Distrubution Of Human Capital: A Study On Turkish Regions

Zekeriya Mizirak, Deniz Göktaş

Department of Economics, Konya University, Konya, Turkey

E-mails: *zmizirak@hotmail.com, d.goktas@gmail.com*

Abstract

Firms' location choice causes regional economic differences. The conventional view of firms' location relies on cost-related factors such as tax breaks and subsidies. Human capital theory of regional development asserts that people are the motor force behind the regional growth. According to proponents of the human capital theory, regional growth is driven by endowments of highly educated and productive people instead of reducing costs of business or low costs of resources. In a world in which people are highly mobile, human capital is not a given endowment. Under the new regime of geography in which jobs follow labor instead of labor force follows jobs, wherever intelligence clusters evolve, so too will wealth accumulate. Firstly, Jacobs attracted attention to the ability of cities to attract creative people and thus spur economic growth. To sustain innovation attracting and retaining human capital is believed a crucial role. Firms want to reap the benefits from skilled labor pool.Places with greater number of highly educated people grow faster and better able to attract more talent.

 There are three linkages between human capital and regional growth. Firstly, concentration of creative and highly educated people through accumulation of knowledge and productivity in existing firms. Human capital enables both product and process innovations. Second explanation is related to inter firm dynamics. Highly human capital endowed people rapidly adapt new ideas and technologies; therefore industrial shift in these human capital endowed regions is rather easier. Not only they succeed in existing mature firms, but also they start new enterprises, thus contribute into economic activity. This linkage is called reinvention view of human capital. Third explanation is about consumption patterns of educated people. Human capital causes growth by spending effect. Since they have higher incomes, they spend much on leisure activities like bars, restaurants and theatres. Their spending habits create employment for the unskilled.

In this paper we will test the relationship between the human capital endowment of the regions and determinants of its regional distribution. Job opportunities, regional amenities and diversity can affect the distribution of human capital.

Keywords: Regional development, human capital, location choice

1. INTRODUCTION

Economists have been trying to exploring the sources of the "wealth of the nations". When the economic structure shifts, the patterns of development also changes. In the last fifty years factor accumulation models shifted to factor efficiency and factor specialization models. One of the changing patterns is replacement of labor accumulation to human capital based explanations. Another shift is from nationwide policies to regional policies. Therefore human capital and regional development attracts attention in recent years.

Regional growth contributes into nation's development by causing externalities and spreads to neighbor regions. The conventional view of regional growth asserts that places develop because they are located on transportation routes or because they have endowments of natural resources that firms benefit. This cost based advantages attract investment and regional growth occurs.

Public policy makers decide tax breaks and infrastructure investments considering this approach. However cost based factors no longer key to development. (Florida, 2004)

Proponents of human capital theory states that key source of the regional growth is talented people who brings productivity and externalities. Where talented people concentrate, human capital accumulates. If talented people cluster in a region, then firms follow talent and invest in that region. These places with higher human capital grow faster than those have lower human capital endowment. If the human capital is determinant of growth, then distribution of human capital affects the regional differences. Then the question is "what factors affect the location decisions of the talent?" There are different answers. One explanation is that presence of educational institutions in a region increases the region's human capital accumulation. Another explanation emphasizes the role of amenities. Third explanation is that talented people appreciate diversity and tolerance, so the most diverse cities or regions attract talented workforce.

In this paper we test effect of amenities, universities and diversity on the uneven distribution of human capital with using Turkish regional data.

2. THEORETICAL FRAMEWORK

2.1. Human Capital and Regional Development

In the economic growth literature many scholars arrive at the conclusion that talented people are motor of the economic growth at national level. (Romer, 1986; Lucas, 1988; Barro, 1991; Simon and Nardinelli, 1996) Intuitively there must be a relationship between existence of talented people and regional growth. Many studies confirms that endowment of talent positively affect regional growth. (Ullman, 1958; Jacobs, 1961; Andersson, 1985; Glaeser, 2000; Florida,2004)

Human capital is defined by the as the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being. (OECD,2007) Skills and competences can be acquired by education, experience and learning by doing. The most frequent used proxy for the human capital is educational level. People who has bachelor's degree and above areusually accepted as measure of human capital.

