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(DIRMBSH-DEC-2016)

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Dr. Sukri Palutturi

International Conference of Akademika Nusa Internasional Association of Social Sciences and Huminities} is a platform that thrives to support the worldwide scholarly community to analyze the role played by the multidisciplinary innovations for the betterment of human societies. It also encourages academicians, practitioners, scientists, and scholars from various disciplines to come together and share their ideas about how they can make all the disciplines interact in an innovative way and to sort out the way to minimize the effect of challenges faced by the society. All the research work presented in this conference is truly exceptional, promising, and effective. These researches are designed to target the challenges that are faced by various sub-domains of the social sciences and applied sciences.

I would like to thank our honorable scientific and review committee for giving their precious time to the review process covering the papers presented in this conference. I am also highly obliged to the participants for being a part of our efforts to promote knowledge sharing and learning. We as scholars make an integral part of the leading educated class of the society that is responsible for benefitting the society with their knowledge. Let's get over all sorts of discrimination and take a look at the wider picture. Let's work together for the welfare of humanity for making the world a harmonious place to live and making it flourish in every aspect. Stay blessed.

Thank you.

Dr. Sukri Palutturi
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International conference on Disciplinary and Interdisciplinary research in Management, Business, Social Sciences and Humanities (DIRMBSH)

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Do Tax Burden Matter in Income Distribution: A Quantile Regression Approach

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Abstract. The objective of the study is to explain the seeming paradox of countries with a high tax burden and a continually concentrated distribution of income by using 120 countries from 1984 to 2012. Our main contribution is to examine the income distribution determinants throughout the conditional distribution of income across nations. By means of quantile regression model we analyze the distributional impact of tax burden on the Gini index. Quantile regression approach can analyze the effects across quantiles in the conditional distribution. In addition, this paper consider GDP per capita, openness, education, female labor force participation rate, unemployment rate, population density, subsidies and others. Our results for the significant determinants support some findings in the literature, but also provide new conclusions. In many cases, quantile regression estimates are quite different from those from OLS regressions. Tax burden, GDP per capita and female labor force participation rate has a significant impact for low quantiles of the distribution of income. Our results suggest that some current tax policies may be reconsidered, especially among the least Gini index nations.

Keywords— Tax Burden, Income Distribution, Quantile Regression

INTRODUCTION

Income distribution remains one of the most debated economic issues in developing countries. Although poverty has declined fast and steadily during the last decade, inequality has not changed much. Quite often it is concluded that the stagnation of income distribution is due to inappropriate policies that should be replaced by direct redistributive measures. Given that one of the ways the state can affect income distribution is through the tax system, there is permanent discussion on the distributional effects of taxes. This discussion heats up whenever the government proposes some tax amendment.

Toward the end of the 19th century the German political theorist Adoph Wagner devised his law of expanding state activity, also known as Wagner's law. This law stated that the size of public sector in the economy grows as per capita income rises. Although this "law" was somewhat controversial, the data show that there is a tendency for government expenditures as a share of GDP to be larger for rich than for poor countries.

Similarly, recent economic experience of a number of major developing economies has raised the concern that the price of high per capita income growth may be an accompany worsening inequality in the relative distribution of income. One would expect to find the tax burden of most low income countries to be lighter than the tax burden of wealthy countries, and at the same time that the distribution of income to be more equitable in higher than in lower income countries.

One would thus expect to find the tax burden of most low income countries to be lighter than the tax burden of wealthy countries, and at the same time that the distribution of income to be more equitable in higher than in lower income countries. It is thus striking to find that in Brazil, one of the maor emerging countries, the tax burden is similar to that of many advanced industrial countries, its income distribution is among the most concentrated in the world. It is the purpose of this article to throw some light on this seeming paradox.

As an alternative to OLS regression, this study uses quantile regression to presents an overview of tax burden and income inequality. The remainder of this study is organized as follows. Section 2 proposes our methodology. Section 3 provides a brief model. Section 4 presents the empirical results, and Section 5 concludes.

METHODOLOGY

Quantile regression (hereafter, QR) is based on the minimization of weighted absolute deviations to estimate conditional quantile (percentile) functions (Koenker and Bassett 1978; Koenker and Hallock 2001; Zietz et al. 2008). For the median (quantile=0.5), symmetric weights are used, and for all other quantiles (e.g., 0.1, 0.2, …, 0.9) asymmetric weights are employed. In contrast, classical OLS regression estimates conditional mean functions. Unlike OLS, quantile regression is not limited to explaining the mean of the dependent variable. It can be employed to explain the determinants of the dependent variable at any point of the distribution of the dependent variable.

Quantile regression generalizes the concept of an unconditional quantile to a quantile that is conditioned on one or more covariates. Least squares minimizes the sum of the squared residuals,

$$\min_{\{b_j\}_{j=0}^{k}} \sum_i \left(y_i - \sum_{j=0}^{k} b_j x_{j,i}\right)^2,$$

where y_i is the dependent variable at observation i,x_(j,i) the jth regressor variable at observation i, and b_j an estimate of the model's jth regression coefficient. By contrast, quantile regression minimizes a weighted sum of the absolute deviations,

$$\min_{\{b_j\}_{j=0}^{k}} \sum_i \left|y_i - \sum_{j=0}^{k} b_j x_{j,i}\right| h_i$$

where the weight h_i is defined as

h_i=2q

if the residual for the ith observation is strictly positive or as

h_i=2-2q

if the residual for the ith observation is negative or zero. The variable q ($0<q<1$) is the quantile to be estimated or predicted.

The standard errors of the coefficient estimates are estimated using bootstrapping as suggested by Gould (1992, 1997). They are significantly less sensitive to heteroscedasticity than the standard error estimates based on the method suggested by Rogers (1993).

Quantile regression analyzes the similarity or dissimilarity of regression coefficients at different points of the distribution of the dependent variable, which is tax burden in our case.

THE MODEL

In order to analyze the empirical relationship between income inequality and tax burden for 120 countries, we use unbalance panel data during 1984 to 2012. However, since some countries do not present data for all considered variables we need to discard some data. Table 1 provides the definition of variables and expected impact.

Since tax burden could have heterogeneity in the potential effects, we use a structural quantile regression (QR) method, where income distribution for each country is the dependent variable of tax burden and other control variables. QR estimation is fully described in Koenker (2005).

Quantile regression approach offers a more complete characterization of the stochastic relationship among variables and provide a more robust, and consequently more efficient, estimates in some non-Gaussian settings. In the case analyzed in this paper, this class of estimator is suitable, since it is important to analyze the behavior of tax burden in each quantile of the conditional income inequality distribution.

QR is not only concerned with the income distribution effect on the average individual, but allows one to estimate the marginal effect of a given tax burden on individuals at different points in the conditional achievement distribution.

To study the determinants of income distribution, we use ten variables: tax burden (TB), economic development (GDP), openness (OPEN), female labor force participation rate (FEMALE), unemployment rate (UN), population density (DEN), population growth rate (POPG), government subsidized (SUB), degree of urbanization (URBAN), and one dummy variable (DUMMY). Formally, the estimated equation takes the following form

$$\mathrm{GINI}_{it} = \alpha + \beta_1 TB_{it} + \beta_2 GDP_{it} + \beta_3 FEMAIL_{it} + \beta_4 OPEN_{it} + \beta_5 DEN_{it} + \beta_6 POPG_{it} + \beta_7 SUB_{it} + \beta_8 URBAN_{it} + \beta_9 UN_{it} + \beta_{10} DUMMY_{it} + \varepsilon_{it}$$

Tax burden and economic development are standard determinants that are used in almost every study devoted to the causes of income distribution. The other variables in Eq. (1) have also been used quite frequently in some studies.

Table 1 The definition of variables and expected impact

Variable Name(Code)	Variable definition	Expected impact	Source of data
Explained variables			
Gini coefficient(GINI)	Gini coefficient is between 0 and 1, the Gini coefficient is smaller, more average annual income distribution, higher the Gini coefficient, income distribution more unequal.		WDI
Variables			
Tax burden(TB)	Tax revenue as percentage of GDP	−	WDI
Economic development(GDP)	GDP per capita	+	
OPEN(OPEN)	The sum of exports and imports of goods and services measured as a share of	?	
Level of education(EDU)	School enrollment, tertiary (% gross)	?	
Female labor force participation rate (FEMALE)	Labor force, female (% of total labor force)	?	
Unemployment rate (UN)	Unemployment, total (% of total labor force)	+	
Variable Name(Code)	Variable definition	Expected impact	Source of data
explanatory variables			
Population density (DEN)	Midyear population divided by land area in square kilometers	+	WDI
Population growth rate (POPG)	Annual population growth rate for year t is the exponential rate of growth of midyear population from year t-1 to t, expressed as a percentage	+	
Government-subsidized (SUB)	Subsidies and other transfers (% of expense)	−	
Degree of urbanization(URBAN)	Urban population (% of total)	+	
Other Variables			
Dummy variable (DUMMY)	Developing country=1 Non-developing countries=0		World economic outlook, April 2015 (International Monetary Fund)

EMPIRICAL RESULTS

All of the results are presented in Table 2. The first column provides the OLS regression results, and the next nine columns provide the QR results for quantiles 10 to 90. First, the OLS slope estimate of the tax burden is

significantly negative at the 1% level. This result indicates that as higher tax burden by government, the more even the income distribution. Secondly, greater GDP per capita, female labor force participation rate, population growth rate, urban population and unemployment rate affect income distribution significantly. A higher level of education and population density seems more to lower GINI index. More openness in countries, other things being equal, are also associated with lower GINI index. A greater government subsidized leads to lower GINI index. However, OLS estimates provide a baseline of mean effects, and we compare these to estimates for separate quantiles in the conditional distribution of income.

Table 2 Coefficient estimates, OLS and by Quantile

		Quantile								
	OLS	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Constant	0.135***	0.077	0.034	0.023	0.114	0.178*	0.284***	0.370***	0.459***	0.591***
	(0.003)	(0.204)	(0.633)	(0.703)	(0.214)	(0.078)	(0.006)	(0.000)	(0.003)	(0.000)
Dependent variable										
TB	-0.202***	-0.388***	-0.395***	-0.371***	-0.354**	-0.254**	-0.1331	-0.097	-0.030	-0.029
	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)	(0.020)	(0.2328)	(0.308)	(0.756)	(0.789)
Control variables										
GDP	0.020**	0.027***	0.022*	0.030**	0.024*	0.007	-0.007	-0.006	-0.016	-0.022
	(0.042)	(0.006)	(0.059)	(0.012)	(0.061)	(0.584)	(0.616)	(0.720)	(0.493)	(0.288)
FEMAIL	0.223***	0.213***	0.269***	0.295***	0.318***	0.309***	0.299***	0.131	0.015	-0.149
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.008)	(0.383)	(0.916)	(0.590)
OPEN	-0.051***	-0.038*	-0.068***	-0.082***	-0.091***	-0.071**	-0.073**	-0.066***	-0.068***	-0.036
	(0.001)	(0.084)	(0.004)	(0.000)	(0.000)	(0.017)	(0.021)	(0.004)	(0.000)	(0.123)
DEN	-0.013**	0.006	0.002	0.002	0.003	0.001	-0.010	-0.023*	-0.033***	-0.052***
	(0.042)	(0.363)	(0.695)	(0.767)	(0.656)	(0.889)	(0.446)	(0.072)	(0.006)	(0.000)

Note：*p*-values appear in parentheses. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels.

By contrast, the quantile-varying estimates of the GINI variable derived by the Quantile regression, reveal considerable variation in size, significance and even in sign. In particular, by using the 10% level of significance as a criterion, while the TB variable is associated with an insignificant coefficient at the higher quantiles, from 0.6 to 0.9, it becomes a significantly negative coefficient at lower quantiles levels from 0.1 to 0.5. This shows that higher tax burden is relatively efficient in decreasing income inequality in countries which already have a more equitable income distribution. Therefore, for countries with lower GINI index, an increase in tax burden has impact in improving the distribution of the income. On the other hand, for the countries with upper GINI index, an increase in tax burden decreases income inequality less effectively.

Subsequently, Figure 1 depicts the QR estimates and the OLS estimates. Apparently, as moving up the GINI index quantiles levels, the QR estimates varies widely. Moreover, a comparison of the QR estimates with the

traditional OLS estimates indicates that the OLS estimates underestimate the tax burden effects at the higher quantile levels and obtain the wrong conclusion at the lower quantiles.

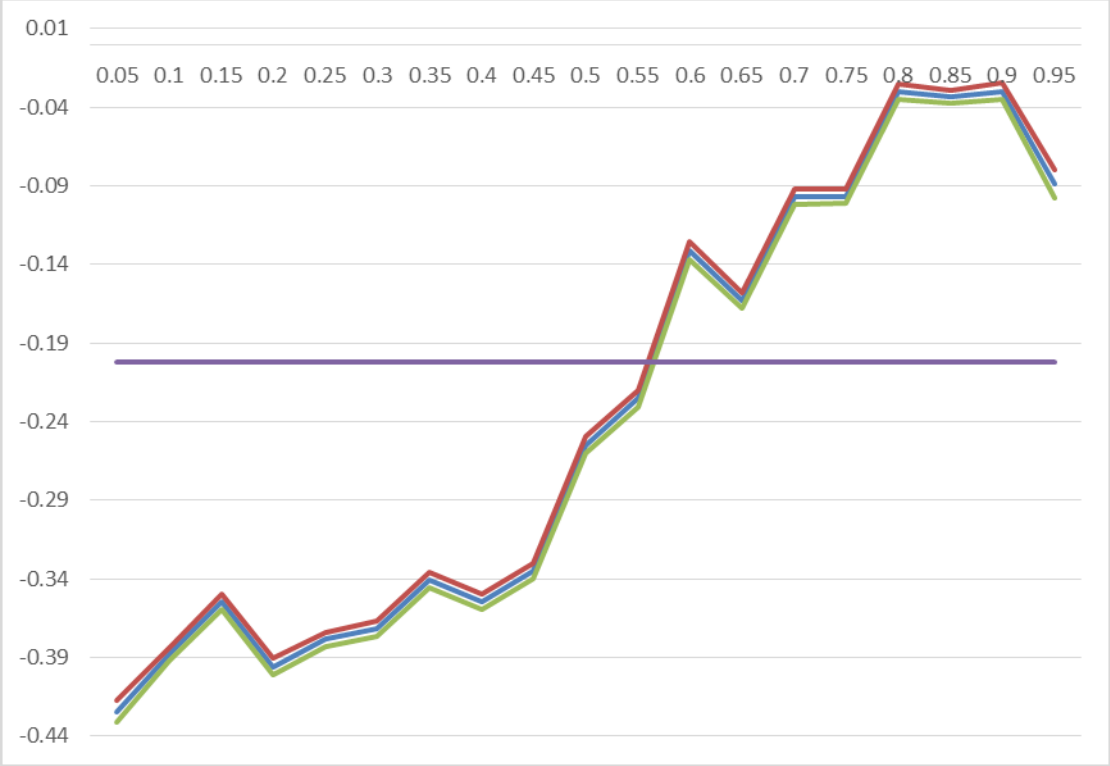

Figure 1 QR estimates with 95% confidence intervals versus OLS estimate

The coefficients for the real GDP per capita, GDP, show a different result: higher real GDP per capita has a much higher impact in lower GINI index than in higher GINI index. This shows that economic development is relatively inefficient in decreasing income inequality in countries which already have a more equitable income distribution. Our results indicate that there is strong evidence that the effect of real GDP per capita is not constant, but varies among the various quantiles. In addition, it is important to note that the effect of female labor force participation rate, FEMAIL, is nearly always positive, causing higher GINI index; i.e., higher FEMAIL is correlated with higher GINI index. However, the effect of FEMAIL is not consistently significant. OLS estimates suggest FEMAIL matters quite a bit in increasing GINI, but quantile regression result do not uniformly confirm that. Specifically, FEMAIL substantially heighten GINI index, but only within quantiles levels from 0.1 to 0.6.

