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International Market Segmentation: A Dynamic Approach

by

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INTERNATIONAL MARKET SEGMENTATION: A DYNAMIC APPROACH

Abstract

The main purpose of this study is to show that international markets are not stable over time and changeable market conditions affect international market segmentation. Our goal is to illustrate changes in the composition of segments and to represent that segments have a limited temporal stability, which has important implications for managers and decision makers.

In this paper, we apply cluster analysis by using 8 variables of market development and market size/potential. Our databases contain 132 countries from all over the world for 2000, 2010 and 2020. After analysis we found that compositions of clusters are not stable over time. Dynamic market conditions cause changeable clusters. This states that international market segments should change across years.

Our findings support the idea that clusters are not static, composition of clusters can change throughout years so dynamic approach should be given more attention. This study contributes to existing literature of international market segmentation in regards to dynamic approach.

1. Introduction

In the 21st century, with development in technology and communication, accessing to information got easier and international marketing has become one of the most vital issues for marketers. International business is directed in an increasingly globalized environment portrayed by fewer boundaries, developing rivalry, and greater chances for extension (Papadopoulos and Martin, 2011). Firms, which want to be profitable in the global and local markets, should focus on international and internationalization strategies. They have to pay attention to this pattern to globalization. Regardless of the fact that they choose not to be included in the worldwide (or pan-regional) marketplace, organizations still face expanded rivalry in their home markets as a result of nimble foreign competitors reaping the benefits of global strategies (Yip, 1995). Moreover, since usage of Internet became widespread, customers from all over the world can reach products of a company through Internet even though company does not have tangible stores in their countries. There are many companies that do not have any stores anywhere at all and they sell their products through Internet to worldwide. Therefore, these issues make international marketing crucial for companies.

There are some challenges about defining the foreign market and its components. When a company starts to operate in another country, managers have to analyze the new market very carefully. They should consider differences between consumers and they need to define them deliberately. The differences and similarities around nations are key in verifying which markets are suitable for entrance (Cavusgil, Kiyak and Yeniyurt, 2004). Firms, which are trying to expand abroad, are confronted with the complex task of screening and assessing outside markets (Cavusgil, Kiyak and Yeniyurt, 2004). Papadopoulos and Martin (2001) stated that “One strategic decision is the selection (Root, 1994; Sakarya et al., 2007) or segmentation (Day et al., 1988; Steenkamp and Ter Hofstede, 2002) of international markets – namely, the decision by which firms choose the markets, whether defined geographically or otherwise, in which to be present.”

One of the most important issues about the international marketing is international market segmentation. A major challenge confronting international marketers is to distinguish international market segments and achieve them with products and promoting programs that meet the common

needs of these consumers (Hassan and Katsanis, 1994). Firms are in need to define their segmentation strategies in order to be profitable and successful. Due to expanding rivalry in the global marketplace, international market segmentation has turned into a more critical issue in developing positioning and selling products across national borders (Ter Hofstede, Steenkamp and Wedel, 1999).

The motivation behind segmentation is to distinguish and serve individual customers who have similar necessities and behaviors (Wedel and Kamakura, 1998). This approach usually groups countries consistent with discrete environmental macro factors (such as current GDP, educational level, political system and/or stability, geographic region and/or proximity and energy consumption). The viability of this method is affected by such micro variables as the nature of the product and perhaps, more important the purchase orientations of consumers (Jain, 1990; Wills et al., 1991; Luqmani et al., 1994).

Segmentation issue is more critical in terms of international markets. Even in the same country, different consumer groups have different cultural, political and socioeconomic backgrounds. When international markets are being discussed, it can be said that these types of differences would be bigger among consumer groups. In such manner, with the globalization of the firms and the markets, international marketing became vital so firms need to follow up this new pattern. Also, they need to characterize their international market segmentation procedures so as to have the ability to be successful in the market. (Ter Hofstede, Steenkamp and Wedel, 1999).

There are different methods for international market segmentation and the most important one is cluster analysis. In previous studies, authors used cluster analysis for clustering the consumers or clustering the countries (Sethi, 1971; Huszagh, Fox, and Day, 1985; Cavusgil, 1990; Sriram and Gopalakrishna, 1991; Cavusgil, Kiyak and Yenyurt, 2004; Quinn, Hines and Bennis, 2007; Cleveland, Papadopoulos and Laroche, 2011).

Cavusgil et al. (2004) pointed out that “Clustering yields a group of countries with similar commercial, economic, political, and cultural dimensions. These similarities not only help managers compare the countries, but also provide information on possible synergies among markets. Clustering fills the need of determine the specific strategies to employ once the markets are chosen by placing countries into homogeneous groups with meaningful similarities. Also, it represents an excellent start

for country screening and evaluation. A firm that wishes to standardize offerings and marketing strategy across different markets should pay more attention to the results of the cluster analysis because this technique provides insights into structural similarities among markets. Cluster analysis can be powerful tool for segmenting world markets according to indicators relevant to a company's business prospects."

A key deficiency of the country segmentation methods in the marketing literary works is their static nature (Steenkamp & Ter Hofstede, 2002). Most of previous studies used static approach to international market segmentation and they defined one of their limitations as their static approach. As discussed by Steenkamp & Ter Hofstede (2002), "...Over time, the number of segments, segment sizes, and structural properties of international segments may change. To our knowledge, this issue has not received rigorous attention. [...] Dynamic solutions allow to integrate changes in the marketplace into the firm's marketing strategy, and to test substantive hypotheses concerning changes in the marketplace." According to Tang and Koveos (2008), economic situations, institutions and cultures develop in parallel, requiring a dynamic approach to examining these issues and adjusting research presumptions to developing conditions.

