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CONTENTS

Organizational Levels of Analysis of Communication Satisfaction and Identification in Relation to Job Satisfaction

Ipek Kalemci Tuzun

Abstract—The purpose of this research is to examine the relationship between organizational levels of communication satisfaction, identification and job satisfaction. Current study attempted to link organizational and departmental communication satisfaction and strength of job satisfaction through organizational and departmental identification. The results indicate the positive connection between the levels of identification and job satisfaction. Study also found that multiple organizational levels of identification predict job satisfaction. As expected the identification act as a mediator in the relationship between communication satisfaction and job satisfaction.

Index Terms—Employee behavior, communication satisfaction, identification, job satisfaction, turkey.

I. LITERATURE REVIEW

Job satisfaction has been one of the most intensely recognized and studied attitudes in organizational behavior field. The definitions and conceptual maps of job satisfaction have been discussed widely before. One of the most extensively used theoretical definitions of job satisfaction is done by Locke, who theorized the concept as "pleasurable or positive emotional stage resulting from the appraisal of one's job or job experience" [1]. Locke and Latham, argued that job satisfaction arises when job offer what employees want or value [2] and moreover an employee who has a higher level of job satisfaction can develop positive attitudes toward their job and the organization he/she worked for. That is why; studying job satisfaction and its relationship with other variables facilitate better understanding of how these variables associates with job satisfaction.

Communication is one of the most crucial factors in organizational functioning and it is known that employees devote a considerable portion of their workday to collecting and disseminating information concerning crucial matters such as company policy, performance feedback, role expectations, and task instructions [3]. In organizational settings, communication satisfaction has been broadly defined as an individual's satisfaction with various aspects of communication in interpersonal, group, and organizational contexts [4], [5]. Employee satisfaction with the amount of information available to them may enhance their positive attitudes toward an organization. Additionally, employees are more likely to be satisfied with their jobs if they are satisfied with the amount of information they received on the job.

Locke and Latham associated job satisfaction with the characteristics of job itself and they stated that sources of job satisfaction vary from individual to individual [2]. In their comprehensive review of the literature on job satisfaction, they conclude that researches have largely validated the connection between job satisfaction and job characteristics. According to the results of the mentioned comprehensive study; work challenge, physical demand, personal interest, the rewards system, goal attainment, superiors, coworkers, subordinates, and fringe benefits are related to jobs satisfaction level of the employee. Moreover, high degree of job satisfaction takes place when the job is comprised by clear and complex goals [1], [2]. When the goals are considered as the outcomes to attain and standards for judging one's accomplishments, it can be said that employees will be more satisfied when they attain those goals and make meaningful progress toward them. Employee's judgment regarding communication satisfaction will take place when employees' goals are met and the messages that are perceived as appropriate and effective within the organizational context.

Within the communication literature there has been consistent support for a positive relationship between communication satisfaction and job satisfaction [3], [6]-[9]. On the other hand, previous researches on communication satisfaction have not been paying too much attention on multidimensional construct in organizational contexts. But researchers have claimed that organizations have subsystems and the emphasis should be given on the importance of distinguishing several organizational levels which employees may have different perceptions regarding communication satisfaction [10], [11]. Employees would be more satisfied with the communication in the level they worked than the organization as a whole. Therefore, job satisfaction level of the employee may be related to both organizational and departmental communication satisfaction.

In examining the relationship between communication satisfaction and job satisfaction, it is important to investigate identification. An emerging stream of research has focused upon social identification as a means of gaining insight into the connection between individuals and a specific form of social group such as organization [12]. Much of the work examining organizational identification has been guided by social identity theory and the substantial body of literature related to group identification processes [13]. Organizational identification is defined as "the perception of oneness with or belongingness to an organization, where the individual

defines him or herself in terms of the organization(s) which he or she is a member" [14]. It has been discussed before that, identification is a communicative process, so it can be considered that communication satisfaction of employees can be associated with the employees' identification with the organization [15]. On the other hand the influence of communication satisfaction on the identification process is still limited; however studies appear to indicate a positive relationship between various dimensions of communication and identification [11], [16]. For instance being well-informed about organizational issues will enable an employee to discover the salient characteristics that distinguish one organization from another [17], and enhance identification. It can be suggested that the more adequate the information employees receive about the company and the department the more employees will identify with the organization or department.

When considering the framework of social identity theory in the context of job satisfaction, it seems logical to assume that employees are satisfied with their organization and/or department when they identify with it. As people identify with groups, they gain self-esteem, which may bring emotional attachment and content to the group expressed through increased job satisfaction [18]. A sense of identification creates a perception in which a member associates oneself with the organization's goals and values [19]. Identification with the organization may also prevent employees from becoming alienated, and may be an important precondition for general feelings of job satisfaction [17]. A positive relationship between identification with the organization and job satisfaction has been well established by numerous studies [14], [20], [21]. Recently, increasing attention has also been devoted to the effects of multiple organizational levels of identification.

Previous researches indicate that communication satisfaction and identification should both be reliable predictors of job satisfaction. On the other hand, little research has specifically included measures of multiple organizational levels of communication satisfaction and identification. Different profiles of identification, in other words, different combinations of departmental and organizational identifications have different consequences. From a theoretical point of view, it seems logical that if multiple organizational levels of communication satisfaction influence job satisfaction, then multiple organizational levels of identification will more likely act as a mediator.

In the light of the above explanation research questions of this paper as follows;
1) How different organizational levels of communication satisfaction and identification influence job satisfaction?
2) How different organizational levels of identification act as a mediator in the relationship between different organizational levels of communication satisfaction and job satisfaction?

II. METHOD

A. Sample and Procedure

In order to test the hypotheses, this researcher administered a survey among employees of insurance companies in Turkey. Questionnaires were sent to 59 Turkish insurance companies but 23 of them accepted to participate to the study. Of the 950 questionnaires sent, 304 useful questionnaires were returned. Respondents fell within the following demographic characteristics: 55% were older than 30 years, the ratio of male/female was 3 to 1, 43% of respondents had been employed at the study organization for more than 5 years, and 74% held a university degree.

B. Measures

In addition to respondents' demographic background data, the questionnaire comprised of three parts (a) organizational identification, (b) communication satisfaction, and (c) job satisfaction. Respondents indicated the extent of agreement with each statement on a 7-point Likert type scale (1 = *strongly disagree* and 7 = *strongly agree*).

The strength of organizational identification is measured using Mael and Ashforth's survey scale [14]. It has been observed that Mael and Ashforth's measure is the most frequently used measure of identification [22]. Identification with work group department is measured by Doosje, Ellemers and Spears, scale [23].

Communication satisfaction was measured with 11-item scales based on Greenbaum, Clampitt and Willihnganz [24]. Communication satisfaction was subdivided into (a) communication satisfaction at the organizational level and (b) communication satisfaction at the department level. Job satisfaction was assessed using a questionnaire adapted from the comprehensive workplace scale developed by Tate, Whatley and Clugston [25].

C. Discriminant Validity of Constructs

Because of the similarity of wordings of items assessing the employee's ratings of the construct, confirmatory factor analysis has been conducted to examine whether organizational and departmental identification and organizational and departmental communication satisfaction are distinct. AMOS [26] software has been used to compare to fit of two nested models (a) a one factor model incorporating both constructs and (b) two factor model distinguishing organizational and departmental identification and organizational and departmental communication satisfaction. On the basis of a sequential chi square difference test [27] for the organizational and departmental communication satisfaction, two factor model, $x^2 (44, N=304) = 224.72$ fit the data significantly better than the one factor model $x^2 (44, N=304) = 508.25$. The two factor model of organizational and departmental communication satisfaction also showed better fit to the data according to the comparative fit index- CFI (two factor model= 0.88 one factor model= 0.69) normative fit index-NFI (two factor model= 0.84, one factor model= 0.67) and the Tucker-Lewis index-TLI (two factor model= 0.82, one factor model= 0.53). Therefore study treated organizational communication satisfaction and departmental communication satisfaction as two separate constructs in subsequent statistical analyses. Same analysis is done for the organizational and departmental identification measures. On the basis of a sequential chi square difference test [27] for the

organizational and departmental identification, two factor model, $x^2(14, N=304) = 86.85$ fit the data significantly better than the one factor model $x^2(14, N=304) = 104.95$. The two factor model of organizational and departmental identification also showed better fit to the data according to the CFI, (two factor model=0.84, one factor model= 0.79), NFI (two factor model= 0.86, one factor model= 0.74), and the TLI (two factor model= 0.80, one factor model=0.68). Therefore study treated organizational and departmental identification as two separate constructs in subsequent statistical analyses.

In the next step, to verify the factor structure of the constructs this researcher continued to conduct confirmatory factor analysis in order to verify the dimensionality of multivariate constructs used in this study. The constructs, which were found to have uni-dimensionality, were subjected to a correlation analysis to determine the directionality and magnitude of the relationship among the factors. Means, standard deviations, internal reliabilities and intercorrelations among the variables are reported in Table I.

TABLE I: MEANS, STANDARD DEVIATIONAS AND CORRELATIONS

	1	2	3	4	5
1. JS	(0.80)				
2.OCS	0.38**	(0.83)			
3.DCS	0.50**	0.50**	(0.78)		
4. OI	0.30**	0.16**	0.20**	(.70)	
5. DI	0.29 **	0.22**	0.34**	0.31**	(0.82)
MEAN	4.83	4.89	5.31	5.04	6.14
SD	1.25	1.39	1.37	0.88	1.12

Notes: N = 304. Alpha reliabilities are reported on the diagonal. ** correlations are significant at $p<0.01$ Acronyms *JS* job satisfaction *OCS* organizational communication satisfaction *DCS* departmenatl communication satisfaction *OI* organizational identification *DI* departmental identification

III. RESULTS

The results of this study indicated that organizational and departmental communication satisfaction have significant effect on employee job satisfaction (β=0.45, $p<0.01$), (β=0.52, $p<0.01$) respectively. Moreover organizational communication satisfaction has significant effect on organizational identification (β=0.45, $p<0.01$) and departmental communication satisfaction has significant effect on departmental identification (β=0.26, $p<0.01$).

Results also revealed that organizational and departmental identification have significant effect on employee job satisfaction (β=0.33, $p<0.001$), (β=0.47, $p<0.001$) respectively. Indirect effects of organizational and departmental communication satisfaction on job satisfaction through organizational and departmental identification were tested. Following Preacher and Hayes [28], this test was conducted in two steps; first the direct effect of organizational and departmental communication satisfaction on job satisfaction (without organizational and departmental identification) was tested. A direct effect of organizational

communication satisfaction on job satisfaction fit statistics of the model was an acceptable fit with the following indices, RMSEA at 0.07, NFI at 0.94, and CFI at 0.96. It must be noted that x^2 was significant ($x^2=79$, 8, $p<0.05$). Given the observed significant effect of organizational communication satisfaction on job satisfaction, the analyses preceded to the second step, which was the introduction of organizational identification as mediators in the model. The indirect effect of organizational communication satisfaction on job satisfaction fit statistics of the model was an acceptable fit indices with RMSEA at 0.06, while NFI and CFI were 0.90 and 0.93, respectively. Again, it must be noted that x^2 was significant ($x^2=162$, 2, $p<0.05$). Therefore study accept that organizational identification partially mediate the relationship between organizational communication satisfaction and job satisfaction.

A direct effect of departmental communication satisfaction on job satisfaction fit statistics of the model was acceptable fit for indices with RMSEA at 0.09, while NFI and CFI were 0.90 and 0.92, respectively, although x^2 was significant ($x^2=152$, 4, $p<0.05$). Given the observed significant effect of departmental communication satisfaction on job satisfaction, the analyses preceded to the second step, which was the introduction of departmental identification as mediators in the model. An indirect effect of departmental communication satisfaction on job satisfaction fit statistics of the model was an acceptable fit for indices with RMSEA at 0.07, while NFI and CFI were 0.93 and 0.95, respectively, although x^2 was significant ($x^2 = 196$, 3, $p<0.05$). Therefore current study found that departmental identification partially mediate the relationship between departmental communication satisfaction and job satisfaction.

IV. CONCLUSION

One of the major conclusions of this research is that organizational identification and communication satisfaction are multiple organizational level concepts. Mentioned finding of this study confirms the results of the previous ones [11], [29], [30]. With regard to communication satisfaction, certain organizational levels do not have the same impact on job satisfaction. In other words, appraisal of a pleasant communication atmosphere in one's department does not necessarily imply that one is satisfies with the communication within the organization. Indeed, a positive relationship between communication satisfaction with the organization and department and job satisfaction does appear to exist. Departmental communication satisfaction appears to have a greater influence on job satisfaction. The results of the present study appear to show that not only the positive connections between identification and job satisfaction, but also organizational levels of identification within the organization may predict job satisfaction. Moreover, findings clearly demonstrate the relevance of social identity for job satisfaction in organizations [31]. While previous researches have focused primarily on identification with an organization, it appears that identification with one's department is also related to satisfaction. This supports the notion from the social identity theory that multiple identities are important to people. In our insurance employee case, multiple

work-related identities are important in determining satisfied employees.

As expected, the relationship between communication satisfaction and job satisfaction is mediated by identification. Apparently, the partially mediating effect of departmental identification is stronger than the mediating effect of organizational identification. Social identity and self-categorization theory make predictions about an individual behavior based on perceived group membership and salience of this membership. The organization may be perceived as an attractive target and cause employees to identify with the target. However, because most organizations are relatively large, one may often work with a smaller group. Thus, although all employees are simultaneously a member of the organization, people prefer to identify more with small, face-to-face groups compared to the larger entity [32]. Whereas social categorization would require that employees receive adequate information concerning what is central and distinctive about their organization, self-categorization can be facilitated when employees are provided useful information about their roles in organization [16].

The findings of this study are consistent with the proposal that intent of communication has relatively powerful and proximal influence on job satisfaction. Therefore, for organizations that wish to enhance job satisfaction, it would be worth focusing on efforts to enrich communication both within an organization and within a department level. As an employee's job satisfaction influences behavior that is conductive to the organization, it is vital that managers gain insight into the various antecedents of job satisfaction. In addition, managers should take into account the fact that an organization is composed of multi levels and variety of identities. Simply taking into the consideration the organization as a whole would create a misunderstanding of their employees' job satisfaction. Management should thus be aware of the presence of identities and employees' identification with different organizational levels, which all have a significant influence on job satisfaction. On the other hand, although "us versus them" mind set can be beneficial but it has to be controlled by management. Management should take corrective action, if there is contradiction between departmental and organizational identification or if there is a huge difference between organizational and departmental communication satisfaction. In such a situation management should encourage activities that promote shared experiences and common goals. Because common goals and values provide a flag that all departments can rally around, thus transcending organizational boundaries [33].

The present study makes useful additions to the current knowledge base by examining the effects of multiple communication satisfaction and identification and on job satisfaction of insurance employees. However there are some limitations to this study. The variables in this investigation were measured at one given moment. This implies that the present results represent in a specific situation in time. As it often the case with such questionnaire research, the nature of the collected data is restrictive. Additionally, all constructs were measured on the basis of the respondents self-reporting.

Future research should consider experimental or longitudinal methodology to capture the changing nature of the relationships among communication satisfaction, identification, and job satisfaction. One other limitation of this study is that it covered only one city in Turkey with 304 employees. Thus, future studies should use a less restricted sample to extend the applicability of the finding of this study.

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Usage of Christian Social Ethics in Business

J. Kuzmina

Abstract—The latest global economic and financial crisis has forced politicians, economists, businessmen and employees irrespective of their political, cultural, and religious connection to think about values and search for possibilities to realize these values in the market economy. The wish for a renaissance of social market economy is particularly relevant in regard to the latest financial crisis and its consequence for the life of individuals and for the business environment of organizations. So that the topicality of this problem encouraged to formulate the following aim of the paper: based on the interdisciplinary literature study to find an opportunity of updating the concept of social ethics and to create a model, which includes European Christian cultural values, but at the same time meets the requirements of the modern business environment. In order to achieve the goal author uses qualitative research methods, and as a result of the study provides theoretical model including cooperation opportunities inside the business organization. Consequently, both Christian social ethics` concept and socio-political issues are used, insuring the possibility for interdisciplinary exchange and dialogue.

Index Terms—Christian social ethics, interdisciplinary cooperation, renaissance of social economy, St. Gallen integrative economic ethics.

I. Introduction

Ethics is being defined as moral guidelines which govern good behavior of individuals. So that behaving ethically means doing what is morally right, while behaving ethically in business is widely regarded as good business practice. Nevertheless the issues of ethical behavior in business are complex, so that necessary attention to the topic should be paid. The latest credit crunch made everyone outside and inside mainstream finance in the US and Europe aware of this threatening tidal event. Despite different attempts to find scapegoats, most economists agree that the blame for the global financial crisis primary lies within the banks and other financial institutions. As financial failure started with the asset bubbles created through extreme and irresponsible lending that unavoidably had to explode. It is worth mentioning that this was a crisis not just of financial assets and financial institutions worldwide but also crisis of confidence, because the problems in the political and economical system had been greatly magnified. So that the latest global economic and financial crisis has forced politicians, economists and ordinary to think about values and their realization in the market economy. While the idea of social market economy is not new, and Christian social ethics within numerous centuries have been discussing this topic, willing to find the solution for the dilemma between capital and moral. The topicality of the issue forces to formulate the

following goal of the paper: based on the interdisciplinary literature study to find an opportunity of updating the concept of Christian ethics and to create a model, which includes European Christian cultural values, but at the same time meets the requirements of the modern business environment. In order to achieve the goal the author explores the social doctrine of the Christian Church based on the Roman Catholic Church's social Encyclicals. In the second step it is necessary to clarify the scope of business views on ethical issues based on the St. Gallen theoretical concept of integrative economic ethics created by Peter Ulrich. Due to the limitations of the paper current research covers analysis and comparison only to St. Gallen approach, while other models in the domain of business ethics (as for example, by Amartya Sen and Amitai Etzioni; Peter Koslowski should be discussed in the further works by the author. The final step is finding the connection points of the both concepts that could be used as the basis for joint dialogue. It is worth considering that despite some different argumentation samples, as well as the contradictory positions in terms of success, life values, norms and morale schemes, both concepts - Roman Catholic Church's social Encyclicals as an example of Christian social ethics and St. Gallen theoretical concept of integrative economic ethics – provide similar results, and orientations for the individuals. So that there is a common grounds between the two concepts for interdisciplinary discussion that could be used in practice.

II. Roman Catholic Church`s Social Encyclicals as Basis for Christian Social Ethics

According to the Catholic Doctrine the church is a part of the divine plan of salvation. That is why the church is supposed to realize its mission both in material and spiritual categories. It should be considered that theological-ethical reflection is tied to the divine revelation and the statements of scripture. Nevertheless the confrontation with social questions began in the first half of the 19th century. So that the modern social teaching begins with the publication of encyclical Rerum Novarum by Pope Leo XIII, in which he speaks about the negative excesses of capitalism in the modern industrial societies [1]. The Catholic Church has been trying to ensure that this document is considered both as economic and religious Magna Carta that has been developed and updated later on, establishing a hundred-year tradition of church`s social encyclicals. The following part is going to summarize the development of the social teaching of Catholic Church and provide main aspects of the documents.

Rerum Novarum [1] starting with the opening words and the title of the Encyclical issued by Leo XIII is the "Condition of Labour". The Encyclical follows the lines of the traditional teaching concerning such aspects as the rights and duties of property and the relations between employer and employee;

it also applies the old doctrines specifically to modern conditions. It develops the idea that the true remedy can be found in the combined action of the Church, the State, the employer and the employed. It is explained that the Church is properly interested in the social question because of its religious and moral aspects; the State has the right and the duty of intervention on behalf of justice and individual and social well-being; while the employers and workers should organize into both mixed and separate associations for mutual protection and for self protection.

Quadragesimo anno [2] was issued on social issues in commemoration of Leo XIII's first modern social encyclical. Confronting severe world economic conditions, the message included a censure of the capitalist order and a recommendation to move toward a more corporatist system. At the same time, the letter also included a reiteration of Leo's condemnation of socialism and a strong statement against excessive extension of state power.

Mater et Magistra [3] is the encyclical written on the topic of Christianity and Social Progress, and it is referring to the role of the church, describing a necessity to work towards authentic community in order to promote human dignity.

Pacem in terries [4] was the first encyclical that the Pope did not address to the Catholic faithful only, but also to all men of good will, highlighting the importance of respect of human rights as an essential consequence of the Christian understanding of men.

Gaudium et Spes [5] is one of the four Apostolic Constitutions resulting from the Second Vatican Council. The document is an overview of the Catholic Church's teachings about humanity's relationship to society, especially in reference to economics, poverty, social justice, culture, science, technology and ecumenism.

Populorum progressio [6] was devoted to the topic of the development of people and that the economy of the world should serve mankind and not just the few. It touches on a variety of principles of Catholic social teaching, as for example the right to a just wage; the right to security of employment; the right to fair and reasonable working conditions; the right to join a union; and the universal destination of resources and goods. It had become traditional for Popes to publish new writings on social issues on ten-year anniversaries of Rerum Novarum, in order to keep the teachings relevant to the current times.

Laborem Exercens [7] was written in respect to the 90th anniversary, and makes reference to Rerum Novarum. The main ideas of the document could be summarized as following: increased use of technology would bring changes comparable to the industrial revolution of the previous century. The Pope noted that some resources, particularly oil, were becoming scarce. Also, the need to protect the environment was becoming apparent. People in the developing world wanted to be more involved in the global economy. John Paul welcomed this trend, but feared it would bring unemployment for many skilled workers as work was distributed more widely.

In Sollicitudo Rei Socialis [8] the global development and its ethical and moral dimensions are discussed. The Pope builds on Pope Paul VI's work, and after surveying the state of poor countries, he considers the confrontation between the two global blocs. He then points to the structures of sin as

obstacles to development and calls for conversion towards solidarity.

Centesimus annus [9] was written during the last days of the Cold War, was examining contemporaneous political and economic issues. The encyclical expounds on issues of social and economic justice, including a defense of private property rights and the right to form private associations, like labor unions. The reoccurring themes of social and economic justice mentioned in the document articulate foundational beliefs in the social teaching of the Catholic Church. Throughout the encyclical the Pope calls on the State to be the agent of justice for the poor and to protect human rights of all its citizens.

Caritas in Veritate [10] - the encyclical is concerned with the problems of global development and progress towards the common good, arguing that both love and truth are essential elements of an effective response. The work is addressed to the global society and contains detailed reflection on economic and social issues and problems. The Pope points out that the Church does not offer specific technical solutions, but rather moral principles to inform the building of such solutions. The economic topics include an attack on free market fundamentalism, though a simplistic polarization of the free market model versus interventionist big government solutions is rejected. There is importance of the need for the actions of all economic actors to be informed by ethics as well as the profit motive.

Based on the chronological presentation of the social doctrines issued by the Catholic Church the focus should be shifted to the principles of social conduct. These social principles are the result of the efforts incurred at different times, nevertheless there is a possibility of insights` and doctrines` systematization in order to provide some proves of their timelessness and connection to contemporary historical periods and political contexts. The encyclicals provides basis for the following social principles: personality, welfare, justice, sustainability, solidarity, and subsidiary.

According to the Catholic Church`s Doctrines the man is incomparable and unique in every subject, and a kind of special dignity belongs to him. On the other hand, the man is a part of community, who is asking for respect and love, while these aspects should fit into social order. This dual anthropological determination of man as individual and social being finds its spirit in the two mutually interrelated principles of personality and welfare. Another basic question for a good and peaceful coexistence within a social community is that of justice. Throughout the theological history different concepts of fair distribution of goods were developed and debated. The significant question about the relation between individuals and group as well as necessary socio-economic structures that will meet the ideal is to be considered in relation to the time axe. The goal of intergenerational equity and the corresponding responsibility of natural resources is determined in the principle of sustainability. The last pair of terms has a special place regarding their historical background. The question of solidarity was particularly virulent by the shift to a modern labor and industrialized society, while the new forms of organization and social unity were necessary. As a counterpoint the principle of subsidiary was formulated and especially appropriate in response to the totalitarian forms of

government in order to protect the personal responsibility of individuals.

Summarizing one can formulate the following duties and social profile of theological ethics:

1) An ethical reflection of all social processes, institutions and structures it is accompanying all the questioning circumstances.
2) It seeks to understand them.
3) It also examines implications, opportunities and obstacles for a well-formed co-existence of humans.

From their own perspective theological ethics designs normative orientations and it tries to implement them into a polyphonic discourse of societal goals and means, while developing argumentative structures.

III. ST. GALLEN CONCEPT OF INTEGRATIVE ECONOMIC ETHICS

The approach of the integrative economic ethics was conceptualizes in St. Gallen by P. Ulrich [11] and the author starts with critical reflection on the normative foundations of the economic thinking. It is important as normative claims are already hidden within the economic logic of the market economy and allows reconstructing this principle as an ethically valuable socio-economic rationality. So that integrative economic ethics is willing to integrate ethical reason into the idea of economic rationality and becomes a fundamental or a comprehensive reflection on the normative preconditions of ethically important and life-conductive ways of rational economic value-creation process. The concept of integrative economic ethics tackles three main tasks. Short introduction in these tasks provides to better understanding of the concept described above: the first task is the critique of pure economic reason and of the economism; the second is the clarification of an ethical integrated idea of socio-economic rationality and of the basic dimension of a life-conductive economy; the third and the last task is the determination of the "loci" of moral reasoning and responsibility with respect to economic behavior and policies in a well-ordered society of free citizens. This means that the ethical concept turns out to be a piece of political ethics.

