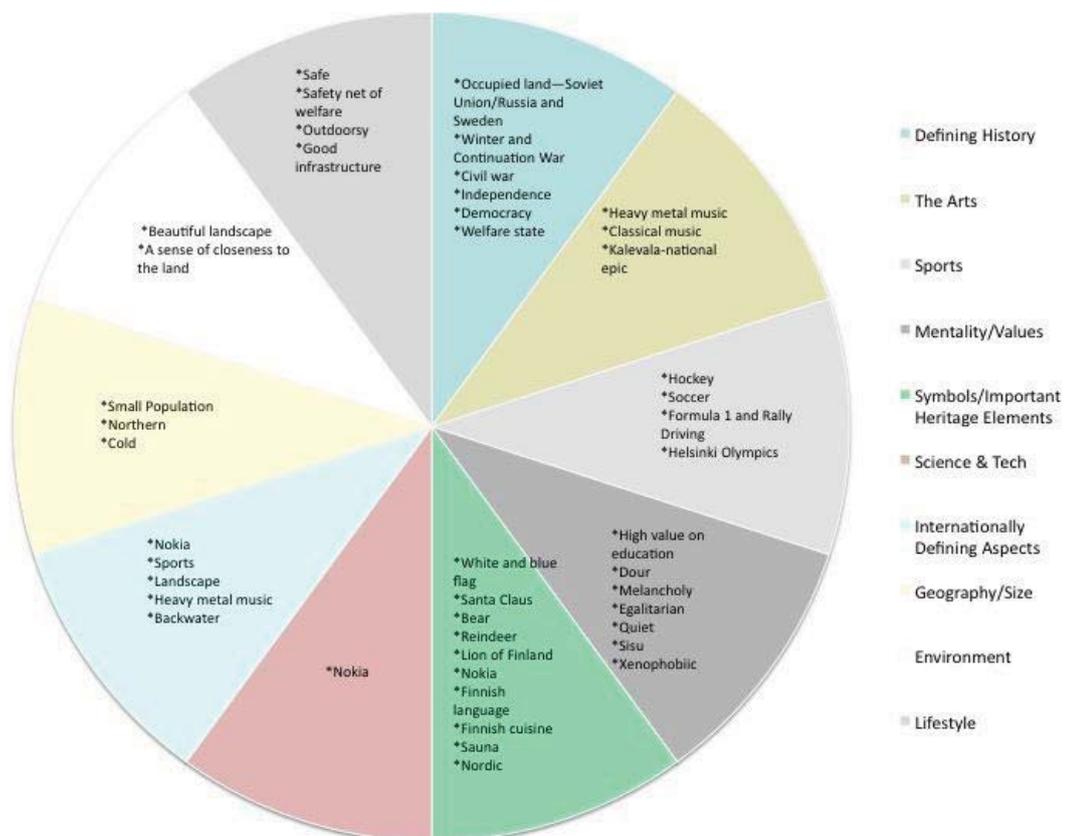
Figure 4.6: Estonian Cultural/National Identity



- Estonia's science and tech identity is that of an e-country and being an e-country has become an acknowledged part of the Estonian lifestyle. As a nation with a relatively recent communist past, this e-country identity has developed in a very short time period.
- Estonian's place a high value on education and has an educated populous to draw on in its innovation endeavors.

4.8 Finland Cultural/National Identity Model

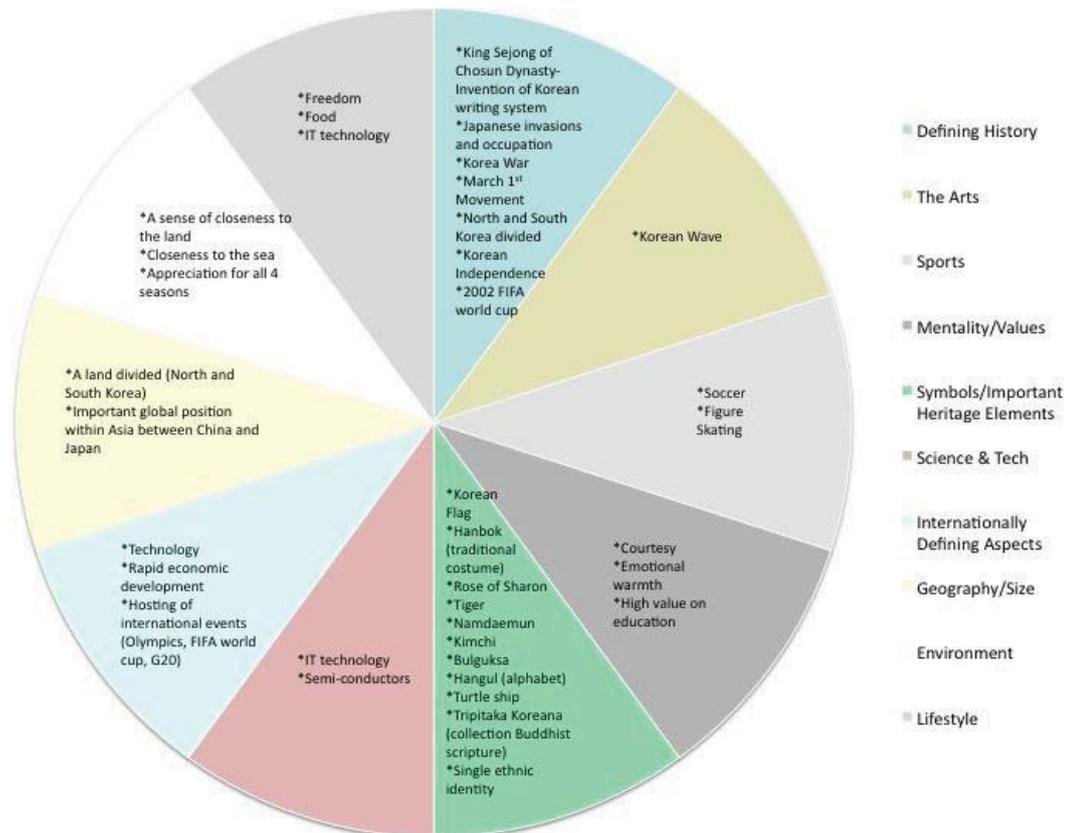
Figure 4.7: Finnish Cultural/National Identity