Greater population density, DEN, lowers GINI index, but not consistently throughout the conditional distribution. This effect appears significant in OLS, but not throughout the quantiles presented. The effect of population density is insignificant in the lowermost quantile, suggesting that within the lower GINI index countries, increasing the size of DEN does not reduce the GINI index.

CONCLUSION

Numerous factors have been considered to assess the causes of income distribution. In this article, we use 566 observations data set of 120 countries in income distribution and tax burden from 1984 to 2012. This study produces some interesting results. The results of estimates of the effects of tax burden on income inequality, presents evidence that in order to reduce income inequality, the government would have to emphasize in its fiscal policy which benefit more countries with low income inequality. In addition, the results showed the relative inefficiency of economic development in reducing the income inequality for countries at the top of the GINI index, where income is less equitable, vis-à-vis countries at the bottom of the conditional income inequality distribution, where income is more equitable.

The quantile results provide some valuable insights to the different relationships that the explanatory variables have with GINI index. For example, some variables such as real GDP per capita, population density and female labor force participation rate have a greater impact across different quantile level. Other variables have a relatively constant effect on GINI index across different income distribution. These include population growth, subsidies and other transfers rate, urban and unemployment rate.

These results add to the body of research explaining how these factors affect the distribution of income. The implication of these findings is that one important means for improving the income distribution of some countries is to drastically change not only tax structure, but also demographic structure.

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The Effect of Mood on Tourists' Service Quality Perceptions

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Abstract. In the tourism industry, numerous variables may affect service quality perceptions of tourists such as personality, cultural background, and mood. Therefore, it is important to consider the effect of these variables for understanding and assessing the service quality perceptions of tourists. In the literature, for example, mood has been one of the ignored and rarely investigated psychological determinants by the academics. Thus, the aim of this research is to examine the effect of mood on service quality perception by using 436 data obtained from tourists who were accommodating in five-star hotels in Antalya-Turkey. Firstly, sub dimensions of service quality were identified as "tangibles", "reliability and responsiveness", and "assurance and empathy". Then, the participants were clustered as 'good mood' and 'bad mood' tourists so that the effect of moods on each service quality sub dimensions would have been tested by independent t tests. The results showed that good mood tourists had higher service quality perceptions for all sub dimensions than bad mood tourists.

Keywords— Service Quality Perception, Mood, Hospitality, Antalya

INTRODUCTION

Service quality is one of the most important determinants of customer satisfaction which further increase profitability of the businesses. Thus, many academics focus on service quality perception of the customers. However, recent studies show that customers' mood also affect customer experiences and perceptions (e.g. Homburg, Koschate, and Hoyer, 2006). Unfortunately, there are limited researches that investigate the role of mood on tourists' service quality perceptions in the tourism industry, especially in the hospitality sector. Therefore, the objective of this research is to examine the effect of mood on service quality perception. More specifically, this study aims to identify whether service quality perception of tourists visiting Antalya-Turkey differ according to their moods.

The paper is structured as follows: after a literature review about service quality and mood, research methodology is presented. Afterwards, the results of the analyses are summarised. The paper is concluded with the discussion of findings and future study recommendations.

LITERATURE REVIEW

2.1 Service Quality

Delivering higher service quality than the competitors' is one of the most effective differentiating strategies of service firms (Kotler, Bowen, and Makens, 2014). Thus, researchers have been widely investigated service quality in different settings such as banking (e.g. Zhu, Wymer, and Chen, 2002), health care (e.g. McGlynn, Asch, Adams, Keesey, Hicks, DeCristofaro, and Kerr, 2003), hospitality (e.g. Saleh and Ryan, 1991), travel (e.g. Ho and Lee, 2007) industries. Early research specifically focused to define service quality concept. For example, Parasuraman, Zeithaml, and Berry (1985) described service quality as "a global judgment, or attitude relating to the superiority of a service". They denoted that the perceived service quality was a reflection of the degree and direction of discrepancy between consumers' perceptions and expectations. Similarly, Zeithaml (1988) defined service quality as "the customer's assessment of the overall excellence or superiority of the service".

The academics proposed different models for measuring service quality. For example, Parasuraman, Zeithaml, and Berry (1985) argued that service quality could have been measured by comparing customers' service quality perceptions and expectations. Therefore, they proposed SERVQUAL instrument which consists of 22 items. By using this scale, expectations of the customers are measured before the service experience. Then, service quality perceptions of the customers are measured by using the same scale. Finally, the gap scores are calculated by comparing customers' service quality perceptions and expectations. Contrary to SERVQUAL model (Parasuraman, Zeithaml, and Berry, 1985), Cronin and Taylor (1992) showed that performance only approach (i.e. customers' service quality perceptions) exhibited a stronger correlation with service quality. Thus, they offered SERVPERF model consists of same 22 items, which solely measures service quality perceptions.

There are many studies that examine the relationship between service quality and various variables like customer satisfaction and behavioural intention. For example, Taylor and Baker (1994) who examined the relationship between

service quality and customer satisfaction in transportation (airlines), health care, recreation (amusement park) service, and communications (long-distance telephone) industries, showed that higher level of perceived service quality resulted in increased consumer satisfaction. Similarly, Andreassen and Lindestad (1998) who collected data from 600 package tour participants in Norway, denoted that service quality was an important antecedent of both customer satisfaction and loyalty.

2.2 Mood

While the terms of emotion and mood are frequently used interchangeably, most of the academics agree that they are closely related but distinct phenomenons (e.g. Beedie, Terry, and Lane, 2005). On the one hand, emotion is a temporary and intense feeling caused by a specific event or object. On the other hand, mood is a permanent and mild feeling. In addition, behavioural influences and consequences of emotion and mood are not completely understood yet. Table 1 shows the main differences between emotion and mood (Huang, Scott, Ding, and Cheng, 2012). In this study, mood is defined as "a consumers' affective state that is relatively global in nature, as opposed to emotions, which tend to have a specific cause" (Rusting, 1998; Martin, 2003).

Table 1. Differences between Mood and Emotion

Criterions	Mood	Emotion
Cause	Cause is less well defined.	Caused by a specific event or object.
Duration	Permanent	Temporary
Intensity	Mild	Intense
Timing	Rises and dissipates slowly	Rises and dissipates quickly
Consequences	Largely cognitive	Largely behavioural and expressive
Control	Controllable	Not controllable
Stability	Stable	Fleeting and volatile
Display	Not displayed	Displayed
Experience	Thought	Felt

Adapted from Beedie, Terry and Lane (2005)

Limited number of researchers has investigated the role of emotion in consumer behaviour. For example, Mano and Oliver (1993) documented strong relationships between product satisfaction and product-related emotions. In addition, Oliver (1994) suggested that positive and negative emotions had direct impacts on customer decision process. Similarly, Homburg, Koschate, and Hoyer (2006) argued that customer satisfaction was influenced by cognitive and affective consideration of purchase experience. Moreover, they explained that customers with positive feelings might ignore service failure incidents. Liljander and Strandvik (1996) argued that negative emotions had a stronger effect than positive emotions on satisfaction. In one of the recent studies, White (2006) investigated the relationships among mood states, emotions, service quality perceptions, and consumer loyalty by a comprehensive model. They found that mood states and emotions had influences on consumer loyalty.

METHODOLOGY

A pre-structured questionnaire was used in this study for data collection. The first part of the questionnaire consists of 20 personality items derived from Glazer (1985). The second part measures participants' mood by 4 items adapted from Swinyard (1993), Mattila and Enz (2002), and White (2006). The third section captures 22 items which measures respondents' service quality perceptions (Cronin and Taylor; 1992). The next section contains 3 items for evaluating respondents' satisfaction. All items were measured by 7 point Likert type of scale ranging from strongly disagree (1) to strongly agree (7). In addition, 7 questions related to demographic characteristics were included to the survey. The questionnaire which was originally in English, translated into Russian language, since the target sample was the British and Russian tourists visiting Antalya-Turkey.

Data used in this study is a part of a research project about personality, mood, and service quality perception relationships. 800 questionnaires were collected from 2 five-star hotels located in Antalya-Turkey in the period of July, August, and September, 2015. After eliminating incomplete questionnaires, 436 useable data were remained for the analyses.

RESULTS

The demographic characteristics of the participants that include gender, age, occupation, nationality and marital, educational status information are shown in Table 2. Of the 436 participants, 59.6 percent were females, 55 percent were singles. In addition, most of the participants were Russian tourists (57.6%). The majority of respondents had college or university level of education (39%). Considering the age, most of the participants were between 21-30

years old (28.2%). Furthermore, 19.5 percent of the participants were retired followed by company employees (18.8%) and students (18.1%).

Table 2. Sample Characteristics (N=436)

Characteristics		N	%
Gender	Male	176	40.4
	Female	260	59.6
Marital status	Married	196	45.0
	Single	240	55.0
Occupation	Retired	85	19.5
	Company Employee	82	18.8
	Business Owner	56	12.8
	Government Sector	35	8.1
	House wife	55	12.6
	Student	79	18.1
	Other	44	10.1
Age	20 and below	47	10.8
	Between 21-30 years	123	28.2
	Between 31-40 years	70	16.1
	Between 41-50 years	86	19.7
	Between 51-60 years	86	19.7
	61 and above	24	5.5
Nationality	Russian	251	57.6
	British	185	42.4
Educational Status	Primary School	14	3.2
	High School	100	22.9
	College or University	170	39.0
	Postgraduate	78	17.9
	Other	74	17.0

Hierarchical Clustering Analysis (with Ward method) was conducted by using mood items' means for clustering participants. Two clusters were obtained and named as the "good mood" and "bad mood" tourists. The mood levels of each cluster are shown in Table 3. Good-mood participants are more happy and comfortable than bad-mood participants. In addition, good-mood participants are not stressful.

Table 3. Mood Means Differences by Groups

	Good Mood f: 115		Bad Mood f: 321	
Items	$\bar{X}$	**SD**	$\bar{X}$	**SD**
Curently, I am in a good mood	6.22	0.70	3.54	1.31
As I answer these questions I feel cheerful	5.84	0.97	3.09	1.48
For some reason I am not comfortable right now*	5.95	1.45	3.84	1.55
At this moment I feel edgy or irritable*	6.72	0.62	3.95	1.46

f: Frequency, $\bar{X}$**:** Average**, SD:** Standard deviation**,** * reversed items

Following, factor analysis was used in order to determine dimensional structure of the service quality scale. 22 items which measure participants' perceived service quality were assessed by explanatory factor analysis with varimax rotation. The Bartlett test of sphericity value (15653.104) showed that there was a relationship between these variables. In addition, KMO (Kaiser Meyer Olkin) value (0.96) reflected that sample size was adequate for conducting factor analysis.

Results of factor analysis offered 3 factors with an eigenvalue greater than 1.0 and explaining 88.3% of the total variance. Table 5 shows the factor loadings, average means, explained variance, and reliability coefficients. Factors were named considering the items that they captured.

Factor 1 includes 5 items, which explain 22.79% of the total variance and was named as "tangibles".

Factor 2 includes 9 items which explain 34.53% of the total variance was named as "reliability and responsiveness".

In addition, factor 3 which captures 8 items and explains 34.53% of total variance was named as "assurance and empathy".

Table 4. Service Quality Dimensions

Items	Tangibles	Reliability and Responsiveness	Assurance and Empathy
The hotel has modern looking equipment.	0.942		
The physical facilities at the hotel are visually appealing	0.916		
Staff at the hotel appear neat	0.911		
Materials associated with the service are visually appealing	0.925		
The hotel has opening hours convenient to all of its patrons	0.775		
When the hotel promised to do something by a certain time, it did it		0.835	
When patrons have problems, the hotel shows a genuine interest in solving them		0.875	
The hotel performs the service right the first time		0.875	
The hotel provides its services at the time it promises to do so		0.879	
The hotel insists on error-free service		0.872	
Staff at the hotel were able to tell patrons exactly when services would be performed		0.868	
Staff at the hotel give prompt service to the patrons		0.763	
Staff at the hotel are always willing to help patrons		0.752	
Staff of the hotel are never too busy to respond to patrons		0.729	
The behaviour of staff instils confidence in its patrons			0.776
Patrons of the hotel feel safe in their transactions			0.758
Staff of the hotel are consistently courteous with patrons			0.781
Staff of the hotel have the knowledge to answer patrons			0.794
The hotel gives patrons individualized attention			0.894
The hotel has staff who give its patrons personalized attention			0.904
The hotel has the patrons' best interests at heart			0.890
The staff of the hotel understand the specific needs of their patrons			0.893
Average	4.96	3.88	4.05
Cronbach Alpha	0.969	0.976	0.982
Variance (%)	22.79	34.53	30.98

Total variance explained: 88.31%; KMO:0.96; Bartlett's test for sphericity:15653.104 ($p<0.01$)

In order to determine whether participants' mood levels affect their service quality perceptions, independent samples t tests were conducted (Table 5). Analyses results revealed that service quality perceptions of good-mood participants were higher than bad-mood participants.