In this study, the main purpose is to show that international markets are not stable over time and changeable market conditions affect international market segmentation. We will use dynamic approach to international market segmentation in order to see differences in analysis for different times. Relatively little work has been carried out in regards to the dynamics of cross-national segment improvement, despite the numerous allusions to factors which would likely impact changes in segment structure (Cannon and Yaprak, 2010). This research will extend existing international market segmentation literature on this subject and will contribute to close the above-mentioned gap. We will use data from 2000 and 2010. With the help of the data from 2000 and 2010, we will estimate variables for 2020 and we also will apply cluster analysis on this data. With the dynamic perspective, we are able to repeat these analyses at any time in the future and detect changing market opportunities. Therefore, we aim to show that the resulting segments have a limited temporal stability. These findings have strong implication for managers and decision makers.

In this paper, first theoretical background is described. Second, we present the data and

methodology that we use and debate results and findings. In final part, we present discussion about topic and we define managerial implications, limitations and suggestions for the future research.

2. Literature Review

There are numerous studies about international market segmentation in the literature; we focus on these studies in this literature review. More specifically, we examine papers about country clustering method. For these analyses, it is important to choose correct segmentation bases so we want to study researches related to segmentation bases. Also, studies about dynamic approach to international market segmentation are investigated in this section.

2.1. International Segmentation Bases

During the 1950s, attention within the marketing literature initially concerned the choice of proper base variables that could also be used for the goal of identifying market segments (Martineau, 1958). The segmentation basis is a set of characteristics that are used to assign consumers to segments. Previous studies have used a wide variety of segmentation bases and segmentation methods. As discussed by Ter Hofstede and Steenkamp (2002), “Some studies used information on countries or regions within countries, aggregated across consumers to the country (or region) level or information pertaining to the countries (or regions) themselves (e.g., climate, legal regime). Other studies used disaggregate, individual-specific information of consumers.” Most early segmentation efforts were dependent upon macro considerations that incorporate variables, for example economic (Kotler, 1986); cultural (Whitelock, 1987); geographic (Daniels, 1987) and technological (Huszagh et al., 1986).

Some decades later, as the need for segmentation of global markets is coming to be widely recognized (Douglas and Craig, 1992), more attention turns into research for the appropriate bases for segmentation (Jain, 1987) and many different methods about the topic have been presented. For instance, in an early effort, Kale and Sudharshan (1987) draw on the idea of micro segmentation (Claycamp and Massy, 1968) to present a methodology of identifying strategically equivalent segments (SES) that aggregate consumers with intrinsic similarities crosswise over different nations.

Ter Hofstede et al. (1999) utilized means end chaining as a basis for recognizing groupings of relatively similar clients across national borders. In an alternate approach, a system for combining geographic areas from distinctive nations into cross-national segments was developed. (Ter Hofstede et al., 2002). Agarwal (2003) improves a model for utilizing survey data to estimate cross-national segments, their size, and their potential responsiveness to price or other marketing variables (Cannon and Yaprak, 2010).

Ter Hofstede and Steenkamp (2002) has stated that “ A key distinction can be made between general and domain-specific segmentation bases (Wedel and Kamakura, 1998). General bases are independent of the domain in question and can be further divided into observable and unobservable bases. Examples of general observable bases include geographic locations (regions, countries), economic indicators, political characteristics, and demographics. Two key instances of general unobservable bases are consumer values and life-styles. Domain specific bases such as brand penetration rates, attitudes, benefit importance or domain-specific attitudes, depend on the particular domain/product.”

Also, Ter Hofstede and Steenkamp (2002) pointed out that, “Six criteria commonly used to evaluate segmentation bases (Wedel and Kamakura, 1998) are: identifiability (extent to which distinct segments can be identified), substantiality (related to segment size), accessibility (degree to which segments can be reached with promotional and distributional efforts), stability (temporal dynamics of segments), actionability (extent to which the segments provide a basis for the formulation of effective marketing strategies), and responsiveness (whether segments respond uniquely to marketing efforts targeted at them)”

Nonetheless, general segmentation bases (e.g. market attractiveness and consumer values) are independent of concrete objects and are more stable and persisting than domain particular variables (e.g. technological and economic characteristics of the industry, consumer benefits in utilizing particular items) which implies that they can provide decision makers with general and enduring guidance for international marketing and communication strategies (Van Raaij and Verhallen, 1994; Gaston-Breton and Martin 2011).

2.2. Country Clustering

In the literature we can observe that one of the method of international market segmentation is cluster analysis. Many studies have represented the use of clustering. Some researchers recommend them as a preliminary step, while others suggest them for ultimate country selection or market segmentation (Cavusgil, Kiyak and Yeniyurt, 2004). Table 1 provides an overview of the country clustering studies.