- With respect to mentality and values, the Finns value education and thus have an educated populous to draw on in their innovation endeavors.
- Nokia, an innovative telecommunications company, is considered a national symbol of Finland as well as representing the nation's science and technology identity.
- Nokia is a company that defines Finland within the international community.
- Finland lacks a history of scientific achievement and has risen in the innovation ranks relatively recently and quickly. Nokia is one reason for the ascent.

4.9 South Korea Cultural/National Identity Model

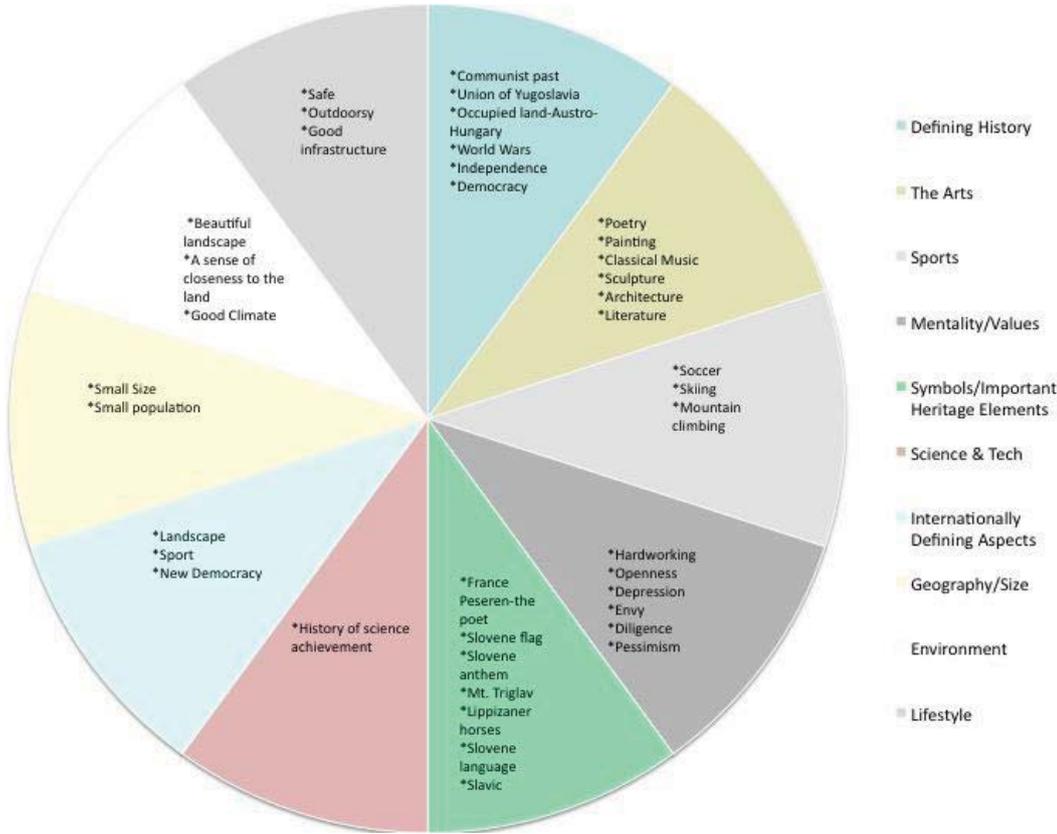
Figure 4.8: South Korean Cultural/National Identity



- With respect to mentality and values, the South Koreans value education and thus have an educated populous to draw on in their innovation endeavors.
- Technology is an internationally defining element for South Korea.
- With a turbulent history which was a detrimental to innovation in many ways, South Korea has risen in the innovation ranks relatively recently and quickly.
- IT technology and semi-conductors dominate the South Korean science and tech identity.
- IT technology is a prominent component of the South Korean lifestyle.