So that the approach developed by P. Ulrich is an attempt of comprehensive ethical re-orientation of economic reasoning on the basis of philosophical ethics and political philosophy. P. Ulrich outlines in his concept a model of society as part of business ethics reflection and is proposing a "third way" between the conventional alternatives like economic liberalism and more regulation like social statism [12].

The foundation of all the efforts is based on the role of economic citizen – in the integrative social ethics he is both bourgeois and citoyen. That means he is the owner of productivity factors and also involved in the life of society solving such questions as responsibility and solidarity. In such a society the probability that the economy serves the people and not vice versa is the highest [12]. These ideas can be presented as theoretical model as following in the Fig 1.

In order to provide evidence that the business ethics postulates are not utopian Ulrich distinguishes business ethics topology [12]. The practice of life-serving economic activity is based on three different levels (follow Fig. 2),

which should be explained in details: the holders of morality are both an individual citizen as an economic actor (domain of economic citizen ethics), and also the companies and organizations as collective leaders (domain of business ethics). Both the holders need a kind of normative umbrella - nationally and globally determined market order (domain of ethic rules). The aim of these considerations is a harmonious balance between individual ethics and institutional ethics, between self-claims of any economic agent and the necessary of moral environment.
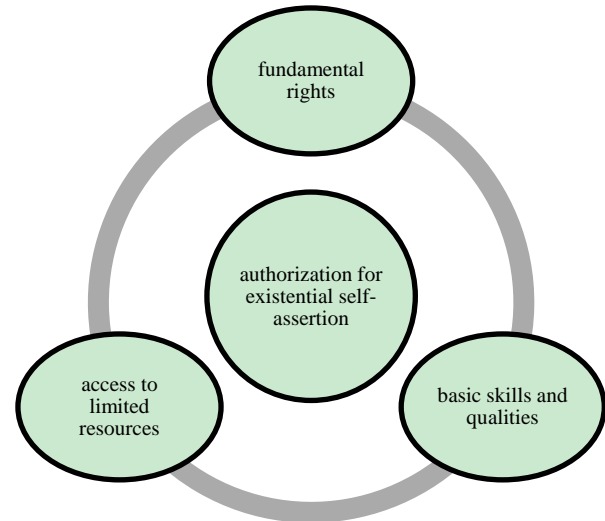
Fig. 1. Civil Society as developed by P. Ulrich.
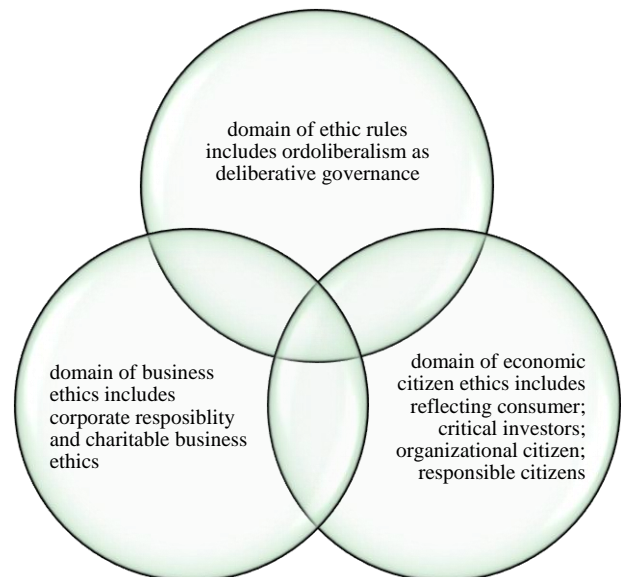
Fig. 2. Topology of Business Ethics.

It is worth considering that the St. Gallen concept of integrative economic ethics is not an ideal one, as this approach does not take into account the necessity of maintenance of economic interests. St. Galler approach is based on philosophical and critical analysis, while knowledge of cybernetics, game theory and institutional economics was not incorporated. P. Ulrich builds his theory on the moral characteristics of each economic actor while the role of normative regulatory authority is neglected, so that the successful implementation of the approach is difficult. Further critics of the St.Gallen approach can be found by

Steinmann [13], Leisinger [14] and Christ [15]. The kind of normative regulatory authority can be represented by Ethics Institutes and different Associations, but also by church due to the fact that even though the church is divided from the state, but according to the latest surveys most the Europeans consider themselves as bearers of Christian religious and cultural heritage.

IV. THEORETICAL INTERDISCIPLINARY CONCEPT

A. Introductory Remarks

Despite the different patterns of argumentation and contrary position in terms of the highest instance of moral system of values, norms and expectations both the integrative business ethics and the Catholic social teaching are reaching to similar results and orientations. So that there is a basis for a fruitful further dialog and cooperation on the field of business ethics. The last part of the current paper is devoted to the discussion of dialog and cooperation possibilities. So that three specific areas of action are going to be presented. It is important to underline that each area, where cooperation is possible, is situated on a different recursion level inside the economic organizations (micro level, meso level and macro level). As a result of these considerations a profile of a Christian business ethics can be developed and described. The concept is based on doctrines and tradition, in the economic and social policy issues it stays on the pulse of the signs of the time and it also remains in the interdisciplinary exchange with other concepts. The Fig. 3 shows a theoretical interdisciplinary model of Christian business ethics.
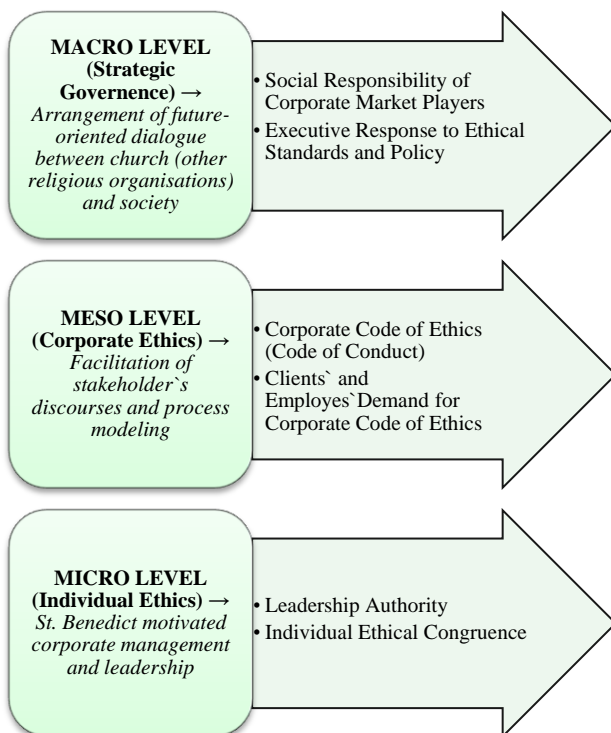
Fig. 3. Interdisciplinary concept.

B. 3-Level Approach

On the micro level it is possible to consider St. Benedict motivated corporate management and leadership principles, as the church has been acquiring skills in the proper and humane management of employees, groups or organizations. Especially the monastic communities have been developing rules for a well-ordered coexistence, describing the necessary qualities and attitudes of a leader. These insights and wisdoms were gained over generations and many of them do not lose their importance today, so that a transfer of the rules of St. Benedict in the commercial world of managers and executives is possible. The kind of transfer would lead to the following management principles as both-side attention inside the organization and permanent learning from each other; the role of manager defined as a culture of service; appreciation of individual diversity.

On the meso level the aspect of facilitation of stakeholder`s discourses and process modeling can be discussed. These considerations are based on the idea, that the ethical quality of a company is measured not only by its voluntary service, social engagement, or good relationships between management and employees, but also by its moral commitment to customers, suppliers, other stakeholders and society and environment.

On the macro level one can consider the fact that the church can and should make use of the orientation vacuum during the period of volatile financial markets and economic downturn, and engage itself with an ecumenical effort in initiatives and projects. The church (regardless the confession) could take the role the agent responsible for common good in order to create discourse for further exchange and contribution of new impulses. Therefore, the churches (along with the Christian organizations) in accordance with the principle of subsidiary should not be engaged in the sense of making policy, but they can fulfill their tasks by providing methodological competence and supporting clarity of content, in order to ensure a new style human politics.

V. CONCLUSION

The main purpose of the paper is to find out possibilities for successful interdisciplinary exchange between integrative business ethics and Catholic social ethics. Critical analysis has shown that an innovative dialogue is possible. In the current part main results of the study should be summarized.

Although both approaches differ from each other in terms of their definition of moral principle, there are some intersections at the level of substantive statements − both approaches reflect their view of a man as a representative of a high ideal. These intersections provide a basis for possible transfers between both disciplines. Moreover, both concepts of social ethics and Catholic social teaching have been uniting theoretical and practical skills, providing critical analysis and constructive participation in social function. The Catholic social ethics that is based on already well-developed assets could have more influence on spectrum of business ethics models and consulting services. In order to insure this possibility two impulses from the concept of integrative economic ethics can be derived:

1) An increased consideration of companies and entrepreneurs as the real backbone of the economy (through the reception of the figure of good corporate citizens).
2) An intensive participation in the discussion about the

ways and means of good, justified and lasting economic activity and contribution to these processes.

An interdisciplinary comparison of integrative economic ethics and Catholic social ethics allows coming to the conclusion that advanced dialog could be based on the following approach: integration – criticism – stimulation. Both positions are consistent in their self-understanding not to be a part-discipline to complement other field of studies, but they are representing the ethical code for men in the different aspects of life, while dialog is necessary and welcomed from both parts (integration). From the side of Catholic social doctrine one can notify (criticism) that the model developed by Peter Ulrich is far away of any transcendent reference, which is an important intellectual argumentative and deprived resource. So that social principles developed through the centuries could be a stimulating impulse (stimulation) for the concept of successful co-existence of men.

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The Relationship between National Culture and Organisational Culture: The Case of Iranian Private Sector Organisations

Alireza Nazarian, Zahir Irani, and Maged Ali

Abstract—**The purpose of this paper is to investigate the relationship between National Culture (NC) and Organisational Culture (OC) in the context of private sector organisations in Iran. This paper outlines some frameworks of NC and OC then looks at some relevant specific cultural perceptions on the part of Iranian managers. The NC and OC of several organizations in Iran were investigated using survey methodology. Questionnaires were distributed through organisations either by email or hard copy. 221 questionnaires were returned. To investigate NC the researcher used the Dorfman and Howell questionnaire. Furthermore, to study OC the researcher used the Organisational Culture Assessment Instrument (OCAI) which is based on the CVF framework. Regression analysis of the results showed that most of the dimensions of NC have insignificant relationship with OC except for the relationship of NC with clan culture. However, the correlations analyses provide some additional support for the association between these two constructs. This paper concludes that company size can serve as an important and significant moderator of the association between NC and OC within these data. Moreover, the results indicate that both education and position serve as significant controls of the association between NC and OC. It is recommended that researchers should consider the industrial cultural effect as a factor that would help for a better understanding of the relationship between NC and OC phenomena.**

Index Terms—**National culture, organisational culture, CVF, private sector, Iran.**

I. INTRODUCTION

Differences in culture have considerable impact on both the personal and corporate spheres of society. Organisational culture affects organizations in various contexts and it has been recognized as one of the most influential factors when considering organizational performance [1]. Sagiv and Schwartz [2] also concluded in their research that company values are more important than those of market forces (for example: Wal-Mart and U.S. South-west-Airlines etc.). This increased importance of culture for researchers in organisational studies has become a source in the development of different theories, frameworks and models aimed at explaining organizational culture. Likewise, NC is another important consideration because of its deeply rooted linkage with the values, entrenched in our everyday life. Cultural values are part of our daily life and we start learning these values in our childhood. Similarly, our communication, behaviour and actions are shaped by these adopted cultural

values. Therefore, it is appropriate to assert that national values have an impact on organizational culture as well. This premise is suggested by Hofstede, he states that 'behaviour at work is a continuation of behaviour learned earlier' [3]. Keeping in mind this relationship, the purpose of this paper is to investigate the relationship between NC and organizational culture specifically in the private sector of Iran.

II. LITERATURE REVIEW

Culture is a very difficult word to define although it is a familiar word for everybody. Williams [4] admits that 'culture is one of the two or three most complicated words in the English language'. Geertz suggests that culture is 'an historically transmitted pattern of meanings embodied in symbols, a system of inherited conceptions expressed in symbolic form by means of which men communicate, perpetuate, and develop their knowledge about attitudes toward life' [5]. Hofstede defines culture as '… the collective programming of the mind which distinguishes the members of one group or category of people from another' [6]. Furthermore, Hofstede argues that the core element of any culture is its values. He further defines values as "broad tendencie*s* to *prefer certain states of affairs over others"* [7]

A. Dimensions of National Culture

Hofstede introduced four dimensions of NC and he later introduced a fifth:

TABLE I: HOFSTEDE'S NC DIMENSIONS

Power distance:	Measures the degree to which the less powerful members of society accept and expect that power is distributed unequally.
Uncertainty Avoidance:	Measures a society's tolerance for uncertainty and ambiguity; the extent to which the culture likes to control the future
Masculinity versus Femininity:	Measures the distribution of roles between the genders.
Individualism versus Collectivism	Measures the extent to which people expect to look after him/herself and immediate family compared to the degree of support expected from social institutions
Short-term and long-term Orientation:	Measures the degree to which society embraces long term commitment to traditional as opposed to forward thinking values.

B. Organizational Culture

Organisational culture is a relatively new term which first appeared in organisational studies in the 1970s. At the beginning 'culture' was used as a substitute for climate [8].

However, since the 1980s many scholars such as [9] have questioned the relationship between the two and instead believe that the two terms should be kept separate. Morgan [10] defines OC as the pattern of development reflected in society's system of knowledge, ideologies, values, laws, and day-to-day rituals. Similarly [9] defines OC as the shared values, beliefs, norms, expectations and assumptions which function like a glue holding employees and organisations' systems together and stimulate employees' performance and commitment [11]-[14]. His view of culture is based on culture deriving from an underlying pattern of assumptions that people in any organisation share as a result of the common experiences they all have. Also, OC has been defined as shared perceptions of organisational work practice within organisational units [15], which provide a guideline for the organisation's business mission and goals [16].

C. Culture Studies Specific to Iran Context

Hofstede categorised Iran alongside Turkey and Greece in the Near Eastern cluster. His results show that Iran scored very highly on the 'collectivistic' dimension of NC, implying that Iranians co-operate well in a team. Considering that Iran has been greatly influenced by Islamic principles, for the last three decades, which place a strong emphasis on justice, harmony and generosity in the workplace, this result might be expected. On the other hand, [17] argues that Iran's culture could be better viewed as 'individualistic' rather than 'collectivistic'. She further argues that team co-operation and group work do not generally fit well with Iranian culture. This result has been supported by [18]-[21]. Namazie [22] used Hofstede's model to examine Iran and compared it with Hofstede's findings. Namazie's findings indicate that Iranian national culture has been becoming closer to western culture on almost all dimensions, apart from collectivism and long term orientation. That could indicate that the revolution and the Iran-Iraq war have had a big influence on changing some aspects of Iranian national culture and this change is a part of what, Iranian leaders have termed "Cultural Revolution" [23].

D. Organisational Culture and Iranian Organisations

There have been some studies conducted in Iran of organizational culture which have used many organizations from different sectors such as service management, education, industry, government organizations and high-tech industrial organizations [24]-[26]. By considering the literature related to organizational culture [24] suggest the ideal model for organizational culture management which includes components empowered by Islamic values such as honesty, trust in God, loyalty, justice counseling and guidance from top management. However, what he found was far from his expectation and came as a shock to many people. He discovered that there is a huge gap between the current OC and the ideal cultural model in government organizations. Furthermore, he identified that job satisfaction in the organizations which practice good ideas from the ideal cultural model is very high.

Around two years after the [24] study, [25] looked at the effect of OC on job satisfaction in an Iranian auto company. He found that there is a positive relationship between the OC

model used in that organisation and job satisfaction. His findings have been supported by other studies based on OC and job satisfaction such as [27] study on military organisation and [28] study on academic staff at Tehran University. However, in another study conducted by [29] on staff of physical education offices of Mazandaran province they found no relationship between OC and components of organisational effectiveness (organizational commitment, work motivation, the amount of negative resistance against change and improving quality).

Hosseini [30] used Hofstede's model of cross national study to investigate OC of seven Iranian companies. She found that only the measure of power distance was the same as in Hofstede's findings and that the other dimensions were totally. In another study [31] studied a selection of managers in public sector organisations based in Ilam province in Iran in terms of management style and OC. His findings support the general argument that OC has an effect on the management style selection. In a more recent study of the effect of leadership style and OC on effectiveness in sports organisations in Iran, [32] argue that the results of their study, based on structural equation model (SEM), show that transformational leadership has a significant positive influence on effectiveness and on organizational culture. On the other hand, their results show that transactional leadership has a direct and significant negative influence on organizational effectiveness and has an indirect and significant positive influence on organizational culture. Furthermore, in another study on OC and organisational effectiveness [26] find that although consistency and mission dimensions of Denison's cultural model have crucial impact on organizational culture, only mission dimension has a significant relationship with culture. Furthermore, , they conclude that as a result of significant differences in the cultural dimensions in the 4 companies under their study they were not able to find a unique pattern to generalise the results expect for mission dimensions . Based on this literature review, the current study explores the relationship between OC and NC by hypothesizing the following statement for testing:

TABLE II: HYPOTHESES

Hypothesis-1:	There is a positive relationship between dimensions of NC and Clan Culture
Hypothesis-2:	There is a positive relationship between dimensions of NC and Adhocracy Culture
Hypothesis-3:	There is a positive relationship between dimensions of NC and Hierarchy Culture
Hypothesis-4:	There is a positive relationship between dimensions of NC and Market Culture
Hypothesis-5:	Company size serves as a significant moderator of the association between NC and OC
Hypothesis-6:	The controls of education and position will serve as substantial control measures with regard to the association between NC and OC.

III. RESEARCH METHODOLOGY

The research methodology section is divided into two sections. The first section highlights the sampling and data collection procedure and the second section illustrates instrumentation.

Convenience sampling was employed to collect data from managers working in small and medium organizations in Iran. Due to various operational difficulties, researchers had to use convenience sampling method. Although convenience sampling may reduce the representativeness of the sample, it can be justified when there is limited access to resources [33]. While in the case of Iran, rules and regulations for conducting research and collecting information from different organizations in Iran is very tight and becomes even more difficult when it comes to some sensitive issues such as culture.

A. Instrumentation

The researcher adopted the scale from Dorfman and Howell's work on national culture and the CVF work of [1] on OC. Information related to four dimensions of NC were extracted from a questionnaire designed by [34] having 22 questions for managers and senior managers in each organisation. Additionally an OC section, which comprises 24 questions, was adopted directly from the OC Assessment Instrument (OCAI). The OCAI has been used in extensive studies from the Far and Middle East to North America. The OCAI asks respondents to answer six questions based on six dimensions, thought by Cameron and Quinn to be critical and important in gaining an understanding of OC. In order to ensure the researcher authenticity, a covering letter from the researchers together with a supporting letter from Brunel University and a stamped envelope was attached to each questionnaire. Moreover, in the case of Iran, the researcher had to seek permission from Ministry of Education.

IV. RESULTS

A. Descriptive Statistics

The descriptive statistics for data was presented in table-4. Results show that percentage of male participants was 47.6, while the percentage of female participants was 52.6. Most of the respondents were above 45 (52.4 %). The percentage of respondents with having post graduate as their education level is 53.8, followed by undergraduate (39.1%). There were few respondents with PhD as their qualification (6.8 %). The participation of middle and senior managers was high, while the percentage of chief executives was only 7.1.

B. Reliability of the Constructs

Results shows that all the dimensions of NC were highly reliable and their value were above 0.6, while the overall reliability of NC is 0.932. The dimension of organizational culture values ranges from 0.6 to 0.9, while the reliability coefficient for organizational culture is 0.940.

C. Hypothesis Testing

In order to test the hypothesis, regression analysis was employed. For the hypothesis 1 results show that UAI (B=-0.238, P<0.05), REVIDV (B= 0.357, P< 0.01) and PDI (B= 0.221, P< 0.01) are significantly predicting clan culture, while MSI (B= 0.046, P> 0.05) is not significant predictor of clan culture. A value of R-square of 7.9 percent implies that dimensions of NC are a good predictor of clan culture. Additionally, a series of correlation coefficients were also

calculated between these measures. Significant correlations were only found between clan culture and IDV (r (351) = .208, p <.001), as well as between clan culture and PDI (r (351) = .200, p < .001).

Furthermore, the results for hypothesis 2 show that REVIDV (B= - 0.082, P< 0.05) is a significant predictor of adhocracy culture, while MSI (B= -0.001, P> 0.05), UAI (B= 0.025, P> 0.05) and PDI (B= 0.015, P> 0.05) are not a significant predictor of adhocracy culture. The value of R-square is 1.4 percent which implies that dimensions of NC are not a good predictor of adhocracy culture. Additionally, a series of correlations were calculated between NC and adhocracy culture. Only one significant correlation was found, which consisted of the correlation calculated between adhocracy culture and IDV (r (351) = -.108, p < .05).

The results for hypothesis 3 that UAI (B= 0.377, P< 0.01), MSI (B= 0.110, P< 0.05) and REVIDV (B= 0.187, P< 0.01) significantly predict market culture, while PDI (B= 0.058, P> 0.05) is not a significant predictor of hierarchy culture. The value of R-square is 10.2 percent which implies that dimensions of NC are a good predictor of hierarchy culture. Four Pearson's correlations were also calculated between NC and hierarchy culture. All four Pearson's correlations were found to achieve statistical significance. This analysis consisted of the correlation between hierarchy culture and UAI (r (351) = .281, p < .001), hierarchy culture and IDV (r (351) = .191, p < .001), hierarchy culture and PDI (r (351) = .133, p < .05), and between hierarchy culture and MSI (r (351) = .153, p < .01). Moreover, the results for hypothesis 4 show that REVIDV (B= -0.345, P <0.01) and UAI (B= 0.864, P< 0.01) are a significant predictor of market culture, while PDI (B= 0.108, P> 0.05), MSI (B= 0.166, P> 0.05) are not a significant predictor of market culture. The value of R-square is 16.6 percent which implies that dimensions of NC are a good predictor of hierarchy culture. A series of four Pearson's correlations were also conducted between market culture and NC. Three significant correlations were found, which consisted of the correlation between market culture and UAI (r (351) = .375, p < .001), market culture and PDI (r (351) = .117, p < .05), and market culture and MSI (r (351) = .130, p < .05).

A series of regressions analysis were conducted in order to test Hypothesis-5. Specifically, this consisted of a series of regression analyses incorporating interaction effects between NC and size in order to determine whether company size serves as a significant moderator of the association between NC and OC. The first series of analyses, focusing on clan culture and the interaction between OC and size was found to achieve statistical significance in the regressions conducted on IDV and PDI, indicating significant moderation with regard to company size in these two cases. Next, analysis focuses upon the moderational analyses conducted on adhocracy culture. None of the four interaction effects were found to achieve statistical significance in this set of analyses. This indicates no significant moderating role of company size with regard to adhocracy culture.

A series of moderational analyses were conducted focusing upon hierarchy culture. Only one significant interaction effect was found, which consisted of the interaction between IDV and company size. This indicates

significant moderation of company size with regard to the association between IDV and hierarchy culture.

Another set of regression analyses focused on the moderational effect of company size with regard to market culture. A significant interaction effect was found in the cases of UAI and IDV, indicating significant moderation with regard to these two measures.

Further regression analyses were conducted in order to test Hypothesis-6. The first set of regression analyses focused upon whether education and position serve as substantial controls with regard to the association between NC and clan culture. While education was not found to be a significant control in any of the four analyses, position was found to be significant in all four, indicating that this measure was a substantial control with regard to clan culture.

Regression analysis was done to investigate adhocracy culture. Again, education was not found to achieve significance in any of the four analyses, while position was found to achieve significance in all four analyses. This indicates that position serves as a substantial control with regard to adhocracy culture.

Regression analysis was done to investigate hierarchy culture. The results of these analyses did not find education to be significant in any analysis. However, position was found to achieve significance with regard to the analysis conducted on IDV. This indicates that position was a substantial control with regard to hierarchy culture, though only with regard to IDV.

An additional series of regressions were conducted focusing upon market culture. Both education and position were found to achieve statistical significance in all four regression analyses, indicating that these two measures were substantial controls with regard to market culture.

V. Discussion and Conclusion

The study tested the impact of NC on organizational culture in the private sector of Iran. For NC four dimensions were taken into consideration i.e. uncertainty avoidance, individualism versus collectivism, power distance and masculinity versus femininity, while for organizational culture, clan culture, adhocracy culture, hierarchy culture and market culture. Hypotheses were tested using four dimensions of NC as independent variables and dimensions of organizational culture as dependent variables.

Results revealed that some of the dimensions of NC are insignificantly related to the dimensions of organizational culture, though the correlations conducted provided some additional support of the association between these two constructs. In case of clan culture, individualism versus collectivism and power distance showed significant relationship, while for the rest of the two dimensions relation was not significant. Furthermore, all the domains of NC showed insignificant relationship with adhocracy culture. In the case of hierarchy culture, only uncertainty avoidance, individualism and masculinity versus femininity has significant relationship, while in the case of market culture only uncertainty avoidance has significant relationship. As highlighted in the results, in the case of Iran, some of the NC indicators were loosely bounded with the organizational culture dimensions.