Table 1: An overview of the country clustering studies

Author/ Date	Segmentation Basis	Sample	Method	Approach	Results
Sethi (1971)	Cultural, political, socioeconomic and religious indicators	91 countries according to 29 variables	Cluster analysis	Static Approach	4 variable clusters and 7 country clusters are identified
Hofstede (1980)	Four categories of cultural difference	Data from surveys of employees in 40 countries at the Hermes Corporation in 1968 and 1972	Cluster analysis with dynamic approach	Static Approach	8 different groups are defined
Huszagh et al. (1985)	9 country characteristics reflecting economic development	21 countries classified as major industrial markets by the World Bank	Cluster analysis on country scores	Static Approach	5 groups are presented
Day et Al. (1988)	18 country characteristics reflecting economic development	96 countries from all continents	Factor analysis on country characteristics, cluster analysis on country scores on three factors extracted	Static Approach	6 geographically dispersed segments
Sriram and Gopalakrishna (1991)	Economic and cultural similarities as well as media availability and usage	40 countries	Cluster analysis	Static Approach	6 geographically dispersed segments
Yavas et al. (1992)	Risk and brand royalty rates	781 consumers from 6 countries	Cluster analysis	Static Approach	4 cross-national segments

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Helsen et al. (1993)	23 country characteristics reflecting economic development	12 countries	Factor analysis on country characteristics, cluster analysis on country scores on five factors retained	Static Approach	2 and 3 segment solutions examined
Kale (1995)	Hofstede's (1980) dimensions (national-cultural)	17 countries from Europe	Clusters analysis on country ratings based on dimensions	Static Approach	3 segments are identified.
Peterson and Malhotra (2000)	Six commonly-derived measures for objective quality of life or material conditions of living	165 countries of the world	Cluster analysis	Static Approach	12 segments of countries based on objective quality of life are identified
Steenkamp (2001)	11 cultural dimensions	24 countries from 5 continents	Factor analysis, two-stage cluster analysis on country scores on 4 factors extracted	Static Approach	7 segments are presented
Cavusgil et al. (2004)	Internet hosts, index of economic freedom, freedom in the world and country risk survey	90 countries	Exploratory factor analysis, cluster analysis and country ranking	Static Approach	7 clusters are defined
Grein et al. (2010)	Economic, technological, cultural, demographic and quality of life variables	39 countries	Principal component analysis, cluster analysis on country scores	Dynamic Approach	Different cluster membership across years
Cleveland, Papadopoulos & Laroche (2011)	Cosmopolitanism and Ethnic Identity Scores	8 countries about 9 different product groups, 2015 consumers	Exploratory factor analysis, correlation analysis, cluster analysis and multigroup SEM analysis	Static Approach	4 segments are defined
Gaston-Breton and Martin (2011)	First stage: market size/ potential and market development Second stage: personal values and social values	27 European Union (EU) member states	Factor analysis and hierarchical cluster analysis	Static Approach	3 clusters are presented regarding macro-segmentation variables and sub-clusters regarding micro-segmentation variables

The first notable study in country clustering was reported in the late 1960s (Liander et al., 1967). The authors grouped countries consistent with their similitude in economic development. In spite of the fact that broadly affirmed for its contributions, this research was criticized for its methodological shortcomings (Sethi & Holton, 1969; Cavusgil, Kiyak and Yeniyurt, 2004).

In the other study in this area, Sethi (1971) argued for the segmentation of world markets dependent upon comparative clusters. Sethi inferred social, political, socioeconomic, and concluded that countries ought not be characterized on the sole ole dimension of development but on shared traits, which might be assessed as strong or weak attributes for business purposes (Cavusgil, Kiyak and Yeniyurt, 2004).

In previous studies, authors also combined the cluster analysis with other methods. For instance, Cavusgil, Kiyak and Yeniyurt (2004), in order to study preliminary foreign market opportunity assessment and decision making in the early stages of foreign market selection, used two complementary approaches: country clustering and country ranking. They remarked that “Ranking essentially rates countries in terms of their overall market attractiveness. When these two methods are combined, the manager can identify a reduced set, or sets, of potentially attractive markets with meaningful similarities. After analysis, they found out that a firm that wishes to standardize offerings and marketing strategy across different markets should pay more attention to the results of the cluster analysis because this technique provides insights into structural similarities among markets. On the other hand, a firm that wishes to identify the best possible market to enter should lean toward the ranking approach as a way to determine the few countries that deserve the in-depth attention. In combination, they provide unique and highly valuable information that does not overlap.”

In the study of Cavusgil, Kiyak and Yeniyurt (2004), they discuss the limitations of country clustering method. According to authors, the basic shortcoming of clustering approach has been repeatedly identified as an exclusive reliance on aggregate, macro indicators (Cavusgil and Nevin, 1981; Douglas and Craig, 1983; Papadopoulos and Denis, 1988) at the neglect of specific-product/service market indicators. These indicators are not readily accessible as secondary data and require noteworthy and costly market research. Consequently, their consideration is appropriate only when a reduced set of countries has been identified. Moreover, the criticism might have merit when

cluster analysis is constantly used to identify market segments or ultimate country selection however a preliminary market evaluation dependent upon aggregate data is still a necessary initial step.

Second limitation of clustering analysis is showed by Luqmani, Yavas and Quareshi (1994) who discussed that global markets ought to be seen as a continuum as opposed to as entirely similar or different. They argued that the level of convenience demanded in products and services by shoppers worldwide shows such a continuum. This view gives a rationale for developing an index that places nations on a continuum instead of forcing them into distinct and mutually exclusive clusters. (Cavusgil, Kiyak and Yeniyurt, 2004).

A third limitation of country clustering centers on the assumption is that countries are inseparable, homogenous units (Jain, 1996; Kale and Sudharshan, 1987). Kale and Sudharshan (1987) argued that within-country heterogeneity is completely disregarded. Moreover, because similarities among group of customers across national borders are not acknowledged, possible economies of scale in production, R&D, marketing and advertising are lost. Suggestion is an inter-market segmentation approach to identify similar customer segments across borders however that is generally applicable to large corporation in consumer markets. It ought to be underlined that the segmentation approach again applies only to the last phases of selecting a market (Cavusgil, Kiyak and Yeniyurt 2004).