Table 5. Service Quality Perception Differences by Groups

	Good Mood f: 115		Bad Mood f: 321		
Service Quality Dimensions	$\bar{X}$	**SD**	$\bar{X}$	**SD**	**p**
Tangibles	6.06	1.16	4.57	1.79	0.00**
Reliability and Responsiveness	4.21	1.34	3.76	1.38	0.03*
Assurance and Empathy	5.44	0.83	3.55	1.72	0.00**

f: Frequency, $\bar{X}$**:** Average, **SD:** Standard deviation, **p:** Significance, **$p<0.01$,*$p<0.05$

DISCUSSION

The aim of this research was to examine the role of mood in service quality perception. For achieving this purpose, data obtained from the British and Russian tourists who were accommodating in 2 five-star- hotels in Antalya were used. Participants were grouped into the good-mood and bad-mood tourists, by relying on their mood levels. By using exploratory factor analysis, "tangibles", "reliability and responsiveness", and "assurance and empathy" were identified as the underlying dimensions of service quality. While five-dimensional structure of SERVPERF has been proved by number of researchers (Devebakan and Aksaraylı, 2003; Carrillat, Jaramillo, and Mulki, 2007; Landrum, Prybutok, and Zhang, 2009), in this study three dimensions were obtained, similar to Zhou's study (2004).

Then, independent sample t test results showed that mood level of the participants affect their service quality perceptions. In other words, service quality perceptions of good-mood participants were higher than bad-mood participants. To conclude, the results of the study indicate that mood is an important determinant of service quality perception. In the future studies, it is recommended by the authors that the academics should examine the role of mood in different service settings for testing the sample, sector and research area differences. This will both enable researchers to enlarge the literature about mood and also to clarify the influence of mood on customer behaviour.

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A Preliminary Study about the Impact of Destination Websites' Persuasiveness on Perceived Risk and Purchase Intention

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Abstract. Destination websites are visited by potential tourists for information search and destination selection purposes. In particular, persuasiveness of destination websites is important for attracting users and also providing necessary information about the destination. In this study, a conceptual model which indicates destination websites' persuasiveness influence on online tourist behaviour in terms of perceived risk and intention to purchase is proposed. As a preliminary study, this research is hypothesized to clarify the relationships amongst these variables.

Keywords— Destination, Websites' Persuasiveness, Perceived Risk, Purchase Intention

INTRODUCTION

Information and communication technologies opened a new realm of possibilities for tourism and travel sector. For tourist destinations, official websites are now quite important information, marketing, promotion, and communication instruments. However, destination authorities and website content creators should consider the necessities for generating well-designed, highly qualified, and successful websites; and for identifying the factors that have influence on tourists' online search and purchase behaviours. Therefore, it is necessary to identify the antecedents of online tourist information search and purchase behaviour through conceptual and empirical research.

The thinking behind this paper comes from a desire to contribute the previous literature on information and communication technology usage behaviour of tourists and to propose a research model which investigates the relationships amongst destination websites' persuasiveness, perceived risk, and purchase intention. In the following sections, a literature review about the variables that are examined in this paper, aim of the research, method and discussion of the prospective theoretical and managerial implications are presented.

LITERATURE REVIEW

Latest developments in information and communication technologies, both increased the synergistic interaction between tourism companies and tourists (Frew, 2000), and also enabled people to obtain information much more easily, accurately, and timely. Especially the Internet has made a great contribution to marketing practice in tourism and travel industry (Luque-Martínez et al., 2007). Online marketing of tourism products or services, and even destinations are now practicable. Several platforms and content creators are available nowadays that offer information to tourists for mainly marketing and communication purposes. Burgess et al. (2011) categorize these suppliers as independent expert, consumer, and seller (Table 1).

Moutinho (1987) defines information search as "an expressed need to consult various sources prior to making a purchasing decision". Whether obtained from internal sources such as memory and personal experiences, or from external sources such as marketplace, tourism and travel related destination information is a need for potential tourists at the destination choice process (Perdue, 1985).

Particularly, official destination websites (called as government tourism websites, in Table 1) are seen as one of the most reliable external information sources by increasing number of people. These websites are considered independent and credible sources which provide tourism-related and destination specific information to website users. Besides, destination websites meet the needs of tourists about destination offerings as well as minimize the possible risk anticipations.

A destination website should persuade tourists about the responsiveness, accuracy, and honesty of its content; generate positive impressions about its design; and motive tourists to visit the subject destination. Since many of the tourism products or services, and travel packages are perceived risky by potential tourists which are not available to test before the purchase, they tend to "engage in information searches prior to purchase decisions in order to minimise risks" (Jacobsen & Munar, 2012). At this point, destination websites are reliable and facilitator search engines that tourists generally use at the destination selection process.

Table 1. Different Content Creators of Online Tourism Information

Content Creator	Description/Features	Examples
Independent Expert	Information is created by what people perceive to be independent bodies or entities that allow the published information to embrace elements of objectivity and credibility.	Government tourism websites Travel agents
Consumer	Information that embodies User-Generated-Content that can be viewed as forms of electronic word-of-mouth (or eWOM)	Weblogs Social networking sites Third party tourism websites such as Tripadvisor
Seller (Tourism Operators)	Promotional marketing of an operator's products through a review in the traditional media or on a website recommending a particular product.	Email promotion based on a commercial mailing list Tourist operators own website

(Source: Burgess et al., 2011)

In this study, therefore, the persuasiveness of official destination websites has been the focus of research interest. Principally, persuasive destination websites should "have the ability to evoke favourable impressions toward the site" (Kim & Fesenmaier, 2008), and "can influence the attitudes of website visitors" (Lee & Gretzel, 2012). For being successful in the tough international market competition, as Loda, Teichmann, and Zins (2009) stated, tourism providers should understand how they may maximize the persuasiveness of their websites. Because, tourists who become satisfied with a destination website's content, aesthetic, functions etc., are expected to generate positive image, intention to purchase and to visit toward the subject destination. Mitchell and Boustani (1994) also note that "consumer information processing in the pre-purchase context plays an important role in reducing perceived risks". Therefore, persuasive characteristic of a destination website may enable content creators to decrease the perceived risks of the potential tourists.

In the tourism literature, perceived risk has been a widely investigated topic (Mäser & Weiermair, 1998; Mitchell et al., 1999; Slevitch & Sharma, 2008; Fuchs & Reichel, 2011) and various risk dimensions or destination attributes were offered so far by the academics. For Yeung and Morris (2006), risk perception can be defined in terms of "concerns about potential consequences, long-term adverse impacts and the involuntariness of exposure" at the decision making process. In earlier studies (Bauer, 1960; Cox, 1967), researchers conceptualized perceived risk under two dimensions as: uncertainty and consequences. Destinations need to offer online and offline information resources and availabilities, since lack of information implies uncertainty in the eye of tourists (Slevitch & Sharma, 2008). In terms of consequences, the academics identified the factors such as "functional, performance, or psychological goals and the money, time, and effort invested to achieve those goals" related to perceived risk (Lin, Jones & Westwood, 2009).

Persuasive destination websites may influence website users' (tourists') attitudes. Because, empirical evidences obtained from the previous studies show that highly qualified and well-designed destination websites have impact on user behaviour such as trust, satisfaction, and purchase intention (Wen, 2012). Moreover, Ajzen and Fishbein (1980) argue that intention is solely predictor of actual behaviour, while there is a strong and significant correlation between these variables.

RESEARCH QUESTION

To understand and predict online tourist behaviour, a research model is proposed which examines the importance of website persuasiveness for decreasing perceived risk and increasing purchase intention of the users'. In Figure 1, the research model which demonstrates these relationships is shown.

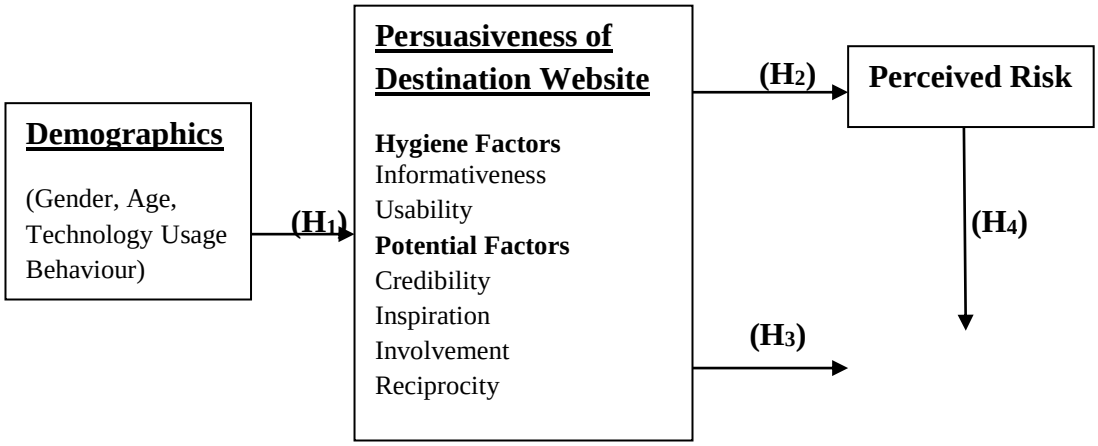

Figure 1. Research Model

These are the hypotheses that should be tested:

H1: Participants' demographic characteristics influence on their perception about persuasiveness of destination website.

H2: Persuasiveness of destination website negatively effects (reduces) perceived risk.

H3: Persuasiveness of destination website positively effects (increases) intention to purchase.

H4: Perceived risk negatively effects (reduces) purchase intention.

METHODS

This is a quasi-experimental research which is going to be conducted by following stages. Firstly, a survey will be performed for measuring the participant perceptions about website persuasiveness, risk perception, purchase intention variables. Demographics of the participants, such as gender, age, technology usage behaviour are also be identified by additional questions. Nineteen items of the website persuasiveness, which conceptualize that the variable contain hygiene and potential factors, are obtained from Kim and Fesenmaier's (2008) study. Four items that measure perceived risk are adapted from Chan and Lu (2004). All items will be measured by using 7-point Likert type of scale with a range from 'strongly disagree' (1) to 'strongly agree' (7). Purchase intention is going to be examined by two items obtained from Bai, Law and Wen (2008), where participant intentions in the near future (6 months) and longer term (2 years) are determined by 7-point Likert type scale ranged from (1) being 'very unlikely' to (7) being 'very likely'. The variable ''Purchase intentions'' was exam- ined in a two-item 7-point Likert type scale ranged from ''7'' being ''Very likely'' to ''1'' being ''Very unlikely'' that reflects online visitors' behavioral intentions in the near future (6 months) and relatively long term (2 years). The variable ''Purchase intentions'' was exam- ined in a two-item 7-point Likert type scale ranged from ''7'' being ''Very likely'' to ''1'' being ''Very unlikely'' that reflects online visitors' behavioral intentions in the near future (6 months) and relatively long term (2 years).

By using convenience sampling method, data will be collected from the university students. Because, the university students are "useful surrogates when modelling underlying consumer behavioural processes" (Sweeney, Soutar, & Johnson, 1999). Tourism Faculty students of Akdeniz University, Antalya-Turkey, as the sample of the study, will be asked to complete a pre-structured survey while they are searching Antalya destination's official website at a laboratory. Following, the obtained data will be analyzed for testing the research model by using Structural Equation Modelling technique and for identifying the demographic differences.

CONCLUSION

With appropriate data collection and empirical testing, results of this study may enable the academics to offer important theoretical and managerial implications. For example, sector authorities may collaborate with professional website designers with the aim of enhancing the attractiveness, effectiveness, and persuasiveness of destination website. User opinions and critiques about their website experiences; sufficiency of various website functions for meeting the information needs of users; and impact of website's overall quality on users' risk perceptions and purchase intentions can be measured and developed by continuous monitoring. In addition, persuasiveness of a subject destination's website can be benchmarked with market leader destination's website. If destination risk factors and their importance in the eye of tourists may also be identified by user feedbacks, authorities may consider including additional information about these issues. Investigation of the relationships amongst website

persuasiveness, risk perception, purchase intention, like this study, is expected to enlarge the scientific perspectives about online information search behaviour in the tourism and travel literature.

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Environmental Tax and Economic Growth: New Evidence

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Abstract. The aim of this study is to re-examine the relationship between environment taxes and economic growth, using different measures of environment taxes with GDP as well as net savings. A panel of 22 European countries is used from 1995 to 2014 and the quantile regression approach is applied. Our analysis shows that environment tax decrease economic growth at the top of conditional GDP. This explicitly allows higher-development countries to have a different environmental tax than lower-development countries. The quantile results also provide some valuable insights to the different relationships that the explanatory variables have with economic growth such as population. Some other variables such as net national saving and education expenditure have a significant effect on GDP but there is no clear pattern of the effect across different GDP.

Keywords— Environmental Tax, Economic Growth, Net National Savings

INTRODUCTION

Over the recent past, European Union member states in particular and other countries in general have set voluntary targets for the reduction in pollution and emission of greenhouse gases, which have facilitated the sometimes controversial use of environmental taxes across the world, especially in the EU. As a result of recent concerns relating to the harmful effects of global warming, policy makers have become increasingly interested in the use of environmental taxation as a means of combating the problem, in order to meet targets set at the 1997 Kyoto protocol to reduce greenhouse gases.

Also, during the 1990s, beginning with the Scandinavian countries, there has been a number of attempts to introduce Environmental Tax Reform (ETR) in EU member states. This has involved shifting the burden of taxation away from factors of production to pollution and the users of natural resources, summarized as a move from economic "goods" to environmental "bads". Again, one of the main ways in which EU governments have attempted to do this is through the use of energy taxes, in order to encourage a reduction in carbon emissions.

To determine whether the existing level of economic growth affects how the various causes of economic growth come into play, we use quantile regression. This technique enables us to investigate whether the relationship between economic growth and the explanatory variables differs throughout the distribution of the dependent variable. Thus, as an alternative to OLS regression, this study uses quantile regression to presents an overview of economic growth and environmental tax. The remainder of this study is organized as follows. Section 2 proposes our methodology and model. Section 3 presents the empirical results, and Section 4 concludes.