Traditional regional growth and location choice theories are based on material conditions like availability of inputs, low cost of inputs, tax advantages and low wages of labor. Firms choose their locations by examining these cost related factors. When firms invest in a region, then

production and income of that region increase. This process results in employment growth and economic development. Thus traditional approaches implicitly assume that people follow jobs while deciding where to live. However proponents of human capital theory state that jobs follow people. Regional growth lies not in reducing the cost of doing business, but it endowments of highly educated and productive people. Clustering people is more important for economic success than the clustering of companies.

Florida (2004) summarizes several explanations for regional growth. The conventional enterprise driven view is that regional growth comes from attracting companies or building clusters of industries. Social capital theory which is coined by Putnam (2000) states that economic growth is an outcome of social cohesion, trust and community relations. The human capital theory advanced by economists Robert Lucas and Edward Glaeser says that concentrations of educated people drive regional growth.

Florida(2002, 2004) proposes creative class that is refined theory of human capital, is the determinant of regional growth. Creative class is occupational definition of talent which describes the labor force creating new forms. Scientists, engineers, university professors, poets, artists and professionals working in knowledge based industries. Florida articulates that talent, tolerance and technology are necessarily components of regional growth. Presence of one component is necessary but not sufficient.

Marshall and Porter(1990, 2000) are proponents of firm driven regional growth view. Marshall argued that firms cluster in agglomerations to benefit from productive efficiencies. Porter (2000) sees firm clusters are drivers of regional competitiveness via increasing productivity and innovation. According to Florida (2004) the main driver of clustering is people. Companies cluster in specific regions because they want to employ talented people who bring innovation and economic growth. Florida (2004) advanced the view of competitive advantage by reinventing its pattern. In the creative economy, source of competitive advantage is "rapidly mobilize talent". Thus Florida(2004) attributes the idea that talent is not a fixed stock, it easily flows from place to place.

An alternative view is social capital theory which is put forward by Robert Putnam. Putnam and others explain the success of clusters like Silicon Valley due to the networks among people and firms constitute a form of social capital. Florida refutes this view, because of the loose ties between people and social diversity. His qualitative research reveal that people do not desire the strong ties and long term commitments. Mercan and Halici (2005) argue that social capital is an attraction factor for location planning of companies. A firm can choose to locate a plant in new geographic region not only due to reduce distribution costs, but also to create cultural ties between the firm and local community. Mercan and Halici(2005) propose the idea that people do not follow jobs; jobs follow people and communities.

Human capital theory of regional development attributes talented people is key to regional development. According to proponents of theory clustering of human capital is more important than clustering of companies. Jacobs proposes that economic growth of cities depend on their success to attract creative people. Lucas emphasizes productivity effects that come from the clustering of human capital as the critical factor in regional economic growth, referring to this as a "Jane Jacobs" externality. Florida (2004) mentions the empirical contributions of Glaeser and Beeson. Glaeser and his collaborators empirically proved that human capital is center for economic growth. They found that clustering of human capital is ultimate cause of regional agglomeration of firms. Beeson found that investments in higher education are outperformed investment in physical infrastructure like canals, railroads and highways.

There are three linkages between human capital and regional growth. Firstly, concentration of creative and highly educated people through accumulation of knowledge and productivity in existing firms. Human capital enables both product and process innovations. Second explanation is related to inter firm dynamics. Highly human capital endowed people rapidly adapt new ideas and technologies; therefore industrial shift in these human capital endowed regions is rather easier. Not only they succeed in existing mature firms, but also they start new enterprises, thus contribute into economic activity. This linkage is called reinvention view of human capital. Third explanation is about consumption patterns of educated people. Human capital causes growth by spending effect. Since they have higher incomes, they spend much on leisure activities like bars, restaurants and theatres. Their spending habits create employment for the unskilled. (Marlet, Woerkens, 2007)

Marlet and Woerkens (2004) showed that human capital measure and creative class measure significantly contribute into employment growth in Dutch cities.

2.2. Regional Distributionof Human Capital

Human capital is distributed unevenly among regions. There are three main explanations of this uneven distribution. Florida et al (2008) explains three approaches.