According to Cavusgil, Kiyak and Yeniyurt (2004), the final drawback of clustering arises from its use of secondary data. Typically, such sources lack comparability across countries, are unreliable and are not current (Cavusgil and Nevin, 1981; Papadopoulos and Denis, 1988).

2.3 Dynamic Approach to International Market Segmentation

Another important issue in subject of international market segmentation is approach. There are two different approaches; static and dynamic. In the literature, most of researches have been studied with static approach; we can observe that there is a lack of researches with dynamic approach. Since we use dynamic approach in our study, it is crucial to investigate studies with this approach.

As it is said before, relatively little work has been done to address dynamic approach. The research of Helsen et al. (1993) is really a content study that also delineates very effective methodological approach; the analysis of diffusion patterns as a segmentation variable. Diffusion

patterns are vital to how international markets are changing, making us list it in the dynamic stream. Lemmens et al. (2011) commented that time reliance remains an essential concern in international segmentation (Steenkamp & Ter Hofstede, 2002). From a managerial perspective, disregarding dynamics in international segments is likely to lead to suboptimal marketing strategies. From an estimation perspective, the violation of the supposition of stationarity might undermine model estimation when the phenomenon under study is by nature non-stationary or when the data range spans quite a while period, such as in diffusion studies (Lemmens et al., 2011; Cannon and Yaprak, 2010).

According to Cannon and Yaprak (2010), “The most obvious approach to study dynamic cross-national segmentation would be to look at the variables by which segments are described, and project how they will change in response to population trends. They stated that they might build on Kale and Sudharshan’s (1987) notion of SES. By examining the structure of the SES, and considering the dynamics of population trends, economic factors, and so forth that govern them, we would be able to simulate these mathematically at any time in the future. From an operational perspective, this would be very satisfying, yielding readily identifiable and accessible segments. The purpose of the paper of Cannon and Yaprak (2010) has been to introduce a dynamic perspective to cross-national segmentation research that has received very little attention to date. Rather than looking at methods by which segmentation studies might be conducted, or investigating the content of cross-national segments, it seeks to explain how cross-national segments are likely to develop and change over time.”

This review of literature highlights the range of research about international market segmentation, segmentation methods and country clustering. Table 1 indicates that in the literature we have significant amount of studies about country clustering. Nevertheless, small amount of studies combine cluster analysis with dynamic approach. With this study, we will contribute to existing literature in this regard. Also there is a lack of researches with future estimation. With our estimations and analyses for 2020, we help to fill the gap in existing literature.

3. Methodology

3.1. Data

We applied country-clustering model on 132 countries from all over the world. Initially, about 180 countries were selected for the analysis. There were some missing values in the data. We found the trend for indicators of these missing values for each country and estimated these values due to lack of information about some countries, they were subtracted, leaving a final set of 132 countries. Data was gathered from World Development Indicators list of World Bank, CIA World Factbook, Transparency International and The Organization for Economic Co-operation and Development (OECD) for two different time periods; 2000 and 2010. After gathering the data, we estimated each variable for each country for the year 2020. For estimation, we found change rates between 2000 and 2010 and applied this rate on 2010 in order to find year 2020.

3.2. Factors and Indicators

The variables are identified after literature review. Market attractiveness is the perspective most reliably incorporated in past research on IMS to discriminate among foreign markets (Ayal et al., 1987; Bennett, 1995; Nowak, 1997; Rahman, 2003; Gaston-Breton and Martin, 2011). We also consider two dimensions; market development and market size/potential. Russow and Okoroafo (1996) also remark that “The international market screening literature is highly supportive of using market size and the level of economic development for identifying potential opportunities.”. For the first dimension, we choose variables as GDP per capita (Cavusgil et al., 2004), Corruption Perception Index (Sethi et al., 2010; Gaston-Breton and Martin, 2011), telephone lines (Cavusgil et al., 2004) and country risk score (Cavusgil et al., 2004).

The second dimension is market size/potential. In order to see the level of development we define electric power consumption (Cavusgil et al., 2004), imports (Gaston-Breton and Martin, 2011), total population (Gaston-Breton and Martin, 2011) and current GDP (Gaston-Breton and Martin, 2011; Cavusgil et al., 2004). All variables can be seen in Table 2.

Table 2: Variables

Variable	Description	Units	Source
GDPCurrent	GDP	Current US\$	World Bank World Development Indicators
GDPPerCapita	GDP per capita	Current US\$	World Bank World Development Indicators
Import	Imports of goods and services	Current US\$	World Bank World Development Indicators
TotalPopulation	Total Population		World Bank World Development Indicators
Telephoneline	Telephone lines	per 100 people	World Bank World Development Indicators
Electricconsump	Electric power consumption	kWh	World Bank World Development Indicators
CorruptionIndex	Corruption Perception Index		Transparency International
CountryRisk	Country Risk Survey		The Organization for Economic Co-operation and Development (OECD)

3.3. Data Analysis Technique

In order to analysis the data, we use cluster analysis as main technique. First of all, principal component analysis explores the dimensionality and avoids eliminating multicollinearity. Also with principal component analysis, we can investigate the relationship between variables. Once we explore the dimensionality of our indicators, we obtain factor scores and with these scores we run cluster analysis. Gaston-Breton and Martin (2011) remarked; “This procedure is frequent in the literature (e.g. Askegaard and Madsen, 1998; Steenkamp, 2001) and avoids the problem of correlated variables and the influence of an unbalanced number of items per dimension over the multidimensional distances that the cluster algorithm estimates when grouping objects.” We do not know number of clusters; therefore we select hierarchical clustering technique with squared Euclidean distances and Ward’s method.