METHODOLOGY AND MODELS

Quantile regression (hereafter, QR) is based on the minimization of weighted absolute deviations to estimate conditional quantile (percentile) functions (Koenker and Bassett 1978; Koenker and Hallock 2001; Zietz et al. 2008). For the median (quantile=0.5), symmetric weights are used, and for all other quantiles (e.g., 0.1, 0.2,…, 0.9) asymmetric weights are employed. In contrast, classical OLS regression estimates conditional mean functions. Unlike OLS, quantile regression is not limited to explaining the mean of the dependent variable. It can be employed to explain the determinants of the dependent variable at any point of the distribution of the dependent variable.

Quantile regression generalizes the concept of an unconditional quantile to a quantile that is conditioned on one or more covariates. Least squares minimizes the sum of the squared residuals,

$$\min_{\{b_j\}_{j=0}^{k}} \sum_i \left(y_i - \sum_{j=0}^{k} b_j x_{j,i}\right)^2,$$

where y_i is the dependent variable at observation i,x_(j,i) the jth regressor variable at observation i, and b_j an estimate of the model's jth regression coefficient. By contrast, quantile regression minimizes a weighted sum of the

absolute deviations,

$$\min_{\{b_j\}_{j=0}^{k}} \Sigma_i |y_i - \Sigma_{j=0}^{k} b_j x_{j,i}| h_i,$$

,
where the weight h_i is defined as
h_i=2q
if the residual for the ith observation is strictly positive or as
h_i=2-2q
if the residual for the ith observation is negative or zero. The variable q (0<q<1) is the quantile to be estimated or predicted.

The standard errors of the coefficient estimates are estimated using bootstrapping as suggested by Gould (1992, 1997). They are significantly less sensitive to heteroscedasticity than the standard error estimates based on the method suggested by Rogers (1993). Quantile regression analyzes the similarity or dissimilarity of regression coefficients at different points of the distribution of the dependent variable, which is economic growth in our case.

In this paper we attempt to explain the empirical relationship between economic growth and environmental tax, we use balance panel data during 1995 to 2014. However, since some countries do not present data for all considered variables we need to discard some data. Table 1 provides the definition of variables and expected impact.

To study the relationship between economic growth and environmental tax, we use four variables: environmental tax (ENV), total population (POP), net national saving (SAV) and education expenditure (EDU). Formally, the estimated equation takes the following form:

$$\mathrm{LGDP}_{it} = \alpha + \beta_1 ENV_{it} + \beta_2 POP_{it} + \beta_3 SAV_{it} + \beta_4 EDU_{it} + \varepsilon_{it} \quad (1)$$

Environmental tax and total population are standard determinants that are used in almost every study devoted to the causes of economic growth. The other variables in Eq. (1) have also been used quite frequently in some studies.

Table 1 The definition of variables and expected impact

Variable Name(Code)	Variable definition	Expected impact	Source of data
Explained variables			
LGDP	natural logarithm of GDP per capital(constant 2011 US$)		WDI
Explanatory variables			
ENV	Total environmental taxes(Percentage of GDP)	?	EUROSTAT
POP	natural logarithm of total population	+	WDI
SAV	net national saving(% of GNI)	+	WDI
EDU	education expenditure (% of GNI)	+	WDI

EMPIRICAL RESULTS AND DISCUSSION

All of the results are presented in Table 2. The first column provides the OLS regression results, and the next nine columns provide the QR results for quantiles 10 to 90. First, the OLS slope estimate of the environmental tax is insignificantly at the 1% level. This result indicates that higher environmental tax by government has no effect on economic growth. Secondly, greater population does not affect economic growth insignificantly. Third, a higher level of net national saving is associated with higher economic growth. Finally, the greater education expenditure leads to higher economic growth. However, OLS estimates provide a baseline of mean effects, and we compare these to estimates for separate quantiles in the conditional distribution of economic growth rate.

Table 2 Descriptive Statistics

Variables	Mean	Median	S.D.	Min	Max
LGDP	10.322	10.514	0.666	8.225	11.608
ENV	2.675	2.560	0.686	1.040	5.300
POP	15.988	15.976	1.475	12.822	18.229
SAV	6.883	6.846	5.161	-7.155	21.744
EDU	4.944	4.810	1.127	2.220	8.285

By contrast, the quantile-varying estimates of the LGDP variable derived by the Quantile regression, reveal considerable variation in size, significance and even in sign. In particular, by using the 10% level of significance as a criterion, while the ENV variable is associated with an insignificant coefficient at the lower/median quantiles, from 0.1 to 0.6, it becomes a significantly negative coefficient at higher quantiles levels from 0.7 to 0.9. This shows that higher environmental tax is relatively efficient in decreasing economic growth in countries which already have a higher economic development. Therefore, for countries with higher LGDP, a decrease in environmental tax has impact in improving the economic growth. On the other hand, for the countries with lower LGDP, a decrease in environmental tax burden increases economic development less effectively.

Greater population, POP, has no effect on LGDP, but not consistently throughout the conditional distribution. This effect appears insignificant in OLS, but not throughout the quantiles presented. The effect of population is significant in the median and uppermost quantile, suggesting that within the higher LGDP countries, increasing the size of POP does improve the economic growth.

Table 2 Coefficient estimates, OLS and by Quantile

		Quantile								
	OLS	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
C	8.804***	7.962***	6.637***	6.725***	7.134***	7.500***	8.006***	8.660***	11.071***	12.856***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ENV	-0.0672	-0.0065	-0.0841	-0.0878	-0.0572	-0.0353	-0.0236	-0.0724**	-0.0574*	-0.0671***
	(0.1392)	(0.9219)	(0.2302)	(0.2037)	(0.1844)	(0.3107)	(0.3983)	(0.0116)	(0.0503)	(0.0029)
POP	0.0119	-0.0576	0.1022**	0.1219***	0.1147***	0.1041***	0.0856***	0.0594***	-0.0513	-0.1280***
	(0.5392)	(0.2431)	(0.0456)	(0.0002)	(0.0000)	(0.0000)	(0.0000)	(0.0045)	(0.1157)	(0.0000)
SAV	0.0585***	0.0736***	0.0400***	0.0404***	0.0422***	0.0436***	0.0449***	0.0513***	0.0451***	0.0228***
	(0.0000)	(0.0000)	(0.0030)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0086)
EDU	0.2226***	0.4053***	0.3439***	0.2972***	0.2451***	0.2100***	0.1730***	0.1653***	0.0733**	0.0268***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0365)	(0.2266)
R-squared	0.319	Pseudo R-squared			0.253					
Adjusted R-squared	0.313	Adjusted R-squared			0.246					

Note：*p*-values appear in parentheses. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels.

CONCLUSION

In this article, a panel of 22 European countries is used from 1995 to 2014 and the quantile regression approach is applied. Our analysis shows that environment tax decrease economic growth at the top of conditional GDP. This

explicitly allows higher-development countries to have a different environmental tax than lower-development countries. The quantile results also provide some valuable insights to the different relationships that the explanatory variables have with economic growth such as population. Some other variables such as net national saving and education expenditure have a significant effect on GDP but there is no clear pattern of the effect across different GDP.

The quantile results provide some valuable insights to the different relationships that the explanatory variables have with LGDP. For example, some variables such as environmental tax and population have a greater impact across different quantile level. Other variables have a relatively constant effect on LGDP across different income distribution. These include net national saving and education expenditure. These results add to the body of research explaining how these factors affect the economic growth. The implication of these findings is that one important means for improving economic development of some countries.

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Determinants of the Effective Tax Rate in Taiwan

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Abstract. This study examines the determinants of the effective tax rate (ETR) for listed companies in Taiwan. We use a panel of 1,062 companies over the period 2005-2014, and we apply the quantile regression for panel data. This study produces some interesting results. First, family business and financial leverage (LEV) are often used to determine the performance of a company since they are expected to have a significant effect on the ETR. While previous studies bear this out, it is interesting to see how companies in different ETR value these variables. This is shown by the significant difference between the coefficients at the lower and the higher quantiles. Second, other variables have a relatively constant effect on ETR across different ETR level. These include the ratio of earnings before income tax to total assets (ROA), family CEO (FCEO), the ratio of outside board member (OUT), operational risk (RISK), firm size and cash flows from operating activities (CFO).

Keywords— Effective Tax Rate, Family Business, Financial Leverage

INTRODUCTION

The business income tax is the tax collected by the government from a business enterprise based on its annual taxable income and the statutory tax rate schedule. Theoretically, the business income tax rate is determined by the need of government expenditures, for example, a country providing its citizens with a better social welfare system would have a higher tax rate. However, in an attempt to encourage the development of certain industries or investment activities, the government often stipulates various laws of tax incentives, thus creating a difference between the nominal business income tax and the effective tax rate of business enterprises.

Furthermore, tax incentives also cause acute differences in the effective tax rate among companies from different industries of of/with different sizes, violating the principle of tax equity. The study of the Citizens for Tax Justice presented by McIntyre and Wilhelm (1985) loudly criticized large companies for having unreasonably low effective tax rates. That study was generally regarded as the major catalyst that fostered the 1986 tax reform in the United States. Thereafter, many US scholars used the effective tax rate to evaluate the performance of the Tax Reform Act of 1986 on corporate tax burdens and tax fairness (e.g. Hagan and Larkins, 1992; Kern and Morris, 1992; Omer, Molloy and Ziebart, 1993; Gupta and Newberry, 1997). Hence, effective tax rate studies are important both in academics and in public policy debate; they are useful not only in the fairness surveillance of a nation's taxation system and the need for reform, but also useful in evaluating the success of tax reforms.

Since there are numerous factors causing differences between the effective tax rate and the nominal tax rate, a number of finance and accounting scholars have attempted to discover the factors deciding the effective tax rate. Studies of this nature could further clarify the various factors leading to tax differences, as well as make a valuable reference for taxation policies. The studies on Taiwan's effective tax rate are still in the incipient stage. Domestic studies, such as Chou et al. (1989) and Lin and Yang (1994), generally examined the relation of effective tax rate and company size in a univariate framework and overlooked the effects of corporate characteristics on the effective tax rate. Hence, prior studies potentially created correlated omitted variables problems, leading to biased and inconsistent parameter estimations.

As an alternative to OLS regression, this study uses quantile regression to presents an overview of tax burden and income inequality. The remainder of this study is organized as follows. Section 2 proposes our methodology. Section 3 provides a brief model. Section 4 presents the empirical results, and Section 5 concludes.

METHODOLOGY

Quantile regression (hereafter, QR) is based on the minimization of weighted absolute deviations to estimate conditional quantile (percentile) functions (Koenker and Bassett 1978; Koenker and Hallock 2001; Zietz et al. 2008). For the median (quantile=0.5), symmetric weights are used, and for all other quantiles (e.g., 0.1, 0.2, …, 0.9) asymmetric weights are employed. In contrast, classical OLS regression estimates conditional mean functions. Unlike

OLS, quantile regression is not limited to explaining the mean of the dependent variable. It can be employed to explain the determinants of the dependent variable at any point of the distribution of the dependent variable.

Quantile regression generalizes the concept of an unconditional quantile to a quantile that is conditioned on one or more covariates. Least squares minimizes the sum of the squared residuals,

$$\min_{\{b_j\}_{j=0}^{k}} \sum_i \left(y_i - \sum_{j=0}^{k} b_j x_{j,i}\right)^2,$$

where y_i is the dependent variable at observation i,x_(j,i) the jth regressor variable at observation i, and b_j an estimate of the model's jth regression coefficient. By contrast, quantile regression minimizes a weighted sum of the absolute deviations,

$$\min_{\{b_j\}_{j=0}^{k}} \sum_i \left|y_i - \sum_{j=0}^{k} b_j x_{j,i}\right| h_i,$$

where the weight h_i is defined as
h_i=2q
if the residual for the ith observation is strictly positive or as
h_i=2-2q
if the residual for the ith observation is negative or zero. The variable q (0<q<1) is the quantile to be estimated or predicted.

The standard errors of the coefficient estimates are estimated using bootstrapping as suggested by Gould (1992, 1997). They are significantly less sensitive to heteroscedasticity than the standard error estimates based on the method suggested by Rogers (1993).

Quantile regression analyzes the similarity or dissimilarity of regression coefficients at different points of the distribution of the dependent variable, which is effective tax rate in our case.

THE MODEL

In order to analyze the factor influencing corporate effective tax rates in Taiwan, we use balance panel data from the listed corporations during 1984 to 2012. However, since some countries do not present data for all considered variables we need to discard some data. Table 1 provides the definition of variables and expected impact.

Quantile regression approach offers a more complete characterization of the stochastic relationship among variables and provide a more robust, and consequently more efficient, estimates in some non-Gaussian settings. In the case analyzed in this paper, this class of estimator is suitable, since it is important to analyze the behavior of tax planning in each quantile of the conditional ETR distribution.

To study the determinants of effective tax rate, we estimate the following model:

$$\mathrm{ETR}_{it} = \beta_0 + \beta_1 FB_{it} + \beta_2 LEV_{it} + \beta_3 ROA_{it} + \beta_4 FCEO_{it} + \beta_5 OUT_{it} + \beta_6 RISK_{it} + \beta_7 SIZE_{it} + \beta_8 CFO_{it} + \epsilon_{it}$$

The effective tax rate, ETR, is a common measure of corporate tax aggressiveness in prior literature (e.g. Gupta and Newberry, 1997; Hanlon and Slemrod, 2009; Wilson, 2009; Chen et al., 2010; Chan et al., 2013). The ETR can be used to evaluate the distribution effect of the tax system in the economy, thus providing an indicator for determining the presence of capital allocation distortion. Therefore, ETR is a widely used parameter of tax policy makers and academic researchers. Following Wu et al. (2013), we define ETR as the ratio of the current portion of tax expense to adjusted taxable income.

The explanatory variable, FB, is a dummy variable used to test the effect of family business on ETR. LEV denotes a firm's capital structure, which is measured as total debt divided by total assets. SIZE is measured as the natural logarithm of the total assets. While larger firms have more resources for tax planning and are better able to reduce their tax burdens (Shevlin and Porter, 1992; Dyreng et al., 2008). ROA denotes earnings before income tax divided by book value of total assets. FCEO is a dummy variable. OUT is the ratio of outside board member. RISK denotes the standard derivation of firm profitability. CFO is cash flow right over voting rights.