4.10 Slovenia Cultural/National Identity Model

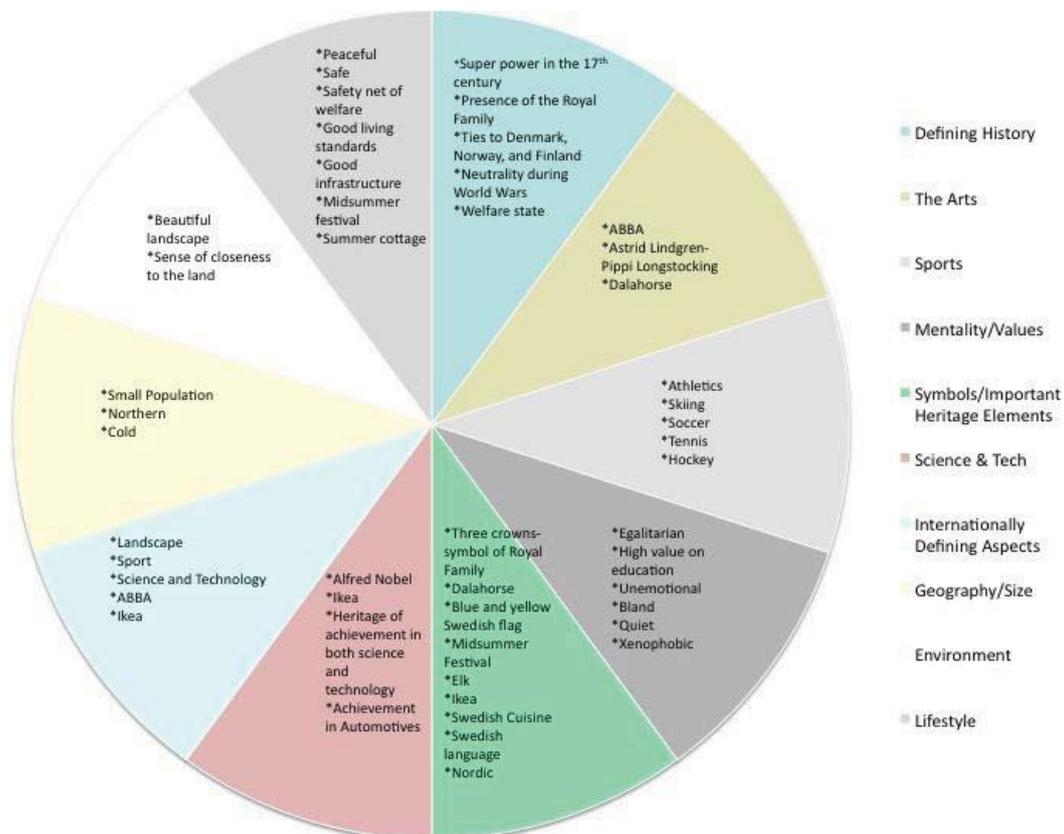
Figure 4.9: Slovenian Cultural/National Identity



- Slovenia has a history of scientific achievement to draw on in the nation’s current innovation endeavors.
- The national mentality in which hardwork and diligence is emphasized may be conducive to innovation.

4.11 Sweden Cultural/National Identity Model

Figure 4.10: Swedish Cultural/National Identity



- With respect to innovation, Sweden has a history of science and technology achievement to draw upon. Education is also highly valued. Together these create an environment conducive for scientific achievements.
- Ikea, an innovative furniture company, is considered a national symbol of Sweden as well as representing a key aspect of the nation's science and technology identity.
- Prowess in science and technology is one element that defines Sweden within the international community.

4.12 Conclusion

By comparing the presences and absences present in the New Zealand model with the models from other nations, a number of takeaway points for New Zealand can be discerned. These are points that should be considered in the formation of government policy initiatives directed at New Zealand innovation.

- Although New Zealand lacks a history of scientific achievement and cannot create one overnight, the level of emphasis New Zealand places on education can be changed through pointed government initiatives. In many of the case study countries education was highly emphasized. An increased focus on education may in turn, help provide a base on which future scientific achievement can be built.

- As seen in Sweden and Finland, New Zealand only needs one high profile company to gain international recognition as being a highly innovative nation.
- Sweden and South Korean are internationally known for innovation and technology, respectively. A targeted national and international campaign to boost New Zealand's reputation as being innovative or a producer of great technology might be beneficial.
- A history of scientific achievement is not a prerequisite for being innovative. Via directed government programs a country can increase its innovation levels significantly in a relatively short period of time as was done in Estonia, Finland and South Korea.
- It may be prudent for New Zealand policy-makers to look at South Korean, Finnish and Estonian policy to ascertain how these nations garnered a reputation as being innovative in a relatively short period of time.
- Within South Korea, technology is considered a part of the South Korean lifestyle. Increasing the caliber and level of technology utilized within New Zealand society and having it become a part of the NZ lifestyle might be of benefit to increasing New Zealander's belief that the nation is innovative.
- Within the New Zealand mentality/values category, 'a make do' attitude is emphasized. This is the polar opposite of a craftsmanship mentality (as seen in the Czech model) and is not well suited to those kinds of innovation which require a certain attention to detail.
- Medical technologies are what define Australia as far as science and technology identity. This is an important difference from New Zealand which has the very general #8 wire mentality defining the nation as far as science and tech. It may be prudent for New Zealand to find a focal area of technology on which to focus and gain a name for the nation. New Zealand is quite innovative with respect to agriculture but agriculture lacks the charisma and high profile of medical or IT-type technologies. These technologies often gain significant media attention and/or are used on a day-to-day basis by the general populous and, thus, are on the forefront of people's minds.

Chapter 5

Cultural and National Identity Models: Quantitative Data

5.1 Introduction

In the last chapter we examined the cultural/national identities of each of our chosen countries, presented in a pie chart format, and discussed them in a qualitative manner. In this chapter, we will look at the same material but through a quantitative lens using some basic counts. This allows us to identify views commonly held across most nations and to identify what is unique to a nation. This chapter also gives close attention to what makes New Zealand's identity unique and what countries are most similar to New Zealand.

5.2 Counts by category

This section presents counts of items in the ten categories of culture/national identity for each country studied. All listed items are derived from interviewer responses and were not predetermined. Table 5.1 reports counts of 'historically defining' elements. The most cited 'historically defining' elements were wars (eight out of ten), occupation by a foreign nation (six out of ten), and gaining independence (five out of ten). Across countries, South Korea had the most items (seven).