4. Findings

As a beginning of analysis, we ran principal component analysis to our 8 indicators with Varimax rotation and Kaiser normalization. This is done for each year separately. As results, two dimensions emerged with same indicators and different factor loadings for each year. In 2000, two dimensions are explaining 82,6 percent of the variance (first 56,5 percent and second 26 percent), in 2010 they are explaining 83,4 percent (first 53,6 percent and second 29,7 percent) and finally in 2020 we found that

these dimensions are explaining 76,9 percent respectively (first 47,3 percent and second 29,6 percent). In first dimensions indicators of market development are grouped together and in second dimension, we have four indicators of market size/potential. For 2000 and 2010, in first dimension we have corruption perception index, telephone lines (per 100 people), GDP per capita (Current US\$) and country risk score. In 2020, we have these indicators in second dimension. Therefore we can observe that these four indicators of market size/potential are loaded together and present high internal consistency (Values of Cronbach's α are 0,95, 0,93 and 0,80 for 2000, 2010 and 2020 respectively). Also, four indicators of market development (Electric power consumption (kWh), GDP (current US\$), Imports of goods and services (current US\$) and total population) are loaded together in second dimension and present also high internal consistency (Values of Cronbach's α are 0,86, 0,91 and 0,96 for 2000, 2010 and 2020 respectively). Results of factors loadings are provided in Table 3, Table 4 and Table 5.

Table 3: Factor loadings for 2000

	Factor 1 Market Development	Factor 2 Market Size/Potential
Corruption Perception Index	0,938	0,014
Telephone lines (per 100 people)	0,928	0,14
GDP per capita (current US\$)	0,916	0,187
Country Risk Score	-0,899	-0,159
Electric power consumption (kWh)	0,193	0,96
GDP (current US\$)	0,271	0,913
Imports of goods and services (current US\$)	0,423	0,857
Population, total	-0,185	0,569

Table 4: Factor loadings for 2010

	Factor 1 Market Development	Factor 2 Market Size/Potential
Corruption Perception Index	0,939	0,034
GDP per capita (current US\$)	0,919	0,065
Country Risk Score	-0,885	-0,188
Telephone lines (per 100 people)	0,856	0,152
Electric power consumption (kWh)	0,113	0,968
GDP (current US\$)	0,258	0,896
Imports of goods and services (current US\$)	0,391	0,876
Population, total	-0,169	0,772

Table 5: Factor loadings for 2020

	Factor 1 Market Development	Factor 2 Market Size/Potential
Electric power consumption (kWh)	0,962	0,056
Imports of goods and services (current US\$)	0,96	0,212
GDP (current US\$)	0,938	0,188
Population, total	0,882	-0,086
Corruption Perception Index	-0,001	0,883
Country Risk Score	-0,144	-0,855
GDP per capita (current US\$)	-0,036	0,848
Telephone lines (per 100 people)	0,145	0,529

For each year, with their factor loading scores we ran cluster analyses and it produced clusters for each year. With the help of dendograms, we defined 8 clusters for 2000 and 7 clusters for 2010 and 2020. Dendograms are shown in appendix and countries in each cluster can be seen in Table 6, Table 7 and Table 8. These analyses are interesting in regard to show how groups of countries are changing between 2000, 2010 and 2020. When we see results, we can say that clusters have similarities across years but also there are some remarkable changes.

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Table 6: Cluster solution for 2000

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8
Cote d'Ivoire	Congo, Rep.	Egypt, Arab Rep.	China	Costa Rica	Norway	Korea, Rep.	Japan	United States
Yemen, Rep.	Azerbaijan	Philippines	India	Oman	Sweden	Spain		
Honduras	Tanzania	Iran, Islamic Rep.		Botswana	Denmark	Italy		
Cambodia	Guatemala	Romania		Uruguay	Switzerland	France		
Eritrea	Syrian Arab Republic	Venezuela, RB		Estonia	Iceland	United Kingdom		
Togo	Ghana	Colombia		Trinidad and Tobago	Austria	Canada		
Nicaragua	Armenia	Algeria		Czech Republic	Ireland	Germany		
Zimbabwe	Senegal	Peru		Hungary	New Zealand			
Kyrgyz Republic	Kazakhstan	Belarus		Malaysia	Finland			
Turkmenistan	Moldova	Jordan		Poland	Singapore			
Ethiopia	Swaziland	Bosnia and Herzegovina		Saudi Arabia	Australia			
Kenya	Nepal	Cuba		Lithuania	Hong Kong SAR, China			
Uzbekistan	Paraguay	Sri Lanka		Tunisia	Belgium			
Iraq	Ecuador	Gabon		Latvia	Netherlands			
Ukraine	Benin	Dominican Republic		Croatia				
Vietnam	Zambia	Serbia		Slovak Republic				
Angola	Bolivia	Macedonia, FYR		Israel				
Congo, Dem. Rep.	Georgia	Suriname		Portugal				
Sudan	Bangladesh	South Africa		Greece				
Albania	Pakistan	Turkey		United Arab Emirates				
Tajikistan	Nigeria	Argentina		Brunei Darussalam				
Mozambique	Indonesia	Thailand		Qatar				
Cameroon	Brazil	Belize		Bahrain				
Equatorial Guinea	Mexico	Namibia		Slovenia				
Haiti	Russian Federation	Lebanon		Chile				
		Morocco		Kuwait				
		El Salvador						
		Jamaica						
		Bulgaria						
		Bhutan						