EMPIRICAL RESULTS

Table 1 demonstrates the descriptive statistics of the dependent variable and the explanatory ones. All of the results are presented in Table 2. The first column provides the OLS regression results, and the next nine columns provide the QR results for quantiles 10 to 90. First, the OLS slope estimate of the ROA, FCEO, OUT and SIZE are significantly positive at the 1% level. This result indicates that the ROA, FCEO, OUT and SIZE have influence on ETR. Secondly, RISK and CFO have negative influence on ETR in OLS regression. Third, we found no significant relationship among FB, LEV and ETR.

Table 1 The definition of variables

Variable Name(Code)	definition
Explained variables	
Effective Tax Rate(ETR)	Total income tax burden (% of earnings before income tax)
Explanatory variables	
Return on Assets (ROA)	Earnings before income tax/ book value of total assets
Family Business (FB)	If the company is family firm is 1, and 0 otherwise
Family CEO (FCEO)	If the ultimate control shareholder family serve as President or CEO is 1, and 0 otherwise
Financial Leverage (LEV)	Total debt(% of total assets)
The Ratio of Outside Board Member (OUT)	Outside directors(% of board committee)
Operations risk (RISK)	Standard derivation of firm profitability(firm profitability=earnings before income tax/book value of total assets)
Firm Size (SIZE)	Natural logarithm of total assets
Cash Flows rights (CFO)	Cash flow rights over voting rights

By contrast, the quantile-varying estimates of the ETR variable derived by the Quantile regression, reveal considerable variation in size, significance and even in sign. In particular, by using the 10% level of significance as a criterion, while the FB variable is associated with an insignificant coefficient at the lower and median quantiles, 0.1, 0.5 and 0.6, it becomes a significantly negative coefficient at lower quantiles levels from 0.2 to 0.4, but positive coefficient at higher quantiles levels from 0.7 to 0.9. This shows that family business is relatively efficient in making tax planning in company with higher effective tax rate.

For the firm characteristics, greater SIZE increases ETR, but not consistently throughout the conditional distribution. The effect seems bimodal, with less positive and more insignificant effects in the tails among the most and least ETR. The effect of CFO is insignificant in the lowermost quantile, suggesting that within the less ETR companies, increasing the CFO does not change tax planning.

For the board characteristics, the effect of OUT is nearly always positive, causing higher ETR; i.e., OUT is correlated with more ETR. However, the effect of OUT is not consistently significant. OLS estimates suggest OUT matters quite a bit in increasing ETR, but quantile regression results do not uniformly confirm that.

Table 2 Descriptive Statistics

Variables	Mean	Median	S.D.	Min	Max
ETR	14.321	13.770	14.643	0	99.100
FB	0.612	1	0.487	0	1
LEV	41.858	42.150	18.017	0.580	99.130
ROA	4.043	4.500	10.066	-110.820	95.780
FCEO	0.468	0	0.499	0	1
OUT	0.396	0.400	0.213	0	1
RISK	1.14E-06	1.61E-06	5.35E-05	-0.003	0.000
SIZE	15.230	15.043	1.459	9.795	21.624
CFO	24.365	20.290	17.898	0.010	100.000

Table 3 Coefficient estimates, OLS and by Quantile

		Quantile								
	OLS	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Constant	0.357	-0.039	-3.584***	-8.608***	-11.374***	-9.162***	-3.714*	5.543**	12.704***	29.800***
	(0.839)	(0.923)	(0.000)	(0.000)	(0.000)	(0.000)	(0.095)	(0.011)	(0.000)	(0.000)
Dependent variable										
FB	0.056	-0.004	-0265**	-0.600**	-0.565*	-0.287	0.081	0.543*	0.819**	1.173***
	(0.844)	(0.946)	(0.037)	(0.013)	(0.073)	(0.392)	(0.794)	(0.081)	(0.018)	(0.008)
LEV	0.007	-0.000	-0.013***	-0.022***	-0.007	0.018**	0.039***	0.076***	0.087***	0.083***
	(0.380)	(0.909)	(0.000)	(0.000)	(0.401)	(0.039)	(0.001)	(0.000)	(0.000)	(0.000)
ROA	0.337***	0.005*	0.225***	0.430***	0.532***	0.571***	0.552***	0.474***	0.290***	-0.245***
	(0.000)	(0.069)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
FCEO	0.817***	0.003	0.336***	0.663***	1.062***	1.400***	1.217***	1.174***	1.013***	0.278
	(0.003)	(0.958)	(0.004)	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.524)
OUT	1.848***	0.005	1.006***	2.799***	3.085***	2.208***	1.969**	0.833	0.844	0.148
	(0.006)	(0.972)	(0.000)	(0.000)	(0.000)	(0.005)	(0.014)	(0.268)	(0.304)	(0.894)
RISK	-7605.079***	-181.373	-9179.712*	-27566.29***	-35694.91***	-41989.15***	-32129.29***	-17542.64***	-870.429	12570.25***
	(0.005)	(0.462)	(0.089)	(0.000)	(0.000)	(0.000)	(0.003)	(0.007)	(0.478)	(0.000)
SIZE	0.739***	0.003	0.309***	0.780***	1.107***	1.110***	0.917***	0.475***	0.275*	-0.210
	(0.000)	(0.907)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.084)	(0.294)
CFO	-6.87E-08***	5.78E-09	2.86E-09	-3.71E-08***	-5.47E-08***	-7.87E-08***	-8.36E-08***	-6.89E-08***	-6.18E-08***	-3.24E-08***
	(0.000)	(0.681)	(0.649)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Note : *p*-values appear in parentheses. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 level

CONCLUSION

Numerous factors have been considered to assess the causes of effective tax rate. We use a panel of 1,062 companies over the period 2005-2014, and we apply the quantile regression for panel data. This study produces some interesting results. First, family business and financial leverage (LEV) are often used to determine the performance of a company since they are expected to have a significant effect on the ETR. While previous studies bear this out, it is interesting to see how companies in different ETR value these variables. This is shown by the significant difference between the coefficients at the lower and the higher quantiles. Second, other variables have a relatively constant effect on ETR across different ETR level. These include the ratio of earnings before income tax to total assets (ROA), family CEO (FCEO), the ratio of outside board member (OUT), operational risk (RISK), firm size and cash flows from operating activities (CFO).

These results add to the body of research explaining how these factors affect the effective tax rate. The implication of these findings is that one important means for improving the tax planning of companies.

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The Impact of Corporate Governance and Effective Tax Rate on their R&D Investment Decisions

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Abstract. Investments in R&D can influence a firm's ability to develop new products and to create and adopt innovative technologies that may enhance productivity. However, due to uncertainty regarding the outcome, investments in R&D may lead to an agency problem between the owners and the managers of a firm. This paper studies whether corporate governance and effective tax rate would affect the R&D investment decisions. Our empirical analysis is based on listed company in Taiwan from 2005 to 2014 by using quantile regression. The results of estimates of the effects of corporate governance on R&D investment, presents evidence that in order to increase R&D investment, the company would have to emphasize in its corporate governance, such as cash flow rights, deviation, family business, the ratio of outside board member and firm size. In addition, in our study, quantile regression estimates are quite different from those from OLS regressions. Among the higher R&D investment companies, higher effective tax rate and greater total accruals do appear to reduce R&D investment. Our results suggest that some current R&D investment decision may be reconsidered, especially among the higher R&D investment companies.

Keywords— Corporate Governance, Effective Tax Rate, Quantile Regression

INTRODUCTION

Investments in research and development (R&D) are essential to advance innovation. However, R&D spending has certain characteristics that make it different from other investments: it is time-consuming and often fails to meet objectives. R&D returns are uncertain and highly skewed (Scherer, 1998; Scherer and Harhoff, 2000). Making R&D investments therefore requires a risk-taking attitude and a long-term horizon. This explains why R&D investments may lead to an agency problem between owners and managers of a firm: the manager undertaking the R&D decisions often has better information about the likelihood of success and the nature of given R&D activity than does an external owner, and this creates an instance of asymmetric information (Akerlof, 1970; Leland and Pyle, 1977; Myers and Majluf, 1984; Thakor, 1990).

In addition, because managers are usually primarily interested in short-term performance, they may fear the costs associated with R&D and favor projects with short-term payoffs over uncertain projects with long-term payoffs. This can lead to a moral hazard situation (Campbell and Marino, 1994; Hirshleifer and Thakor, 1992; Narayanan, 1985). As a result of asymmetric information and moral hazard, an underinvestment problem may occur with R&D. Specifically, the firm may invest less in R&D than it should to stay competitive. Yet, problems of moral hazard may also lead to overinvestment: managers may invest the firm's free cash flow in their "pet projects" rather than paying out the funds to shareholders (Jensen, 1986; Vogt, 1994). Either way, the investment strategy is not value maximizing from a firm's perspective.

From an agency theory perspective, family-and lone founder-owned firms are different from other businesses (Chrisman et al., 2004, 2007). In particular, the owners are in a strong position to monitor the management of the firm. As owners, families and lone founders usually own large blocks of stock, which is why they have a strong incentive to ensure effective monitoring (Fama, 1980; Maug, 1998). Moreover, they often exhibit a thorough understanding of the business and its underlying processes, which reduces the information asymmetries between the owners and managers of the firm (Miller and Le Breton-Miller, 2005; Ward, 2004). In some cases, the managers of the firm are owner-managers or belong to the business-owning family. A stronger alignment of a firm's ownership and management suggests lower agency costs (Jensen and Meckling, 1976) and more efficient R&D spending. For family firms, however, this view has been challenged from several perspectives.

It has been argued that family firms are characterized by conflicts originating from, e.g., sibling rivalries, identity conflicts and different goals of individual family members with regard to the development of the firm (Dyer, 1994; Eddleston and Kellermanns, 2007; Schulze et al., 2001, 2003). Another stream of literature argues that families as owners may primarily seek private control-oriented benefits and preferentially seek high dividends over firm growth (Chandler, 1990; Claessens et al., 2002; Johnson et al., 2000; Morck and Yeung, 2003). Their comprehensive understanding of the business and their entrenchment in the firm puts them in a strong position to pursue their private

goals. These two lines of arguments cast doubt on families being strong monitors and suggest less efficient R&D spending in family firms relative to lone founder or other firms. In summary, it is an open question whether family firms exhibit high or low levels of R&D spending and R&D productivity and how they as a group compare against lone founder or other firms.

This paper contributes to the discussion about the link between corporate governance, effective tax rate and R&D investment. As an alternative to OLS regression, this study uses quantile regression to presents an overview of tax burden and income inequality. The remainder of this study is organized as follows. Section 2 proposes our empirical method. Section 3 provides a brief model. Section 4 presents the empirical results, and Section 5 concludes.

EMPIRICAL METHOD

Constant-coefficient regression models have been applied extensively in statistics, while various random-coefficient models have also emerged as viable competitors in particular fields of application. One variant of the latter class of models, although perhaps not immediately recognizable as such, is the Quantile regression (hereafter, QR). Quantile regression is based on the minimization of weighted absolute deviations to estimate conditional quantile (percentile) functions (Koenker and Bassett 1978; Koenker and Hallock 2001; Zietz et al. 2008). For the median (quantile=0.5), symmetric weights are used, and for all other quantiles (e.g., 0.1, 0.2, …, 0.9) asymmetric weights are employed. In contrast, classical OLS regression estimates conditional mean functions. Unlike OLS, quantile regression is not limited to explaining the mean of the dependent variable. It can be employed to explain the determinants of the dependent variable at any point of the distribution of the dependent variable.

Quantile regression generalizes the concept of an unconditional quantile to a quantile that is conditioned on one or more covariates. Least squares minimizes the sum of the squared residuals,

$$\min_{\{b_j\}_{j=0}^{k}} \sum_i \left(y_i - \sum_{j=0}^{k} b_j x_{j,i}\right)^2,$$

where y_i is the dependent variable at observation i,x_(j,i) the jth regressor variable at observation i, and b_j an estimate of the model's jth regression coefficient. By contrast, quantile regression minimizes a weighted sum of the absolute deviations,

$$\min_{\{b_j\}_{j=0}^{k}} \sum_i \left|y_i - \sum_{j=0}^{k} b_j x_{j,i}\right| h_i$$

where the weight h_i is defined as
h_i=2q
if the residual for the ith observation is strictly positive or as
h_i=2-2q
if the residual for the ith observation is negative or zero. The variable q ($0<q<1$) is the quantile to be estimated or predicted.

The standard errors of the coefficient estimates are estimated using bootstrapping as suggested by Gould (1992, 1997). They are significantly less sensitive to heteroscedasticity than the standard error estimates based on the method suggested by Rogers (1993). Quantile regression analyzes the similarity or dissimilarity of regression coefficients at different points of the distribution of the dependent variable, which is R&D investment in our case.

THE MODEL

In order to analyze the empirical relationship between corporate governance, effective tax rate and R&D investment, we use balance panel data during 2005 to 2014. However, since some countries do not present data for all considered variables we need to discard some data. Table 1 provides the definition of variables and expected impact.

Since R&D investment could have heterogeneity in the potential effects, we use a structural quantile regression (QR) method, where R&D investment for each company is the dependent variable of effective tax rate and other control variables. QR estimation is fully described in Koenker (2005).

Quantile regression approach offers a more complete characterization of the stochastic relationship among variables and provide a more robust, and consequently more efficient, estimates in some non-Gaussian settings. In the case analyzed in this paper, this class of estimator is suitable, since it is important to analyze the behavior of tax burden in each quantile of the conditional R&D investment distribution. QR is not only concerned with the R&D investment effect on the average individual, but allows one to estimate the marginal effect of a given effective tax rate on individuals at different points in the conditional achievement distribution.