Additionally, the regressions conducted for Hypothesis-5 indicated significant moderation with regard to company size, though the extent of the moderation varied substantially depending upon the type of Organizational Culture in question. Overall, these results do suggest that company size can serve as an important and significant moderator of the association between NC and Organizational Culture within these data. The further series of regression analyses conducted testing Hypothesis 6 found both education and position serve as significant controls of the association between NC and Organizational Culture, however, these effects also varied substantially depending upon the Organizational Culture in question. Furthermore, position was more commonly found to be a significant control as compared with education.

Due to strict cultural norms in Iran, organizations tend to restrict many cultural improvement opportunities and the resources necessary to initiate national cultural collaboration efforts with organizational culture. In the social context, the support of government is essential for organizations to adopt cultures which help in the development of international standards and norms for better development opportunities. It seems that the dimension of power distance in Hofstede's model for Iranian culture lies in the middle of two extremes and can help organizations to improve organizational culture. This may be the reason why only the hypothesis concerning a relation of power distance with clan culture was accepted, while all the other three were rejected. These findings are in contrast with [12] findings in the US and other developing countries, where power distance and individualism are negatively correlated, meaning where there is high power distance, individualism is low and where power distance is low, individualism is high. Moreover, the relationship of NC with clan culture highlights that leadership in Iranian organizations is more supportive and managers act as mentors in organizational matters.

All the dimensions of NC have insignificant relationships with adhocracy culture. In adhocracy culture, leaders are creative and are risk takers, where subordinates follow them and only take developmental initiatives. In the case of Iran all the dimensions of NC have insignificant relationships with adhocracy culture which implies that organizational culture in Iran does not permit leaders to take risks. The major reason may be the international pressure including restrictions on joint venture. As highlighted by [12] that masculinity or femininity characteristics cannot be bound with gender, it depends on the situation where both genders can adopt either characteristic. In the case of Iran, it seems that masculine or feminine characteristics were not much influenced by adhocracy culture. Similarly, leaders with innovation capabilities fail to induce characteristics of uncertainty avoidance among the members of their organizations.

However in the case of hierarchical culture leaders promote a formalized and structured work environment and in such cultures leaders were considered as good coordinators and organizers as well. A significant positive relationship of hierarchy culture with uncertainty avoidance reveals that leaders in Iran focus on formalised organizational structures have the capability to take risks and avoid

ambiguity to promote team work among employees. The power distance has an insignificant relationship with hierarchical culture. Therefore, it can be concluded in the case of Iran where masculinity is low as well as power distance.

Market culture as highlighted by [1] is characterised as being very customer orientated where leaders are tough, demanding and focused on achievement. All the dimensions of NC have insignificant relationships with market culture except uncertainty avoidance. The results of this study cannot be generalized to other developing countries since Iran is facing strict restrictions from international competitors. Future research should consider the size of organizations and the literature reveals that size of the firms has an impact on the culture of organizations. Since NC mostly deals with human emotion and behaviour patterns, the size of firms has a significant influence. Similarly, it is proposed that there is a need for longitudinal research in order to test the relationship between NC and organizational culture.

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Does Trade Flow between Turkey and Germany Justifies Ricardian Theory?

S. Güneş, F. Yeşilyurt, and H. S. Karaalp

Abstract—**Classical Ricardian theory of comparative advantage states that differences in labor productivities determine trade patterns. Many publications have focused on labor productivity differences as an important variable in determination of trade flows among countries. However few studies focused on both productivity and labor cost differences and their effects on countries' export performance. Unit labor cost (ULC) combines the effects of productivity, labor cost and exchange rate. An increase in ULC implies that labor costs rise more than productivity gains. As a result, comparative advantage deteriorates. The aim of this study is to contribute validity of classical model by inquiring the effect of relative unit labor cost (RULC) in determination of trade flows between Turkey and Germany. We used annual Turkish and German data for the period of 2002 to 2008 for five major manufacturing sectors which are food and beverages, tobacco products, textiles, wearing apparel, leather and leather products. Export and import data are obtained from TurkStat. The ULC data set are calculated by using UNIDO value added and wage data set. The estimation results show that Ricardian theory explains trade pattern between Turkey and Germany. Increase in relative unit cost in Turkey effects relative export performance of Turkey negatively.**

Index Terms—**Productivity, trade flows, time series, unit labor cost.**

I. INTRODUCTION

Mercantilism was the dominant economic policy over the period from the 16th century to the late 18th century. However, in 1776, Adam Smith published "The Wealth of Nations" which can be used as the formal beginning of Classical Economics and mentioned the importance of specialization through international division of labor. International free trade theory begins with absolute advantageous theory of Adam Smith and followed by Ricardo's comparative advantage theory. Both of which mainly focus on labor productivity differences among countries in determination of trade flows. Then Heckscher-Ohlin theory mentioned the importance of differences in both factor abundance of trading partners and factor intensities of commodities in determination of trade flows. In addition to inter industry trade theories, new international trade theories also analyze the determinants of intra-industry trade flows between nations. According to Linder hypothesis, trade takes place among similar countries to provide variety for consumption. Reference [1] mentions the importance of quality differences, externalities of clusters, research on innovation and domestic competition and

strategic behavior of firms in determination of countries' competitiveness level. Reference [2] states that cost advantages of increasing returns to scale industries and importance of geography are important variables in determination of trade flows between countries. New trade models like gravity model states that trade is proportional to two countries' gross domestic product (GDP) and negatively proportional to their distance. Although there are various international trade models, classical model is one of the most important models in explanation of trade patterns. Classical theory of Ricardo states that comparative advantage which based on relative labor productivity differentials determines both international specialization and trade pattern between two countries. Each country produces and exports of those goods in which the relative output per worker was more than the relative money wages of workers. In this context comparative cost advantage plays an important role in determination of a country's trade flows. Cost of tradable inputs have tendency to be equalized internationally. Due to capital and raw materials are much more tradable than labor, testing classical trade theory by assuming labor theory of value still make sense.

Price of commodity is one of the most important variables in determination of comparative advantage. Both labor productivity and labor cost have considerable influence on determination of goods' prices. So, comparing countries relative unit costs may give information about their competitiveness level [3]. A country may have a comparative advantage over commodity exports if the ratio of domestic productivity to productivity abroad exceeds the domestic wage ratio to wage ratio abroad. Labor cost per unit of output (unit labor cost (ULC)) is the ratio of wages to its productivity. Provided that labor wage level remains unchanged, if labor productivity decreases, ULC rises or vice versa [4]. In other words the inverse of productivity that is unit labor requirement ratio is used in calculation of ULC. So both changes in wage level and worker productivity affect ULC. Reference [5] concluded that relative unit labor cost (RULC) is probably the best indicator in measuring industrial countries' competitiveness level for manufacturing sector. In this context, cost competitiveness of sector i in country j compared with country k depends on RULC and it could be calculated using following formula:

$$RULC_{ijk} = a_{ij} w_{ij} / a_{ik} w_{ik} e_{jk} \qquad (1)$$

a_{ij}, a_{jk} Unit labor requirements for countries j and k respectively. It is calculated through getting the ratio of labor employment to value added

w_{ij}, w_{ik} = Wage levels for countries j and k respectively

e_{ik} = Bilateral exchange rate

As both Turkey's and Germany's export pattern relies on manufacturing industry, the RULC variable is employed. So, we expect that trade flows and ULC relationship between Turkey and Germany can be more explicitly explored.

Turkey signed Custom Union Treaty with European Union in 1996. Existing tariff barriers or other protectionist non-tariff implementations are at the minimum level between Europe and Turkey. Germany is also the most important trade partner for Turkey for the sample period. For instance, in 2008 and 2011, exports from Turkey to Germany was 13.9 million $ and 9.8 million $, respectively. In the years of 2008 and 2011, 9.8% and 9.5 % of Turkey's exports were realized to Germany. Turkey's imports from Germany was 18.6 million $ and 22.9 million $ in 2008 and 2011, respectively [6]. In this context, we analyzed the effect of RULC for Turkey's export competitiveness relative to Germany over the period between 2002 and 2008. The main contribution of this study to the literature is that it examines the effect of RULC on Turkey's export competitiveness relative to Germany.

This paper proceeds as follows: Following introduction, section II summarizes recent empirical studies. Section III describes the variables and discusses the empirical findings of the model. Section IV provides concluding remarks.

II. LITERATURE

Comparative cost advantage plays an important role in determining a country's trade flows. Since labor theory of value is assumed, both labor productivity and cost differential are important variables in determination of export share. The simplicity of Ricardian model reveals its strength so; older tests of the model were highly successful. First empirical study was conducted by [7]. He tested classical theory by comparing output per worker and wage level. The dependent and independent variables were ratio of US to UK exports and relative labor productivity, respectively. In other words, it is expected that each country will export goods for which the ratio of its productivity exceeds the ratio of money wage rate to that of the other. For the sample period American wages were twice of the British wages. This study, covering 97% of the sample, showed that American manufacturing sectors which have per worker productivity more than two dominated bulk of the market and American manufacturing sectors having output per worker less than two had lost bulk of the market power. This study had found clear positive relationship between labor productivity and exports. And this study had also found a strong inverse relationship between US and UK relative wage costs per unit of output and relative exports.

Similar to the previous study, [8] used total export ratio but also included RULC as an independent variable besides relative productivity. Results of this study indicated that comparative costs provide an important explanation of relative export performance between UK and US. This study found that differences in the ULC ratio tended to be associated with a somewhat larger inverse percentage difference in relative export quantity. By relaxing the strict labor theory of value assumption, costs other than labor were

also included into analysis. There is a negative relationship between output per worker and net costs which are representing per unit cost of production in the value added sense. But [8] added that net cost variable is not as good predictor as relative output per worker or ULC.

The independent variable in [9] was export to third markets rather than bilateral trade volume between UK and US. This study employed relative labor productivity as the main explanatory variable. Results show that correlation coefficient between productivity ratios and export shares higher than net unit cost ratio and export shares. This study found inconclusive evidence that higher wages might be associated with higher export shares. This situation tried to be explained by unidirectional relationship, in which higher export shares might result higher wages. Another study also supported that labor productivity variable correlates with export performance of Canada and the US [10].

ULC for motor vehicle and steel industries for the US, Japan and Industrialized Europe is examined by [11]. Results supported that ULC is a good indicator to measure trade position in these two industries. Another study, examined the structure of trade flows in manufacturing industries over the period between 1967 and 1982 [12]. In this study, to estimate individual industry effects, fixed panel estimation method is used. The results of labor productivity variable are consistent with the classical theory. A positive relationship between labor productivity and export performance was found. But labor compensation variable gave contradictory results. There was both high level of labor productivity and relatively high level of labor costs.

Purchasing power parity theory assumes law of one price for tradable manufactured goods. This theory can be extended for tradable input prices. Reference [13], mentioned that as other tradable input prices equalized internationally, labor is the most important factor in determination of cost competitiveness. In this context input prices also converge to each other. This study was extended by [3]. They tested the relationship between trade flow, relative labor productivity and ULC by using larger group of countries vis-a-vis the US for 21 manufacturing sectors. The countries which are used in empirical analysis are; Japan, Germany, France, UK, Italy, Canada, Australia, Korea and Mexico. In this analysis labor compensation data is used to generate ULC. Empirical results seem to support Ricardian theory of comparative advantage. Although explanatory power of regressions are weak, majority of coefficients are correctly signed and most are statistically significant.

RULC is one of the most important variables in determination of trade flows for manufactured goods among industrial countries [5]. Reference [14] found that even if his estimates had low explanatory power, comparative advantage depends on both factor abundance and differences in labor productivity.

By using quarterly data a time series analysis applied for Turkey by [15]. They stated that ULC has substantial effect in the determination of international competitiveness of Turkey. The 2001 crises caused relatively higher productivity and relatively lower dollar based wages and resulted in comparatively lower ULC in Turkey. Their empirical results showed that export performance of Turkey had increased for

the period from 1999 to 2003.

A comparison of relative levels of ULC for several OECD countries relative to the US was tested by [16]. Their study decomposed ULC effects into productivity, labor cost and relative price performance. Main result of this study is that lower productivity levels tend to correlate with relative lower labor cost levels. Low productivity level rather than high labor cost threatens countries' competitiveness level.

Reference [17], compared Senegalese manufacturing industry international competitiveness level with Africa, Asia, South America and Eastern/Central Europe. This study concluded that besides world demand, the exchange rate, and relative wages in dollar terms and relative level of productivity are important variables in determination of Senegalese's export competitiveness.

The relationship between productivity growth and export volume of Taiwan electronics industry was examined by [18]. This study found that compared to other sectors, exporters in the electronics industry have higher productivity. Another study also tested the existence of Ricardian theorem between South Africa and the US on 23 manufacturing industries [19]. They also concluded that the trade pattern supports the Ricardian theorem. The equation of Balassa [9] was estimated in the study of [20]. Although there is a change in value of coefficients, this study also supported previous findings of Balassa [9] that is labor productivity difference is the main explanatory variable in determination of export performance.

III. Model And Data

Ricardian theorem is used to explain bilateral trade pattern between Turkey and Germany by using panel data approach on five manufacturing industries which are food and beverages, tobacco products, textiles, wearing apparel, leather and leather products. Bilateral trade flow data between Turkey and Germany is used to escape aggregation bias problem. The data set is annual data and ranges from 2002 to 2008. Trade data are obtained from TurkStat (Turkish Statistical Institute) according to 2 -digit levels of ISIC (Revision 3) [21]. As it is stated in previous studies, the ULC variable could be used to analyze export performance. Changes in ULC gives information about both labor and market efficiencies. So, ULC data is used as an explanatory variable to represent a link between productivity and cost of labor in the production of the output. The ULC variable is calculated by using wage level and value added data set. These data are provided from UNIDO [22]. Relative export performance of Turkey with Germany is the dependent variable of the model. All variables are transformed to natural logarithms. In this context, to examine the validity of the Ricardian model and measure the strength of the relationship between RULC and export performance. A simple panel equation can be written as the following form:

$$\log(\text{EXP}_{i,t} / \text{IMP}_{i,t}) = \beta_1 + \beta_2 \log \text{RULC}_{i,t} + \varepsilon_{i,t} \quad (2)$$

where, EXP/IMP is Turkey's Exports to Germany divided by Turkey's Imports from Germany. $RULC$ is Turkey's ULC divided by Germany's ULC.

There are some advantages of panel data analysis such as increasing the degrees of freedom and improving the efficiency of the estimations by reducing collinearity among explanatory variables [23]. Panel data estimation method also offers researchers the possibility to control for individual heterogeneity [24]-[25]. In this context, we used panel data estimation technique and employed some tests to decide appropriate model.

First, we employed redundant fixed effect test and we found that the hypothesis of "pooled ordinary least square (OLS)" versus "fixed effects" in time and in cross section couldn't be rejected. In other words, the null hypothesis of "pooled OLS" is accepted. As a first result, "pooled OLS" is preferred to fixed effects model. Second we examined the null hypothesis of "pooled OLS" against "random effects" in both cross section and period by using Breusch-Pagan LM Test. According to the test result we rejected the null hypothesis pooled OLS and we conclude that "random effects" model is appropriate for our model at 1% significance level. As a third step, we applied Hausman Test to identify whether "the random effects" or "the fixed effects" are appropriate for our model. According to the test result we accepted the null hypothesis and we concluded that the preferred model is random effects model. As a result of all these empirical tests, we decided to use random effects model in this study. However, to make comparison of all models we estimate (2) by using pooled OLS, fixed effects and random effects and we lay out the results in Table I. In this context, estimation results revealed that pooled model, fixed effect model and random effect model produce the same results. The same results of pooled OLS and random effects also show the efficiency of random effects estimator.

TABLE I: ESTIMATION RESULTS

	Pooled OLS	Fixed	Random
Variable			
constant	-0.19	-0.45	-0.19
RULC	-0.35*	-0.46*	-0.35*
R^2	0.21	0.29	0.21
Cross Section F	0.85		
Period F	0.19	Breusch Pagan LM Test	66.44*
Cross Section/ Period F	0.42	Hausman Statistic	1.95

Note: * indicates that the corresponding coefficient is significant at 1% level

The results in Table I showed that the RULC variable is statistically significant and has the expected sign. Increase in ULC cause a decrease in Turkey's export performance as expected. Furthermore empirical results showed that there is a negative relationship between relative export performance of Turkey and RULC. We may conclude that if Turkey's ULC increase more than Germany's ULC, export performance of Turkey deteriorates.

IV. CONCLUSION

Economic theory consists of a number of economic models. Each model tries to explain theories with explanatory variables and make predictions for the future. New international trade theories had focused on both inter and intra industry trade flows between nations. These theories have also being tested with tremendous amount of empirical studies. Despite many complex new international trade theories, this analysis focuses on mainly simple classical theory of Ricardian Comparative Advantage and tested existence of Ricardian theory between Turkey and Germany which is the most important trade partner of Turkey. As far as we know, there isn't any empirical study to test the relative cost and export performance between Turkey and Germany. As mentioned before most of studies had analyzed determinants of US and UK trade flows. That is why this study contributes existing empirical literature.

By relying on existing empirical literature, the ULC variable is used to explain relative export performance differences of Turkey and Germany. Although cost of capital and raw materials can also be crucial factors for comparisons of export performance between countries, labor cost differential had been mentioned as a good indicator for measuring export performance [8]-[9].

As a result, this study empirically shows that Ricardian theory still has a word to say in explanation of trade flows between Turkey and Germany. When Turkey's ULC increase more than Germany's ULC, Turkey's relative export performance was affected negatively.

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Using Partial Correlation Coefficient to Assess the Importance of Quality Attributes: Study Case for Tourism Romanian Consumers

Olimpia-Iuliana Ban and Victoria Bogdan

Abstract—The importance-performance grid is a marketing instrument used to optimize the attributes of products in order to increase the consumers' satisfaction. A special place for debates is represented by the way in which the importance of attributes is determined, the direct research way having many weak points, among which we mention: it aggravates the application of the survey, the answers are already influenced by the perceived performance of the products, the answers are not authentic or they are too polite so that the values obtained are high and the inter-item differences are little and pointless etc.

The aim of this paper is to test a mathematic method recommended by the literature in the field, in order to indirectly determine the importance of the attributes, starting from the evaluation of the performance of products in relation to global satisfaction.

Methodology contain: a survey through a questionnaire which recorded the importance assigned by candidates to the quality attributes and evaluated the performance of the touristic services considering the quality attributes; determined the importance of the attributes through the partial correlation coefficient, by correlating the attributes' perceived individual performance with the global satisfaction and compared the two matrixes pertaining to the information obtained by the two ways considering the marketing decisions.

The results obtained indirectly through the partial correlation coefficient substantially differs from the results obtained by directly investigating the importance of the attributes, in order to make marketing decisions. The present paper continues previous researches, in which we tested two methods meant to indirectly determine the importance of the attributes, the Spearman coefficient and the entropy calculus.

Index Terms—Importance-performance analysis, importance attributes, partial correlation, study case, tourism.

I. INTRODUCTION

A marketing instrument having the quality to be extensively used by theorists and practitioners is the Important-Performance Matrix (IPA) launched in 1977 by J. A. Martilla and J. C. James, which analyses the quality attributes of products/services considering the perceived importance and performance. IPA was applied in different fields, among them touristic services, in order to determine the selection factors for a hotel, to establish the critical attributes of the tourist guide's performance, to identify the

competitivity factors of destinations or to draw up different strategies [1]-[3]. A critical point in building up the Importance–Performance matrix is represented by the determination of the importance of quality attributes.

The measurement of the attributes' importance in the IPA Importance-Performance matrix can be done as follows:

- Directly, by surveys. It has the following disadvantages: it makes more difficult to gather data by increasing the dimension of the survey, it makes longer the duration of answer recording, the scores have a very small inter-itemic variation with scores uniformly high, therefore useless [4], many times the answers are not trustworthy or are influenced by the punctual performance of the products/services considered [5]. For the indirect methods meant to establish the importance of the attributes bring in themselves more problems, the direct methods are still widely used. [6]

- Directly, by conjoint analysis. This method requires the application of a set of questions combining the characteristics of the product in different alternatives. This very useful method becomes unfeasible when it implies more than a few attributes, a situation often encountered in many cases or when the respondents perceive certain connections between characteristics.

- Indirectly, by mathematical methods by correlating the performance given to the attributes with the global satisfaction. Methods such as the following are used: the Pearson correlation coefficient [7] or the use of the Spearman coefficient [8].

- Indirectly, by regression coefficients and the multivariate regression [9]. These methods attempt to correlate the global satisfaction with the performance given to each attribute in order to detect the importance given to each attribute. The major disadvantages of this method are: the collinearity between the attributes [4] which leads to very poor results, the omission of a non-linear relationship between the global performance and that of each attribute fractionally [10]. Studies have shown that the negative effect of a product's low performance in the total evaluation of satisfaction is higher than the positive effect of an over the average performance [6]. The Spearman coefficient has yet the advantage of being able to be used for non-parametric data.

There have also been suggested other measurement methods, yet they contradict one another and they confer different results for the same case [8]-[11].

Alternatives of the Importance-Performance matrix have been created, framing improvements [6]-[11]. The most

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interesting ones are those highlighting the difference between importance and performance by drawing a diagonal given by the points of equality between importance and performance. In the IPA matrix framed by Abalo, the left upper part is enlarged and includes quadrant II, ½ quadrant I and ½ quadrant III and the attributes in this area are candidates for improvement. The area under the diagonal in the chart keeps the interpretation of Martilla and James' IPA. The difference is t hat, everything recording a higher score for importance than performance and it is located in the upper left side, is regarded as a candidate for improvement.

II. METHODOLOGY

The research took place in three stages:

- In the first stage there was a survey through a questionnaire which recorded the importance assigned by candidates to the quality attributes and evaluated the performance of the touristic services considering the quality attributes;
- The second stage determined the importance of the attributes through the partial correlation coefficient, by correlating the attributes' perceived individual performance with the global satisfaction;
- In the third stage the two matrixes pertaining to the information obtained by the two ways and the two matrixes were compared considering the marketing decisions.

Work hypothesis: by using Abalo's IPA matrix [6], the results obtained by directly investigating the importance of the attributes not substantially differs from the results obtained indirectly, in order to make marketing decisions. The market research and, implicitly, the building of the IPA matrix can be simplified by eliminating the questions regarding the importance of the attributes and determining the importance of the attributes by mathematical methods. The problem is not related only to simplification but to optimization, for such a performance generates am certain attitude towards the attributes, a certain perception of their importance, therefore it requires either the separate determination of importance and performance, in different moments or the indirect determination of importance.

- During March-April, 2010 a survey was conducted among the population of Oradea, Romania [12]. The sample was composed of a total of 1,060 people; sampling method chosen was the stratification method (margin of error of 3%). The segmentation criterion used was age. The respondents were persons who received accommodation services in Romania at least once since 2007 till 2010.

The research goal was to investigate the level of Oradea inhabitants' satisfaction, with the quality of tourism services and the performance of service staff. The research instrument was a questionnaire with 21 questions, plus some questions related to socio-demographic aspects.

There were 19 attributes chosen for tourism staff, in correspondence with SERVQUAL, for which it was done the analysis of the importance given by respondents and the analysis of the perceived performance of the staff from Romania. A scale with five steps was used in this research, from "unimportant" to "very important".

TABLE I: PARTIAL CORRELATION

Variables in correlation		Value of coefficient
r 19g.1	=	0.0796
r 19g.1 2	=	0.0878
r 19g.1 2 3	=	0.0774
r 19g.1 2 3 4	=	0.0699
r 19g.1 2 3 4 5	=	0.0641
r 19g.1 2 3 4 5 6	=	0.0502
r 19g.1 2 3 4 5 6 7	=	0.0587
r 19g.1 2 3 4 5 6 7 8	=	0.0382
r 19g.1 2 3 4 5 6 7 8 9	=	0.0358
r 19g.1 2 3 4 5 6 7 8 9 10	=	0.0350
r 19g.1 2 3 4 5 6 7 8 9 10 11	=	0.0344
r 19g.1 2 3 4 5 6 7 8 9 10 11 12	=	0.0280
r 19g.1 2 3 4 5 6 7 8 9 10 11 12 13	=	0.0365
r 19g.1 2 3 4 5 6 7 8 9 10 11 12 13 14	=	0.0452
r 19g.1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	=	0.0449
r 19g.1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	=	0.0351
r 19g.1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	=	0.0251
r 19g.1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	=	0.0184

The results obtained indicated a hierarchy of the attributes from the point of view of the importance and a hierarchy of the attributes from the point of view of the perceived performance with regard to the tourism staff in Romania. (Table II, column 1 and column 3)

- The method chosen to determine the importance of the attributes is that of partial correlation between the performance perceived by for each attribute and the global satisfaction. For this method to be applied, it requires the transformation of data by their natural logaritmation [3].