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Table 7: Cluster solution for 2010

Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7
Bosnia and Herzegovina	Paraguay	India	Greece	Brazil	Denmark	Germany
Moldova	Honduras		Russian Federation	Norway	Japan	China
Suriname	Mongolia	Portugal	Iran, Islamic Rep.	Sweden	Korea, Rep.	United States
Dominican Republic	Equatorial Guinea	Slovenia	Thailand	Switzerland	Spain	
Guatemala	Bangladesh	Czech Republic	South Africa	Australia	Italy	
Sri Lanka	Nigeria	Hungary	Turkey	Netherlands	France	
Cuba	Pakistan	Chile	Indonesia	Hong Kong SAR, China	United Kingdom	
Azerbaijan	Ethiopia	United Arab Emirates	Mexico	Singapore	Canada	
Albania	Iraq	Brunei	Macedonia, FYR	Austria		
Jamaica	Congo, Dem. Rep.	Darussalam	Serbia	Belgium		
Armenia	Sudan	Kuwait	El Salvador	Finland		
Lebanon	Tajikistan	Estonia	Namibia	New Zealand		
Syrian Arab Republic	Zimbabwe	Slovak Republic	Tunisia	Qatar		
Argentina	Eritrea	Uruguay	Romania	Iceland		
Venezuela, RB	Togo		Georgia	Ireland		
Egypt, Arab Rep.	Cote d'Ivoire		Jordan			
Ukraine	Nepal		Bhutan			
Vietnam	Congo, Rep.		Kazakhstan			
Philippines	Haiti		Peru			
Gabon	Kyrgyz Republic		Belarus			
Swaziland	Nicaragua		Morocco			
Belize	Cameroon		Colombia			
Ghana	Mozambique		Algeria			
Senegal	Cambodia		Poland			
Zambia	Yemen, Rep.		Saudi Arabia			
Turkmenistan	Angola		Malaysia			
Bolivia	Tanzania		Bulgaria			
Benin	Kenya		Latvia			
Ecuador	Uzbekistan		Botswana			
			Bahrain			
			Oman			
			Costa Rica			
			Croatia			
			Trinidad and Tobago			
			Lithuania			

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Table 8: Cluster solution for 2020

Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	
Cambodia	Uzbekistan	Turkey	Czech Republic	Qatar	Indonesia	United States	China
Cameroon	Yemen, Rep.	Vietnam	Greece	Switzerland	Italy	India	
Mozambique	Kenya	Iran, Islamic Rep.	Portugal	Norway	Brazil		
Ecuador	Tajikistan	Mexico	Chile	Australia	Russian Federation		
Tanzania	Togo	Thailand	Israel	Finland	Korea, Rep.		
Benin	Jamaica	Albania Equatorial	Hungary	Iceland	United Kingdom		
Bolivia	Senegal	Guinea	Estonia	Slovenia	Spain		
Mongolia	Belize	Latvia	Uruguay	Denmark	Germany		
Zambia	Haiti	Macedonia, FYR	Kuwait	Ireland	Japan		
Gabon	Lebanon	Bahrain Trinidad and	Slovak Republic	Singapore	France		
Ghana	Zimbabwe	Tobago	Kazakhstan	Sweden			
Turkmenistan	Cote d'Ivoire	Bulgaria	Romania	New Zealand			
Paraguay	Kyrgyz Republic	Malaysia	Saudi Arabia United Arab	Belgium			
Dominican Republic	Nicaragua	South Africa	Emirates	Hong Kong SAR, China			
Honduras	Eritrea	Colombia	Poland	Austria			
Swaziland	Congo, Rep.	Morocco	Azerbaijan	Canada			
Armenia	Bangladesh	Peru	Costa Rica	Netherlands			
Bhutan	Philippines	Serbia	Croatia				
Bosnia and Herzegovina	Argentina	Botswana	Georgia				
Suriname	Ethiopia	Namibia	Lithuania				
Angola	Iraq	Moldova	Brunei Darussalam				
Syrian Arab Republic	Congo, Dem. Rep.	Tunisia					
Venezuela, RB	Sudan	Jordan					
Egypt, Arab Rep.	Nepal	Belarus					
Ukraine	Pakistan	Sri Lanka					
Nigeria		Algeria					
		Cuba					
		Guatemala					
		El Salvador					

In 2000, clusters appear to reflect geographic region but not that clear. For instance, first cluster contains countries mostly from Africa and South America. Also, it is observable that in that cluster, countries are less developed. This cluster has the lowest mean of corruption perception index. Therefore, countries in this cluster are highly corrupted. Countries in second cluster are relatively more developed than countries in first cluster. Also, mean of the GDP per capita is relatively higher in this cluster, which shows countries in second cluster have greater market potential than countries in first cluster. Third cluster seems to have countries, which have big market size. Also for these countries, India and China, it is observable that they have large population and greater current GDP than first two clusters. In fourth cluster, countries are all over the world. They are more industrialized than countries in first and second cluster. The greater mean of telephone lines per 100 people and more electric consumption are also supporting the idea that these countries are more developed than first two clusters. Fifth cluster countries are mostly from European Union. Also, countries like Singapore, Hong Kong and New Zealand joined this cluster. For these countries, we can say that they all have very good economic well-being. The mean of corruption perception index is biggest in this cluster; therefore this cluster represents less corrupted nations. Sixth cluster is similar to cluster 5 but in this cluster, all countries have 0 country risk and the mean of current GDP is greater than countries in cluster 5. Again, we have most powerful countries from Europe. Korea and Canada are also in this cluster so this cluster represents well-industrialized countries with big market potential. In cluster 7 only contains Japan and in cluster 8 there is United States which are both developed nations but major difference in these two cluster is size. We can observe that current GDP, total population, import and electric power consumption are bigger in United Nations.