Table 5.1: Defining history by country

	New Zealand	Australia	Austria	Slovenia	Estonia	Finland	Sweden	Czech Republic	Denmark	South Korea	Total
Colonization	1	1									2
Ethnic uneasiness	1	1									2
Foundation treaties	1										1
Wars	1	1	1	1		1		1	1	1	8
World Political Stance	1										1
Sports Victory/Events	1	1								1	3
Federation		1									1
Civil unrest events		1								1	2
Dominance as a world power			1				1				2
Royal family			1				1				2
Occupation by a foreign nation			1	1	1	1		1		1	6
Declaration of neutrality			1				1				2
EU membership			1								1
Communist past				1	1			1			3
Gaining independence				1	1	1		1		1	5
Gaining democracy				1	1	1		1			4
Singing Revolution					1						1
Welfare state						1	1				2
Ties to nearby countries							1				1
Loss of territory									1		1
Maintaining independence									1		1
Significance of a historical period								1	1	1	3
North and South divide										1	1
Total	6	6	6	5	5	5	5	6	4	7	

Table 5.2 reports counts for aspects of ‘the arts’ identified by each country’s respondents as being important for culture/national identity. The most commonly cited aspects of ‘the arts’ were classical music/opera and literature/poetry (seven of ten). The second most frequently mentioned important component of ‘the arts’ was non-classical musical (four of ten). Across countries, the Czech Republic had the most items (seven), followed by Slovenia (five).

Table 5.2: The arts by country

	New Zealand	Australia	Austria	Slovenia	Estonia	Finland	Sweden	Czech Republic	Denmark	South Korea	Total
Music (non-classical)	1					1	1			1	4
Classical music or opera	1		1	1	1	1		1	1		7
Movies/Actors/Actresses		1						1			2
Literature/Poetry		1		1	1	1	1	1	1		7
Painting				1				1			2
Sculpture				1			1				2
Architecture				1				1			2
Theatre					1			1			2
Humor								1			1
Total	2	2	1	5	3	3	3	7	2	1	

Table 5.3 reports counts for sports identified by each countries respondents as being important for culture/national identity. Field sports were the most commonly cited sports (e.g. Rugby, soccer) (nine of ten). Alpine and winter sports were the second most cited sports (e.g. skiing, figure skating) (seven of ten). Sports played on a court were the third most cited sport type (e.g. tennis) (five of ten). Across countries, Czech respondents identified the most items (five) and Austria the least (one).

Table 5.3: Sports by country

	New Zealand	Australia	Austria	Slovenia	Estonia	Finland	Sweden	Czech Republic	Denmark	South Korea	Total
Water	1	1									2
Field	1	1		1	1	1	1	1	1	1	9
Court	1				1		1	1	1		5
Alpine/Winter			1	1	1	1	1	1		1	7
Motor						1					1
Track		1					1	1			3
Olympics						1					1
Gymnastics								1			1
Cycling									1		1
Total	3	3	1	2	3	4	4	5	3	2	

Table 5.4 reports counts for ‘mentality and value’ elements by country. The most mentioned element was ‘high value on education’ (seven of ten). This factor was not mentioned by New Zealand respondents. The second and third most mentioned items were ‘openness’ (six of ten), ‘xenophobia’ (five of ten) and egalitarianism (five of ten).

Table 5.4: Mentality and values by country

	New Zealand	Australia	Austria	Slovenia	Estonia	Finland	Sweden	Czech Republic	Denmark	South Korea	Total
Pioneer values	1										1
Laidback	1	1							1		3
Practical	1										1
Make do attitude	1										1
Tall poppy	1										1
Egalitarian	1	1				1	1		1		5
Innovative	1										1
Irreverence		1									1
Fair Dinkum		1									1
Openness		1	1	1	1			1	1		6
Multicultural		1									1
Mateship		1									1
Xenophobia		1	1		1	1	1				5
Traditional			1						1		2
High value education			1		1	1	1	1	1	1	7
Conservative			1								1
Cozy			1								1
Hardworking				1	1			1			3
Depression				1							1
Envy				1				1			2
Diligence				1							1
Pessimism/Melancholy				1		1		1			3
Introverted					1						1
Dour						1					1
Quiet						1	1				2
Bland							1				1
Strength of character						1					1
Unemotional							1				1
Humor								1	1		2
Craftsmanship								1			1
Positive									1		1
Inferiority complex									1		1
Hygge									1		1
Courtesy										1	1
Emotional warmth										1	1
Total	7	8	6	6	5	7	6	7	9	3	

Table 5.5 reports counts for symbols/heritage elements by country. The flag was the most commonly mentioned item (ten of ten countries). Fauna and a specific ethnic group were the second most mentioned elements (seven of ten) followed by language, an architectural structure or a prominent person/family (six of ten). Across countries, Swedish and South Korean respondents identified the most items (ten).

Table 5.5: Symbols and important heritage elements by country

	New Zealand	Australia	Austria	Slovenia	Estonia	Finland	Sweden	Czech Republic	Denmark	South Korea	Total
Flora	1				1					1	3
Fauna	1	1	1	1		1	1			1	7
Clothing/shoes	1		1							1	3
Ethnic symbol	1						1		1		3
Sports/sports teams	1		1								2
Flag	1	1	1	1	1	1	1	1	1	1	10
Ethnic group	1			1		1	1	1	1	1	7
Natural landmark		1	1	1	1				1		5
Architectural landmark		1	1		1			1	1	1	6
Food		1	1			1	1			1	5
Colors		1									1
Emblem			1			1	1	1			4
Company						1	1	1			3
Anthem		1		1							2
Person/family			1	1		1	1	1	1		6
Military symbol										1	1
Language				1		1	1	1	1	1	6
Literary item					1				1		2
National event/passtime (not sports)					1	1	1				3
Religious symbol/element									1	1	2
Total	7	7	9	7	6	9	10	7	9	10	

Table 5.6 reports counts for ‘science and technology’ elements identified by respondents as being important for culture/national identity. ‘A history of scientific achievement’ was the most frequently mentioned element (five of ten) followed by IT (two of ten). Most ‘science and technology’ elements of significance for culture/national identity were unique to the nation (i.e. mentioned for one of one countries). Swedish respondents identified the highest number of science and tech elements as being relevant to their culture/national identity (four).