After logaritmation, we obtain the value of coefficient "r" for each attribute, how can be seen in Table I for *Q8.19 Self-control*. The value of coefficient "r" indicates the importance assigned to attributes by partial correlation method. (Table II, column 2)
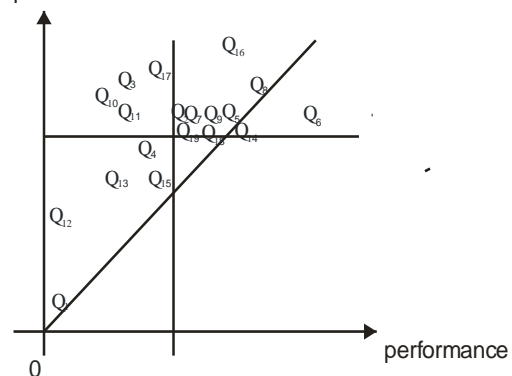
Fig. 1. Importance-performance grid obtained through direct research.

- Based on data obtained, two importance performance matrixes were built according to the model framed by Abalo [6] the importance-performance matrix pertaining to data obtained directly (the attributes' perceived importance and performance) (see Fig. 1) and the importance-performance matrix pertaining to indirect determination of the importance by partial correlation and direct determination of the perceived performance in relation to the attributes mentioned (see Fig. 2).

TABLE II: IMPORTANCE AND PERFORMANCE OF ATTRIBUTES OBTAINED BY DIRECT DETERMINATION AND IMPORTANCE OF ATTRIBUTES OBTAINED BY PARTIAL CORRELATION

Attributes according to their importance in the survey		Attributes according to their importance determined through partial correlation	Attributes according to their performance in the survey
Q8.16 Kindness	4.62	0.0348	3.2
Q8.17 Responsibility	4.58	0.0199	3.14
Q8.8 Communication	4.53	0.0492	3.25
Q.8.3 Promptitude	4.53	0.0128	3.12
Q8.10 Responsiveness to problems	4.5	0.0099	3.06
Q8.11 Conscientiously	4.46	-0.0145	3.09
Q8.7 Ability to solve problems	4.46	-0.0744	3.17
Q8.2 Attention	4.46	-0.0556	3.16
Q8.5 Availability	4.45	-0.0109	3.2
Q8.9 Oral Expression	4.45	0.0186	3.18
Q8.6 Physical Appearance	4.43	0.0556	3.38
Q8.18 Sociability	4.42	0.0161	3.19
Q8.14 Skills	4.41	-0.0206	3.23
Q8.19 Self-control	4.4	0.0184	3.16
Q8.4 Professional knowledge	4.38	0.0118	3.09
Q8.13 Flexibility	4.26	-0.0634	3.05
Q8.15 Elegance	4.25	-0.0142	3.13
Q8.12 Enthusiasm	4.17	0.0612	2.95
Q8.1 Anticipate desires	3.82	0.0428	2.96
Medium	4.3989	0.0056	2.9868
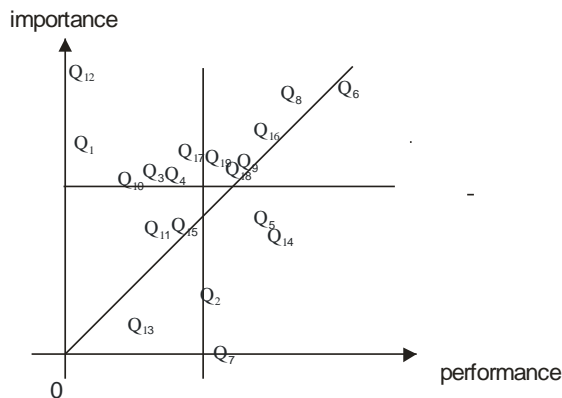
Fig. 2. Importance-performance grid obtained through partial correlation

III. INTERPRETATIONS

The IP grid constructed from the attributes evaluated directly as importance and performance, shows a concentration of 17 attributes (out of 19 attributes) in quadrant II and only two (Q6 and Q14) in quadrant I what mean *keep up the good work.*

According to Abalo's interpretation, in this case four attributes can be eliminated, unnecessary from the consumers' perspective: Q5- Availability; Q14- Skills; Q2- Attention; Q7- Ability to solve problems and Q13- Flexibility could frame into "low priority".

The IP Matrix, built up with the data obtained directly (the performance perceived in relation to the attributes analysed) and the data obtained indirectly (the determination of the importance of attributes by partial correlation) shows the concentration of 11 attributes in quadrant II, of an attribute in quadrant I (Q6), of an attribute in quadrant III (Q13) and of four attributes in quadrant IV (Q5, Q14, Q2 and Q7).

Comparing the two matrixes, the fundamental difference is given by the four attributes which in the first matrix recommend to be supported and in the second their elimination is brought into attention. What is the reality? Starting from the idea that the direct answer does not reflect the reality, the importance assigned to the attributes being influenced by the performance associated to evaluated products/services, then, does the indirect method express more accurately the opinion of the respondents? The hypothesis asserting the getting of substantially different results is confirmed. Regarding the validation of certain results against others is debatable for, in their current form, there is a strong connection between the attributes proposed by SERVQUAL, here and there existing overlapping of meanings. For example, the consumers' decision could be to eliminate Q7 Ability to solve problems, as long as there is Q10 Responsiveness to problems.

IV. CONCLUSIONS

The hypothesis hasn't been confirmed, which brings into discussion the efficiency and credibility of results obtained indirectly, respectively the importance recording assigned to attributes in relation to global satisfaction. On the other side, SERVQUAL in the still very much used alternative requires radical revision, the intercollinearity of attributes being very high. Better results were obtained through the Spearman correlation coefficient, and the entropy calculus [13].

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The Effect of Personality Traits on User Continuance Usage Intention of e-Filing System

T. Santhanamery and T. Ramayah

Abstract—**Personality has been found to be related to broad spectrum of human activities and behavior. However, the effect of personality traits on technology adoption has not been widely researched. Eventually, as the usage of internet has shown a tremendous increase world-wide, it is reasonable to investigate its usage in terms of personality perspectives. Since the level of internet usage is voluntary rather than mandated, so it is more likely to reflect personal motives, needs, values, preferences and other personality attributes. Moreover, previous researcher had predicted that there is a possibility that future technology adoption decision will be more concern on human nature compared to usefulness factors. As such this paper proposed to investigate the effect of personality traits in encouraging the continued use of the e-filing system in Malaysia.**

Index Terms—**Personality, technology adoption, continuance usage intention, e-filing system.**

I. Introduction

The term e-government or electronic government refers to the use of information technology by government agencies, such as web-based Networks, the Internet, and mobile computing, that have the ability to transform relations with citizens, businesses, and other arms of government [1]. A useful indicator to determine the status of e-government in developing countries is by comparing its e-government readiness index with the other countries [2]. Malaysia's ranking for e-government development index has improved from the ranking of 43 (2005) to 34 (2008) to 32 (2010) [3]. In South East Asia Category, Malaysia's ranking has also improved from 3rd ranking (2005) to 2nd raking in 2008 and 2010 but with an improved index [3]. In terms of e-Participation Index, there has been a tremendous improvement for Malaysia where its ranking improved from the placing of 41 (2008) to 12 (2010) [3]. In reality, all these rankings actually show the initiatives and technology developments made by Malaysian Government in making sure that the e-government services reach the citizens. These initiatives truly resemble the "supply side" of the e-government development delivery [4]. What about the "demand side"? To what extend the citizens are going to use or continually use these particular services? remains as an important question to be answered because countries can be high in e-government rankings which focus more on technology developments but a system is still considered a failed system if the intended recipients do not use or continually use them [4]. Thus the underlying problem now is not the problem of design but utilization. The key to successful e-government depends very much on the utilization of the implemented systems [5].

Recent studies have found linkages between technology adoption and personal characteristics [6]-[9] indicating that personal characteristics do have an effect on technology adoption. Differences investigated in these studies were based on personal innovativeness, absorptive capacity, culture, personal awareness, and personal internet experience. Nevertheless, one factor that has not been widely investigated in technology adoption particularly in e-government context is personality of the users.

Personality has been found to be related to broad spectrum of human activities and behavior including romantic relationship [10], psychopathic [11], job performance [12], career success [13], job satisfaction [14], sex differences [15]. Furthermore, a number of recent studies also had suggested that personality is an important behavior in online environment [16] and [17]. Thus, it is necessary and timely to investigate the effect of personality on continuance usage intention in the context of e-government services.

One of the puzzling phenomena with regard to internet usage is the difference between internet users and e-services users. According to [18], there has been tremendous growth of internet users worldwide. In the context of Malaysia, internet users increase to 64.6% of the total population of 26.1 million. Indeed, Malaysia is ranked as one of the top ten countries in Asian region with the highest number of internet users. According to survey done by [19] in 2009 reveals that the main purpose of internet usage in Malaysia is for getting information (76.9%) followed by communication by text (74.8%), leisure (50.1%), social networking (46.8%), educational activities (46%), financial activities (27.2%), government services (19.6%), maintain homepage (7%) and others (7.6%). This shows that users have actually become more like consumers in making decisions on their preferences to use, not to use or continually use a particular system [16]. While the difference has been empirically observed but it is still unclear the factor that contribute to this difference. Thus, this paper will explore the effect of personality traits on the continuance usage intention. The proposed research model will be tested on the tax payers and their continuance usage intention of e-filing system to file their tax online in Malaysia.

II. E-Filing in Malaysia

The submission via e-filing has shown a tremendous

increase since its launching in 2006 particularly for individual taxpayers. The number of submission grew from 186,271 (2006) to 873,095 (2007) [20] to 1,171,105 (2008) to 1,466,507 (2009) [21]. This shows that 30% of the total registered individual taxpayers (4,785,452) have filed their income taxes via e-filing in 2009 [21]. Eventually, with the increasing number of taxpayers adopting e-filing system, a substantial amount of cost savings have been achieved. Up to 31st May 2009, a total cost of RM9, 162,845.64 have been saved. The number has gradually increased since its introduction in 2006 (RM1, 302,590.40), 2007 (RM4, 876,564.64) and 2008 (RM8, 187,144.96). Such trends underlines the importance, relevance and timeliness of studying IS continuance as a topic of government interest.
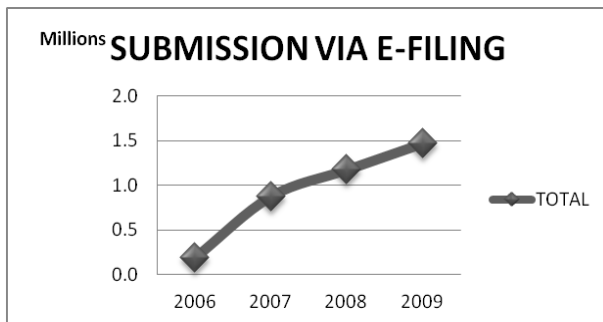
Fig. 1. Theoretical Background

Based on the evaluation of the theoretical finding from previous literatures concerning the personality variable and as well as the recommendation by previous researchers, the research model as illustrated in Fig. 2 were constructed to explore the relationships expected in this study. Basically, the theoretical framework proposed that personality will directly affects perceived usefulness towards e-filing continuance usage intention. Personality factor has been explored widely in different fields earlier; however it is getting its popularity among technology adoption researches recently. Researchers on personality traits [16], [17], [22] have reported that personality variable has a high impact on technology adoption. The major area of this study is the continuance usage intention, whereby customers' repurchasing or loyalty is critical to the success and profitability of online stores [23]. Significantly while there has been encouraging interest shown in determining continuance usage intention, however, very little effort is undertaken in determining the effect of personality on the continuance usage intentions particularly in e-government perspectives. Therefore, this study intends to fill the aforementioned gap.
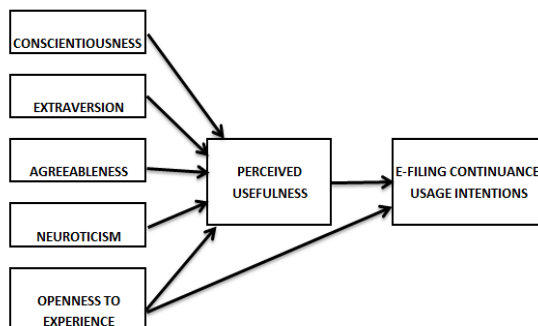
Fig. 2. The Proposed Research Model

III. DESCRIPTION AND DEFINITION OF THE PROPOSED VARIABLES IN THE MODEL

A. Continuance Usage Intention

Continuance usage intention is defined as ones intention to continue using or long term usage intention of a technology [24]. Research on IS continuance have been explored both at the organizational and individual level of analysis [25], for example [26] found that in order for an organizational innovation to be successful the organizational member must accept and utilize it. The individual level of analysis, which is also the focus of the present study, assumes that IS continuance behavior is the continued usage of IS by adopters, which is follows an initial acceptance decision [27]. In line with this, the research on e-government is taking a new phase with researches focusing more to evaluate the continued usage intention by the citizens rather than the initial intention. However, unlike initial acceptance decision, IS continuance depends on various factors that affect the individuals' decision to continually using a particular system [28]. Since the internet usage is voluntary, there is a strong possibility that the usage is reflected by the personality attributes [29].

B. Perceived Usefulness

Perceived usefulness was defined "as the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context [30]. Perceived usefulness has been subjected to widespread study by previous researchers (31, 32, 33, 34, and 35]. It was found that perceived usefulness was correlated with all technology usage. Researches by [16, 36, 37, 38, and 39] establish that perceived usefulness has a significant positive influence on continuance usage intention of a technology. However, contradict to the other studies, [40] found no strong impact between perceived usefulness and continuance intention while [41] founds that there exist no relationship between perceived usefulness and continuance usage intention.

C. Personality

Research on personality has received great attention among scholars in different fields particularly of human activities and behavior. Personality is defined as an individual's disposition or tendencies that lead to certain attitudinal and behavioral patterns across situations [42]. Personality reflects the exceptional features of human being, the characteristics that defined the essence and it is reflected in all the thoughts and actions [17].

Several researches have begun the investigation on the affect of personality traits on technology adoption such as [17], [43]-[45]. However there is limited study on the effect of personality towards continuance usage intention. Therefore this study will attempt to identify the effect of personality traits (openness, conscientiousness, extraversion, neuroticism and agreeableness) on the perceived usefulness and confirmation towards the continuance usage intention of e-filing system.

Conscientiousness individuals are organized, reliable, hardworking, self-discipline, punctual, neat, ambitious and persevering type personality [46]. They are intrinsically

motivated to achieve, perform at a higher level and take action to improve their job performance [17]. Thus, they will accept a particular technology only after a careful assessment of its opportunity for further achievement [17]. As such, they will be more readily perceived the e-filing system as useful.

Extraversion individuals are sociable, talkative, person-oriented, optimism, fun-loving and affectionate [46]. Rogers (1983) (cited in [17]) that gaining social status is the most motivation for individuals to accept and adopt an innovation. As such, they will have a more readily perceive the usefulness of the e-filing system.

Neuroticism individuals are worrying, nervous, emotional, insecure, inadequate and paranoid [46]. Ajzen and Fishbein's (1980) TRA identified neuroticism as one of the personality variables affecting beliefs about behavior (as cited in [17]). These individuals view technology advances as threatening and stressful and usually have negative thought about a technology [17] which could affect their thought about the perceived usefulness of a technology [16].

Agreeableness individuals are soft-hearted, good natured, trusting, helpful, forgiving and straight forward [46]. Agreeable personalities are more likely to accommodate and cooperative when considering a new technology and focus on the positive and cooperative dimensions of the technology [17]. Since e-filing system is a new technology used to file the tax online, thus it should be affected by this agreeable personality who may accept the system as useful.

Openness individuals are curious, broad interests, creative, original, imaginative and untraditional [46]. They are also defined as the individuals who like to explore unfamiliar or new things [46] and value changes [42]. Thus, it is possible that individuals who scores high on openness may be willing to learn new technologies and be less worried about the new technology [47] such as e-filing system. Due to their personality, they can easily perceive the system as useful and ever willing to continue using the new technology

Considering all these factors, we propose the following hypotheses:

1) Conscientiousness will be positively associated with the perceived usefulness of the e-filing system continuance usage intention
2) Extraversion will be positively associated with the perceived usefulness of the e-filing system continuance usage intention
3) Neuroticism will be negatively associated with the perceived usefulness of the e-filing system continuance usage intention
4) Agreeableness will be positively associated with the perceived usefulness of the e-filing system continuance usage intention
5) Openness to experience will be positively associated with the perceived usefulness of the e-filing system continuance usage intention
6) Openness to experience will have a direct impact towards the e-filing system continuance usage intention

IV. RESEARCH METHODOLOGY

To test these proposals, a set of self-administered questionnaires survey will be used upon those taxpayers in the northern region of Malaysia consist of Penang, Kedah and Perak. The unit of analysis chosen for this study is the individual salaried taxpayers who have used the e-filing system to file their tax online at least once. The reason individual salaried taxpayers are chosen is due to the fact that they are the pioneering group who used the e-filing system and the largest group of taxpayers in Malaysia. Data will be analyzed using the Partial Least Squared Method (PLS).

V. CONCLUSION

Many of the existing studies on individual adoption of information technology (IT) have focused on investigating the intention to use or to adopt an IT, while less attention is paid to the post adoption environment where individuals decides whether to continue or discontinue using an IT [48]. It is observed that in most cases after "initial usage" of e-government services many users revert to traditional ways for acquiring information and services, therefore engaging and retaining citizens for "continued usage" are a challenge faced by most government agencies providing online public services [49].

Practically, this study will highlight the various personality traits and the influence of this personality on satisfaction and attitude. By understanding the personality perspectives of citizens it will assist government leaders in the implementation or designing any other e-government projects in future whereby personality traits should be carefully considered and explored in relation to belief, attitude and experience. Indeed, [50] had predicted that there is a possibility that future technology adoption decision will be more concern on human nature compared to usefulness factors.

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Impact of Globalization on Organizational Form: Die Away of Open Air Movie Theatres in Turkey

R. Arzu Kalemci

Abstract—Those asserting that globalization has a 'convergence' effect on institutional field point that, with globalization, models and practices acknowledged as 'best practices' will move from where they are institutionalized to other countries. With the late of 1980s, Turkey met with the American-origin 'multiplex' movie theatres. The main purpose of this study is to examine the expansion of 'multiplex' form of movie theatres and how such expansion affected the reduction in the number of previously existing forms such as open air movie theatres in Turkey. Based on the data of Turkish Statistics Institute (TurkStat), numbers and current statuses of 'open-air movie theatres' that previously existed in Turkey are discussed in the research.

Index Terms—Globalization, convergence, U.S, movie theatres, turkey.

I. INTRODUCTION

The concept of globalization is often used to refer to sharp increases since the mid-1970s in the flow of goods, services, money, people, information and science among countries [1]. Most management researchers associated globalization with modernization and reflected the prosperity and consumer satisfaction in some countries as an outcome of globalization [2]-[3]. The approach, which regards globalization as modernization generally emphasizes that globalization, creates a 'convergence' effect between countries [1]. According to such approach, bureaucratic managements, formal education, protection of civil rights and science will resemble each other among countries with globalization and this will also become rational [4]-[5]. One of the key arguments of the 'convergence' aspect of globalization is that it introduces the 'best practice' to be imitated among countries. With such process, international models and practices are transferred between countries. Accordingly, within the scope of the globalization process, there are core countries (i.e., U.S. and Japan) representing the best practices and there are periphery countries transferring such best models and practices from core countries [6]-[9]. After the practices transferred from outside are adopted by periphery countries, this will lead to a loss of power in actors in domestic context or to less strong states [5]. According to such approach, stronger or more reputable countries of the international system will shape practices of less strong countries or weaken their legitimacies [10]. On the other hand, as pointing to a specific country instead of strong states, the term 'Americanization' has often been used to discuss the

convergence process (i.e. [7]-[9]). Main argument of such approach is that the rising success of American industrial

System in the post-Second World War period is effective on the adoption of American administrative practices in particular by European and Japanese companies. At the end of this process, called as 'Americanization', convergence between international organizational practices has gradually increased [11].

With the late of 1980s, Turkey met with the American-origin 'multiplex' movie theatres. This form of movie theatres, which started to become widespread throughout the world in 1990s, embodies not only multi-screen movie auditoriums, but also food stands and other entertainment activities [12]. On the other hand, this new 'multiplex' movie theatre form has found a place for itself mostly in cities. Because, one of the important conditions required for establishing this form of 'Movie Theater' is to have potential population. Accordingly in this period, some movie theater owners in Turkey split large movie auditoriums into two or more and converted movie theaters into movie complexes [13] and started adapting their own movie theaters to the features of 'multiplex' movie theatres [14]. On the other side, in addition to the old ones, new multiplex movie theaters were built in metropolitan cities, particularly inside the shopping malls [12]. As a consequence of the support provided by U.S, which we can define as the global actor of cinema sector throughout the world, to the expansion of 'multiplex' form of movie theatres, how such expansion affected the reduction in the number of previously existing forms of movie theatres is analyzed in this study. Based on the data of Turkish Statistics Institute (TurkStat) numbers and current statuses of 'open-air movie theatres that previously existed in Turkey are discussed in the research.

II. METHOD

In the study, qualitative and quantitative data gathering methods are simultaneously used. Archive scanning and document analysis included books, interviews, magazines and websites on Turkish cinema. The quantitative data were obtained from TurkStat. Since 1978, the TurkStat has been providing statistics on cinemas in all provinces in TurkStat in its publication 'Cultural Statistics'. We accessed all the publications issued by TurkStat since 1978, except for the 1985 publications. In general these data included total number of cinema halls, the number of cinema by class (first, second, third, other) on city basis, number of movie released, number of domestic and foreign movies released , total number of audience and the number of domestic and foreign movie audience

III. AMERICAN EFFECT ON THE FORM OF MOVIE THEATRE: TURKEY

The US has been the most reputable country of the world in the cinema sector from the beginning. With the establishment of *Motion Picture Company* in 1909, the first film company of the United States, film producers began to turn to foreign markets [14]. The US governments supported the internalization of Hollywood and an act passed in 1918 permitted the studios to collude overseas [15]. Over the next few years, American film companies began to market their own products directly, opening distribution branches in South America, Australia, Far East and European countries, thus taking over the world market [16]. Cinema sector structure in the world generally points to such segregation; although most countries have their own domestic cinema sector, majority of the underdeveloped countries import the movies released in their countries from the West and, mostly, from the USA [17]. The USA holds a significantly dominant position in the world cinema sector, particularly in the field of distribution. To give an example; American movie distributor companies distributed 80% of the movies, which were distributed in foreign countries in 1990s, in Argentine, one of the countries where national movies get the highest share by 16% out of the total box office revenues among other Latin American countries [18]. Acland provided important data about the subject in his book titled 'Screen Traffic' [12]. Accordingly, international movie rental prices charged for Hollywood movies in 1993 were higher than those charged for domestic ones. So, American movie companies earned more from other countries than they do from their own country. While the international market share of American cinema sector's box office gross raised by ticket sales was 43% in 1989, this rate reached 51% in 1996, exceeding the domestic market share. Such rates show that American cinema sector earns almost more in the international market than it does in domestic market. USA's creation of global market in cinema sector was not led by the distribution of American movies to other countries. Establishment of American-style movie theater forms in other countries is a part of their global activities. In late 1980s, an American-origin form of movie theatre was introduced to the world. This form of movie theatre goes under the name of 'multiplex' around the world. Such movie theatres embody not only multi-screen movie auditoriums, but also food stands and other entertainment activities [12]. In 1990s, investments were made in venues in some global markets. Such investments include construction of multiplex type movie theatres. In 1990, the USA provided funds to Europe, for the purpose of spreading the construction of American multiplex movie theatres. Italy, Spain, Portugal, the Netherlands, Germany, Finland and Denmark in Europe, as well as Japan, Australia and New Zealand, renovated their movie theatres and increased the number of their stages. It was American distributor companies who invested in movie venues. For example, Warner Brothers (Warner Bros.) and the Paramount/Universal both purchased and constructed movie theatres in Germany. There was a boom in the number of movie theatres in the Southeast Asia and multiplex movie theatre construction contributed to such development. In addition, American movie companies Virgin Cinemas, Warnel Mycal and AMC (American-Multi Cinemas) built multiplex movie theatres in Japan until the end of 1990s and mostly showed American movies [12]. In brief, globalization of world cinema sector occurred when the USA turned both its movies and form of projection, known as 'multiplex movie theatre', into a global market and expanded them. This American-origin new form of 'multiplex' movie theatres find more place for themselves in cities, which is directly related to the requirement of a potential population needed to build such form of movie theatres and to the fact that each such new form becomes a symbol representing the development of cities [19]. Multiplex movie theatres have therefore found more places for themselves in metropolitans. For instance, with the introduction of multiplex movie theatres in Australia in mid-1980s, the number of single-screen theatres declined in towns and villages and a few of them remained only in Sydney and its vicinity, later to be structured as multi-screen movie theatres [20].

As the American cinema sector's worldwide dominance gradually increased, 1980s were crucial in terms of the structuring of Turkish economy. In the 1980s, The Turkish economy underwent a change that also directly concerned the cinema sector. A number of structural regulations were launched in Turkey in 1980, under the name of 'reform program'. This program is based on transforming Turkish economic structure into an open, liberal and market-oriented structure in line with global neo-liberal reforms. The entry of foreign capital to various sectors in Turkey, including cinema sector as part of the structural adjustment program was facilitated and encouraged [21]. Turkey, thus, started to open its doors towards outside. The 'multiplex' movie theatres, which started mushrooming under American influence in 1990s, also became more prevalent in Turkey. Cineplex Odeon, for example, built 12 multiplex movie theatres in Turkey between 1998 and 2000 [12]. Apart from that, some movie theatre owners started adapting 'multiplex' movie theatre features to their own theatres. Particularly in metropolitans, many movie theatres were renovated and equipped with Dolby Stereo or Dolby Digital sound systems featured by multiplex movie theatres [14]. Nevertheless, movie theatre managers split large auditoriums into two or more auditoriums and converted movie theatres into movie theatre complexes [13]. In the interview, one of the cinema operators described those times, where big movie theatres were divided into multiple cinemas as follows:

"There were movie theatres with 750 people capacity; but, afterwards, these began to be divided in to halls of 300 people capacity".