Further, in 2010, we have 7 clusters, one less than year 2000. As main difference between 2000 and 2010, we observe that economy of China improved across 10 years and with advantage of market size, it joined to cluster of United States so we have two countries with big market potential. Cluster 1 is similar to cluster 1 from 2000. Again, it reflects less developed nations and poor market potential. We can still mention about geographic effect but this effect is less in this year because countries like Moldova, Ukraine from Europe are also in this cluster. After China left, India is alone in second cluster but again it appears that this cluster represent country with big population and relatively

poor level of economic development. Structure of cluster 3 is similar to cluster 4 from 2000 but in 2010, there are fewer countries. We can comment that some countries in cluster 4 of 2000 cannot develop as much as other countries in cluster and their level of market development became similar with countries of cluster 2 from 2000 across ten years. As a consequent, in 2010 these countries are in cluster 4. The structure of cluster is better than cluster 1 and 4 in terms of both market development and market size/potential. Cluster 4 shows developing nations. Their market development measures are lower than cluster 5, 6 and 7 and their market potential is relatively poor. Cluster 5 is similar to cluster 5 from 2000. It can be seen that Qatar and Ireland joined to cluster 5, which contains most of the European Union countries with economic well-being. The reason is across ten years, economy has improved in these two countries. The other big difference between 2000 and 2010 is cluster of Japan. In 2000, Japan was alone in its cluster but ten years later, in 2010; it is together with big market potential in the cluster. The reason is that level of market development in these countries now similar to level of market development in Japan; therefore Japan is in their cluster now.

The first remarkable result in cluster results of 2020 is that China is taking the place of United States. In 2000, India and China were in same cluster and United States was alone in its. Now, China is alone in its own cluster with its well-developed and big market. United States is with India, which means they also have big market size but in China, market size and potential are greater. For all variables other than country risk score, indicator values of China are greater than the mean of indicator values of United States and India. In China, country risk score is lower than the mean country risk score of United States and India. Another important thing is according to 2020 estimations, Indonesia, Brazil and Russian Federation are joining to cluster 5, the cluster of countries with better market potential. Mean of the current GDP, mean of the import and telephone lines per 100 people are greater in this cluster than cluster 4. Therefore we can predict that these three countries economies are going to improve quite well. Nevertheless, Canada left this cluster and joined to cluster 4. This shows that market potential across ten years in Canada is not going to be good as countries in cluster 6 from 2010 because as mentioned above, cluster 4 has lower market potential. Other clusters are mostly stable across 20 years. Again, geographically similarity is observable but not that strong.

For most countries, we observe that cluster membership does not change in ten years period. Changings are more remarkable between well-developed or developing countries. Especially for South American and African countries, clusters are more stable and consistent across years.

5. Discussion, Implications, Limitations and Future Research

5.1. Discussion

Analyzing foreign markets and finding the best international market segmentation strategy is overwhelming process for marketers. Unstable market conditions and many different indicators make some difficulties in this situation. In this paper, we used cluster analysis with 8 macro segmentation variables and created groups of countries based on two dimensions across year 2000, 2010 and 2020.

As a result, we observed 8, 7 and 7 clusters in 2000, 2010 and 2020 respectively. These clusters are based on market size/potential and market development, which means countries with similar conditions about market, are in same cluster. Clusters also show which countries have the best market potential for international marketers. As discussed by Gaston-Breton and Martin (2011), “The most attractive countries should be prime targets for decision makers if we leave aside other strategic aspects such as firm resources and characteristics, particular industries, and the factors of the macro-environment not considered by the model – and use general segmentation bases”. For instance, in 2000, United States appears to reflect the best market size/potential and market development conditions, therefore it should be the first target of firms that outside of United States. .

Also, our results across years show us clusters are not static, countries can change clusters during years. Hence, strategies for one period might not be useful in another period, companies should consider that international markets are not static; they are dynamic. Market conditions can change so quickly, companies should be able to adopt these unstable conditions. In our results, cluster memberships are changing and this supports the idea that international market segments are likely to develop and change over time (Cannon and Yaprak, 2010). Also, as Grein et al. (2010) has stated; “A wide range of countries and variables, over a 10 year period, has nevertheless shown a remarkable degree of consistency in terms of factor structure. It appears that things change over time, but they change slowly for most countries. [...]The clusters show some consistency over time but also many

changes, in cluster membership, during the 10 year period.” We also see this in our results. Specifically, less-developed and less-industrialized countries are less likely to change clusters over time. On the other hand, changeability of cluster memberships among cluster with developing or developed countries is more evident over ten years periods. These countries should be paid more attention in analyses.

This study contributes to existing literature by showing that international markets are changing over time. Therefore, international market segmentation strategies should be changed across years. Countries, which used in analyses, are from all over the world so it gives the idea about any kind of market condition. Strengths of this analysis are visible in terms of applicability across years, easy use of analysis and interpretation, data availability and easy access to data since data was gathered from secondary information sources. Further, this paper is filling the gap in existing literature by repeating analyses in different time periods and by illustrating changes in the composition of segments.