Table 5.6: Science and technology by country

	New Zealand	Australia	Austria	Slovenia	Estonia	Finland	Sweden	Czech Republic	Denmark	South Korea	Total
#8 wire mentality	1										1
Medical technologies		1									1
History of science achievement			1	1			1	1	1		5
E-country					1						1
Nokia						1					1
History of technology achievement							1				1
Automotive achievement							1				1
Ikea							1				1
IT					1					1	2
Semiconductors										1	1
Total	1	1	1	1	2	1	4	1	1	2	

Table 5.7 reports counts for ‘Internationally defining’ elements by country. Landscape was the most frequently identified item (nine of ten) followed by sports (eight of ten). Music was the third most identified element (four of ten).

Table 5.7: Internationally defining aspects by country

	New Zealand	Australia	Austria	Slovenia	Estonia	Finland	Sweden	Czech Republic	Denmark	South Korea	Total
Clean & Green	1										1
Landscape	1	1	1	1	1	1	1	1	1		9
Sports	1	1		1	1	1	1	1	1		8
Laidback mentality		1									1
Barbecues		1									1
Fauna		1									1
Friend of USA		1									1
Sense of Humor		1									1
Backwater	1	1				1					3
Music			1		1	1	1				4
Religion			1								1
History			1								1
Europe's heart			1								1
Traditional			1								1
Tourism			1								1
New Democracy				1	1			1			3
ICT					1						1
Company						1	1				2
Science and technology							1			1	2
Art								1			1
Architecture								1			1
Beer								1	1		2
A person or family								1			1
International events										1	1
Rapid economic development										1	1
Total	4	8	7	3	5	5	5	7	3	3	

Table 5.8 reports counts for 'geography and size' elements identified by respondents as being important for culture/national identity. A small population was the most frequently mentioned element (eight of ten) followed by small geographical size (six of ten) and being northern and cold (four of ten).

Table 5.8: Geography and size by country

	New Zealand	Australia	Austria	Slovenia	Estonia	Finland	Sweden	Czech Republic	Denmark	South Korea	Total
Small population	1	1		1	1	1	1	1	1		8
Isolated position	1										1
Small size geographically	1		1	1	1			1	1		6
Big country geographically		1									1
Island continent		1									1
Heart of Europe			1					1			2
Gateway to Eastern Europe			1								1
Northern					1	1	1		1		4
Cold					1	1	1		1		4
Near Russia					1						1
No sea access								1			1
Entrance to Baltic									1		1
Land divided										1	1
Important position in Asia										1	1
Total	3	3	3	2	5	3	3	4	5	2	

Table 5.9 reports counts for ‘environment’ elements identified by respondents as being important for culture/national identity. A ‘beautiful landscape’ and ‘a feeling of closeness to the land’ were the most frequently identified elements (nine of ten) followed by a ‘feeling of closeness to the sea’ (three of ten). Most ‘environment’ elements of significance for culture/national identity were unique to the nation (i.e., mentioned for one of one countries). New Zealand and Australian respondents identified the highest number of ‘environment’ elements as being relevant to their culture/national identity (five).

Table 5.9: Environment by country

	New Zealand	Australia	Austria	Slovenia	Estonia	Finland	Sweden	Czech Republic	Denmark	South Korea	Total
Clean and green	1										1
Outdoorsy populous	1										1
Beautiful landscape	1	1	1	1	1	1	1	1	1		9
Closeness to land	1		1	1	1	1	1	1	1	1	9
Good climate				1							1
Closeness to sea	1				1					1	3
Inclement weather					1						1
Unique animals		1									1
Sunburned		1									1
Fresh air		1									1
Clean water		1									1
Alpine			1								1
Appreciation of all four seasons										1	1
Total	5	5	2	3	4	2	2	2	2	3	

Table 5.10 reports counts for ‘lifestyle’ elements identified by respondents as being important for culture/national identity. ‘Being safe’ was the most frequently mentioned element (eight of ten) followed by ‘the safety net of welfare’ (six of ten). Being ‘outdoorsy’ and possessing a ‘good infrastructure’ were the next most frequently mentioned elements (four of ten). Swedish and New Zealand respondents identified the highest number of ‘lifestyle’ elements as being relevant to their culture/national identity (seven).