In the ongoing process, the number of such movie theatres increased mostly in locations densely occupied by shopping malls. According to an interview made by Hurriyet newspaper correspondent Vahap Munyar with Adnan Akdemir, Chairman of the Executive Board of AFM Movie Theatres, Adnan Akdemir is known as the first one to make a company with professional identity' out of movie theatres and the 'first movie theatre owner' of Istanbul Stock Exchange (IMKB). In the mentioned interview, Adnan Akdemir added that 40% of his company's movie theatres were in Istanbul, while the rest were in Ankara and Izmir and

that these three cities made up the majority of movie goers.

TurkStat drew up its lists on movie theatres in accordance with the 'first class', 'second class', 'third class' and 'other' movie theatres classifications until 1987, however, 'luxury class' movie theatres were added to the aforementioned categories after 1988. 'Luxury class' movie theatres describe multi-screen multiplex movie auditoriums. As can be seen in Fig. 1, 'Luxury class' (or multiplex) movie theatres gradually increase in Turkey since 1987.
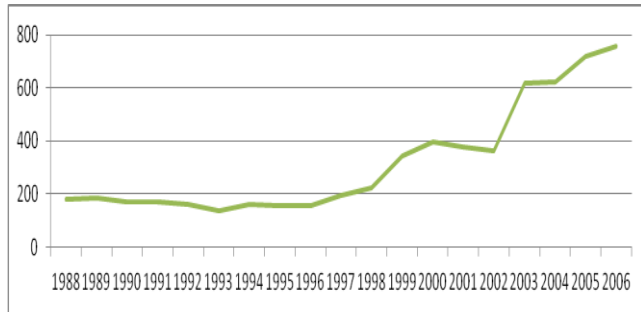
Fig. 1. Number of 'Luxury Class' movie theatres in Turkey: 1988-2006.

On the other hand, as mentioned before, American-origin 'multiplex' movie theatres are mostly built in metropolitans. In Fig. 2, city-based locations of 'luxury class' movie theatres in Turkey in 2003 are pointed on the map of Turkey. The number of 'luxury class' movie theatres present in those cities are also specified on the same map (figures in brackets). Accordingly, although there were totally 186 'luxury class' movie theatres in Turkey in 2003, only 21 cities had 'luxury class' movie theatres. As can be seen on the map of Turkey (Fig. 1), majority of 'luxury class' movie theatres are located in metropolitans. 51 out of 186 'luxury class' movie theatres are in Istanbul, 29 in Ankara and 30 in Izmir. Total number of 'luxury class' movie theatre in these three cities makes up approximately 60% of the same number for Turkey.

Greece and Australia have also gone through similar experiences. Sifaki analyzed Greek Cinema History in the study titled 'Projections of Popular Culture Through of The Study of Cinema Market in Contemporary Greece' [22]. In 1990s, American foreign distributor countries stepped in the Greek cinema sector. American distribution countries assumed distribution of 90% of all movies in Greece. This figure hit 92% in 1992. Movie theatres in Greece were renovated as they were in Turkey and supplementary stages were added to the old traditional movie theatres to turn them into 'multiplex' movie theatres. Multiplex movie theatres became highly popular, particularly among the young population of Athens. In 2001, there were nearly 450 movie theatres in Greece, more than half of them being in Athens. The largest multiplex movie theatre of Athens, 'Village Entertainment Park', attracted three and a half million Athenians in its first year of establishment. This figure is three times more than the visitors of Acropolis. On the other hand, American-origin multiplex movie theatres were started to be built in Australia in mid 1980s. In this process, number of multi-screen movie theatres gradually declined in towns and villages. Only a few single-screen movie theatres remained in Sydney and its vicinity, later to be structured as multi-screen movie theatres [20].

TABLE I: NUMBER OF OPEN AIR MOVIE THEATRES, NUMBER OF CITIES WITH OPEN AIR MOVIE THEATRES AND PERCENTAGE OF MOVIE THEATRES IN 67 CITIES IN TURKEY: 1978 – 1986

Year	Number of Open-air Movie Theatres	Number of Cities With Open-Air Movie Theatres	% of cities
1978	303	44	65.67
1979	308	49	73.13
1980	183	37	55.22
1981	180	38	56.72
1982	252	34	50.75
1983	249	33	49.25
1984	205	34	50.75
1986	166	31	46.27
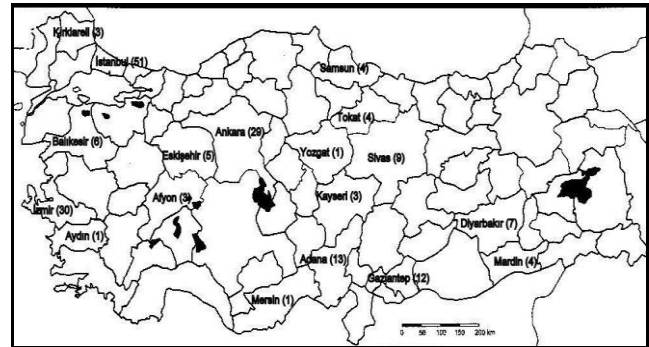
Fig. 2. City based locations of 'Luxury Class' movie theatres in Turkey: 2003.

However, it is known that there were different types of movie theatres in Turkey prior to 1990s. The most prominent of them is 'open-air' movie theatres. In 1969, there were 1534 open-air movie theatres in Turkey [23]. Additionally, while TurkStat published movie theatres under 'indoor', 'outdoor' (represents open air movie theatres) and 'mobile' titles until 1987, from then onwards, such classification disappeared and records of 'indoor' movie theatres alone were kept. In Table 1, total number of open-air movie theatres in Turkey between 1978 and 1986, the number of cities with open-air movie theatres and percentage of the cities (with movie theatres) in 67 cities to the total number of cities is presented. As can be seen in numbers, open-air movie theatres were not set only in metropolitans, but also in many other places throughout Turkey. Nearly more than half of Turkish cities had open-air movie theatres until 1986. In Greece, on the other hand, with multiplex movie theatres becoming more popular, the number of traditional Greek open-air movie theatres declined. As of 2001, although Greece had 180 outdoor movie theatres out of a total of 450, only 70 of those outdoor theatres were used [22]. One of the main reasons why TurkStat stopped keeping 'outdoor' movie theatre records was because this movie theatre type slowly dwindled, before vanishing almost completely.

IV. CONCLUSION

'Convergence' effect of globalization on the cinema sector has been examined. One of the debates about the convergence effect of globalization discussed on and around the 'Americanization' process (i.e. [7]-[9]).This debates mainly emphasize the role of U.S as an imitating factor within the framework of the 'convergence' controversy of globalization. The U.S, as the strongest and most reputable

country around the world within the international system of cinema sector, has promoted the expansion of 'multiplex' movie theatres, benefitting from its strong competitive advantage in the global market. Multiplex movie theatre forms have been accepted as a part of urban entertainment life and, therefore, they have been mostly built in metropolitans with a certain population potential. In late 1980s, Turkey started to get influenced by such expansion and the number of 'multiplex' form of movie theatres gradually increased. Some other countries are also known to go through such process (i.e. Greece and Australia). On the other hand, it is further known that there were various forms of movie theatres in Turkey during the periods when global impacts did not prevail. One of them is open-air movie theatres. For a certain period of time, open-air movie theatres were set up not only in the metropolitans of Turkey, but also in many places including villages and towns. However, with multiplex movie theatres becoming widespread as a global form, previous movie theatre forms were slowly abandoned. This situation is clearly observed in TurkStat's data on movie theatres. While movie theatres were categorized as 'indoor', 'outdoor', 'mobile' until 1987, from that year onwards, this classification was removed and only the records for 'indoor' movie theatres were tracked. One can observe the absence of outdoor movie theatres in Turkey, except for the very few ones that have been set up merely in holiday villages for long years. This research mainly contributes to debates about the convergence effect of globalization discussed on and around the 'Americanization' process. However this paper also contributes the organizational studies by analyzing the expansion of 'multiplex' form of movie theatres and how such expansion affected the reduction in the number of previously existing forms such as open air movie theatres in Turkey.

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Special Interest Groups, Public Policy and Social Welfare

Tetsuro Okazaki

Abstract—**In this paper, we examine the amount of goods provided by the government using common agency models. It has already been proved that the public policy is efficient in the truthful equilibrium. But, this efficiency reflects only welfare of the agent and the principals who make lobbying activities. Therefore, if there is some principal who does not make lobbying activity, the public policy can be inefficient from the viewpoint of the social welfare. In this paper, focusing on this point, we analyze public policy decision. Especially, we prove that the amount of goods provided by the government is greater than that in the efficient allocation if some group does not make lobbying activity. Moreover, we prove that the partial prohibition against lobby enlarges the government size in some cases. In addition, if the groups' valuation for the good increases, then the allocation becomes to be more inefficient, and if the marginal cost decreases, then the allocation also becomes to be more inefficient. Last, based on these results, an interpretation of the success and failure of Japanese industrial policy is presented.**

Index Terms—**Common agency, efficiency of public policy, industrial policy in Japan, special interest groups.**

I. INTRODUCTION

There are many studies that examine relation between special interest groups and public policy decision. In many of these studies, common agency models are adopted (see, for example [1]-[8]). In the common agency models, there are one agent who decides an action and many principals who are affected by this decision and try to influence the agent's decision. In the studies of public policy, in general, a government is viewed as the agent and special interest groups are viewed as the principals. The government decides public policy that affects the special interest groups and the groups make lobbying activities.

In this paper, we examine the amount of goods provided by the government using common agency models. In order to provide the goods, the government has to impose taxation on individuals. So the size of government can be measured by the amount of goods provided by the government. Thus, through the examination, we investigate the size of the government.

In particular, we consider the following societies. There are many groups and group-specific goods. These goods are provided by the government. Each group's utility is affected by the amount of the group-specific good. The cost to provide the good is financed by taxation that is imposed on every group. So each group wants the provision of the good to be favorable for him. Therefore some groups try to organize interest groups lobbying for the provision of the goods by the government. In order to examine relation

between lobbying activities and the amount of public goods, we adopt common agency models.

In general, common agency models have multiple subgame perfect equilibria (see [2]). One class of equilibria, called truthful equilibria, has been identified by [2]. The truthful equilibria have many appealing characteristics and seem to be focal point. This is especially because each principle's truthful strategy is in the set of her best response strategies for any set of strategies of the other principals. So, each principal bears essentially no cost from playing a truthful strategy, no matter what she expects as for the other principals' strategies. Therefore, many studies after [2] assume that truthful equilibria realize and analyze the property of the truthful equilibria.

The truthful equilibria have many desirable properties in addition to the point mentioned above. Especially, the action by the agent in the truthful equilibrium is efficient. In the studies of public policy, it has already been proved that the public policy is efficient in the truthful equilibrium of the common agency models (see [2], [4]). This is also true in the case of the allocation of goods provided by the government (see [8]).

But, this efficiency reflects only welfare of the agent and the principals who make lobbying activities. Therefore, if there is some principal who does not make lobbying activity, the public policy can be inefficient from the viewpoint of the social welfare. In this paper, focusing on this point, we analyze public policy decision.

Moreover, based on the results of our analysis, an interpretation of the success and failure of Japanese industrial policy after the Second World War is presented. Japanese industrial policy has gotten much attention because of Japanese economic success after the Second World War. Our interpretation sheds a new light on the study of Japanese industrial policy.

II. THE MODEL

We consider societies with a government and n groups. The public policy is $x = (x_1, \ldots, x_n)$ and $t = (t_1, \ldots, t_n)$. In this policy, x_i that affects the group i's utility is the level of group-specific good provided by the government and t_i is tax imposed on group i. Some groups can make lobbying activity in order to implement the policy that is favorable for them.

In order to analyze such situations, we adopt common agency models. That is, there is an agent and n principals. Here, the agent is the government and the principals are the groups.

The set of principals is $\{1, \ldots, n\}$. This represents the set of groups affected by public policy. We denote the set of special interest group by L with $L \subset \{1, \ldots, n\}$. This means that each group in L makes lobbying activity. Let the

cardinality of L be l. The principal i ($i \in \{1, \dots, n\}$) has her own utility function:

$$U_i(x_i, y_i) = u_i(x_i) + y_i = ax_i^{0.5} + y_i \qquad (1)$$

where y_i is consumption level of the private good. Each principal has her income I_i. This is measured by the level of private good. Let $= \sum_{i=1}^{n} I_i$.

We define T by $T = \sum_{i=1}^{n} T_i$ and assume that T has to be equal to the cost of producing $(x_1, \dots, x_n)$. For simplicity, let

$$T = b \sum x_i. \qquad (2)$$

Under this technology, the marginal and average costs are b for any x_i. As for tax system, we consider the case where $t_i = T/n$ for any i. (If tax system is freely determined by the government who is under influence of the lobbying activities, $\sum_{i \notin L} t_i = T$ should hold in equilibrium.)

In order to represent lobbying activities, we assume that each principal makes payment to the agent. Principal i's payment schedule is $c_i(x) \geq 0$ ($i \in L$) or $c_i(x) = 0$ ($i \notin L$). Let $C(x) = \sum c_i(x)$. From these, principal i's utility is

$$U_i = ax_i^{0.5} + I_i - t_i - c_i(x). \qquad (3)$$

The agent's utility is assumed to be the weighted sum of the social welfare and payments that he receives. Here, the social welfare is

$$\sum_{i=1}^{n} u_i(x_i) + I - T(x). \qquad (4)$$

So the agent's utility is

$$V(x_1, \dots, x_n) = \gamma(\sum u_i(x_i) + I - T(x)) + \sum c_i(x) \qquad (5)$$

where γ is the weight attached to the social welfare.

We assume that there is no asymmetric information. That is, the agent and the principals have complete information. The timing of the model is as follow: (1) Each principal $i \in L$ simultaneously decides her payment schedule $c_i(x)$. (2) The agent decides $x = (x_1, \dots, x_n)$. (3) The utilities of the agent and the principals realize.

III. TRUTHFUL EQUILIBRIUM

As mentioned in the introduction, the common agency games have multiple subgame perfect equilibria. In those, truthful equilibria have appealing characteristics and are analyzed by the studies. In this paper, we focus on the truthful equilibrium. For detail on the truthful equilibrium of the common agency models, see [2], [4].

In the truthful equilibria, the shape of each principal's payment schedule is the same to that of her indifference surface. Thus, the equilibria are called truthful. Naturally, the government maximizes his utility given the payment schedules. We denote the truthful equilibrium by $\left(\{c_i^T\}_{i \in L}; (x_1^T, \dots, x_n^T) \right)$.

As for payment schedules in the truthful equilibrium, from truthfulness,

$$c_i^T(x, U_i^*) \equiv \min [0, \varphi_i(x, U_i^*)] \qquad (6)$$

holds where $u_i(x_i) + I_i - t_i - \varphi_i(x, U_i^*) = U^*$ and U_i^* is the equilibrium utility level. In the truthful equilibrium, c_i^T is interest group (principal) i's best response for any $(c_j)_{j \neq i}$. Moreover, in the truthful equilibrium, we have

$$(x_i^T, \dots, x_n^T) = argmax[\gamma(\sum_{i=1}^{n} u_i + I - T) + \sum_{i \in L} c_i^T]. \qquad (7)$$

From these,

$$(x_i^T, \dots, x_n^T)$$
$$= argmax[(1+\gamma) \sum_{i \in L} u_i(x_i) + \gamma \sum_{j \notin L} u_j(x_j) - \gamma T - \\ i \in L ti$$
$$= argmax \left[(1+\gamma) \sum_{i \in L} u_i(x_i) + \gamma \sum_{j \notin L} u_j(x_j) - \\ ln + \gamma bk = 1nxk. \qquad (8)$$

holds.

IV. PROPERTY OF EQUILIBRIA

In this section, we examine property of the truthful equilibria. At first, we derive the efficient allocation $(x_1^*, \dots, x_n^*)$ for comparison. The first order condition is

$$\frac{du_i}{dx_i} = 0.5a(x_i)^{-0.5} = b \qquad (9)$$

for each $i \in \{1, \dots, n\}$. From these, we have

$$x_i^* = \frac{a^2}{4b^2}. \qquad (10)$$

In the efficient allocation, the total amount of goods provided by the government, being denoted by X^*, is

$$X^* = nx_i^* = \frac{a^2 n}{4b^2}. \qquad (11)$$

Next, we examine the truthful equilibria. If interest group i is in L, the first order condition with respect to x_i is

$$\frac{du_i}{dx_i} = 0.5a(x_i)^{-0.5} = b\frac{(l+n\gamma)}{(n+n\gamma)} \qquad (12)$$

($i \in L$). Hereafter we denote this amount by x_L^T in the case where $i \in L$. So we have

$$x_L^T = \frac{a^2 n^2 (1+\gamma)^2}{4b^2 (l+n\gamma)^2}. \qquad (13)$$

From $b(l+n\gamma)/(n+n\gamma) < b$, we have over provision of the public good if the interest group makes lobbying activity. (This is similar to the fact proved by [8].)

If interest group i is not in L, the first order condition with respect to x_i is

$$du_i/_{dx_i} = 0.5a(x_i)^{-0.5} = b^{(l+n\gamma)}/_{n\gamma} \qquad (14)$$

$(i \notin L)$. Denoting this amount by x_{NL}^T, we get

$$x_{NL}^T = a^2 n^2 \gamma^2 /_{4b^2(l+n\gamma)^2}. \qquad (15)$$

From $b(l+n\gamma)/n\gamma > b$, we have under provision of the public good if the interest group does not lobby. (This is also similar to the fact proved by [8]).

From these, in the truthful equilibria, we have over provision as well as under provision. Then we have the following question: How about the total amount?

The total amount is, being denoted by X^T,

$$X^T = lx_L^T + (n-l)x_{NL}^T$$
$$= a^2 n^2 (l + 2l\gamma + n\gamma^2)/_{4b^2(l+n\gamma)^2}. \qquad (16)$$

Then, the following facts hold.

Proposition 1.
1) We have $X^T = X^*$ if $l \in \{0, n\}$.
2) We have $X^T > X^*$ if $l \in \{1, \dots, n-1\}$.

Proof: As for the difference between X^T and X^*, we have

$$X^T - X^* = a^2 ln(n-l)/_{4b^2(l+n\gamma)^2}, \qquad (17)$$

and these facts hold. (Q.E.D.)

From (1) in the proposition, the allocation of good provided by the government is efficient if every interest group lobbies or if there is no lobbying activity. This is a similar result to that proved by existing researches. On the other hand, from (2) in the proposition, if there are lobbying activities while some interest group does not lobby, the amount of goods provided by the government is greater than the efficient amount. So the amount of goods is inefficient and the size of the government is large.

Next, we examine the effect of the number of the lobbying interest groups.

Proposition 2.
1) We have $\partial X^T/_{\partial l} > 0$ if $l < {n\gamma}/_{(1+2\gamma)}$.
2) We have $\partial X^T/_{\partial l} < 0$ if $l > {n\gamma}/_{(1+2\gamma)}$.

Proof: By simple calculation, we get

$$\partial X^T/_{\partial l} = a^2 n^2 \{n\gamma - (1+2\gamma)l\}/_{4b^2(l+n\gamma)^3}, \qquad (18)$$

and the facts hold. (Q.E.D.)

For any γ, $\gamma/(1+2\gamma) < 1/2$ holds. Consider the economy where more than half interest groups make lobbying activity. Assume that the government makes the partial prohibition against lobbying (This means $\Delta l = -\varepsilon$

for some small $\varepsilon > 0$). Then, from Proposition 2, this prohibition results in the greater amount of goods provided by the government and large government size.

Next we examine the degree of inefficiency. To do so, we define

$$D = {X^T - X^*}/_n \qquad (19)$$

as the degree of inefficiency. Then, we have the following results.

Proposition 3.
1) We have $\partial D/_{\partial a} > 0$.
2) We have $\partial D/_{\partial b} < 0$.

Proof: From

$$\partial D/_{\partial a} = {al(n-l)}/_{2b^2(l+n\gamma)^2} \qquad (20)$$

and

$$\partial D/_{\partial b} = {-al(n-l)}/_{2b^3(l+n\gamma)^2}, \qquad (21)$$

we have these facts. (Q.E.D.)

If the interest groups' valuation for the group-specific good becomes high, then x_i^*, x_L^T, and x_{NL}^T increase. In this case, we have

$$\partial x_L^T/_{\partial a} =$$
$$\left(a/_{2b^2}\right)\left((n^2 + 2n^2\gamma + n^2\gamma^2)/_{(l^2 + 2ln\gamma + n^2\gamma^2)}\right) >$$
$$\left(a/_{2b^2}\right) = \partial x_i^*/_{\partial a} \qquad (22)$$

and

$$\partial x_{NL}^T/_{\partial a} = \left(a/_{2b^2}\right)\left(n^2\gamma^2/_{(l^2 + 2ln\gamma + n^2\gamma^2)}\right) >$$
$$\left(a/_{2b^2}\right) = \partial x_i^*/_{\partial a} \qquad (23)$$

So, the increase rate of x_L^T is more than that of x_i^*; the increase rate of x_{NL}^T is less than that of x_i^*. Therefore we have the fact in (1) of Proposition 3.

If the marginal cost increases, then x_i^*, x_L^T, and x_{NL}^T decrease. In this case,

$$\partial x_L^T/_{\partial b} =$$
$$-\left(a^2/_{2b^3}\right)\left((n^2 + 2n^2\gamma + n^2\gamma^2)/_{(l^2 + 2ln\gamma + n^2\gamma^2)}\right) <$$
$$-\left(a^2/_{2b^3}\right) = \partial x_i^*/_{\partial b} \qquad (24)$$

and

$$\partial x_{NL}^T / \partial b = -\left(a^2 / 2b^3\right)\left(n^2\gamma^2 / (l^2 + 2ln\gamma + n^2\gamma^2)\right) >$$

$$-\left(a^2 / 2b^3\right) = \partial x_i^* / \partial b. \tag{25}$$

So, the decrease rate of x_L^T is more than that of x_i^*; the decrease rate of x_{NL}^T is less than that of x_i^*. Therefore we have the fact in (2) of Proposition 3.

Next, we examine the influence of the size of the society on inefficiency.

Proposition 4.

1) We have $\partial D / \partial n > 0$ if $l > n\gamma / (1 + 2\gamma)$.

2) We have $\partial D / \partial n < 0$ if $l < n\gamma / (1 + 2\gamma)$.

Proof: From

$$\partial D / \partial n = a^2 l\{(1 + 2\gamma) - n\gamma\} / 4b^2(l + n\gamma)^3, \tag{26}$$

we have these facts. (Q.E.D.)

If the set of lobbying interest groups is large, then the growth of the society confounds efficiency. In contrast, if the set of lobbying interest groups is small, then the growth of the society alleviates inefficiency.

In the above proposition, we assume that the number of the lobbying interest groups is constant even though the society becomes large. Let $l = e(n) \cdot n$. Then we have the follows.

Proposition 5.

1) We have $\partial D / \partial n = 0$ if $de / dn = 0$.

2) We have $\partial D / \partial n > 0$ if $de / dn < 0$ and $e > \gamma / (1 + 2\gamma)$.

3) We have $\partial D / \partial n < 0$ if $de / dn < 0$ and $e < \gamma / (1 + 2\gamma)$.

4) We have $\partial D / \partial n > 0$ if $de / dn > 0$ and $e < \gamma / (1 + 2\gamma)$.

5) We have $\partial D / \partial n < 0$ if $de / dn > 0$ and $e > \gamma / (1 + 2\gamma)$.

Proof: From

$$\partial D / \partial n = \left[a^2\{\gamma - (1 + 2\gamma)e\} / 4b^2(e + \gamma)^3 \right]\left(de / dn\right), \tag{27}$$

we have these facts. (Q.E.D.)

If the ratio of the set of lobbying interest groups to the society is constant, then the growth of the society has no effect on efficiency. If the ratio decreases as the society grows, then the growth of the society has the similar effect to that in Proposition 4. Conversely, the ratio increases as the society grows, the growth of the society has opposite effect.

V. CONCLUDING REMARKS

In many studies analyzing policy decision, the common agency models are adopted. In addition, they focus on the property of the truthful equilibria. It has already been proved that the public policy is efficient in the truthful equilibrium of the common agency models. But, if some interest group does not make lobbying activity, the allocation is not efficient from the viewpoint of the social welfare. In this paper, we analyze such situations.

We prove that the amount of goods provided by the government is greater than that in the efficient allocation if some interest group does not make lobbying activity. That is, the government size is greater. Moreover, we prove that the partial prohibition against lobby enlarges the government size in some cases.

In addition, if the interest groups' valuation for the group-specific good becomes high, then the allocation becomes to be more inefficient, and if the marginal cost decreases, then the allocation also becomes to be more inefficient. The effect of the size of the society depends on circumstances and is complex.