To study the determinants of R&D investment, the estimated equation takes the following form:

$$R\&D_{it} = \alpha + \beta_1 ETR_{it} + \beta_2 ROA_{it} + \beta_3 DIV_{it} + \beta_4 GRO_{it} + \beta_5 RISK + \beta_6 PRF_{it} + \beta_7 FB_{it} + \beta_8 OUT_{it} + \varepsilon_{it} \quad (1)$$

R&D investment (R&D) and effective tax rate (ETR) are standard determinants that are used in almost every study devoted to the causes of income distribution. Following Wu et al. (2013), we define ETR as the ratio of the current portion of tax expense to adjusted taxable income. The other variables in Eq. (1) have also been used quite frequently in some studies. FB is a dummy variable used to test the effect of family business on ETR. LEV denotes a firm's capital structure, which is measured as total debt divided by total assets. SIZE is measured as the natural logarithm of the total assets. While larger firms have more resources for tax planning and are better able to reduce their tax burdens (Shevlin and Porter, 1992; Dyreng et al., 2008). ROA denotes earnings before income tax divided by book value of total assets. FCEO is a dummy variable. OUT is the ratio of outside board member. RISK denotes the

Table 1 The definition of variables and expected impact

Variable Name(Code)	**Variable definition**	**Expected impact**	**Source of data**
R&D Investments(RD)	Research development expense(% of total sales)		TEJ
Effective tax rate(ETR)	total income tax burden(% of earnings before income tax)	−	TEJ
Family firms(FB)	If the company is family firm, and 0 otherwise.	+	
Return on assets(ROA)	Earnings before income tax (% of total assets)	−	
Enterprise growth rate(GRO)	(Net operating income for the year/Net operating income last year)-1	+	
Outside directors (OUT)	Outside directors (% of board committee)	+	
Operations risk(RISK)	standard derivation of 5 years firm profitability(firm profitability= earnings before income tax/book value of total assets)	−	
Dividend payout rate(DIV)	Cash dividends for ordinary shares & cash dividends for special shares (% earning after income tax)	+	
Firm profitability(PRF)	Pre-tax profit before depreciation (% book value of total assets)	−	

standard derivation of firm profitability. CF is cash flow right over voting rights.

EMPIRICAL RESULTS

All of the results are presented in Table 3. The first column provides the OLS regression results, and the next nine columns provide the QR results for quantiles 10 to 90. First, the OLS slope estimate of the effective tax rate is insignificantly negative at the 1% level. This result indicates that the higher effective tax rate by government do not influence on R&D investment. Secondly, the greater firm profitability, the more R&D investment. The family firms, return on assets, operation risk, dividend payout ratio, Enterprise growth rate and outside directors do not affect R&D investment significantly. However, OLS estimates provide a baseline of mean effects, and we compare these to estimates for separate quantiles in the conditional distribution of R&D investment.

Table 2 Summary statistics

Variable	**Mean**	**Std. Dev.**	**Min.**	**Max.**
RD	6.514	98.859	0.000	8890.76
ETR	14.738	14.765	0.000	99.100
ROA	4.237	9.928	-110.820	49.400
DIV	0.535	4.127	-26.861	344.736
GRO	12.624	313.651	-99.800	27896.370

RISK	1.69E-06	5.12E-05	-0.003	0.000
PRF	9.312	10.369	-107.620	71.560
FB	0.589	0.492	0.000	1.000
OUT	0.417	0.2077	0.000	1.000

By contrast, the quantile-varying estimates of the R&D investment derived by the Quantile regression, reveal considerable variation in size, significance and even in sign. In particular, by using the 10% level of significance as a criterion, while the ETR variable is associated with a significant coefficient at the all quantiles, from 0.1 to 0.9, it becomes a significantly negative coefficient at higher quantiles levels from 0.1 to 0.9. This shows that higher effective tax rate is relatively efficient in decreasing R&D investment in companies.

The coefficients for the return on assets, ROA, show a different result: lower ROA has a much higher impact in lower R&D investment than in higher R&D investment. This shows that return on assets is relatively efficient in decreasing R&D investment in companies which already have a less R&D investment. Our results indicate that there is strong evidence that the effect of ROA is not constant, but varies among the various quantiles. In addition, it is important to note that the effect of enterprise growth rate, GRO, is nearly always positive, causing higher R&D investment; i.e., higher GRO is correlated with higher R&D investment. However, the effect of GRO is not consistently significant. OLS estimates suggest GRO do not matter quite a bit in increasing R&D investment, but quantile regression result do not uniformly confirm that. Specifically, GRO substantially heighten R&D investment, but only within quantiles levels from 0.3 to 0.9.

Table3 Results of OLS and Quantile

	OLS		**Quantile**								
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
C	10.135	***	0.134***	0.433***	0.837***	1.369***	2.038***	2.992***	4.178***	6.470***	12.907***
	(0.003)		(0.027)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ETR	-0.122		-0.003**	-0.007***	-0.010***	-0.014***	-0.021***	-0.032***	-0.043***	-0.058***	-0.107***
	(0.108)		(0.033)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	-0.006		-0.034**	-0.044***	-0.038***	-0.032***	-0.025**	-0.014	-0.005	0.047	-0.017
	(0.985)		(0.000)	(0.000)	(0.000)	(0.001)	(0.049)	(0.473)	(0.877)	(0.118)	(0.834)
DIV	0.016		0.021	0.021*	0.024***	0.022***	0.021***	0.020***	0.018***	0.012***	0.018
	(0.951)		(0.121)	(0.098)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.769)
GRO	0.001		0.000	0.000	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.851)		(0.978)	(0.992)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
RISK	-19366.8		-4796.4	-15201.790	-20301.670	-20078.700	-19823.150*	-24132.890	-29758.2	-62245.96*	-63429.42*
	(0.390)		(0.866)	(0.102)	(0.000)	(0.000)	(0.000)	(0.000)	(0.106)	(0.000)	(0.000)
PRF	-0.486	*	0.035***	0.046***	0.038***	0.027***	0.016	-0.002	-0.023	-0.098***	-0.194***
	(0.093)		(0.000)	(0.000)	(0.000)	(0.001)	(0.152)	(0.928)	(0.290)	(0.000)	(0.005)
FB	1.563		-0.146***	-0.311***	-0.501***	-0.768***	-0.942***	-1.179***	-1.434***	-2.166***	-3.168***
	(0.480)		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
OUT	4.372		0.396***	0.991***	1.761***	2.478***	2.993***	3.762***	4.800***	7.376***	9.925***
	(0.406)		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R-square		0.004001		Pseudo R-squared		0.027382					
Adjusted R-squared		0.003058		Adjusted R-squared		0.026452					

Note：*p*-values appear in parentheses. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels

CONCLUSION

Investments in R&D can influence a firm's ability to develop new products and to create and adopt innovative technologies that may enhance productivity. However, due to uncertainty regarding the outcome, investments in R&D may lead to an agency problem between the owners and the managers of a firm. This paper studies whether corporate governance and effective tax rate would affect the R&D investment decisions. Our empirical analysis is based on listed company in Taiwan from 2005 to 2014 by using quantile regression.

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These results add to the body of research explaining how these factors affect the R&D investment. The implication of these findings is that one important means for improving the R&D investment of some companies is to drastically change not only board characteristics, but also corporate governance structure.

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The Relationship Between Facebook Engagement and Team Identification: An Investigation for Sport Fans

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Abstract. Social media-especially Facebook- have a great effect in terms of fans' relationship. The aim of this study is to investigate the relationship between Facebook engagement and team identification for soccer fans. The sample consists of 470 soccer fans in a city of Central Anatolia, Turkey. The scales of Facebook engagement and team identification were subjected to reliability, validity, confirmatory factor analysis (CFA) procedures. The results of EFA and CFA indicated the satisfactory fit values about validity and reliability. The main result of the study indicates that there are a significant relationship ($p < 0.01$) between Facebook engagement and team identification. The study has significant implications as to how well sport team managers design social media strategies.

Keywords— Facebook, Facebook Engagement, Sport Marketing, Team Identification, Turkey

INTRODUCTION

Team managers that are aware of this involvement of the fans into the social media have begun to take conscious steps for using Facebook in more effective ways and to develop strategies in this regard. Engagement subject has attracted attention as one of the today's most popular concepts and practices. It is trying to use social media tools effectively to keep the fans in a continuous relationship with the club.

The subject of Facebook engagement can be used for both loyalties of the fans, profitability and reinforcement of the team identification. Keeping fans constantly connected with the team through social media can contribute to the development of awareness and level of advocacy. Social media that has become a medium that can be measured, especially Facebook, has come to be used in an effective and efficient manner in the development of advocacy. For this reason, it has been seen that people who associate more their self with the team or whose team identification is more advanced share more things about their team on social media. Therefore, it is likely to mention the existence of a relationship between Facebook engagement and team or fan identification.

Although there are conducted researches on Facebook, the purpose of Facebook usage among fans and on similar issues in the literature, the number of conducted researches examining the relationship between Facebook attachment and team identification is extremely limited. Thus, the purpose of this research is to examine this relationship

LITERATURE REVIEW

Fan identification is one of the subjects studied in different sports branches such as basketball, football, and baseball (Wann, Dimmock, & Grove, 2003). Fan identification is defined as establishing a psychological connection of a fan for a team (Wann et al., 2001). According to this definition, a fan perceives the team as an extension of his/her personality. Trail, Anderson, and Fink (2000) defined identification as "an orientation of the self in regard to other objects including a person or group that results in feelings or sentiments of close attachment" (p. 165-166). Branscombe and Wang (1992) define a fan's identification as a level of special concern or attachment for a special team.

Researchers reveal that fan identification is an important indicator from emotional, cognitive and behavioral aspects in many sports branches. (e.g. Kim, 2013; Wann & Branscomb, 1993; Wann & Dolan, 1994; Wann, Tucker, & Schrader, 1996). For instance, fan identification has a positive effect on fans' perception of the sponsors of the team they support. Fans with the high level of dedication have more awareness on their team's sponsors, fed more positive feelings towards them, and are more likely the purchasers of the products of the sponsors (Dalakas, & Phillips Melancon, 2012; Gwinner and Swanson, 2003). The level of fan allegiance gives a clue about an individual's persistance and resistence for a team. Allegiance situation of a fan for the team is evaluated with team identity, fan loyalty, psychological commitment and connection, team attachment and relationship quality (Yoshida et al., 2014). And also, in the literature it is considered that geographical location socialization agents, perceived similarity with the team, and team success are the reasons for team identification (Theodorakis, Wann & Weaver, 2012).

Engagement is one of the concepts examined widely in different disciplines. The concept "engage" in the sport marketing literature is often used (Yoshida et al., 2014). Marketing scholars view customer engagement as 'the level of a customer's physical, cognitive and emotional presence in their relationship with a service organization' (Patterson et al, 2006; cited in Chan et al., 2014, p. 83). Bowden (2009) conceptualized the customer engagement concept as a psychological process by examining it from cognitive and emotional aspects. Fan engagement can be considered as an interaction and experience (Chan et al., 2014). The subject of fan engagement can also be considered from the perspective of relationship marketing in sports marketing literature (Pronschinske, Groza, & Walker, 2012). When taking the subject with this approach, interactions between a sports team and fans and shared experiences with bringing the realities of matches to the social media will be considered in this context.

Malhotra, Malhotra and Sea (2013) refer to the eight ways used as tools to establish brand engagement on Facebook of increasing the number of likes. These are: express yourself through photos, be topical, share the validation, don't hesitate to be in your face, educate the fans, humanize the brand, humor is the best social medicine, and ask to be "liked". When you take these eight ways, it is possible to see that these are widely used by the fans about their own team.

Sports teams present themselves on Facebook and fans respond this presentation. Involvement of fans to Facebook pages can also be considered as a clue about fan identifications. Traditionally, the concept of customer engagement is seen as transactional and non-transactional in sports marketing literature (Yoshida et al., 2014). Eventually, both transactional and non-transactional fan engagement elements can direct social media operations in today's world.

Researchers have examined also the relationship between team identification and fan aggression (Wann et al., 1999), sport team performance (Wann & Dolan, 1994), fan loyalty (Kim, 2013), and sponsorship outcomes (Gwinner & Swanson, 2003). However, research that bas examined the relationship Facebook Engagement and Fan Identification are limited. Given its likely influence on fandom, sport marketing researchers would benefit from increased understanding of how fans' Facebook usage characteristics are related to fan identification.

Bernthal et al. (2015) indicates that there is a positive relationship between engagement variables and spectatorship. The research also found a positive relationship with attendance at and viewership of top-level tournaments.Loyal fans do not only deal with the tasks that serve their own interests, but also are concerned with the tasks for the benefit of the team they are in favor (Yoshida et al., 2015). In this sense, Facebook engagement can be considered as a key variable in creating or developing fan identification. Facebook engagement influences not only more repeat interaction, but also the behavioral component of identification (support, greater participating frequency, etc.).

Yosida et al. (2014) have predicted that there is a significant relationship between management cooperation with fan engagement dimensions, pro-social behavior, and performance tolerance. As a result of the research, it is found that fan identification is the leader of all three dimensions of fan engagement. Based on the above-noted issues and the results obtained in this study; we anticipate that in this study there is a significant relation between team identification and Facebook attachment. The model based on this anticipation is as follows.

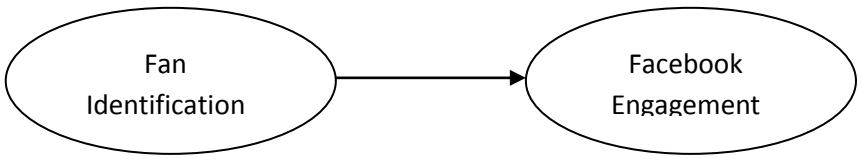

Figure 1. Conceptual model

METHODOLOGY

The questionnaire of this study contained two scales and, demographic and fandom characteristics. The following two scales were included in the model analysis: fan identification and Facebook engagement (Table 1). The scales were measured using a 5-point Likert scale ranging from 1 (never) to 5 (very frequently). Participants responded to seven-items related to their fan identification behaviors. The items in the fan identification engagement scale were adopted from Moyer (2012), Theodorakis et al. (2010) and Wann and Branscombe (1993) to determine identification about the favorite team of the participants. The second scales titled as Facebook engagement comprised seven-items. The seven-items related to Facebook engagement were adopted from Moyer (2012).

The data were collected using nonprobability convenience sampling, where participants who fit the eligibility requirements (18 years and bigger fans in a university) were asked to fill in a self-completion questionnaire. A total of 627 valid questionnaires were sent and 523 were completed in the one week time frame. Data cleaning based on

missing values and blank questionnaires narrowed the total to 470, which were used in the analysis (74% final response rate). Participant demographics indicated that 50.4 percent of the respondents were female, and that the majority of the respondents (55.7%) were between the ages of 20-22. Large majority of participants (80.8%) was faculty students. $170 $ or below. More than 40 % was at $170 $ or below. In terms of fandom status, 41.9 % of them were fan of Galatasaray, about 26% of the participants were Fenerbahce fans, and 20% of them were Besiktas fans.