Table 5.10: Lifestyle by country

	New Zealand	Australia	Austria	Slovenia	Estonia	Finland	Sweden	Czech Republic	Denmark	South Korea	Total
Peaceful	1		1				1				3
Safe	1	1	1	1		1	1	1	1		8
Safety net of welfare	1	1	1			1	1		1		6
Leisure time emphasized	1	1									2
Outdoorsy	1	1		1		1					4
Sporting	1	1									2
Relaxed	1	1							1		3
Good living standards			1				1	1			3
Good infrastructure				1		1	1	1			4
E-country/IT technology					1					1	1
Summer cottage					1		1				1
Midsummer festival							1				1
Hygge									1		1
Food										1	1
Freedom										1	1
Total	7	6	4	3	2	4	7	3	4	3	

5.3 A focus on New Zealand

Table 5.11: New Zealand Cultural/National Identity elements shared by other countries

	New Zealand	Australia	Austria	Slovenia	Estonia	Finland	Sweden	Czech Republic	Denmark	South Korea
Defining History										
Colonization	1	1								
Ethnic uneasiness	1	1								
Sports event	1	1								1
Foundation treaties	1									
Wars	1	1	1	1		1		1	1	1
World political stance	1									
The Arts										
Music (non-classical)	1					1	1			1
Classical music or opera	1		1	1	1	1		1	1	
Sports										
Water	1	1								
Field	1	1		1	1	1	1	1	1	1
Court	1				1		1	1	1	
Mentality/Values										
Pioneer values	1									
Laidback	1	1							1	
Practical	1									
Make do attitude	1									
Tall poppy	1									
Egalitarian	1	1					1		1	
Innovative	1									
Symbols/Heritage Elements										
Flora	1				1					1
Fauna	1	1	1	1		1	1			1
Clothing/shoes	1		1							1
Ethnic symbols	1						1		1	
Sports/sports teams	1		1							
Flag	1	1	1	1	1	1	1	1	1	1
Ethnic group	1			1		1	1	1	1	1
Science and Tech										
#8 Wire	1									
Internationally Defining Aspects										
Clean & Green	1									
Landscape	1	1	1	1	1	1	1	1	1	
Sports	1	1		1	1	1	1	1	1	
Backwater	1	1				1				
Geography/Size										
Small population	1	1		1	1	1	1	1	1	
Isolated position	1									
Small size geographically	1		1	1	1			1	1	
Environment										
Clean and green	1									
Outdoorsy populous	1									
Beautiful landscapes	1	1	1	1	1	1	1	1	1	
Closeness to land	1		1	1	1	1	1	1	1	1
Closeness to sea	1				1					1
Lifestyle										
Peaceful	1		1				1			
Safe	1	1	1	1		1	1	1	1	
Safety net of welfare	1	1	1			1	1		1	
Leisure time emphasized	1	1								
Outdoorsy	1	1		1		1				
Sporting	1	1								
Relaxed	1	1							1	
Totals	45	21	13	14	12	16	16	13	18	11

Of the nine other countries surveyed, Australia shares the most culture/national identity elements with New Zealand (21 of 45 elements). Denmark shares the second most culture/national identity elements with New Zealand (18 of 45 elements) followed closely by Sweden and Finland (16 of 45 elements).

There are several identity factors that are found in the New Zealand model and no other. These include: Foundation treaties and world political stance as defining historical elements; pioneer values, practicality, a made do attitude, the tall poppy syndrome and notions of innovativeness within the mentality and values element; a #8 wire mentality as an important science and technology element; clean and green and an outdoorsy populous as important environment elements; and an isolated position as being important with respect to geography.

The table also shows the elements New Zealand shares with most other nations evaluated. These include: landscape and sport as internationally defining aspects; small population and small size being recognized as geographically important; belief that one's country has a beautiful landscape and feelings of closeness to the land; wars as defining historical elements; the flag as an important national symbol; and safety as an important lifestyle element.

5.4 Conclusions

Given that Australia is the most similar to New Zealand of the countries surveyed, but shares less than half of New Zealand's identity elements one can arguably surmise that New Zealand has a unique culture/national identity. While much can be learned from the innovation policies of other nations, care must be taken when transferring these ideas to New Zealand given the cultural differences between the nations. When looking at what innovation initiatives might suit New Zealand from a cultural standpoint, Australia may be an important place to look as they are somewhat similar to New Zealand.

Chapter 6

Conclusion

6.1 Introduction

The objective of the research presented in this report was to devise cultural/national identity models for selected countries and focus on cross-cultural comparisons of these identities. The main rationale for this research objective was to provide a basis for comparison across nations in order to better understand the uniqueness of New Zealand's cultural/national identity situation. Data were obtained from ten countries using CASI and an internet survey, and the data were analysed both qualitatively and quantitatively.

6.2 Implications for New Zealand identity

A qualitative and quantitative assessment of the cultural/national identity models for New Zealand and our nations of interest show that New Zealand is indeed unique with respect to cultural/national identity. Australia is the nation most similar to New Zealand yet shares less than half of the same identity elements. Given New Zealand's unique characteristics it is important to take care in making recommendations on innovation policy based on findings from other nations. That said, an analysis of the cultural/national identity models from our nations of interest can point to areas that should be considered when developing future innovation policy for New Zealand. In the following paragraphs we reiterate some of the more important takeaway messages derived from the models.

A comparative look at the research models suggest that an increased focus on education within New Zealand may be important for future innovation success. All nations surveyed (except Slovenia and New Zealand) sited education as being an important part of the nation's mentality and values. With its tall poppy syndrome in which high academic achievers are not valued, it can be argued that New Zealand deemphasizes education. Something needs to be done to change the way education is viewed.

Although New Zealand lacks a history of scientific achievement, the models from Finland, Estonia, and South Korea suggest that directed government programs, if applied correctly, can transform a nation into an innovation leader within a relatively short period of time. Further, a single internationally recognized company known for innovation can significantly boost a nation's image as an innovator within the global community.

As previously discussed in the introductory chapter, Skilling's (2010) article highlights how important innovation is considered to be for national-level success and points to the importance of innovation as a part of national identity in general, and New Zealand national identity in particular. By looking at the cultural/national identity model for New Zealand, we are in a position to assess the effectiveness of the government's focus on innovation and whether or not the rhetoric about innovation and economic growth has translated into widespread acceptance of innovation as part of New Zealand's national identity.