Last, based on these results, we present an interpretation of the success and failure of Japanese industrial policies. Someone attributes Japanese success after the Second World War to industrial policies. (See, for example [7].) And many find the 'iron triangle' behind the decision process of policies in Japanese government. The triangle unites the mutual interests of industries, politicians and bureaucrats. In Japan, the bureaucracy has many original bureaus and each original bureau is in charge of some industry. So many industries can make influence on policy decision through the triangle (see [9], [10]).

As proved in this paper, if the set of lobbying interest groups coincides (almost) entirely with the set of the interest groups, the policy is (fairly) efficient. So if the set of original bureaus covers the set of the industries, the (fairly) efficient policy results. This partially explains Japanese economic success after the Second World War.

As time passes, however, the structure of the industries changes drastically while the structure of bureaucracy changes a little. Then, the gap between the two sets emerges and grows. Especially, Japan faced such a drastic change in the structure of industries after 1980's. The gap, as proved in this paper, leads to inefficiency of the policy and increase of the government expenditure. This partially explains Japanese economic failure after the economic bubble burst in Japan.

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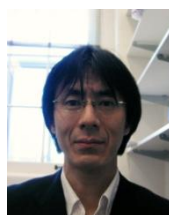
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Demographic Determinants of Work-Family Conflict among Female Factory Workers in South Africa

T. Mjoli, M. Dywili, and N. Dodd

Abstract—**The study examines the relationship between work-family conflict and selected demographic variables among female factory workers in East London, South Africa. The independent variables for the study were selected demographic variables, while work-family conflict is the dependent variable. The demographic variables concerned are age, marital status, number of children and age of the youngest child. The measuring instruments were a self-designed questionnaire to measure the demographic variables and a questionnaire developed to measure work-family conflict (Cronbach's alpha = 0.90). A sample of 100 female factory workers who are employed by companies in East London, South Africa was used. Age, number of children and age of the youngest child were all found to be positively correlated to work-family conflict (r = 0.38, p = 0.001; r = 0.31, p =0.002; r = 0.27, p = 0.01 respectively). For marital status the findings were contrary to previous research findings, as the researcher found that marital status is not significantly positively related to work-family conflict (r=-0.08, p = 0.42).**

Index Terms—**Work-family conflict, demographic variables, female factory workers.**

I. INTRODUCTION

Workers face challenges of managing their work and family roles, and importantly, these challenges have become more numerous and complex [1]. The focus towards work-family issues and work-family practices in particular, has been driven by a number of major demographic changes. These include the increased employment of women [2], the rising number of dual-career couples and single-parent families [3], and the enlargement of the elderly population [4].

The main objective of the study is:

To examine the role of selected demographic variables in work-family conflict.

To provide results that may help to improve circumstances and professional careers of female employees in South Africa.

To provide results that may lead to a deeper understanding of the relationship between demographic variables and work-family conflict.

II. HYPOTHESES

Hypothesis - 1

H_o –Age will not be significantly positively related to the work-family conflict that a female factory worker experiences.

H_1 – Age is significantly positively related to the work-family conflict that a female factory worker experiences.

Hypothesis – 2

H_o – Married female factory workers will not experience significantly more work-family conflict than single female factory workers.

H_2 – Married female factory workers will experience significantly more work-family conflict than single female factory workers.

Hypothesis – 3

H_0 – The number of children that a female factory worker has will not be significantly positively related to the work-family conflict that she experiences.

H_3 – The number of children that a female factory worker has will be significantly positively related to the work-family conflict that she experiences.

Hypothesis – 4

H_0 – Female factory workers a youngest child that is under six years of age will not experience more work-family conflict as compared to female factory workers with a youngest child above six years of age.

H_4 – Female factory workers with a youngest child under six years of age will experience more work-family conflict as compared to female factory workers with a youngest child above six years of age.

III. SIGNIFICANCE OF THE STUDY

Workforces are becoming increasingly diverse all over the world, and it is something to be appreciated. It, however, brings about many problems in the management of human resources that must be solved. One aspect of workforce diversity is the increasing number of women that are employed in many organisations. One major problem, which working women experience is work-family conflict, which often leads to high levels of stress [4]. This study will explore this problem in an attempt to unravel some of its complexities. It is hoped that the resulting knowledge will be of assistance to managers in all organisations.

IV. AGE AND WORK-FAMILY CONFLICT

According to many career models, individuals may view their careers differently depending on which age-related career stage they are in [5]. In particular, researchers have observed that, in early stages of their careers, individuals are often willing to sacrifice their personal lives in the interest of their career progression [6]. However, as individuals advance in age to the maturity stage of their careers, they have been found to place a greater emphasis on a balance between their

work and family lives when assessing their careers. Thus, because of the greater priority that individuals give to their family roles as they age, the career satisfaction of older individuals is likely to be more negatively affected by work-family conflict than that of younger individuals.

V. Marital Status and Work-Family Conflict

Prior research has found that being married leads individuals to give their personal lives priority over their work lives [7]. Similarly, being a parent increases the importance to individuals of their family roles [7]. Because of the greater priority that individuals give to their family roles once they get married and/or have children, they may be more likely to be dissatisfied when their work roles spill over into their family roles than are individuals who are not married and/or do not have children. Thus, we expect married women to show more work-family conflict than unmarried ones. We also expect the number of children that a woman has to be significantly positively associated with work-family conflict.

VI. Children and Work-Family Conflict

Research to date has established that work-family conflict increases as one's obligation to the family expands through marriage and arrival of the children [8]. It also has been argued that this conflict will diminish, or at least decrease, as the age of the youngest child increases. Parents with children under the age of six had the highest levels of work-family conflict, followed by parents of school-age children [9]. Employees with no children reported the least amount of work-family conflict. It is therefore hypothesized that parents of younger children are likely to report higher levels of work-family conflict.

VII. Research Method

This research is of a non-experimental, exploratory and quantitative nature. A survey was conducted to collect the empirical data. Exploratory research is done to explore relatively unknown areas in order to gain new insight and understanding into a phenomenon. A sample of n=100 female factory workers was drawn in East London, in the Eastern Cape Province of South Africa.

VIII. Results

A. Internal Consistency of the Main Measuring Scales

The population sample for this research study involves five organisations. A sample of 100 female factory workers who are employed by companies in East London, Eastern Cape Province was used. The sampling approach which has been used in this study is the non-probability purposive sampling method. Internal consistencies of scales used for rating questions on work-family conflict and occupational stress were sufficient and reliable with a Cronbach's alpha of 0.72 and 0.82 respectively. This confirms that these scales adequately measure the work-family conflict and occupational stress constructs. Since these scales were found to be reliable, i.e. they met the criteria of sufficient internal consistency (>0.70), these scales were accepted for further data analysis.

B. Results

1) Hypothesis 1: correlation between age and work-family conflict

H_o –Age will not be significantly positively related to the work-family conflict that a female factory worker experiences.

H_1 – Age will be significantly positively related to the work-family conflict that a female factory worker experiences.

As shown in Table One, age is significantly positively correlated with work-family conflict (r= 38, p=0.001).

TABLE I: Pearson Correlation of Work-Family Conflict and Demographic Variables

Variable	Age	Marital Status	Number of Children
Work-family Conflict Assistant channel	0.383 (0.000)*	-0.081 (0.422)	0.315 (0.002)*

Note: Cell has Pearson's correlation coefficient, r and corresponding *p-value* (in brackets), *$p<0.05$, (2-tailed).

2) Hypothesis 2: correlation between marital status and work-family conflict

H_o – Married female factory workers will not experience significantly more work-family conflict than single female factory workers.

H_2 – Married female factory workers will experience significantly more work-family conflict than single female factory workers.

Table One shows that marital status is not significantly positively related to work-family conflict ($r = -0.08$, $p = 0.42$).

3) Hypothesis 3: correlation between number of children and work-family conflict

H_0 – The number of children that a female factory worker has will not be significantly positively related to the work-family conflict that she experiences.

H_3 – The number of children that a female factory worker has will be significantly positively related to the work-family conflict that she experiences.

As exhibited in Table One, the number of children is significantly positively related to work-family conflict ($r = 0.32$, $p = 0.01$).

4) Hypothesis 4: correlation between age of last-born child and work-family conflict

H_0 – Female factory workers with a youngest child under six years of age will not experience more work-family conflict as compared to female factory workers with children above six years of age.

H_4 – Female factory workers with the last-born child under six years of age will experience more work-family conflict as compared to female factory workers with children above six years of age.

As shown in Table One, age of youngest child is significantly positively related to work-family conflict ($r = 0.27$, $p = 0.01$).

IX. DISCUSSION AND CONCLUSION

As shown in Table One, age is significantly positively correlated with work-family conflict ($r = 38$, $p = 0.001 < 0.05$). The research hypothesis (H_1) is accepted. These findings are in line with the previous research findings. In particular researchers have observed that in early stages of their careers, individuals are often willing to sacrifice their personal lives in the interest of their career progression [6].

Marital status is not significantly positively related to work-family conflict ($r = -0.08$, $p = 0.42$, > 0.05). The research hypothesis (H_2) is rejected and null hypothesis (H0) accepted. These findings are in contrary to previous research findings. Prior research has found that being married leads individuals to give their personal lives priority over their work lives [7].

The number of children is significantly positively related to work-family conflict ($r = 0.32$, $p = 0.01$, < 0.05). The research hypothesis (H_3) is accepted. Research to date has established that work family conflict increases as one's obligation to the family expands through the arrival of children [8].

Age of the last born child is significantly positively related to work-family conflict ($r = 0.27$, $p = 0.01$, < 0.05). The research hypothesis H_4 is accepted, i.e. women with children under six years of age experience more work-family conflict as compared to women with children above six years of age. Parents with children under the age of six had the highest levels of work-family conflict, followed by parents with school-age children [9].

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Use of Cluster Analysis in Exploring Economic Indicator Differences among Regions: The Case of Latvia

Ieva Brauksa

Abstract—**This paper can help decision makers to identify the regions with the largest need for stimulating their development. It offers ideas how to compare municipalities and how to search for common factors that influence development. Data from Latvia are used as an example of this method. It shows how cluster analysis can be applied for comparing socio-economic development of different municipalities and confirms the hypothesis that one of the characteristics common for municipalities with similar measures describing development is their geographical location.**

Index Terms—**Cluster analysis, municipalities, regional development.**

I. INTRODUCTION

Though this paper is focused on the example of Latvia, it can be useful also for researchers from other countries as it offers ideas how to group and compare municipalities and evaluate efficiency of territorial reforms. It gives a new perspective on how to identify regions with the largest need for stimulating their development. Main suggestion is to group municipalities based on criteria that characterize their social and economic development (selection of the variables included in analysis should be careful and strictly based on the estimates that is believed to matter most for development in particular country).

The next step after the municipalities are grouped based on similarities in their development indicators, further analysis is needed to check what other features are common for these municipalities. The proposed hypothesis is that one of the characteristics that will be common for municipalities in the same group is their geographical location, i.e. municipalities from the same region will tend to be part of the same groups. In case if this hypothesis is fulfilled, country experience regional stratification and support should be allocated not just for particular municipalities, but planned in regional level.

This paper will present summary of previous research about region comparison using cluster analysis and describe methodology that can be used for this task. The elaborated example based on data from Latvia is included to show how cluster analysis can be applied in municipality comparison. After administrative territorial reform in 2009 Latvia was split in 109 municipalities. There have been wide debates

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about borders and differences of these municipalities. In this paper analysis will be used to look at the question of differences among municipalities from another perspective. It uses some variables that describe social and economic development base for municipalities (mainly focusing on the potential development based on labour force availability and entrepreneurship activities) and checks what kind of municipalities have similar results.

II. PREVIOUS RESEARCH

Previously authors have used various methods for municipality comparison and evaluation of regional development. As the focus of this paper is to explore possibilities to apply cluster analysis to solve this question, previous research analysis will mainly deal with authors that have used this tool for region comparison in different countries.

Cluster analysis is one of multidimensional methods of statistical analysis that allows classifying observations in groups. Observations with similar attributes are grouped together therefore variables for this analysis should be chosen with care as this choice can lead to different results. Cluster analysis is often derogated as it has different methods and each of them can have different results, but in the case of municipality analysis the aim is to find out the main common lines and slightly different municipality classification in one or another group is not so essential.

Previous research has used cluster analysis for different set of countries and various areas of regional analysis. For example, Stimson et al. [1] use cluster analysis for ten years of data for cities in Australia offering to use the results of this research to encourage stronger development of less developed regions, but Petterson [2] by this type of analysis studies data on Sweden revealing significant differences in socio-economic conditions between populations living in different places.

There is also a discussion of variable which should be included in analysis. Of course, this choice depends also on data availability in different countries, but some general rules still can be made. Leschke [3] notes that countries are in most cases clustered on the bases of different general characteristics of labour market and social policy. Author notes that cluster analysis has more disadvantages when there are larger variations in institutional peculiarities among countries. It is indicated that variables for the cluster analysis should be chosen such that are close to the question of interest.

Cluster analysis is often used also because of its advantage to represent data also in graphical way as it offers several

possibilities to do that. Dendrogram or other graphical solutions are often used to visualize linkages between observations. For example, Galic et al. [4] have analyzed Bosnia and Herzegovina data and provides data visualization exampled. Cluster analysis in this case is used to group cities with similar social economic development, though in this case authors have chosen to group them only based on growth rate of GDP per capita and illiteracy per capita and share of population employment in tertiary sector.

An important question of interest that most often stimulate these researches is evaluation of regional development both in rural-urban and in comparative context. Vincze & Mezei [5] demonstrate the role of cluster analysis of rural localities in the process of choosing the rural development measures to be used to stimulate rural socio-economic growth. They perform two stage analysis using large number of variables grouped by factor analysis and later in cluster analysis. Authors note that these methods cannot give a general solution because of the problems of abstractions, but this information could represent a good basis for a detailes analysis.

Similarly also Mistre & Muska [6] as part of their research to compare economic development levels across districts of Latvia used cluster analysis using a list of statistical indicators for the period till the administrative territorial reform in 2009. They confirm that in Latvia there is a monocentric economic development trend and therefore there are significant differences between capital city and other districts.

Another context of this kind of analysis is not just reginal comparison but search for the evidence and reasons of inequality. This inequality could be measured by the level of income, unemployment of other measures describing social and economic situation in regions. For example, Peters [7] identifies and describes clusters of persistently low and high income inequality in the North Central Region.

Using more macro level data Jurun & Pivac [8] uses cluster analysis during their studies of regional GDP of Croatian counties. These counties are classified using cluster analysis to make a comparative analysis with official region division which is more geographical ad political areas than real homogenous socio-economic areas. Similarly also Poder et al. [9] have analysed Estonian data to study entrepreneurial activity in rural municipalities by applying hierarchical cluster analysis.

Therefore previous research analysis shows that cluster analysis is already widely applied in analysis different topics of regional development both based on micro and macro level data. Separate studies have used examples from both large and small countries and compared situation within one country and across some larger regions.

This paper is aimed to contribute to this literature with the analysis of Latvian data which is specific as there recently has been administrative territorial reform in this country and further analysis is needed to see if municipalities that are located nearby have similar economic indicators. Moreover this paper will show how cluster analysis can be used in identifying if some economic development problems exist only in particular municipalities or the problem is wider as well as there is a search of evidence if higher development in nearby municipalities can promote development in wider area.

III. METHODOLOGY AND DATA USED

Data from the reports of the Ministry of Regional development and local governments in Latvia will be used [10]. Cluster analysis will be based on information about unemployment rates, age structure (proportion of inhabitants at working-age), rate of change in number of permanent inhabitants and number of individual entrepreneurs in these municipalities.

These variables are chosen to reflect economic situation in municipalities and they are comparable also for regions of different size and population. Data about the changes in the number of inhabitants compares changes over period of five years (2007-2012). Data about number of inhabitants at working age and unemployment level is for the beginning of 2012, but number of individual entrepreneurs per 1000 inhabitants is used from year 2010 as it is the latest statistics available.

Cluster analysis can be a useful tool for arranging observations into groups that can be further analyzed, it is a process of finding out unknown group profiles. There have been discussions that, although now municipalities are larger than previous districts and it could help distributing resources equally and enhance equivalent development, in reality also the new system has faced several problems.

The aim of this paper is to use cluster analysis for creating new perspective for discussing similarities and differences of economic and social development in municipalities of Latvia. Later similar ideas could be applied also in the context of other countries.

Cluster analysis can be rather subjective as results may depend on method chosen. That is why in this paper several methods will be tested and compared to understand if there are significant differences in results or they show similar tendencies. K-means clustering is used to split observations in groups and test what are the main characteristics of these groups.

Cluster analysis will be used to give possibility to visually evaluate, which of the regions are more similar. More detailed statistical measures and indicators will be included to interpret the results based on numeric data. This analysis gives us a possibility to understand, if clusters, that will be formed based on this analysis, will group together municipalities from the same planning regions (Riga, Vidzeme, Kurzeme, Zemgale, Latgale) or they will be mixed differently.

This research can help to better understand situation of differences between municipalities and generate ideas what factors should be taken into account when discussing about sustainable and equal development of different regions in Latvia.

IV. RESULTS OF MUNICIPALITY COMPARISON

As there are four planning regions in Latvia (excluding capital city), analysis will be started by applying K-means

clustering method dividing all municipalities in four groups to test a simple hypothesis if municipalities from the same planning region will tend to be in a single cluster.

Administrative territorial reform was implemented in Latvia in 2009 and it divided country in 109 municipalities (after some modification later this number changed slightly), previously there were more than 500 smaller municipalities. Therefore long term analysis us territories is encumbered as the territory structure has changed.

When joining small municipalities and shifting borders there was an idea that larger territories will promote faster and economic development as larger regional units are more efficient in attracting financial support and some inequality between parts of the territories could be lessened. Though, in case if economic development is problematic not just in a single municipality but in wider region, possibly that also territorial reform is not a universal cure for this problem. That is why this paper tests similarity between municipalities based on economic criteria and checks if problematic and more advanced municipalities are from the same or from different regions.

Analysis excluded large cities, but used data only at municipality level. Table I shows the results from such analysis. Firstly, there is a specific cluster (cluster 3) with just one observation for a specific municipality Marupe which is situated next to capital city and have significantly higher rate of number of individual entrepreneurs per 1000 inhabitants as well as it had high inflow of permanent inhabitants and also the unemployment level in this municipality is much lower than in all other clusters. This municipality is very different from all other showing the highest development potential.

Territory development index [10] for 2011 and also few previous years shows that Marupe municipality was the second most developed municipality in Latvia. Though, alternative territory development index offered by Brauksa [11] suggests that traditional territory development index for this municipality is underestimated and it has the strongest development potential. Also the results of cluster analysis allow having similar conclusion and confirms this idea once more.

TABLE I: FINAL CLUSTER CENTRES

	Cluster			
	1	2	3	4
Inhabitant changes, %	17.6	-6.9	40.1	-1.9
Inhabitants working age, share	65.9	65.2	65.2	66.1
Unemployment level	5.3	13.1	3.9	8.2
Number of individual entrepreneurs per 1000 inhabitants	36.8	11.9	63.8	21.8
Number of municipalities in cluster	8	61	1	40

Opposite situation is observed in cluster 2 which has the lowest rate of individual entrepreneurs per 1000 inhabitants, highest level of unemployment as well as fastest decrease of number of permanent inhabitants over last five years. This cluster is the largest and includes 61 municipalities mainly

from Latgale (31% of them), we should note that all Latgale municipalities are included in this cluster. There are also municipalities from Vidzeme (25%), Zemgale (23%) and Kurzeme planning regions (16%), only 5% of them are from Riga planning region.

Cluster 1 is with second highest rate of increase in number of permanent inhabitants supported by relatively low unemployment rate and average high level of inhabitants involved in individual entrepreneurship. This cluster that has the second "best" measurements includes municipalities only from Riga planning region indicating that situation in municipalities near Riga is better than elsewhere in Latvia.

Cluster 4 features moderate decrease in number of permanent inhabitants (1.9% per last five years), but has the largest share of inhabitants at working age. Municipalities in this cluster on average had a bit higher unemployment rate than national average and the number of individual entrepreneurs per 1000 inhabitant was smaller than in Cluster 1 and Cluster 4 but higher than in Cluster 2. Cluster 4 includes municipalities from Riga planning region (26%), Vidzeme (16%), Kurzeme (13%) and Zemgale (10%).

Therefore we can conclude that hypothesis that even though the grouping was based on economic variables, municipalities located geographically close together also group together is confirmed. That means that situation with high unemployment rate, decrease in number of inhabitants, low share of inhabitants at working age and low entrepreneurship activity is problem not just for particular municipality, but for wider regions.

Looking at these results from another perspective we can say that also economic development encourage stronger further development. Recently there has been wide discussion about economic and development clusters meaning some territories or industries collaborating to achieve faster economic growth.

V. CONCLUSION

This paper has showed how analysis of social and economic indicators can be used to search for similarities across municipalities and get better understanding about situation in region in whole country. In case there are mechanisms for support for individual municipalities but analysis shows that similar lagged development is for several municipalities from the same region, support mechanism should be reconsidered and collaboration of smaller municipalities should be encouraged.

For the case of Latvia cluster analysis based on inhabitant structure and basic economic indicator analysis shows that there are some regional similarities for municipalities of Pieriga and Latgale. Other planning regions do not create separate groups. There are similar municipalities across all of them.

To sum up, there are different tools for exploring differences in economic development in municipalities, and cluster analysis also proves to be useful way to look at these questions from another perspective, though of course decisions and their implication should be based on

consideration of wide range of data and analysis, but this could be a part of it.

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Theory of Exit Choice: IPOs versus Acquisitions with Differential Bargaining

Rohan Chinchwadkar and Rama Seth

Abstract—**This paper introduces differential bargaining into the Bayar and Chemmanur (2011) model of exit choice between IPOs and acquisitions and shows that a mixed strategy equilibrium can exist for both high (H) type and low (L) type firms. Using the concept of signaling games and perfect Bayesian equilibrium, we prove for the first time in a theoretical framework that PE investors are inclined to take more type H firms public than entrepreneurs.**

Index Terms—**Private equity exits, initial public offering, acquisitions, signaling games**

I. INTRODUCTION

Initial Public Offering (IPO) literature addresses only two outcomes for a firm: staying private or conducting an IPO (e.g. [1]-[3]), whereas mergers and acquisitions literature analyzes acquisitions in isolation (e.g. [4]). Few studies analyze the decision to exit as a choice between IPO and acquisition such as empirical studies by [5] and [6] and only one theoretical model by [7]. Reference [7] assumes that a crucial factor driving the exit choice is product market competition: a stand-alone firm has to fend for itself after going public but an acquirer is able to provide considerable support to the firm in product market competition. Based on the probability of success in the product market, they divide the firms into two types: high (H) and low (L). They show that under certain conditions high type firms always go for an IPO i.e. use a pure strategy and low type firms use mixed strategy in equilibrium.

The objective of this paper is to introduce differential bargaining into the Bayar and Chemmanur model and show that a mixed strategy equilibrium can exist for both H type and L type firms. We also prove an intuitive result for the first time in a theoretical framework that private equity (PE) investors are inclined to take more H type firms public than entrepreneurs.

II. THE MODEL

The basic structure of the model follows [7]. At time 0, shares of a private firm are initially held by two types of agents: an entrepreneur and a PE investor. Initially, the fractions of equity held by them are denoted by δ_E and δ_V respectively. The firm needs new investment I for a positive NPV project at time 0. The investment (I) can be raised either

through an IPO or by selling the firm to an acquirer. In order to satisfy their liquidity demand, the entrepreneur and the PE investor will also sell a fraction of their shares out of their remaining initial equity holdings, α_E and α_V respectively, to outside investors through a secondary offering in the IPO market. At time 1, all cash flows are realized and the firm is liquidated. The final cash flows (V) depend on the choice of exit mechanism decided at time 0, the degree of product market competition between time 0 and time 1 and firm type. If the project is implemented at time 0 by raising I, the cash flows (V) can take one of two possible values at time 1: $V = (I + V_S)$, if the firm "succeeds" by time 1 or $(I + V_F)$, if the firm "fails" by time 1.

The decision is modeled as a signaling game played between the firm (entrepreneur or PE investor), the IPO market and the acquirer. IPO market investors believe that the proportion of H-type firms is θ. The firm takes into consideration the beliefs of the investors and sets a P_{ipo}, α_E and α_V. The investors have to decide whether to bid for the IPO or not.

We introduce differential bargaining into the model such that bargaining power of the high type firm with the acquirer (ρ_H) is higher than the bargaining power of the low type firm with the acquirer (ρ_L). Thus, the acquirer pays $\rho_H V_A$ to the H-type firm and $\rho_L V_A$ to the L-type firm, where V_A is the post-acquisition value of the firm due to synergy effect. The introduction of this structure allows the possibility of mixed strategy equilibrium for the H-type firm as well. Thus, the H-type firm goes public with probability β_H and L-type firm goes public with probability β_L.

III. EQUILIBRIUM OF THE MODEL

We use the concept of Perfect Bayesian Equilibrium (PBE) to analyze the choice decision. The equilibrium includes: (i) a choice made by the entrepreneur or PE investor between an IPO and an acquisition, (ii) a decision by the IPO market investors about whether to bid or not at the price P_{ipo} and (iii) a decision by the acquirer about the acquisition price P_{acq}. We consider equilibria in two different cases: (i) an entrepreneur controlled firm and (ii) a PE investor-controlled firm.