RESULTS

Measurement and Structural Models

To determine the measurement of the model a confirmatory factor analysis (CFA) was performed (see Table 2). At the level of fan identification scale, ratio of X^2 to degrees of freedom (X^2=7.99; df= 5; p > 0.05) was 1.598, indicating smaller than the cutoff point of 3. Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Incremental Fit Index (IFI) and comparative fit index (CFI) values over 0.90 were considered to represent an adequate fit; a root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR) under 0.05 indicated a good fit and a RMSEA between 0.05 and 0.08, a reasonable fit, between 0.08 and 0.1 satisfactory fit (Bollen & Long, 1993; Thompson, 2004). The following fit indices were considered satisfactory: RMSEA (0.038) < .05, SRMR (0.007) < 0.05, CFI (1.00) > 0.95, GFI (0.99) > 0.95 (Browne & Cudeck, 1993), AGFI (0.98) > 0.5, NFI (1.00) > 0.95, NNFI (1.00) > 0.90; IFI (1.00) > 0.95.

Table 1. Facebook engagement and fan identification

	Std. Loads	*t value*	*M*	*SD*
Facebook Engagement (F-ENG)			2.93	1.18
Follow updates	.91	25.61	2.98	1.33
Read stories	.93	26.56	2.76	1.33
Watch videos	.93	26.27	3.10	1.37
View photos	.86	23.58	3.10	1.35
Answer questions/polls or quizzes	.74	19.00	2.70	1.35
Fan Identification (F-IDE)			3.54	1.06
How important to you is it that your favorite team win?	.86	22.95	4.02	1.04
How strongly do your friends see you as a fan of your favorite team?	.93	26.43	3.39	1.26
During the season, how often do you your favorite team via any of the following media: television, on the radio, internet etc.?	.89	24.35	3.50	1.23
How important is being a fan of favorite team to you?	.90	24.99	3.69	1.21
How often do you display your favorite team name or insignia at your place of work, where you live, or on your clothing?	.83	22.07	3.06	1.34
CR: 0.94, 0.96; respectively. AVE: 0.77, 0.78; respectively. Reliabilities (Alphas): 0.93, 0.92; respectively.				

Similarly, CFA results presented a very good fit to the data, in terms of fan identification scale: X^2 /df =2.61 (x2= 13.09, df= 5, p < 0.05), CFI = 1.00, NFI = 1.00, NNFI = 0.99, IFI = 1.00 =0.95, GFI = 0.99, AGFI = 0.97, SRMR = 0.009 and RMSEA = 0.059 (Hu & Bentler, 1999).

Following the confirmation of the measurement model, the conceptual model was evaluated by SEM including the test of path estimates (see Figure 1). The SEM results revealed a good structural fit within the model (X^2/df = 2.48 [X^2 = 84.60, df = 34, p < 0.05], RMSEA and SRMR < 0.08 and 0.05 respectively, CFI, IFI, NFI, NNFI, GFI > 0.95; AGFI > 0.90). Moreover, result from the SEM analysis showed that fan identification were very strong predictor of Facebook engagement (Std. $\beta = 0.86$; $t = 20.59$)

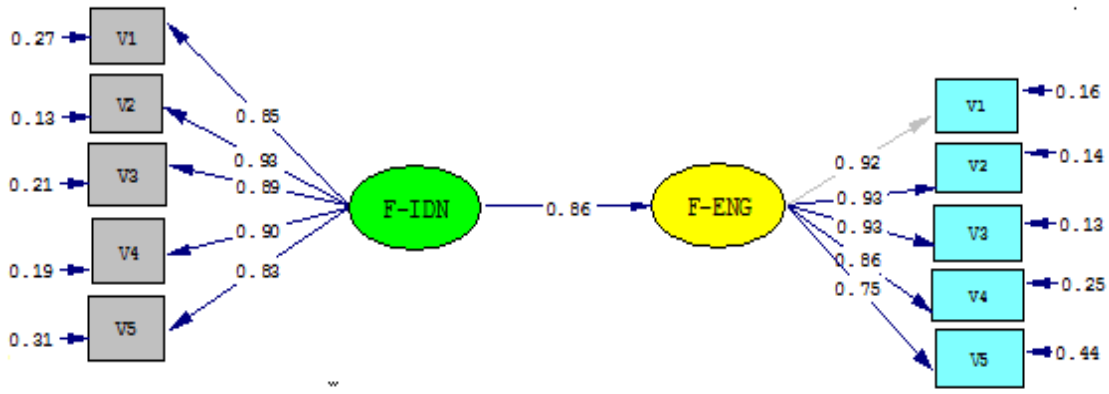

Figure 2. Relationship between fan identification (F-IDN) and Facebook engagement (F-ENG)

DISCUSSION AND CONCLUSION

The purpose of this study was to investigate relationship between fan identification and Facebook engagement. The CFA results show that dimensions about fan identification and Facebook engagement can be conceptualized and measure as unidimensional constructs, separately. The results from the SEM analyses showed that the relationship between fan identification and Facebook engagement was strong. This finding is somewhat consistent with previous research (Yosida et al., 2014), showing associations between fan engagement and sub-dimensions of Facebook engagement, management cooperation, prosocial behavior and performance tolerance. Therefore, consistent with previous suggestions appearing in the sports marketing literature, we conceptualize fan identifications as an antecedent of engagement, loyalty and purchase. Additionally, the originality in this study is that the significant relationship between two variables revealed by researcher.

The findings provide several important insights into the relationship between identification and engagement. The results not only highlight the structure and nature of meaningful relationship, but they also represent the first attempt to test the role of a strong fan identification as an indicator of engagement or transaction. Moreover, the benefit for spot team management is that Facebook engagement is a very cheap way of reaching a potentially very large fan groups and the enormous amount of information about fan database.

Overall, the study results show that the fans who have strong grade have an exceptional role in terms of communicating with external audiences of sport clubs. The findings of this study highlighted that Facebook transactions regarding sport teams emerged. Moreover, our finding regarding relationship between fan identification and social media engagement means that fans as sport team promoters should be encouraged to be form new loyal fans. As a result, this study has significant implications as to how well sport team managers design social media strategies.

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How Can a Networked View of Communities Inform our Understanding of the Communal Responses to Siting Decisions? : A Wind-Energy Case Study from Tunisia

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Abstract. The need to shift from the current fossil-fuel based energy system towards a more environmentally friendly option has become a prerequisite for many countries aiming at fulfilling the total of energy demand requirements and addressing the perils of environmental degradation (Saidur et al., 2010). But in spite of high levels of concern for the environment and uttered preferences for sustainable products, a large consumer base fails to transform their eco-consciousness into regular green purchase behaviours (eg: Hughner, McDonagh, Prothero, Shultz II& Stanton, 2007; Claudy et al, 2013). The same phenomenon frequently referred to as "attitude-behaviour gap" (e.g. Peattie, 2001), occurs in the deployment and use of new RE-based technologies, thereby rendering social acceptance a factor restraining the implementation of these projects and one of the most difficult areas to act upon (Moula et al., 2013).

Keywords— Environmental Degradation, Communities, Siting Decisions

INTRODUCTION

The need to shift from the current fossil-fuel based energy system towards a more environmentally friendly option has become a prerequisite for many countries aiming at fulfilling the total of energy demand requirements and addressing the perils of Environmental Degradation (Saidur et al., 2010). But in spite of high levels of concern for the environment and uttered preferences for sustainable products, a large consumer base fails to transform their eco-consciousness into regular green purchase behaviours (eg: Hughner, McDonagh, Prothero, Shultz II& Stanton, 2007; Claudy et al, 2013). The same phenomenon frequently referred to as "attitude-behaviour gap" (e.g. Peattie, 2001), occurs in the deployment and use of new RE-based technologies, thereby rendering social acceptance a factor restraining the implementation of these projects and one of the most difficult areas to act upon (Moula et al., 2013).

In this respect, psychology experts have had a considerable responsibility to assume in terms of preventing what has been reported by Oslon (1998) as an "ecological holocaust" and fostering the transition toward a more sustainable future, yet their efforts in the design, implementation and assessment of behaviour-change programs have been limited in scope and have not led to effective alterations in behaviours (McKenzie-Mohr, 2000). This is due to sustainability programs only dealing with (only anchored in) information intensive campaigns aiming either at boosting the public knowledge regarding a desired activity or at shedding light on its financial advantages pending that individuals will eventually act in their economic self interest.

A vital catalyst for addressing such issue is to develop a common vision of the communal support of siting decisions amongst the main actors involved and to get to a shared agreement upon what incites the heterogeneous stakeholders to work together towards attaining a satisfactory level of community acceptance. This will be brought about by exploring the interplay between the intervening actors in a community and evaluating how they perform their community roles, use and exchange economic, social and informational resources.

Originally, prior work on communities has been dominated by a theoretical vision which contends that communal assemblies are homogeneous. Subsequent research, nonetheless, brought to light a number heterogeneous communities that "[challenge] and [undermine] the authority of the hegemonic perspective" (Schouten, Martin, and Mc-Alexander 2007, 74). The new perspective outlines the complexities associated with the heterogeneity of the intervening actors from the outside and within the community, the nuances that characterize their motivations and roles and the resources they exchange.

The perspective challenges our thinking in the sense that it entails the careful integration of "disparate but equally important groups" (Fournier, Sele,and Schoegel 2005, 16) and draws on the ability of communities to adjust and act in response to changes arising from both in the external environment and within the community (e.g., DeLanda 2006; Latour 2005).

Despite the prevalence of heterogeneity in contemporary consumer research, we still know little about the interplay between the entirety of the community components and its impact on the communal support of siting decisions.

We embrace the networked view of communities as assemblages of both human and non-human collections of actors so as to document the role of exchanged resources, which through their expressive, informational and material capabilities, will reveal the social mechanisms of communities and incite local residents to adopt supportive behaviours.

LITERATURE REVIEW

2.1. Social Acceptance Of Renewable Energy: A Complex Phenomenon

Authors interested into the renewable energy field ascertain that social acceptance -used as a practical term- is relatively neglected as a theoretical construct. Wüstenhagen et al., (2007) were among the first to propose a three-dimensional model of social acceptance, namely, socio-political acceptance, market acceptance and community acceptance.

Socio-Political Acceptance: It is a general dimension that refers to the attitude of the public, key stakeholders, and policy-makers. According to Sovacool and Lakshmi (2012), it concerns the ability for regulators, policy makers and other key stakeholders to craft effective policies or frameworks that create and promote community and market acceptance.Market Acceptance: It operates at a meso level between national politics and local communities. It involves both consumers and investors and refers to the process of how the market deals with energy innovations.

Community Acceptance: It is more specific as it is linked to projects and as it depends on the nature of the energy under consideration. It refers to the acceptance of siting decision of RE projects by key local stakeholders, particularly indigenous residents, local authorities, local institutions, businesses, landowners, environmental organisations, and "neo-rurals".

Findings of recent research indicate that trust-building activities and institutional arrangements, are important in shaping local community's reactions to new projects. Although previous investigations on the sources of success or failure of wind farms projects show that local rejection is explained in terms of NIMBY attitudes, recent research found that the underlying reason for NIMBY is the perceived unfairness of the decision-making processes rather than selfishness which focuses purely on physical and technical factors (e.g., visual and noise impacts).

Sovacool and Lakshmi (2012) highlight the multidimensionality of community acceptance of wind energy projects and proposed the following typology based on physical and environmental, Psycho-social Social, and institutional factors.

Physical and environmental factors of the site and technical attributes of wind energy related to the characteristics of the technology such as landscape, turbine color, turbine and farm size, wind farm design, turbine noise, distance to turbines and ecological site (birds and other wildlife).

Psycho-social factors are related to the individual and to the collective profile of the community hosting such technology (knowledge, general attitudes, familiarity, perceived benefits and costs, socio-demographics, social network influences).

Social and institutional factors govern the interaction between the technology and the hosting community, such as the nature of the planning and development process, levels of community engagement, perceived justice and fairness and local ownership.

2.2. Literature on consumption communities

2.2.1. Community

In 1987, Lyon reported the following: "In the social sciences the most important concepts are often among the most imprecise… in fact… there seems to be an inverse relationship between the importance of a concept and the precision with which it is defined" (p. 4).

This acknowledgment applies to the word of community which is considered as one of those terms whose utilization gives the impression to generate positive and affectionate sentiments to the detriment of significant analysis. Even though, the concept was commonly and loosely used in our daily language, it's still deficient in definitional clarity and precision. This elusiveness makes its correspondent empirical examination impossible to reach.

Hence researchers were continually trying to agree upon one single comprehensive definition: George Hillary Jr. (1955) might set for the best example to evaluate conformity between 94 sociological definitions.

The results of his work showed that 3 elements had been consistently inherent in 69 of the collected definitions: (1) "common ties" (2) "social interaction" and (3) "spatial consciousness". Based upon Hillary's indicators, a community encloses then a number of people living in the same space, sharing common ties and socially interacting with each other. This latter conceptualization falls into the category of "territory-based" communities that considers geographical boundaries to be a crucial element when speaking about a community.

However, with the technological revolution and the industrialization, a second kind of "territory-free" communities has emerged (Wellman and Gulia, 1999). And those communities are defined as social entities with no geographic frontiers.

In fact, Etzioni (1995) identified 2 compatible, yet different characterizations of community members: First, individuals belonging to the same community share a both encouraging and reinforcing interrelationship. And second, they must feel committed to the shared set of rules or standards, values, and meaning they have in common.

In this direction, social scientists become inclined to place more emphasis on "communities of interest" as a form of gathering which embraces people by the time they become a part of the same mutual identity, start to share the same interests and responsibilities (with or without) belonging to the same geographical scope.

2.2.2. Typology of consumption communities:

Applying the "community" terminology to the consumer research field has created a notable impact on marketing theory progress and resulted in producing a typology of social groupings based on their communal consumption features: Sub-cultures of Consumption, Brand Communities and Consumer tribes. Subcultures: This definition is retrieved from chosen consumer behavior papers:

A subdivision of individuals within a society whose members show strong interpersonal ties, share the same values and modes of symbolic expression, exhibit a common pattern in the way they behave and identify themselves; all of these in a manner that sets them apart from other social affiliations (Solomon, 2007).

Brand communities: A set of interpersonal connections that are arranged around the communal use of a particular brand (Mun˜iz and O'Guinn, 2001). Unlike subculture groups, brand communities members no longer look for alienating social arrangements; instead they are moved with the need to identify themselves as admirers of once brand.