The first approach offered by Glaeser and his collaborators (2001) is that human capital builds off itself. Presence of major universities cause high human capital endowment.(Florida, Mellander, & Stolarick, 2008: 619)

Florida et al (2008) refutes the idea that the distribution of education and skill are coincident with the distribution ofuniversities. While some regions with great universities have large concentrations oftalent, others operate mainly in the production of human capital, serving as exportersof highly educated people to other regions. This is a result of the increased mobility ofhighly skilled and educated people within countries and even across borders. However,even if region has good educational institutions, it is no guarantee it can hold on to itseducated and skilled people.

The second approach is emphasizes the role of amenities in attracting human capital. Natural amenities, night life, entertainment are the factors that attract educated people. Glaeser et al (2001) and Florida (2004) sees amenities as an important determinant. Florida (2004:225) articulates that:

"People today expect more from the places they live. In the past, many were content to work in one place and vacation somewhere else, while frequently getting away for weekends to ski, enjoy a day in the country or sample nightlife and culture in another city. The idea seemed to be that some places are for making money and others are for fun. This is no longer sufficient. The sociologists Richard Lloyd and Terry Nichols Clark of the University of Chicago note that "workers in the elite sectors of the postindustrial city make 'quality of life' demands, and…increasingly act like tourists in their own city.""

Besides hard factors such as wages, employment opportunities; regional amenities gain increasing importance, at least in developed countries. Cultural amenities such as entertainment life and quality of regional consumer's services can make the region preferable.

Florida et al (2008) tested the role of amenities in attracting human capital, creative class and generating regional growth for Sweden. Diversity of consumer services is taken as proxy for amenities. The amenities are found significant for creative class, but not significant for human capital.

Marlet and Woerkens (2005) study the attraction factors of Dutch cities. They try to find the relationship between jobs, tolerance, amenities, aesthetics and creative class in line with Florida's theory. Aesthetics, measured by the environmental beauty and historic buildings, play an important role. Cultures amenities are another factor of attraction. Cultural amenities are live performances per thousand population and number of pubs per thousand population are positively significant.As a hard factor job opportunity play an important role.

Third approach tolerance and openness to diversity are critical determinants of talented people's place choice. Tolerance provides a free atmosphere for an individual, either freedom of express or freedom of living lifestyle. Diversity is a signal of low barriers to enter into labor force, for instance less affirmative action. Jacobs (1961) emphasized the diversity of people contributes economic growth of cities, with the diversity of industries. Immigrants transfer different skills and knowledge to the city or region. Florida further explains the importance of diversity for creative people:

Like the diverse workplace, a diverse community is a sign of a place open to outsiders. And just as domestic partner benefits convey that a potential employer is open and tolerant, places with a visible gay presence convey the same kind of signal. Some said they oriented their location search to such places, even though they are not gay themselves. Others actively sought out gay neighborhoods for their amenities, energy, safety and sense of community. Younger women in particular said they liked to live in gay neighborhoods because they are "safe." As with employers, visible diversity serves as a signal that a community embraces the open meritocratic values of the Creative Age.(Florida, 2004:227)

The explanation above stresses superiority of meritocratic values to identities. When meritocratic principles come first, various talents benefit from this values and labor allocation becomes more efficient.

Diversity also means "excitement" and "energy." Creative-minded people enjoy a mix of influences. They want to hear different kinds of music and try different kinds of food. They want to meet and socialize with people unlike themselves, to trade views and spar over issues. A person's circle of closest friends may not resemble the Rainbow Coalition—in fact it usually does not—but he or she wants the rainbow to be available. (Florida, 2004:227)

Florida(2004) emphasizes the social aspect of diversity. Creative and educated people have less prejudices and social exclusion affect decreases.

Florida et al (2008) finds that tolerance, measured by gay and bohemian index, plays an important role in regional development in Sweden. Correlation between tolerance and human capital is found high.

Marlet and Woerkens(2005) found that tolerance and openness have not effect on distribution of Dutch creative class. In another study, Marlet and Woerkens (2007) , the tolerance creative class nexus is failed for the Netherlands.

3. DATA AND METHODOLOGY

3.1. Data and Variables

Regional distribution of human capital is uneven among Turkish regions. We search on 81 Turkish regions which are called provinces. Provinces are public administrative units; each has one core city and its periphery (towns, and rural areas). The data are extracted from TURKSTAT Regional Statistics Database.