5.2. Implications

Our research and results contains some important implications for institutions and policy makers, managers and academia. First of all, our results show that decision makers should pay more attention to dynamic approach. Static approach, because of its temporal validity, might cause to misunderstand market situations and structures of segments. Over time, market conditions are changing and this leads decision makers to use dynamic approach instead of static approach. Policymakers should investigate composition of clusters changes over time to figure out if their country had performed similarly with other countries in similar economic circumstances, and to determine which policy variables have the greatest level of impact on country performance (Grein et al., 2010). In this context, managers should also consider dynamic approach in management of company.

In terms of academic implications, we suggest to researches to concentrate on dynamic approach more than static approach. Despite effect of time changings on international market segmentation analyses is noticeable and results show that cluster memberships are different over time, there is a lack of studies that have been examined international market segmentation with dynamic approach. Hence, we encourage researches to focus on dynamic approach and to make longitudinal analyses.

5.3. *Limitations and Future Research*

One limitation of this paper could be periods that we have used in analysis. The purpose of this study is representing changes in composition of cluster across time. We examined ten years periods between 2000 and 2020. Future researches might repeat analysis with larger time periods in order to emphasize these changes of clusters.

Second limitation could be the number of factors and indicators. Analyses were driven with only macro segmentation variables. In international market segmentation, one of critical issues is culture. Cultural variables are as important as macro segmentation variables. Social and personal values are dissimilar in different countries and for international segmentation they should be monitored very well. In our study, we did not use these variables related to culture because data was not available because of difficulties of measuring culture and behaviors. As argued by Cavusgil et al. (2004), “Sriram and Gopalakrishna (1991) use Hofstede’s (1980) cultural indicators in an attempt to identify homogeneous clusters for which advertising may be standardized. Jain (1996) suggests that religion can serve as a surrogate for culture, since it is an important element of any society and has a significant influence on lifestyles. Similarly, Simon (1996) believes that the importance of language has been grossly underrated. He found that the “hidden champions” of the world saw language as one of the most obvious barriers to globalization and is thus a critical factor to approach proactively.” Analyzing countries in regard to cultural variables with dynamic approach could be a contribution of future research.

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Appendix

Figure 1: 2000 clustering dendrogram

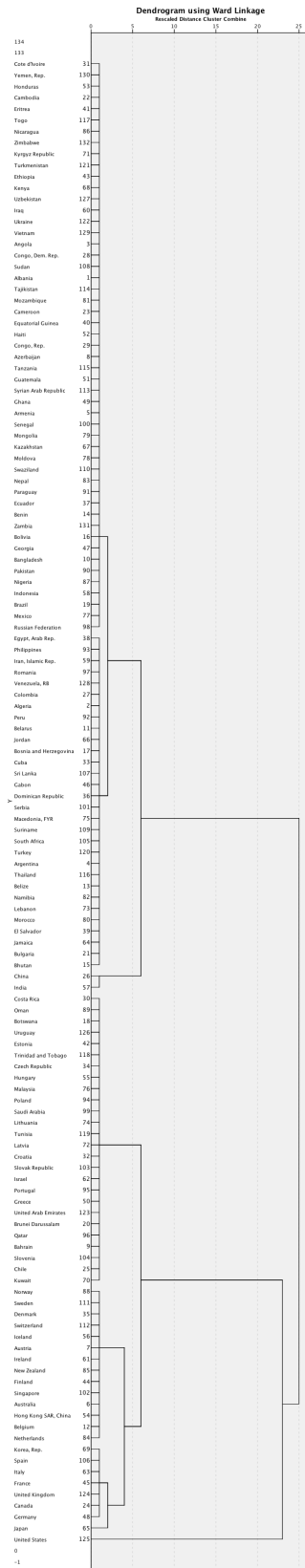


Figure 2: 2010 clustering dendrogram

International Market Segmentation: A Dynamic Approach

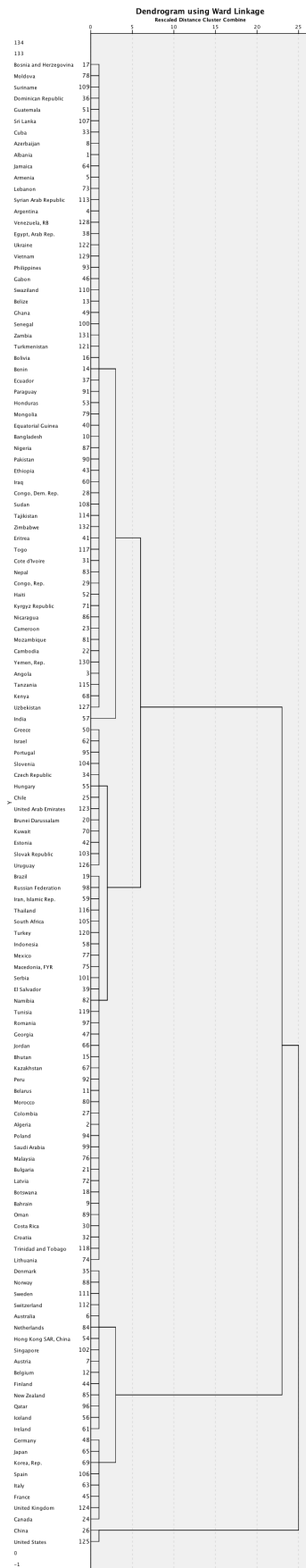


Figure 3: 2020 clustering dendrogram

International Market Segmentation: A Dynamic Approach