Consumer tribes: Being committed to these communities is likely to happen through sharing collective consumption experiences, which, in turn create similar systems of moral values, close lifestyles and convergent ethical beliefs among members of the community (Cova, 1997). Consumer tribes have been defined as "imagined communities" (Anderson, 2006) with profound interpersonal ties existing in the mind of their people, just coming into sight the moment of interface and then fading (Maffesoli, 1996). Consumer tribes and brand communities and sub cultures are intercorrelated matters sharing most of the time close characteristics however they differ in several respects (Cova, 1997; Cova and Cova, 2002): Brand communities are unequivocally commercial in nature, shaped around a specific product and only focusing on the link between consumers and their beloved brand whereas tribes are neither commercial nor formed by groups of people tracing their socialization around a single trademark. -Tribes are multiple, transient and playful; always assimilated to a momentary criterion permitting people to switch from one tribal identity to another depending on the context within which they operate (online, at domicile, at work…).

METHODOLOGY

Our study is set in Bizerte Governorate located at the northernmost edge of Tunisia and in which a project to expand the wind power plant has been envisioned for the two areas of "Metline, El Alia and Jebel Kchayta" / since 2012. A total of fifteen semi-structured interviews were carried out with regional authority representatives, project planners, local citizens whether land-owners or farmers, and Tunisian company of electricity and gas officials. Purposive and snowball sampling methods were applied in the aim of selecting individuals who will better be able to assist with the relevant research questions of the sort "why particular people (or groups) feel particular ways, the processes by which these attitudes are constructed, and the role they play in dynamic processes within the organization or group" (Palys, 2008, p. 697). The sampling method choice comes from the importance of "who a person is and where that person is located within a group…", "unlike other forms of research where people are viewed as essentially interchangeable" (p.697). Moreover Interviews' duration extended from 1 to 2 hours depending on the willingness of selected participants to provide information for research purposes.

The analysis of textual data was performed with the aid of a hermeneutical approach (Thompson, 1997).The interpretation of collected data involved to-and-fro movement between field and the interpretive framework which led to the adaptation of the schematic structure (Thompson J. Craig, 1997). As a first step, an intratextual analysis was conducted on the basis of each individual interview transcript so as to develop an understanding of the motivations for accepting wind energy project. We then carried out intertextual analysis whereby we looked for similarities and disparities, in particular regarding how community actors manifest and interact with each other and with local institutions, regional authorities (human and non human resources).

As we move forward through the analysis, it became evident that elements of social, information and economic resource dependencies were emerging in the data. We therefore relied on these elements structure our findings and capture their importance while discussing the heterogeneous nature of communities.

ANALYSIS

4.1. Resource Exchange Dependence in Renewable Energy Based-Consumption Communities:

- *Social resource dependency:*

Social resource dependency emanates from a network of relationships between community members who share a sense of both individual and collective belonging helping them maintain a sense of continuity in their daily routines and interactions. Nonetheless, the exchange between farmers and residents in the studied wind energy case is characterized by loose social networks and social isolation. The majority of interviewed farmers said that they had little interaction with people outside the village and that their main social contacts were family members and immediate neighbors.

One commented: "With some of my relatives moving out of the village, I felt socially isolated...I can hardly have any contacts with people… Maybe things will get better with the installation of the wind farm and the newly built roads bringing neighbors more close to each other."

There is evidence of cohesion once community members are forming a united whole and are acting together towards influencing the business activities of the developer. But, when people are in isolation, the community cannot operate as a cohesive social entity and manifest their voices through collective action.

Tensions associated with heterogeneity took place between modest farmers who strongly identify themselves with their communities and wealthy residents who play a de facto leadership role in theirs. These tensions reduce the quality of the relationships, generate distrust amongst locals, and threaten their willingness to promote collective interests. " We grew up in tight-knight community where family members and even neighbors are supposed to look for each others' interests. speak to each other, but one large family playing the role community leader is believed to look after its own interests in negotiating rent with the developer. We don't relate to them."

Additionally some of the local farmers' replies were in congruency with scaraboto's (2015) finding in that adversarial relationships in which individualism prevails over the collective interest is a sign of a community decline:

"there is Fear ingrained in most of us for standing up to corporate and government giants.. Standing up alone prevents us from developing an ability to negotiate and act collectively… We feel we are in a weak position… We cannot defend our area nor can we voice our concerns.''

This is reminiscent of Muniz and O'Guinn's « consciousness of kind » (2001) - a social bond evidenced in the "intrinsic connection members feel toward one another, and the collective sense of difference from others not in the community." It leads to the creation and maintenance of information resources and of social support systems which cement the ongoing commitment to the community and affects its economic and social viability (Mathwick et al., 2008).

Treated from a project developer-local resident side, social resources dependency revealed high levels of mistrust in political actions:

Neither the developer nor the local authorities are trustworthy.. It feels like they are simply exploiting us and are gradually draining out the resources of our land ". Upham and Shackley (2006) compliantly found that low levels of trust in key actors, who are engaged in the development of biomass plant in the UK, play a major role to determining responses to information and assessments provided as part of the statutory planning process. Trust in developers, local authorities and regional development organizations are found to be important ingredients in determining opposition to RE developments. Without the trust of the population, project developers cannot prevent opposition nor can they ensure the acceptance of wind farm proposals (Aitken, 2010).

Krohn and Damborg (1999) argue that people in areas with significant public resistance to wind projects are not against wind turbines per se, they rather are against the people who want to build them. "Don't expect people to get to your side when you don't care about their concerns. Project developers did not keep their promises of fully providing us with free electricity."

A project representative claimed in this sense: " While we are aware of the local population not trusting our words, there are several causes for it that we cannot counterpart; Many intermediates intervene in our relationship to citizens. Another reason is that local residents are exposed to several information sources… Local authorities can drew upon incorrect information while dealing with opposition issues… Intox circulating between citizens reduces the level of trust and prevents constructive discussion between the local residents and project developer."

Consequently, as social trust erodes, concerns about keeping power on project managers' side become magnified. This will decrease locals' willingness to take risks and to expect others to act in mutually supportive ways.

Another point which must be made is about the developer being a public entrepreneur. Having enough knowledge about the local context and the social conditions of the community facilitates one's integration in it and fosters the establishment of a local network of support (Jobert et al., 2007). "Not being a private international investor encourages locals to be more open, facilitates access to the territory and initial conflict resolution".

Last but not least, a series of dependent social resource-exchanges is occurring between the project developer and the local authorities who are working together to promote a positive image of their country and make the best use of the proposed project by integrating it in the tourism activity: "Supporting the installation of a wind park in the heart of a Tunisian, conservative community and non-industrialized area can only reflect our openness to internationally pursued objectives of future sustainability"

- *Informational Resource Dependency*

Informational resource dependency emerges from information exchange between community members.

While Communication is a determining as factor in community acceptance, the case before hand unveiled many issues related to the circulation of information by word of mouth leading to some misunderstandings and inaccuracies, to a lack of communication between the different stakeholders and to incoherence of visions ect… .

Even though project managers acknowledged the importance of engaging local people in communication and negotiation at the early stages of project implantation, "Gaining community support cannot be accomplished through resort to tribunals, but rather through communicating information in a way that that is both accessible and easy to understand.", their actions did not stand up to their words resulting in incoherence of visions:

In concrete terms, project developers have failed to communicate clear messages to the public and answer their fears about the environmental and social impact of wind turbines. Accordingly, community members were fearful of the project outcomes and were perceiving its implementation as threatening the sustainable values they are embracing.

"The developers of the project and local authorities have little contact and limited coordination with other local partners such as landowners, farmers and local residents involved in the project."

Overall, Communication should not be limited to providing information about the project, but basically should involve gaining information about the local context and the stakeholders' concerns. Discussing the different aspects related to project among the local partners (whether landowners, farmers or local residents) is required to pinpoint more clearly what these latter accept and/or reject about the land-use proposal.

- *Economic Resource Dependency*

Economic resource dependency includes resources characterized by a material role in the community such as commercial exchange, rent, economic opportunity, etc.

It has been suggested that generating economic benefits and providing financial incentives for local communities is another key to ensuring community acceptance of proposed wind power developments (Toke, 2005). However, the interviewees expressed that the offered material benefits are not good enough to exceed the locally borne costs of the project.

A number of local residents ascertained that the implementation of the wind turbines did not attain the level of unemployment alleviation they were hoping for nor did it address the local economy decline in a remarkable way.

Residents also expressed their discontent with poverty prevailing in community and with benefits stemming only from access to routes used in commercial exchange and experience between the local residents, and from rent but not from tax money exemption.

Further a project representative articulates that: "I think what matters here it is money, people want more money. People's economic concern; they don't want to own shares in a turbine » ; another adds "Negotiation and acceptation of community's propositions concerning financial compensation are necessary to resolve pending issues.''

The importance of economic resources dependency has also been revealed in the local authorities' commitment to create local development opportunities along with project developers. As emphasized by a project representative: "*one of our aims is to translate our presence into concrete economic opportunities and serve low income communities… we will create temporary working positions, resolve internal displacement issues, we will even pay rent for locals who have donated their land for the project*."

DISCUSSION

The present paper brings the two literatures on community acceptance and consumption communities together in an attempt to investigate how the interplay between heterogeneous actors in a community affects the communal support of siting decisions. Scrutinizing the relationships between key stakeholders in the energy sector (between

developers, planning authorities, elected representatives and among local communities) and getting to a shared agreement upon what incites the heterogeneous stakeholders to work together towards attaining a satisfactory level of community acceptance can be drivers of change within a dynamic system where ties among its members are often interrelated. Additionally, the study highlights the heterogeneity and resource dependency natures of communities and explores their implications on the formation of local residents' attitudes toward

Available theories and research on heterogeneity's implication for communities suggest contrasting views about heterogeneity' s effect, with former consumer studies putting forward fragmentation as a pervasive outcome (e.g., Irwin 1973; Thompson and Coskuner-Balli 2007).

Our research findings were illuminating in suggesting that community acceptance can prevail when the heterogeneous nature of communities is entwined with resource dependency. To make the point more fully, we demonstrated that even though heterogeneity can act as a destabilizing force, the benefits and motivations associated with social, economic and informational resource flows incites heterogeneous actors to act in mutually supportive ways and places them in interdependent positions.

Consequently, the networked view of communities, considering individuals as a set of heterogeneous actors playing different interdependent roles and emphasizing the actor-resources interplay, captures the importance of actor-network theory (e.g., Latour 2005). The theory that posits social entities as "patterned networks of heterogeneous materials" (Law 1992, 381) enables us to better understand how all community components interact with each other.

Findings of our study can offer essential prerequisites to initiating behavior-change programs and developing more effective strategies addressing context-specific reasons against behaviours we aim at promoting and strengthening members' reasons for acceptance. A number of behaviour-change tools can assist us with undertaking this mission.

Commitment: In a particular tight-knit community farm village such as in the case in question, locals who are used to live sustainably by avoiding to buy products packaged in or made from plastic, driving green and eating from their own gardens whenever possible, have unfortunately been found to reject the implementation of a wind energy project. An acute task of project managers is then to introduce the proposed development as matching perfectly with their conventional way of living. Helping local citizens view themselves as environmentally concerned and guiding them toward greater value-action accuracy is a guarantee of sustainable program success.

So, seeking compliance to an initial commitment of living in harmony with nature can have a powerful impact on boosting the desired pro-envrionmental behavior. First of all, locals who are committed to live a green life are the most inclined to behave consistently with their past acts and be committed to a greater request.

Second, the close ties shared by members of sidi daoud paired with the desire of being seen as consistent and not being regarded negatively by others; enhance the propensity of locals to follow through with their commitment to other sustainable actions.

In considering using commitment as behavior-change tool, empowerment is also deemed imperative in that involving locals in decision making will enable them take more responsibility for their actions.

Use of sustainable norms: Including sustainable norms in programs can have powerful impact on the way individuals behave. This could be done through organizing green events, educational workshops and meetings.

Assisting to these kind of educational meetings help local residents decide how much they really value renewable energies and decide about their appropriateness, especially when they have no prior knowledge and experience with the implementation of a wind farm near their homes. Personal contact can be an opportunity to reinforce the internalization of norms that support sustainable behavior.

Social diffusion: social diffusion can be a potent lever to promoting behavior but can also undermine internal motivations that drive action and discourage the public from engaging in an activity. This was the case of wealthy residents of sidi daoued who are supposed to play a leadership role in their communities, yet they only stood up for their own interests without caring about the life that others want to sustain.

It is then inescapable for project managers to recruit well-respected farmers who are more likely to have inordinate influence on the rest of community members upon the adoption of desired behaviours.

A further possible course of action would be to make commitments visible. Posting a sign at the entrance of the village makes commitments public and durable, fosters dialogues across locations, experiences and societies and allows social diffusion.

Communication: Many of the issues in relation to poor communication, to intox circulating between the community members by word of mouth and conveying fallacies, to the existence of many intermediaries between the

citizen and the project developer and to inaccuracies in vision have been determined as one the main causes standing behind sustainable programs' failure .

In order to counterpart these issues, recourse to the following practices is deemed necessary:

- Project managers should have a firm sense of the target population. All communications should be developed whilst taking into account the local context and social conditions of the community, so as to establish local network of support (Jobert et al., 2007).

- Project managers should be more selective in choosing whoever is delivering information on their behalf.

- Allowing people who have a previous experience in sustainable activities and those who have no prior acquaintance on the subject to get together through programs of the type of block leaders. Ensuring personal contact between the two groups of people enables them to model pro-environmental behaviors they perceive desirable and therefore allow social diffusion of novel behaviors to take place.

Incentives: Incentives whether monetary or in-kind have proven to stimulate sustainable behavior on a number of fronts whether energy efficiency, waste reduction and so forth. However, these incentives may have adversarial effect if not living up to the expectations of affected community members. In the case of sidi daoud, locals of the village were dissatisfied because of what has been offered to them in terms of benefits or incentives. In against part to the land given to the government, local members only benefited from the rent and were neither exempted from tax nor did they profit of free electricity generation.

In order to overcome the reason given for refusal, project managers are called to closely pair the incentive to the behavior and most importantly reach a minimum of incentives that exceed the beard cost associated with the implementation of the sustainable project.

In the same line of thinking, the human behaviour can also be motivated by social rewards like the approval of others or the social approval.

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