The model suggests that a notion of innovativeness is accepted as part of the New Zealand cultural/national identity (e.g., #8 wire and innovativeness showing up in the mentality and values section of the model). This is an innovativeness characterized as 'being able to think outside the box' and 'make something out of nothing'. This conception is of a different character than that promoted by the government (i.e., innovation as the creation of a new product for which an economic return will be gained). Thus, the model suggests the government's innovation rhetoric has not been adopted into the New Zealand cultural/national identity.

6.3 Future research

Based on the findings from this report there are a number of areas for future research:

- Only one Asian nation was included in this report. Other Asian nations that might be of interest include Taiwan, Singapore and Malaysia. Although most New Zealanders are of European heritage, the nation is located in the Pacific Rim and learning about the cultural/national identity of prospective competitors and trading partners within the Pacific Rim would be very useful.
- Research looking at how governments and businesses can mitigate cultural aspects that are not conducive to innovation would be of benefit.
- Research looking into the innovation policies of Finland, South Korea and Estonia could be of benefit, as these nations have developed into what can be characterized as innovative societies within a relatively short period of time.

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Appendix 1

Open-Ended Questions for Computer-Assisted Survey

Agribusiness and Economics Research Unit

PO Box 84, Lincoln University
Canterbury 8150, New Zealand

Telephone 64 3 321-8291

Facsimile 64 3 325-3847

www.lincoln.ac.nz

E-mail: John.Fairweather@lincoln.ac.nz

Dear Respondents,

The study in which you are about to participate is part of a research programme at Lincoln University in New Zealand in which innovation is being studied across multiple nations. The following interview is divided into four sections. The first three sections ask about culture, national identity and innovation, respectively. In the fourth section, a series of scales are given and you are asked to indicate either level of agreement with, or importance of, a given statement. None of the questions posed in any of the four sections have a right or wrong answer. We are merely seeking your opinion.

We appreciate you taking time out of your schedule to aid us in our research.

Sincerely,

Dr. John Fairweather and Dr. Tiffany Rinne.

Instructions:

1. Please complete this computer-based interview in one sitting and keep track of the time spent in completing the interview. At the end of the interview we ask you to record this time.
2. We ask that you do not use additional resources (friends, the internet, reference books) to answer any of the questions. We are seeking information about your opinions and thoughts—things that are on the top of your mind.
3. Please take care to answer each question completely. Some questions have multiple components.
4. Please answer each question as fully as possible, keeping in mind that the researcher analysing the interviews is not a citizen of your country and therefore will not necessarily be aware of the significances of certain events, people, or ideas.
5. We would prefer your answers to be in **English** but if you find you have to use your **own language**, please do so.
6. Upon completion of the interview, please e-mail the interview as an attachment to tiffanyrinne76@gmail.com

Culture - A culture is a way of life of a group of people--the behaviours, beliefs, values, and symbols that they accept, generally without thinking about them, and that are passed along by communication and imitation from one generation to the next.

1. Please name five popular people that you consider represent your country's true values or ideals. After each name please describe what values or ideals each person represents.
2. Please name five important symbols used in your country's culture, as a whole. What does each symbol represent?
3. Please give five examples of sayings/phrases that best reflect your country's culture. What does this saying/phrase mean?
4. Please give five examples of important historical events that have influenced your country's culture. What is the significance of each historical event?
5. What role does technology play in your country's culture? Please explain how technology is significant or not significant.
6. Who are important people in science and technology within your country? What are they known for?
7. What role does sport play in your country's culture? Please explain how sport is significant or not significant.
8. What role do the 'arts' play in your country's culture? By the 'arts' we mean music, theatre, dance, movies, painting, writing, sculpture etc. Please explain how the 'arts' are significant or not significant.
9. Who are important people in sports for your country? What are they known for?
10. Who are important people in the arts for your country? What are they known for?
11. If you had to describe your country's culture using five words or phrases to best characterize it what would they be?

National Identity - National identity derives from the image citizens have of their country and the nation's perceived or actual international image in world opinion.

12. How would you characterize your country's national identity?
13. How do you think your country is identified internationally?
14. What are the things you like most about living in your country? Please name at least five positives about living in your country.
15. What are the things you like least about living in your country? Please name at least five negatives about living in your country.
16. What historical events played an important part in the formation of your country's national identity? Please explain how each event influenced national identity.
17. What sporting achievements are important to your country's national identity? Why are these achievements important?
18. What arts achievements are important to your country's national identity? Why are these achievements important?
19. What science and technology achievements are important to your country's national identity? Why are these achievements important?
20. What kind of political influence does your country have in the international community? Is this an important factor in national identity? Why or why not?
21. How significant is your country's military to national identity? In what way is the military significant or not significant for national identity?
22. How would you like your country's military to be utilized?
23. If you had to describe your country using five words or phrases what would they be?

Innovation - A new idea, system, method, or device that is brought to market

24. How important is innovation and technology to your country? Please explain how it is significant or not significant?
25. Do you think that the average citizen of your country is technologically knowledgeable? What improvements could be made?