Table.1. Variables and their definitions

Variables	Definition
TALENT	Share of adult population with a BA degree and above
ALUMNI	Share of newly graduated student in adult population
MOVIES	Number of movie performances per thousand adult population
COMPANY	Number of newly established companies per thousand population
HOUSES	Number of newly built houses per thousand population
DIVERSITY	Sum of incoming immigrant and university students per thousand population

The dependent variable TALENTis the conventional measure of human capital. It is the share of people who has tertiary degree in adult population, older than age of 20. It is because the university graduates are mostly older than 20. We observed talent variable for three years period, from 2009 to 2011.
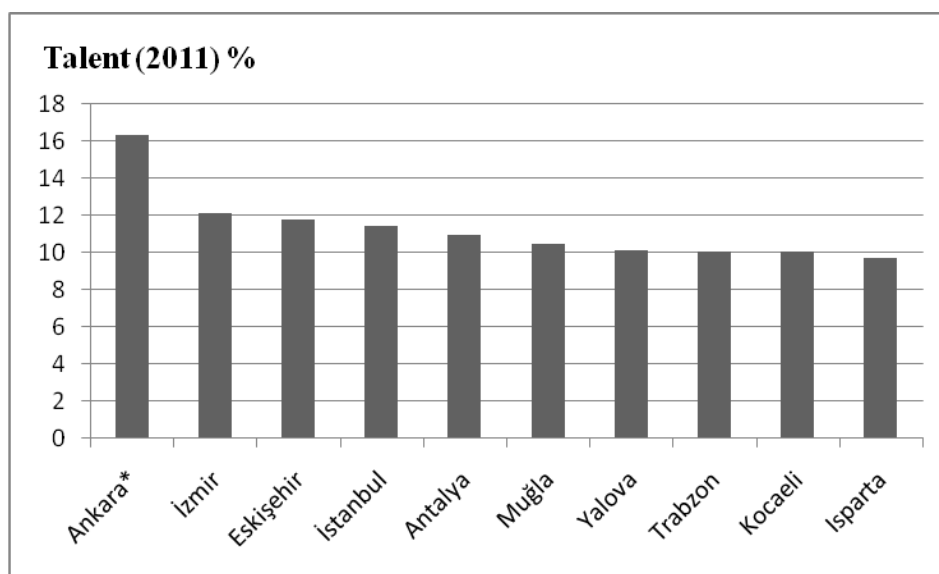

Figure.1. Most talent intensive provinces

Figure.1. illustrates the ten most talent intensive provinces. The capital of the Turkey, not surprisingly, ranks first. Ankara. % 16 of Ankara's over 20 age population has a tertiary degree. Ankara provides range of public job opportunities for the talented people. Izmir comes second. Izmir is known as free lifestyle city in Turkey. It has a warm climate and sound industry. Eskisehir is famous as a student city. It has diversity and open city. Eskisehir shares some cultural similarities with Izmir. The largest metropolis of the country, Istanbul

comes forth. Provinces Antalya and Mugla are well-known with their tourism industry. They have natural amenities.
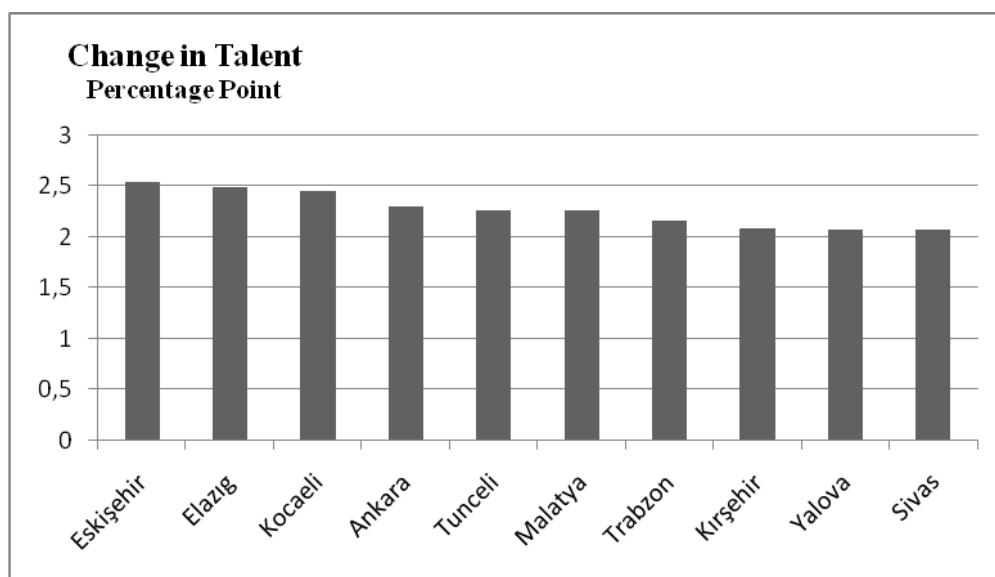