"Reference [7] shows that only four types of equilibria can exist in their model: (i) type H firms strictly prefer to go public whereas type L firms play a mixed strategy (ii) both types of firms strictly prefer to go public; (iii) type H firms strictly prefer to go public whereas type L firms strictly prefer acquisitions; (iv) both types of firms strictly prefer acquisitions." In their model, equilibrium (v): 'both types of firms play mixed strategy', is not possible. However, if we

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introduce differential bargaining, category (v) equilibrium is possible. We will also show that equilibrium of category (i), which is the main focus of [7], is a corner point solution of category (v) such that probability of IPO for H-type firm is strictly 1.

A. Analysis of the Entrepreneur's Problem

We know that the entrepreneur faces a trade-off between IPO price P_{IE} and acquisition price P_{acq}. Since the amount of equity offered in the IPO is γ and the entrepreneur sells fraction α_E out of his remaining holdings $\delta_E(1-\gamma)$, he retains a fraction $\delta_E(1-\gamma)(1-\alpha_E)$ in the firm which has a value $V_q = p_q V_S + (1-p_q) V_F$, where $q \in \{H, L\}$. He also retains his private benefits of control B if he chooses an IPO. However, in the case of an acquisition, the probability of success is increased to p_A and thus the value of the firm is now $V_A = p_A V_S + (1-p_A)V_F$. Since investors' beliefs are updated by Bayes' Rule, the IPO price if the entrepreneur takes the firm public (i.e. a = 1) is given by:

$$P_{IE} = I + \Pr(q = H \mid a = 1)V_H + \Pr(q = L \mid a = 1)V_L \quad (1)$$

However, in case of an acquisition, the acquirer pays $\rho_H V_A$ to the type H firm and $\rho_L V_A$ to the type L firm. Thus, the objective function of the entrepreneur is:

$$\max \; \{ \; a.[\delta_E(1-\gamma)(\alpha_E P_{IE} + (1-\alpha_E)(I+V_q)) + B] \\ + (1-a).[\delta_E \rho_q V_A]\} \quad (2)$$

where, $q \in \{H, L\}$

Thus, an entrepreneur compares between (IPO premium + private benefits of control) on one side and (acquisition premium due to synergy) on the other side.

B. Analysis of the PE Investor's Problem

There are only two differences between the entrepreneur and the PE investor: (1) the PE investor does not enjoy private benefits of control, (2) the liquidity requirements of PE investor are different from that of the entrepreneur. Thus, the PE investor's objective function is given by:

$$\max \; \{a.[\delta_V(\alpha_V + (1-\alpha_V)\frac{I}{P_{IV}})(P_{IV} - V_q - I)] \\ + (1-a).[\delta_V(\rho_q V_A - V_q)]\} \quad (3)$$

C. Equilibrium in an Entrepreneur-Controlled Firm

Proposition 1: Choice between IPO and Acquisition in an Entrepreneur-controlled firm

Under the existence of differential bargaining with the acquirer, both types of firms play mixed strategy in equilibrium. The type H firm goes public with probability β_H and for an acquisition with probability $(1 - \beta_H)$. The type L firm goes public with probability β_L and for an acquisition with probability $(1 - \beta_L)$ such that,

$$\beta_H = \beta_L * \left\{ \frac{(1-\theta) * (P_{IE}* - (I+V_L))}{\theta * [(I+V_H) - P_{IE}*]} \right\} \quad (4)$$

The equilibrium IPO price $P_{IE}*$ is given by (7)

Proof. If a player plays mixed strategy in equilibrium, then he must be indifferent between his pure strategies. Due to the existence of differential bargaining, in the above equilibrium,

it is possible for both firms to play a mixed strategy since both the following indifference equations can hold:

$$\delta_E\left(\alpha_E + (1-\alpha_E)\frac{I}{P_{IE}*}\right)(P_{IE}* - V_L - I) + B \\ = \delta_E(I + \rho_L V_A - (I+V_L)) \quad (5)$$

$$\delta_E\left(\alpha_E + (1-\alpha_E)\frac{I}{P_{IE}*}\right)(P_{IE}* - V_H - I) + B \\ = \delta_E(I + \rho_H V_A - (I+V_H)) \quad (6)$$

Since both (5) and (6) can exist, both type H and type L firm can play mixed strategy in equilibrium i.e. IPO or acquisition. From (5) and (6), we get the equilibrium price $P_{IE}*$ is given by:

$$P_{IE}* = \left(\frac{(1-\alpha_E)I(V_H - V_L)}{(1-\alpha_E)(V_H - V_L) - V_A(\rho_H - \rho_L)} \right) \quad (7)$$

Now, we know that prior probability beliefs of investors are: $\Pr(q = H) = \theta$ and $\Pr(q = L) = (1-\theta)$. Since we analyze mixed strategy equilibrium for both types of firms, the updated beliefs are:

$$\Pr(q = H \mid a = 1) = \frac{\beta_H * \theta}{\beta_H * \theta + \beta_L * (1-\theta)} \quad (8)$$

$$\Pr(q = L \mid a = 1) = \frac{\beta_L * (1-\theta)}{\beta_H * \theta + \beta_L * (1-\theta)} \quad (9)$$

Solving (1), (8) and (9), we get,

$$P_{IE}* = I + \frac{\beta_H * \theta}{\beta_H * \theta + \beta_L * (1-\theta)} * V_H \\ + \frac{\beta_L * (1-\theta)}{\beta_H * \theta + \beta_L * (1-\theta)} * V_L \quad (10)$$

Rearranging (10), we get (4) from proposition 1.

Corollary 1: Corner point solution is the Bayar and Chemmanur model.

We see that if you use a corner point solution of proposition 1 such that $\beta_H = 1$, we get the solution derived by Bayar and Chemmanur (2011):

$$\beta_L = \left\{ \frac{\theta * [(I+V_H) - P_{IE}*]}{(1-\theta) * [P_{IE}* - (I+V_L)]} \right\} \quad (11)$$

However, the equilibrium IPO price in our model is different from that of [7] since it is derived from two indifference equations rather than one.

D. Equilibrium in a PE Investor-Controlled Firm

Proposition 2: Choice between IPO and Acquisition in a PE investor-controlled firm

Under the existence of differential bargaining with the acquirer, both types of firms play mixed strategy in equilibrium. The type H firm goes public with probability β_H and for an acquisition with probability $(1 - \beta_H)$. The type L firm goes public with probability β_L and for an acquisition with probability $(1 - \beta_L)$ such that,

$$\beta_H = \beta_L * \left\{ \frac{(1-\theta)*(P_{IV}*-(I+V_L))}{\theta*[(I+V_H)-P_{IV}*]} \right\} \quad (12)$$

The equilibrium IPO price $P_{IV}*$ is given by (15).

Proof. If a player plays mixed strategy in equilibrium, then he must be indifferent between his pure strategies. Due to the existence of differential bargaining, in the above equilibrium, it is possible for both firms to play a mixed strategy since both the following indifference equations can hold:

$$\delta_V\left(\alpha_V + (1-\alpha_V)\frac{I}{P_{IV}*}\right)(P_{IV}*-V_L-I) \quad (13)$$
$$= \delta_V(I + \rho_L V_A - (I+V_L))$$

$$\delta_V\left(\alpha_V + (1-\alpha_V)\frac{I}{P_{IV}*}\right)(P_{IV}*-V_H-I) \quad (14)$$
$$= \delta_V(I + \rho_H V_A - (I+V_H))$$

From (13) and (14), we get the equilibrium price $P_{IV}*$ is given by:

$$P_{IV}* = \left(\frac{(1-\alpha_V)I(V_H-V_L)}{(1-\alpha_V)(V_H-V_L)-V_A(\rho_H-\rho_L)} \right) \quad (15)$$

Solving (1), (8) and (9), we get,

$$P_{IV}* = I + \frac{\beta_H*\theta}{\beta_H*\theta + \beta_L*(1-\theta)}*V_H \quad (16)$$
$$+ \frac{\beta_L*(1-\theta)}{\beta_H*\theta + \beta_L*(1-\theta)}*V_L$$

Rearranging (16), we get (12) from proposition 2.

Proposition 3: Exit choice in entrepreneur-controlled versus PE investor-controlled firms

If the liquidity requirements of the PE investor (α_V) are larger than the liquidity requirements of the entrepreneur (α_E), then:

$$\left(\frac{\beta_H}{\beta_L}\right)_{\text{PE-controlled}} > \left(\frac{\beta_H}{\beta_L}\right)_{\text{entrepreneur-controlled}} \quad (17)$$

Thus, PE investors would prefer to take more type H firms public and lesser type L firms public than entrepreneurs.

Proof. It has been documented that PE investors have a bias towards taking only their "star" companies public since an IPO creates reputation. Thus, PE investors want to take only those firms public which have a higher probability of succeeding in the market. This bias is obtained for the first time in literature as a result in our theoretical framework as mentioned in proposition 3. We can see that when $\alpha_V > \alpha_E$, $P_{IV}* > P_{IE}*$. We also know from equations in propositions 1

and 2 that: (β_H/β_L) entrepreneur-controlled is increasing in $P_{IE}*$ and (β_H/β_L) PE-controlled is increasing $P_{IV}*$. Thus, when $P_{IV}* > P_{IE}*$, we arrive at (17) in proposition 3.

IV. CONCLUSION

This paper introduced differential bargaining in the model used in [7] and proved that mixed strategy equilibrium can exist for both H and L type firms when firms take an exit decision between IPOs and acquisitions. We also prove for the first time in a theoretical framework that PE investors are inclined to take more H type firms public than entrepreneurs due to possible reputation benefits from taking H type firms public.

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Misvaluation and Mergers Waves: Evidence from Australia

Mehdi Sadeghi and Joseph Ngyuen

Abstract—**This paper attempts to investigate whether stock market misvaluation has been a driver force in merger and acquisition activities during 2000-2007 in Australia. Our findings indicate that, more overvalued firms use stocks to buy less overvalued firms, overvalued firms pay cash to buy undervalued firms, and higher bidder overvaluation relative to target overvaluation decreases the combativeness of the deals. Our findings provide a behavioral explanation of the Australian takeover activities that has been traditionally viewed from the neoclassical perspectives premised upon the efficient market hypothesis.**

Index Terms—**Misvaluation hypothesis, australian merger and acquisition, market efficiency.**

I. INTRODUCTION

Recent studies have documented evidence of waves in mergers and acquisitions activity; most notably the large wave experienced by the U.S. and world economies in the late 1990s. This phenomenon is open to two interpretations; neoclassical theories and behavioural theories. Neoclassical theories posit that firms redeploy assets towards more productive uses due to factors such as market shocks, with the aim to improve market efficiency or maximise shareholders wealth. Behavioural or non-neoclassical theories drop efficiency improvement or wealth maximization assumptions and propose alternative factors, including stock market misvaluations, as the principal explanation for mergers.

Evidence of the ongoing debate on takeover activities and merger waves have mostly stemmed from U.S data and research. This paper aims to test whether there is a systematic relationship between firms' misvaluation and takeover activities in Australian in recent years, using a sample of capital market data during the 2000-2007 period. Our findings provide support for misvaluation hypothesis which is founded on the premise that the market values firms incorrectly while managers have complete information [2], [3], resulting in the correlation of market misvaluation and merger activities. A motivation to conduct this research is the fact that earlier studies on Australia mergers and acquisitions are largely based on the neoclassical paradigm. However, neoclassical theories, have not been very successful in explaining recent merger waves in US and in Australia, while

support is found for behavioural theories.

Traditional neoclassical theory views mergers as an efficiency-improving response to economic, regulatory and industrial shocks [1]. The rationale behind mergers allows firms to smoothly transit into a new competitive environment, increase their profitability, and value of their shares. However evidence found in supporting new classical views are not conclusive. The apparent trends found in the data for the methods of payment to target shareholders also challenges new classical views.

The new behavioral theories present a sharp challenge to the traditional views, trying to link takeover activity with stock market performance[1]. Along these lines, Shleifer and Vishny (S&V) [2] and Rhodes-Kropf and Viswanathan (RK&V) [3] developed models which suggest that stock market misvaluations drive merger activity. One of the fundamental assumptions that are relaxed in these models is the efficiency of financial markets. This creates an environment for firms being misvalued alongside rational managers who understand this inefficiency and take advantage of time acquisitions with the purpose of making a profit. This theory however is in contradiction to Roll's hubris hypothesis [4] relating to takeovers, in which financial markets are rational, but corporate managers are not.

The behavioural model suggested by RK&V, hypothesis that rational targets have imperfect information and would accept a larger number of offers from overvalued bidders during hot markets because they overestimate potential synergies of the merger. This compares differently to S&V model in which target management is not only self-concerned, but hold imperfect information about the value of synergies. Imperfect information can affect the type of firms acquired since managers may, like investors during hot markets, overestimate the synergies that result from a merger and make poor acquisitions during hot markets.

The method of payment is a significant source of information to the market in a takeover and this can take the form of cash, stock, or a combination of both. The central prediction of misvaluation theory is that bidders profit by buying undervalued targets for cash, at a price below fundamental value. Alternatively, the bidders profit by paying stock for overvalued target firms, when they are overvalued at a lesser extent than the bidders' firms. Further, firms should use only cash to buy an undervalued firm because there is no role for true synergies in the model of S&V. RK&V [3] suggest cash targets should be less overvalued than stock targets, but may still be overvalued if

[1]Jovanovic and Rousseau [1] found high merger activity is correlated with high stock market valuations.

high synergies outweigh the overvaluation. Hansen [5] documented that the bidder prefers cash when they believe the target shares are undervalued, implying that the means of payment proposed by the acquiring company will indicate the perceived value of the target company. Overall, the theories suggest that cash mergers are driven by undervaluation or synergies or both, while stock mergers are driven by overvaluation. This argument provides background for proposing a second question: Do overvalued firm will pay cash to buy the undervalued firm?

Since both the theories from S&V and RK&V demonstrate misvaluation can cause a divergence between market value and firm fundamental value, the predictions from the theory. should also be stated in terms of how overvalued and undervalued firms take advantage of the scenario. For the theory to have empirical relevance, increase in valuation errors should affect the combativeness of the deal. Intuitively, the greater a firm's overvaluation, the more likely it is to win the bidding for a target and if this target is also (relatively less) overvalued, then the bidder also faces less combativeness to their offer. As a result, the last question posed in this study is to find out whether higher bidder overvaluation relative to target overvaluation does decrease (doesn't change) the combativeness of the deal.

II. DATA AND METHODOLOGY

This paper examines 284 takeovers from 2000 to 2007 by Australian companies listed on the Australian Stock Exchange (ASX). The takeover sample is from Zephyr Mergers & Acquisition database. Because our sample includes only publicly traded firms, this excludes transactions such as leverage buyouts (LBOs) and management buyouts (MBOs). We then match these data with fiscal year-end accounting data from Aspect/Huntley DatAnalysis database and stock price data from the Bloomberg to obtain a final sample. Earnings forecast needed for calculating the residual income intrinsic values are obtained from the Institutional Brokers Estimate System (I/B/E/S). Our final sample comprises 230 successful and 64 unsuccessful acquisition bids. All variables have been winsorised at the 1st and 99th percentiles to mitigate the impact of extreme observations by assigning the cut-off value to values beyond the cut-off point.

Following Ohlson, [6] and Baker, Stein, and Wurgler [7], we propose two proxies for misvaluation or the non-fundamental component of firm market price; price-to-book value of equity (P/B) and price-to-residual income value (P/RIV)[2]. As P/B contains both fundamental and non-fundamental components, we need to control for the former as our interest is in the latter. Information content literature shows that accounting numbers used in fundamental valuations explain a significant part of contemporaneous and future stock return.

Prior literature considers P/B as a proxy for information about the ability of the firm to generate high returns on its

investments. Market value reflects mispricing and risk, whereas a book value reflects the fundamental value and filters our scale differences, thus P/B can provide a less noisy measure of mispricing [8]. However, it is debatable as to whether P/B return predictions reflect mispricing or risk premium. A further source of noise in P/B is that book value, the denominator of P/B, which is influenced by firm and industry differences in accounting methods.

We calculate P/B as a ratio of equity rather than total asset values, because it is equity rather than total asset misvaluation that is likely to matter for takeover decisions; a similar rationale applies to P/RIV. In our procedure, the P/B proxy is a ratio of the market value of equity to book value of equity. Following Baker and Wurgler (2002), for each stock the book value of equity is measured at the end of the prior fiscal year. The market value of equity is measured three days prior to the announcement. The firm's book value of equity determines the misvaluation, as the positive book value of equity indicates P/B is a positive measure of valuation. In contrast, negative book value of equity means P/B is negative and decreasing, and hence an inverse measure of valuation. Firms with a negative book value of equity (and positive market value of equity) indicate a high valuation, hence we classified these firms with the maximum value of P/B.

According to the recent theories [6], RIV expresses the intrinsic value of the firm's equity as the current book value of equity plus the present value of an infinite series of expected residual income, where the residual income is the difference between the reported income and the cost of equity capital multiplied by the reported book value at the beginning of the period. In practice, we apply a finite series of expected residual income, as Frankel and Lee [9] show. A naive model that uses current earnings performs as well to models using three or more forecasting periods when explaining future stock prices. The residual income model is derived from the discounted dividend valuation model and the assumption of clean-surplus accounting. The application of residual income valuation requires estimates of future income (or return on equity), cost of capital, and dividend payout rates, as well as an assumption about terminal value at the end of the forecasting horizon [10]. Following [9] model, we derive RIV with a three-period forecast horizon[3].

$$RIV_t = B_t + \frac{B_t\left(FROE_{t+1} - r_e\right)}{1+r_e} + \frac{B_{t+1}\left(FROE_{t+2} - r_e\right)}{\left(1+r_e\right)^2} + \frac{B_{t+2}\left(FROE_{t+3} - r_e\right)}{\left(1+r_e\right)^3} \quad (1)$$

where $FROE_t$ is the forecasted return on equity in year t, B_t is the estimated book value of common stockholders' equity at the end of the year t, and r_e is the estimated cost of capital. We estimate $FROE_t$, $FROE_{t+1}$, $FROE_{t+2}$ from I/B/E/S consensus forecasted earnings per share (FEPS), actual book value (B_{t-2} and B_{t-1}) from Aspect Huntley, and estimated future book values (B_t and B_{t+1}) :

$$FROE_{t+1} = \frac{FEPS_1}{\left[\left(B_{t-1} + B_{t-2}\right) \div 2\right]} \quad (2)$$

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[2]See Frankel and Lee [9], who proposed a finite solution to Ohlson's model.

[3]In the takeover context, Dong , Hirshleifer, Richardson, and Teoh [11] report the residual-income-value-to-price ratio helps explain long-run underperformance experiences by bidder firms in takeover situations better than the book-to-price ratio.

$$FROE_{t+2} = \frac{FEPS_2}{[(B_t + B_{t-1}) \div 2]} \qquad (3)$$

$$FROE_{t+3} = \frac{FEPS_3}{[(B_{t+1} + B_t) \div 2]} \qquad (4)$$

where future book value is estimated as:

$$B_t = B_{t-1} + FEPS_1 - DIV_t \qquad (5)$$

$$B_{t+1} = B_t + FEPS_2 - DIV_t \qquad (6)$$

DIV_t are calculated based on the dividend payout ratio in the most recent year. The last available closing price before the announcement date is divided by RIV, to obtain the P/RIV ratio.

III. Empirical Findings

In this section, we report the robust findings of our results. Table I presents mean acquirer and target valuation ratios by mode of offer and payment methods. The means of P/B and P/RIV, and their differences between acquiring and target firms, are reported in both the overall sample across modes of acquisition (tender offers versus merger offers) and methods of payment (cash, stock and mixed).

Panel A shows the overall sample against methods of payment, with bidding firms on average displaying higher valuation ratios than their targets. For a bidder, the average P/B and P/RIV ratio is 3.053 and 2.720 respectively, whereas for their targets it is 1.861 and 2.176 respectively. For our complete sample, there is a significant difference between bidder and target P/B of 1.192, highly significant at the 0.01 level. The P/RIV bidder and target differential is 0.544, and significant at the 0.05 level.

Examining the method of payment as a separate subsample, enables us to test the misvaluation claim that cash mergers are driven by undervaluation or synergies or both, while stock mergers are driven by market overvaluation. From Panel A for both cash and stock payment methods, the bidder valuation ratio exceeds the target ratio. Among the 49 cash subsample offers, the bidder-target P/B differential is 1.363 and the bidder-target P/RIV differential is 0.795. Among the 174 stock subsample offers, the bidder-target P/B differential is 0.934 and the bidder-target P/RIV differential is 0.705. All of these differentials are significant at the conventional statistical levels. Under mixed measurement sample, the overall mean valuation differential between bidder and target is also statistically significant.

Further evidence in Panel A suggests that target valuations of cash offers are significantly lower than target valuations of stock offers. Specifically, target stock P/B is 2.679 compared to cash P/B of 1.871, whereas target stock P/RIV is 2.423 compared to target cash P/RIV of 2.123. Both of these coefficients are highly significant. Similarly with bidder and valuations, where stock bidders on average have higher valuation compare to cash bidders; the stock-cash bidder difference is 0.379 for P/B and 0.210 for P/RIV and significant at conventional statistical levels.

From Panel B and C under both valuation measures, the bidder-target differential is statistically significant. For

instance, in Panel C, we find for 182 merged deals the differential between bidder and target P/V and P/RIV is 0.149 (marginally significant at the 0.10 level) and 0.538 (significant at the 0.05 level). With respect to cash versus stock offer, differentials from the tender and merged offer subsets are also positive and statistically significant.

Table II presents mean valuation ratios (P/B and P/RIV) ranked into quintiles. For each month, acquirer and target firms are assigned a rank between 1 to 5, where 5 is the top valuation quintile with the highest bidder or target P/B or P/V. The difference across the top and bottom quintile is reported to display the relationship between higher market valuation and transaction characteristics. The valuation ratios is then broken down into target and bidder and examined across a wide range of transactions characteristics. Panels A and B report the effects of target valuation on takeover characteristics. Panels C and D report the effects of acquirer valuation on takeover characteristics. By ranking bidders and targets based on their valuation ratios, we avoid time series swings. We also ensure that any effects we identify in the valuation and takeover characteristics are purely cross-sectional.

Comparing target stock valuations to target cash valuations at each quintile, we see that the higher target valuation is associated with greater use of equity compared to cash as the method of payment. Panels A and B show that stock is more likely to be used as the method of payment when the target has a higher valuation as the difference between the highest quintile and lowest quintile with P/B is 13.9% (with P/RIV being 9.6%) which are both highly significant. This is the converse for cash; as the higher the target valuation ratio, the lower the probability that cash will be used as the method of payment. The quintile difference for cash payments is -13.2% for P/B and -10.0% for P/RIV, again both are highly significant.

We also find that higher target valuations are associated with a greater chance of offer success and being a merger, whilst being less hostile. Therefore, these findings indicate that the transaction is less combative with higher target valuations. Specifically, the transaction is less likely to be hostile when the target has a higher valuation (for P/B, the quintile difference is -10.9% and for P/RIV it is -3.4% and are both significant). A transaction is more likely to take the form of a merger with higher target valuation of the quintile difference 15.6% (P/B) and 10.2% (P/RIV). The chance of the transaction being successful also increases with higher target valuation; significant for the quintile difference of 7.2% for P/B and insignificant for P/RIV of 1.8%.

Panels C and D displays the relationship between bidder valuations and takeover characteristics. Firstly, higher bidder valuation is associated with a greater use of equity and less use of cash as a means of payment. Bidders with higher valuations are more likely to use stock as the means of payment. The difference in probability of using stock between the top and bottom valuation quintiles is 10.6% for P/B and 17.5% for P/RIV. Conversely, high valuation acquirers are less likely to use cash as consideration. The difference in the probability of cash offers between the top and bottom valuation quintiles is -10.1% and -5.9% for P/B and P/RIV respectively.

TABLE I: MEAN CHARACTERISTICS OF ACQUIRER AND TARGET VALUATION RATIOS

Panel A: All

	N	Ratio	Bidder	Target	Bidder - Target	Bidder - Cash	Stock Target Stock - Cash
Cash	49	P/B	3.234	1.871	1.363***	0.379*	0.808**
		P/V	2.918	2.123	0.795**	0.210**	0.300*
Stock	174	P/B	3.613	2.679	0.934**		
		P/V	3.128	2.423	0.705**		
Mixed	61	P/B	2.312	1.032	1.280***		
		P/V	2.113	1.981	0.132*		
All	284	P/B	3.053	1.861	1.192***		
		P/V	2.720	2.176	0.544**		

Panel B: Tender Offers

	N	Ratio	Bidder	Target	Bidder - Target	. Bidder Stock - Cash	Target Stock - Cash
Cash	21	P/B	3.121	2.131	0.990***	0.092	0.29*
		P/V	2.031	1.982	0.049	2.49***	0.03
Stock	58	P/B	3.213	2.421	0.792**		
		P/V	4.521	2.012	2.509***		
Mixed	23	P/B	2.506	2.321	0.185**		
		P/V	3.113	1.981	1.132**		
All	102	P/B	2.947	2.291	0.656**		
		P/V	3.222	1.992	1.230***		

Panel C: Merged Bids

	N	Ratio	Bidder	Target	Bidder - Target	Bidder - Cash	Stock Target Stock - Cash
Cash	28	P/B	3.183	2.941	0.242**	0.049	0.270*
		P/V	2.434	1.896	0.538**	0.52**	0.116*
Stock	116	P/B	3.232	3.211	0.021		
		P/V	2.954	2.012	0.942***		
Mixed	38	P/B	2.506	2.321	0.185*		
		P/V	2.115	1.981	0.134*		
All	182	P/B	2.974	2.8243333	0.149*		
		P/V	2.501	1.963	0.538*		

This table presents mean acquirer and target valuation ratios by the mode of the offer and payment method. The t-statistic of differences between acquirer and target, and between stock and cash offers are reported as (*, **, ***) characteristics which represents significant levels of 0.10, 0.05 and 0.01, respectively. P/B is the price-to-book ratio and P/RIV is the price-to-residual income value ratio.