26. What are five characteristics (personality attributes) of your country's citizens that you think make them good at innovation? These would be characteristics possessed by a majority of citizens.
27. What are five characteristics (personality attributes) of your country's citizens that would constrain innovation? These would be characteristics possessed by a majority of citizens.
28. Has your country's history influenced your country's innovation in any way? Please explain.
29. What are some significant sectors, companies or products that have been innovative within your country? Please explain how each has been innovative (inventive ideas/processes/products, inventive business planning, innovative marketing, design).
30. Is your place of work innovative? If so, in what ways?
31. Would you feel comfortable talking with your boss about ideas you may have regarding ways to innovate? Why or why not?
32. Have you ever invented anything or known someone who has? If so, what was it and was it successful?
33. Would producing an invention be something you could see yourself doing in the future? What would stop you from trying to invent something?
34. Where does most innovation occur in your country? For example, does it occur in businesses, research institutes, universities, or people's backyard?
35. How easy would it be for an individual with an invention to bring it to market? What impediments would they face?
36. What are the main factors that would drive a person to invent something and bring it to market?
37. Do you consider invention to be a good way to enhance an individual's financial situation? Why or why not?
38. Are you aware of any government policies to support innovation within your country? If so, what are they and are they effective?
39. Do you think other countries consider your country to be innovative? If yes, in what way?
40. Please name the five countries that you consider to be the most innovative in the world. Taking each country in turn, why do you consider each of these nations to be innovative?
41. How does your country compare to these top innovators with regards to innovation?
42. What are specific areas in which your country is not as innovative as other nations?

Demographic Questions

1. Are you Male or Female?
 Male
 Female
2. What is your date of birth? _____
3. What is the highest level of education you have completed?
 Less than high school
 Lower High school
 Upper High School
 Trade/Vocational/Technical
 University
4. What is your occupation? _____
5. Are you in paid employment? _____
6. If yes, for you alone, what is your approximate monthly income? (please include the currency)-

7. What is your approximate household income? (please include the currency) _____
8. What is your primary language/mother tongue? _____
9. To which national culture do you most identify? _____
10. How long have you been living in the country where you now live? _____
11. How long did it take you to complete this computer-based interview? _____

Appendix 2

Open-Ended Questions for Qualtrics Survey

Agribusiness and Economics Research Unit

PO Box 84, Lincoln University
Canterbury 8150, New Zealand

Telephone 64 3 321-8291
Facsimile 64 3 325-3847

www.lincoln.ac.nz

E-mail: John.Fairweather@lincoln.ac.nz

Dear Respondents,

The study in which you are about to participate is part of a research programme at Lincoln University in New Zealand in which innovation is being studied across multiple nations. The following interview is divided into four sections. The first three sections ask about culture, national identity and innovation, respectively. In the fourth section, a series of scales are given and you are asked to indicate either level of agreement with, or importance of, a given statement. None of the questions posed in any of the four sections have a right or wrong answer. We are merely seeking your opinion.

We appreciate you taking time out of your schedule to aid us in our research.

Sincerely,

Dr. John Fairweather and Dr. Tiffany Rinne.

Instructions:

1. You may respond in your own language or in English.
2. Please complete this computer-based interview in one sitting and keep track of the time spent in completing the interview. At the end of the interview we ask you to record this time.
3. We ask that you do not use additional resources (friends, the internet, reference books) to answer any of the questions. We are seeking information about your opinions and thoughts—things that are on the top of your mind.
4. Please take care to answer each question completely. Some questions have multiple components.
5. Please answer each question as comprehensively as possible, keeping in mind that the researcher analysing the interviews is not a citizen of your country and therefore will not necessarily be aware of the significances of certain events, people, or ideas.
6. If you have any questions about the interview, please e-mail tiffanyrinne76@gmail.com for clarification.
7. Upon completion of the interview, please e-mail the interview as an attachment to tiffanyrinne76@gmail.com.

Culture - A culture is a way of life of a group of people--the behaviors, beliefs, values, and symbols that they accept, generally without thinking about them, and that are passed along by communication and imitation from one generation to the next.

1. Please name five popular people that you consider represent your country's true values or ideals. After each name please describe what values or ideals each person represents.
2. Please name five important symbols used in your country's culture, as a whole. What do each of these symbols represent?
3. Please give five examples of important historical happenings that have influenced your country's culture. Include a brief statement of the significance of each historical event for culture.
4. What role does technology play in your country's culture? Please explain why you think technology is significant or not significant.
5. Who are important people in science and technology within your country? What are they known for?
6. If you had to describe your country's culture using five words or phrases to best characterize it what would they be?

National Identity - National identity derives from the image citizens have of their country and the nation's perceived or actual international image in world opinion.

7. How would you characterize your country's national identity?
8. How do you think your country is identified internationally?
9. What are the things you like most about living in your country? Please name at least five positives about living in your country.
10. What are the things you like least about living in your country? Please name at least five negatives about living in your country.
11. What are achievements in science and technology that are important to your country's national identity? Why are these achievements important?
12. What kind of political influence do you feel your country has in the international community? Is this an important factor in national identity? Why or why not?

Innovation - A new idea, system, method, or device that is brought to market

13. How important is innovation and technology to your country? Please explain why it is significant or not significant?
14. Has your country's history influenced your country's innovation in any way? Please explain.
15. How easy would it be for an individual with an invention to bring it to market? What impediments would they face?
16. What are the main factors that would drive a person to invent something and bring it to market?
17. Do you think other countries consider your country to be innovative? In what way?
18. Please name the five countries that you consider to be the most innovative in the world. Taking each country in turn, why do you consider each of these nations to be innovative?

Demographic Questions

19. Are you Male or Female?

Male

Female

20. What is your date of birth? _____

21. What is the highest level of education you have completed?

Less than high school

Lower High school

Upper High School

Trade/Vocational/Technical

University

22. For you alone, what is your approximate monthly income? (please include the currency)-

23. What is your approximate household income? (please include the currency)-

24. What is your primary language/mother tongue? _____

25. To which national culture do you most identify? _____

26. How long have you been living in the country where you now live? _____

9. How long did it take you to complete this computer-based interview? _____

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