Figure.2. Change in Talent (2008-2011)

Figure.2. presents change in talent stock of the provinces. In three years, from 2008 to 2011 Eskisehir has added 2.55 percentage points on its talent pool. Figure.2. shows a different picture, because some provinces improve their talent pool faster than major cities. Dependent variable talent distributes uneven among provinces. Independent variables are potential explanatories of distribution of talent.

In line with Glaeser et al (2001) argument, we consider the presence of universities and number of graduated students in a specific period. The variableALUMNI isa proxyof university effect on human capital. When students stay in that region after graduation, we expect a strong correlation between ALUMNI and TALENT.Intuitively the newly graduates will have positive effect on human capital. We allow one year decision lag, so the period observed for the alumni is 2008-2010.

Second independent variable MOVIES is a proxy for cultural amenities. Marlet and Woerkens (2007) used live theatre performances per thousand people as a cultural amenity. However live theatre performances data do not exist or are unavailable for Turkish regions. We take annual movies performances in the movies theatres. The movies data is also taken for the period 2008-2010, considering information and decision lag.

The variable COMPANY is selected to explore the role of job opportunities. COMPANY shows the number of newly established companies per thousand adult populations. Considering Turkey is a developing country, employment opportunities for the talented people matter as well. We expect a positive and strong relationship between COMPANY and TALENT variables. The observed period is between 2008 and 2010.

Following Marlet and Woerkens (2004) we take the variable HOUSES as an life quality variable. More newly built houses means a deep housing market and more quality and rent choices. Number of newly built houses can affect the distribution of human capital. The period for the houses is from 2008 to 2010.

Fifth independent variable is a measure of diversity and openness. Florida (2004, 2008) put a special emphasis on role of diversity. A diversity measure can be racial, ethnical, religious,

gender tendency (being gay). Because the data on ethnical diversity or religious diversity are unavailable, we take the number of immigrants as proxy of diversity. If a place attracts more people, it can be inferred that the place is open and it has low barriers to labor entrance. In order to develop a diversity measure, we add number of immigrants to number current university students. Many students move to other cities for university education for four years. They enjoy an independent life in the university city. This free life brings lifestyle diversity. Students can change the atmosphere of city, because they lead an open atmosphere.

3.2. Method and Results

We run pooled OLS regressions on Turkey's 81 provinces with taking 2008-2010 periods. Thus we have 81 cross sections for the 3 years period. When we look at the correlations between variables, HOUSES, MOVIES and COMPANY have relatively high correlation with TALENT variable. Correlation between HOUSES and TALENT is 52 %, between MOVIES and TALENT is 51 %, between COMPANY and TALENT is 53 %. TALENT and ALUMNI are weakly correlated, and there is a negative 5 % correlation between DIVERSITY and TALENT. Table.2. summarizes the correlations among the variables.

Table.2. Correlation Matrix

	TALENT	ALUMNI	MOVIES	COMPANY	HOUSES	DİVERSITY
TALENT	1.0000					
ALUMNI	0.2772	1.0000				
MOVIES	0.5140	0.2445	1.0000			
COMPANY	0.5329	0.0161	0.4000	1.0000		
HOUSES	0.5212	0.6095	0.3427	0.2405	1.0000	
DİVERSITY	-0.0527	0.0076	-0.1925	-0.0705	0.0177	1.0000

Pooled OLS regression results exhibit that the independent variables are statistically significant except the diversity measure. The estimation and estimated parameters are robust and the R^2 is 57 %.

The estimation results are presented in table.3. All of the explanatory variables have expected signs and MOVIES, ALUMNI, HOUSES, COMPANY are significant at 1 % level. Thus null hypothesis is rejected for these four variables. Job opportunities have significantly positive effect on spatial distribution of talent. Each newly opened company cause an average 2.26 (per thousand) point increase in TALENT. Presence of universities, ALUMNI has a positive effect on formation of talent. MOVIES variable and HOUSES variables also contribute into the attraction of educated people. We cannot reject the hypothesis that DIVERSITY has no effect on spatial distribution of talent. DIVERSITY has right expected positive sign but it is insignificant.

Table.3. Estimation Results

Dependent Variable: TALENT	Expected Sign	Coefficient	p Value
CONSTANT	+	28.5913***	0.0000
ALUMNI	+	1.3146***	0.0000

MOVIES	+	1.4060***	0.0000
COMPANY	+	2.62258***	0.0000
HOUSES	+	0.8257***	0.0000
DIVERSITY	+	0.0403	0.4705
$R^2 = 0.5709$			

*** The coefficients are significant at 1 % level.

4. CONCLUSION

Our findings are consistent with the universities hypothesis and amenities approach, but observations do not support diversity hypothesis of Richard Florida. Distribution of talent among Turkish provinces is affected by job opportunities, presence of university in that province, cultural amenities and housing. Diversity measure is not a factor for educated people's location choice in Turkey. Here there can be two explanations. First our diversity measure is inadequate for uncovering talent's tendency for tolerance. Diversity measure is composed of number of students in that province and incoming migration rate. Migration may not cause diversity, because it can have tendency to cluster of similarities. Second, because Turkey is not an advanced country like Sweden and Netherlands, priorities of the talented can be different. Job opportunities and living conditions may dominate the soft factors.

REFERENCES

Andersson, A . E. (1985a) Creativity and regional development. Papers of the Regional Science Association, 56: 5–20.

Barro, R. J. (1991) Economic growth in a cross section of countries. Quarterly Journal of Economics, 106(2): 407–443.

Florida, R. (2002)The Rise of the Creative Class. New York: Basic Books

Florida, R., Mellander, C., & Stolarick, K. (2008). Inside the black box of regional development—human capital, the creative class and tolerance. Journal of Economic Geography, 8(5), 615–649.

Glaeser, E. L. (2000) The new economics of urban and regional growth. In C. Gordon,G. Meric, M. Feldman (eds)The Oxford Handbook of Economic Geography. Oxford: OxfordUniversity Press, 83–98.

Glaeser, E. L., Kolko, J., Saiz, A. (2001) Consumer city. Journal of Economic Geography, 1:27–50.

Jacobs, J. (1961) The Death and Life of Great American Cities. New York: Random House

Lucas, R. (1988) On the mechanics of economic development. Journal of Monetary Economics, 22: 3–42.

Marlet, G. and van Woerkens, C. (2004). Skills and Creativity in a Cross-section of Dutch Cities, Utrecht School of Economics Tjalling C. Koopmans Research Institute, Research papers, nr: 04-29

Marlet, G. and van Woerkens, C. (2005). Tolerance, aesthetics, amenities or jobs? Tolerance, aesthetics, amenities or jobs? Dutch city attraction to the creative class. Utrecht School of Economics Tjalling C. Koopmans Research Institute Discussion Paper Series 05-33

Marlet, G. and van Woerkens, C. (2007). The Dutch creative class and how it fosters urban employment growth. Urban Studies, 44: 2605-2626

Mercan, B. and Halici N.S. (2005). Social capital as a soft factor in facility location planning. Journal of Global Strategic Management, 2007; 1(1):36-43

OECD, 2007, OECD Insights, Human Capital, Last Accessed on April 11, 2012 from www.oecd.org/insights/humancapital.

Porter, M. E. (1990), The Competitive Advantages of Nations, Harvard Business Review,

March-April, No:2

Porter, M. (2000). Location, Competition and Economic Development: Local Clusters in a Global Economy, Economic Development Quarterly, 14 (1), 15-34

Romer, P. M. (1986).Increasing returns and long-run growth. Journal of Political Economy, 90:1002–1037.

Simon, C. and Nardinelli, C. (1996) The talk of the town: human capital, informationand the growth of English cities, 1861–1961. Explorations in Economic History, 33(3):384–413.

Ullman, E. L. (1958) Regional development and the geography of concentration.Papers andproceedings of the Regional Science Association, 4: 179–198. Last Accessed on April 18, 2012 from http://onlinelibrary.wiley.com/doi/10.1111/j.1435-5597.1958.tb01629.x/abstract