It is also shown that higher bidder valuation increases the chance of a merger offer rather than a tender offer. High valuation bidders are less likely to use tender offers and more likely to use merger bids. In Panels C and D, the quintile difference of the probability of a tender offer is -8.0% and -4.3% for P/B and P/RIV respectively. Higher bidder P/B is associated with higher bid premia and higher target stock returns. Panel C shows high valuation bidders paying with stock also pay a higher bid premia. The quintile differential in premium paid is 1.7%, slightly significant at 10%. Panel D shows 2.1% difference in probability for P/RIV which is significant at the 5% level. In the entire sample, the P/B quintile difference in target announcement-period stock returns is 1.9%, slightly significant at 10%. Similarly, P/RIV has a target period stock returns differential of 2.6%. Higher bidder P/B and P/RIV is associated with lower bidder announcement-period returns.

In conclusion we confirm that misvaluation exist within the Australian market. They are also consistent with the hypotheses we developed and we have summarised them below.

High valuation bidders are more likely to use equity rather than cash as the sole consideration. Higher target valuations are associated with equity rather than cash as the sole means of payment. Higher valued bidders are more likely to pay a higher premium, more inclined to use a merger bid and earn lower announcement-period returns. Lower valued targets receive a higher premium relative to the market price. Lower valued targets are more likely to be hostile to the offer and more likely to receive tender offers. Lower valued targets have a lower probability of being successfully acquired and earn higher announcement-period returns. Acquiring firms are valued significantly higher than targets in the full sample.

TABLE II: MEAN ACQUISITION CHARACTERISTICS OF ACQUIRER AND TARGET VALUATION RATIO QUINTILES

Panel A: Acquisitions by Target P/B Ratio

Target P/B rank	Target P/B	% of successful transactions	% of hostile transactions	% of tender offer transactions	% of merger bid transactions	% of cash payment transactions	% of stock payment transactions	Bid Premium
1	1.3	74.1	13.3	36.4	63.6	34.5	45.7	28.8
2	1.6	74.3	12.5	34.9	65.1	29.5	50.5	25.6
3	1.9	75.6	9.7	30.2	69.8	28.4	52.6	25.8
4	2.51	78.1	2.7	29.8	70.2	25.2	58.2	26.3
5	2.9	81.3	2.4	20.8	79.2	21.3	59.6	22.6
Difference (5-1)	1.6***	7.2***	-10.9***	-15.6***	15.6**	-13.2***	13.9***	-6.2***

Panel B: Acquisitions by Target P/RIV Ratio

Target P/B rank	Target P/B	% of successful transactions	% of hostile transactions	% of tender offer transactions	% of merger bid transactions	% of cash payment transactions	% of stock payment transactions	Bid Premium
1	1.1	79.1	10.1	28.3	71.7	29.1	42.5	33.5
2	2.3	78.4	9.8	26.3	73.7	29.1	45.7	32.1
3	4.9	75.1	8.5	25.4	74.6	25.6	49.1	32.8
4	5.6	79.3	8.1	22.1	77.9	23.1	50.1	29.4
5	6.1	80.9	6.7	18.1	81.9	19.1	52.1	28.1
Difference (5-1)	5.0***	1.8	-3.4**	-10.2***	10.2**	-10.0***	9.6**	-5.4***

Panel C: Acquisitions by Bidder P/B Ratio

Bidder P/RIV rank	Bidder P/RIV	% of successful transactions	% of hostile transactions	% of tender offers	% of merger bid transactions	% of cash payment	% of stock payment transactions	Bid Premium
1	1.3	78.1	8.4	22.5	77.5	28.5	34.5	33.4
2	1.3	72.7	9.4	19.0	81.0	33.6	35.7	35.4
3	1.5	81.5	8.1	19.9	80.1	29.5	36.8	35.8
4	3.1	80.1	7.6	15.5	84.5	22.5	38.9	36.1
5	8.5	85.6	7.1	14.5	85.5	18.4	45.1	35.1
Difference (5-1)	7.2***	7.5***	-1.3**	-8.0***	8.0***	-10.1***	10.6**	1.7*

Panel D: Acquisitions by Bidder P/RIV Ratio

Bidder P/RIV rank	Bidder P/RIV	% of successful transactions	% of hostile transactions	% of tender offer transactions	% of merger bids transactions	% of cash payment transactions	% of stock payment transactions	Bid Premium
1	1.0	75.4	7.9	18.2	81.8	29.3	38.6	35.1
2	1.3	76.8	7.5	21.1	78.9	29.5	41.2	35.2
3	1.9	79.1	8.1	22.5	77.5	28.3	44.4	35.8
4	2.2	83.4	8.5	16.4	83.6	26.6	51.2	35.1
5	3.9	82.9	6.3	13.9	86.1	23.4	56.1	37.2

This table presents mean valuation ratios (P/B and P/RIV) ranked into quintiles, ranked between l o w e s t 1 (most undervalued) to 5. P/B is the price-to-book ratio and P/RIV is the price-to-residual income value ratio. The mean acquisition characteristics for each of the quintiles i s difference in means between ranks 1 and 5. Bid premium is the ratio of the bid offered by the acquirer to the target stock price 5 days prior to the announcement of the takeover bid. *,**.*** denote that the difference in means between ranks 1 and 5 is significant at the 10%, 5% and 1% level, respectively, based on the two sample t-test.

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The Extent of Market Acceptance of the Development of an Effective Islamic Banking System in Libya

Ali Khalifa Ali Stela and Barjoyai Bardai

Abstract—Measuring the level of citizens' acceptance towards the implementing of Islamic banking system in Libya is an imperative step in the development of the banking industry in the country. In addition, citizens' acceptance of Islamic banking system can ensure success only when incorporated into the prevailing and adequate understanding of this system. Relevant literature was reviewed. The review assisted the researcher in formulating the research objectives, questions, aims, and framework. The quantitative research method was employed to derive the relationship among the variables of the study. The sample of the study consisted of 500 bank clients located in Tripoli, the most important commercial city in Libya in which questionnaires were randomly distributed to the selected sample. The findings indicated that Libyan citizens are not satisfied with the current financing system which deals with usury and they prefer employing an Islamic tool such as "Qard AL-Hasan" in the country.

Index Terms—Qard Al-Hasan, murabaha, satisfaction, banking industry.

I. INTRODUCTION

In the late seventies and early eighties, Muslim communities were awaken by the emergence of Islamic banks which provided interest-free banking facilities. In addition, the practice of Islamic banking was prevalent across several countries with intense activity in Malaysia, Bahrain, Europe and the USA [1], [2]. One of the important observations that should be considered, when studying the Islamic system of economics, is that Islam began to shape the economic life of Muslims from the early days of revelation. Later, it gave the basis and principles of the entire economic system of the Muslim Ummah. The history of Islamic banking began from the early days of Islam. The most important events, which later shaped the practices of banking in Islam, were the revelations that prohibited Muslims from dealing with Riba (usury). In addition to these revelations, the Prophet (peace be upon him) on many occasions condemned the 'taker and giver' of Riba (usury) [3]. In Libya, government has taken several steps to show itself as a devout Islamic government. During the 1970s, Islam in Libya played a major role in legitimizing spheres of political and social reform, but not in the realm of economics and finance. Moreover, during this time the Libyan banking sector witnessed a significant transformation, and characterized for more than three decades by the massive state Intervention in the commercial banking sector. The prospect of Islamic banks in Libya, like

in other countries, began by identifying the reasons that appeared in the report of the experts and specialists who have analyzed the financial crisis, in the East as well as in the West, based on the religious differences, sex, etc. The majority of these experts agree that the causes that led to the financial collapse in the world were brought about by the irregularities that emerging from the rejection of the legitimacy of the Islamic banking system. The mortgage debt crisis is one of the major contributing factors towards the financial crisis, as real estate credit is dependent on an interest-based lending for home ownership at the time of the financial crisis of 2008, the volume of trading in the financial markets stood at almost 250 trillion dollars. On the other hand, the gross national product of the countries in the world at large, stood at only 48 trillion dollars. In this regard, we can figure out the size of deception that has resulted in debt buying and selling [4].

Due to the above-mentioned crisis, the urgent desire of the Islamic banks and other investment vehicles emerged to initiate private, interest-free loans (Qard AL-Hasan). In subsequent studies, it was found that ordinary people in Libya, especially those with limited income and the younger generation, especially those at marriageable age that requested to own houses were thwarted in doing so due to the usurious loans that were being offered.

The literature reviewed in Libya indicates that the public banking has become accustomed to interest (Riba) as being part of the social financing activities of the country [5]–[6]. In addition, there is a lack of effective Islamic banking system which has fragmented a considerable segment of the Libyan population who naturally lead an Islamic life and, in turn, has resulted in financial exclusion. Moreover, the reviewed literature indicates that the citizens are dissatisfied with the conventional banking services, and thus, they seek a banking system in accordance with Islamic doctrines and moral principles that signifies search for a new Islamic identity [6].

Besides, implementing an accurate Islamic financing tool needs to be prioritized in the government's financing agenda. In accordance with the above- mentioned situation, the present study aims to go deeply into the outlook of the consumers as well as the environment in its support for the introduction of Islamic banking principles, products, and services in the current banking system.

II. LITERATURE REVIEW

A. The Libyan Banking System

After the 1st of September 1969 revolution, it was decided to raise the national shareholding in foreign banks to 51%. All foreign banks operating in the country, at this

time, were subjected to this decision. However, Barclays Bank and Banco de Roma decided to procrastinate in implementing this decision and demanded a joint equal share management between the two parties involved namely, the banks and the Libyan government. The procrastination of the British and the Italian banks did not last for long, as all foreign banks became fully nationalized and owned by the state. Moreover, all the banks were given new names in Arabic.

The commercial banking sector in Libya comprises of two types – namely the state-owned commercial banks and the private commercial banks. In addition, there is the Central Bank of Libya (CBL) which is considered as the coordinator and monitor of the sector. The Libyan commercial banking industry employs approximately 15,000 people. The commercial banks are state-owned banks, national banks owned by stock holders, or enterprises owned by companies called bank holding companies and can be defined as "institutions that accept deposits, offer business loans and give related services,'. There are now five state-owned Libyan banks. Which were old state-owned commercial banks and now they have changed into the National Commercial Bank (NCB). Libyan banking systems are still primarily conventional in practice and hence they are far behind in catching up with the Islamic banking practices throughout the world. Although the costumers were looking forward to have the full fledge Islamic bank services in the countries, the approach of the government has been to slowly adopt the element of Islamic banking within the current practices of commercial banks.

Banks operating in Libya between Acceptance and Rejection

All the previous studies on the Libyan banks ignored the implications of the Libyan banks operation on the community. This has affected the Libyan economy, but most of the studies discussed in one way or another the negative aspects of commercial banks operating in Libya, and the follower of these negative view have found the reaction of the community when the bank interest was in contradiction with the values of the Libyan Muslim society. However, the picture would be very clear if the results of the studies are traced and conducted on the extent of satisfaction of customer and staff at Libyan banks [5].

The results can be summarized as follows:

- Customer dissatisfaction stems from commercial banking services that require interest rates on loans.
- Owners refuse to deal with banks because of interests, and as result, the bank system will be in shortage of cash.
- Citizens only deal with banks operating in Libya because such behavior is imposed on them. For instance, employee salaries are directly transferred to a particular bank.
- Demand for interest-based loans is only due to the lack of an alternative option. Urgent needs to build a house, among others, force clients to accept interest-based loan schemes.
- Some bank employees ask about the legitimacy of the banks that employ them.

Moreover, a number of employees immediately resign from their position due to the reasons related to Islamic advisory opinions on the legalities of banks that deal with interests. These factors increase dissatisfaction with Libyan banks. Despite the presence of a number of commercial banks and specialized branches located throughout the country, the following table displays the number of banks and their operating branches in Libya.

III. METHODS

Most researchers believe that qualitative and quantitative methods can be used together as a valuable option to obtain complementary findings and to strengthen the results. To achieve the aims and objectives of this study, both quantitative and qualitative method were employed and cross-validated in order to produce more reliable empirical data which cannot be produced from any single method. However, in order to go deeply to the heart of matter, the researcher used two kinds of techniques for data collection and investigation. The first technique is the interview in which the basis of the Libyan banking system, information on its background and the possibility of establishing Islamic banking in the country will be considered. The second technique is the use of the questionnaire as an investigative tool to learn about the Libyan banking sector's clients.

IV. FINDINGS AND DISCUSSION

This section presents and discusses the findings obtained from 500 questionnaires. The sample responses to the questionnaire were analyzed. The results shown in this section have already been processed and analyzed. In addition, the findings demonstrate the potential for merging theory and practice. Overall, descriptive statistical analysis was used to identify frequencies and percentages to answer all of the questions in the questionnaire and to confirm or refute its hypothesis.

The statistical significance of relationships among selected variables was determined via using the level of significance set at 0.05.

The results of the study indicated that customers in Libya support the introduction of the Islamic banking system in Libya. The obtained data confirmed that a large number of customers support the introduction of the Islamic banking system and its Islamic tools such as (Qard al Hassan). In which the t-counted for depositors' support (X) is 14.223 with p-value 0.000 lower or "<" than 0.05. This means that, the observed effect is statistically significant. Therefore, it is revealed that "Depositors' will give strong support to the introduction of Islamic banking system in Libya". In line with the obtained results, the current research optimizes that the Islamic banking system will assure progress in Libya.

V. DISCUSSION

The findings obtained in the current study indicate that Libyan people are actually forced to open accounts with conventional banks rather than Islamic ones even if they do not like the interest rate and that AL-Quran also forbids it. However, one of the main obstacles existing in the country is that the Islamic banks are not adequately introduced in the country. This situation may be due to the 1st of September

1969 revolution which enforced Libyan banking system to become primarily conventional in practice and hence is far behind in catching up with the Islamic bank practices throughout the world.

This was due to the raised national shareholding in foreign banks to 51%. All foreign banks operated in the country and became fully nationalized and owned by the state. Moreover, all of the banks were given new names in Arabic which also created a level of confusion among the Libyan citizens with regards to the banking system.

As it was indicated, there was a significant positive influence of depositors' support (X) on the dependent variable of introducing Islamic banking system in Libya (Y). The strong signals of citizens' support to the Islamic banking system in Libya will positively develop a strong Islamic banking industry in Libya which in turns reflects on strengthening the institutional financial infrastructure, the Sharia, and legal infrastructure as well as enhancing intellectual capital development and consumer education.

The successful employment of AL-Qard al- Hassan requires a strong support from the relevant stakeholders in creating a more supportive environment to enhance the Profitability of the banking sector. Researchers had argued that, the introduction of new banking industry cannot succeed unless its construction is combined with a sufficient support from the customers and the surrounding environment, which in turns requires new strategies to be created in order to enhance the customers' support and develop a conductive environment [7].

The reviewed literature indicated that citizens were dissatisfied with conventional banking services, and as a result, they were looking for a banking system that is in accordance with Islamic doctrines and moral principles as a part of their search for a new Islamic identity.

The problem of the study has been crystallized as the search for an alternative for the public other than the conventional banking services. Although Islamic banks are currently operating in Libya, it was discovered that these banks were immune to interest benefits and therefore were looked at negatively.

As a respond to this problem, the government initiated a process of Islamizing the financial system in Libya. This process started with prime minister's order on January, 2011 to establish pure Islamic instruments as an initiative to enhance the version of Islamic banking industry in Libya. The law highlights various ways in sufficient details for eliminating interest from the financial system in Libya. This law was a strong starting point in the efforts for Islamizing the banking system in Libya.

The effect of this sudden Islamization may not produce the required results due to lack of sufficient knowledge concerning Islamic banking services. One of the main problems may be in isolating Islamic and conventional banking preset belongings and developing Islamic banking infrastructure and Islamic instruments such as AL-Qard AL-Hassam.

However, from the findings, it can be argued that vital potentials will be driven from the introduction of Islamic banking in the country as the current study maintained throughout the reviewed literature that Islamic banks in most cases competed with conventional banks and in some cases provided a better substitute for conventional banking system [8], [9]. Currently, two main challenges could face such an introduction of Islamic banking services in Libya. The first challenge is how to introduce Islamic banking to all over Libya. The second challenge is how to create interest free Islamic banking services in parallel with the conventional interest-based banking services.

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Pricing and Volatility Relationships for the Largest Oil Producer: Saudi Arabia

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***Abstract*—Using OLS, ARIMA and Change Point Analysis, this paper empirically analyzes the time series relation between oil price and production and explore various kinds of model that can be utilized to overcome statistical problems and to understand the relationship in Saudi Arabia, one of the fastest growing economies in the Middle East and North Africa and the largest oil producing country in the world, with a large current account surplus. This paper methodically analyzed a times series data and built up models to overcome statistical problems such as non linearity, autocorrelation, and change point. Our findings indicate Saudi Arabia had been consistently producing oil in linear fashion before 2001. However, any international or Middle East dispute can change the trend, as is evident from our change point analysis. Nonetheless, it is likely that Saudi Arabia may increase their oil production during such times of conflict to meet the energy requirements of the world.**

***Index Terms*—Oil prices, production, change point, Saudi Arabia.**

I. INTRODUCTION

The Kingdom of Saudi Arabia is the largest country on the Arabian Peninsula and primarily borders the Persian Gulf to the east, the Red Sea on the west, Yemen to the south and Iraq to the north. Its lesser borders include the U.A.E. and Oman to the southeast and Kuwait and Jordan to the northwest. Saudi Arabia is about one-fifth the size of the United States, with a total area of over 2.5 million square kilometers. The climate is mostly harsh, dry desert with extreme temperatures and mostly uninhabited sandy desert. Saudi Arabia's primary natural resource is oil; hence, this country has been significantly and highly dependent upon oil exports. Oil export revenues make up approximately 90% to 95% of total Saudi export earnings, 70% to 80% of state revenues, and around 40% of the country's gross domestic product (GDP) [1]. Saudi Arabia's economy remains, despite attempts at diversification, heavily dependent on oil (although investments in petrochemicals have increased the relative importance of the downstream petroleum sector in recent years).

The combination of relatively high oil prices and exports has led to a revenue windfall for Saudi Arabia during 2004 and early 2006 [2]. Increasing oil prices for various years can be observed in Fig. 1 below.
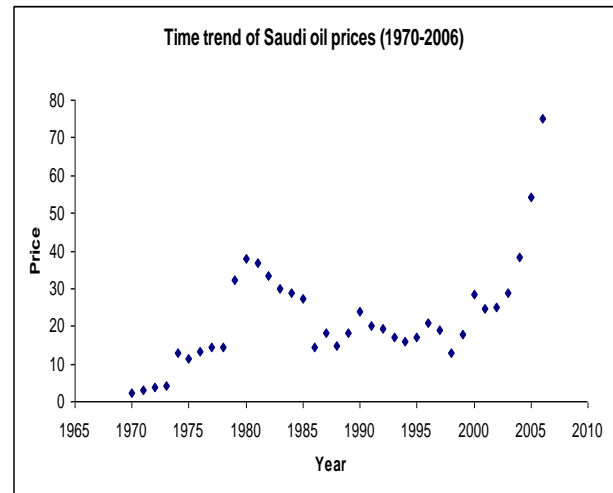
Fig. 1. Oil price trend from 1970-2010.

As the graph suggests, oil prices show an increasing trend over the 30+ year span. In addition, prices doubled four times between 1970 and 1979, reflecting a 1600 percentage increase in only 9 years. The price approximately doubled again between 1989 and 2000, which is only another 11 years. And, even though the price declined gradually between 1981 and 1988, a very sharp increase in prices can be seen from 2001 until current years, after which the price doubled again, but this time in only 5 years between the years of 2002 to 2006.

Because Saudi Arabia is the world's leading oil producer and exporter, and its location is in the politically volatile Gulf region, there is an added element of concern for its major customers, including the United States. However, because Saudi Arabia has one-fourth of the worlds proven oil reserves and some of the lowest production costs, it will still likely remain the world's largest net oil exporter for the foreseeable future [3]. This prediction is based, in part, on the fact that although Saudi Arabia maintains a crude oil production capacity of around 10.5-11.0 million barrels/day, there are claims that it is "easily capable" of producing up to 15 million barrels/day in the future and can maintain that production level for 50 years. In June 2005, the Saudi Aram Senior Vice President of Gas Operations, The Oil Drum report stated that Saudi Arabia would raise production capacity to more than 12 million barrels/day by 2009, and then possibly to 15 million barrels/day "if the market situation justifies it"[4]. The report added that by 2006, Saudi Arabia would have 90 drilling rigs in the Kingdom, more than double the number of rigs operating in 2004 [4].

Little attention has been devoted to inquiring about the effects of fluctuations on the price of crude oil on employment and output for other medium-sized economies

that are represented in the Organization for Economic Co-operation and Development (OECD). The lack of unequivocal evidence on the relationship between oil price changes and production creates an obvious deficiency that may affect applied research and any analysis of policy in finance and economic development. Crude oil prices behave much as any other commodity, with wide price swings in times of shortage or oversupply. The crude oil price cycle may extend over several years, responding to changes in demand in OPEC and non-OPEC supply [5].

II. DATA

The data source for this study is drawn from the Saudi Arabian Monetary Agency's Research and Statistics Department's Forty First Annual Report [5]. This agency has recorded the data for oil production and prices since 1970. Also, this data set includes share price indices for major industrial sectors for the same years. This report contains annual data on oil prices and production information since 1970. The variables that were chosen for this analysis are *OP (Oil prices for each year, SCOP (Saudi crude oil production), $SCOP^2$ (Square of SCOP variable), and X_2 (Dummy variable for oil prices: 1 if year less than equal to 2001; 0 otherwise).* We created variable $SCOP^2$ to explore the non linear relationship between price and production. We also created a dummy variable X_2, as we suspect a change point from year 2001. The data spans from 1971 to 2006.

III. RESEARCH METHODOLOGY

A. Exploratory Data Analysis (EDA)

The correlation between OP and SCOP was found to be 0.4489, which is moderately high. Also, correlation coefficients between SCOP and other industries were calculated, which is shown in Table I as follows.

TABLE I: SPEARMAN CORRELATION COEFFICIENTS FOR SAUDI CRUDE OIL PRODUCTION (SCOP) AGAINST SHARE PRICES INDEX BY OTHER SECTORS

Share Price Index by Sector of Banking	0.71257
Share Price Index by Sector of Industry	0.71647
Share Price Index by Sector of Cement	0.73076
Share Price Index by Sector of Services	0.51380
Share Price Index by Sector of Agriculture	0.20201

It can be inferred from the above table that there is a high correlation between share price indices of sectors like banking, industry, cement, services, and SCOP. Also, agriculture and SCOP had a correlation of 0.20201. As we can see a high correlation amongst SCOP and other industrial sectors, then it makes sense to use SCOP as a variable that will affect OP. Additionally, a scatter plot between OP and SCOP suggests the presence of no heteroskedasticity. However, it can be observed that all the observations are clumped into two distinctive groups. One is before year 2001 and one is after year 2001. As part time series modeling, as these are time series data, we need to also check for possible

autocorrelation. The Durbin-Watson (DW) test is useful for finding repeating patterns which could be buried under noise, or to identify a potentially missing frequency. Specifically, the DW test is traditionally used *to check the* presence of first-order autocorrelation. The DW results indicate that there is a first order autocorrelation - *AR (1)*. To account for this issue, an ARIMA model is constructed [6].

Further, although the normal probability plot (available on request) seems to be fairly straight, suggesting errors to be normally distributed, we performed a normality test as part of robust testing. Looking at the result from the normality test of Shapiro-Wilk, we rejected the null hypothesis that the data is normally distributed, and thus we need to account for this. One of the ways is to introduce some polynomial function in our regression; creating the $SCOP^2$ variable and using it in our regression can be justified to capture non linear trend. If normality is present, the model is well-behaved and many assumptions and analyses can be performed, based on the test of whether the data coincide with a normal distribution. In contrast, if the data conform to a normal distribution, then certain tests results should not be considered in the analysis. Some of these tests that would probably not be statistically significant are the Z tests, t-tests, F-tests and chi-square tests because they are all derived from a normal distribution [7].

Based on the EDA in the above section, we clearly have three problems: non normal data, autocorrelation, and change point. To deal with non normal data, we fit a normal regression (OLS) with quadratic parameter. For the autocorrelation problem we ran an ARMA model, and then finally a change point test [7]. The Ordinary Least Squares (OLS) model used is as follows:

$$OP_t = \beta_0 + \beta_1 SCOP + \beta_2 SCOP^2 + \beta_3 SCOP * X2 + \beta_4 SCOP^2 * X2 + \varepsilon_t$$
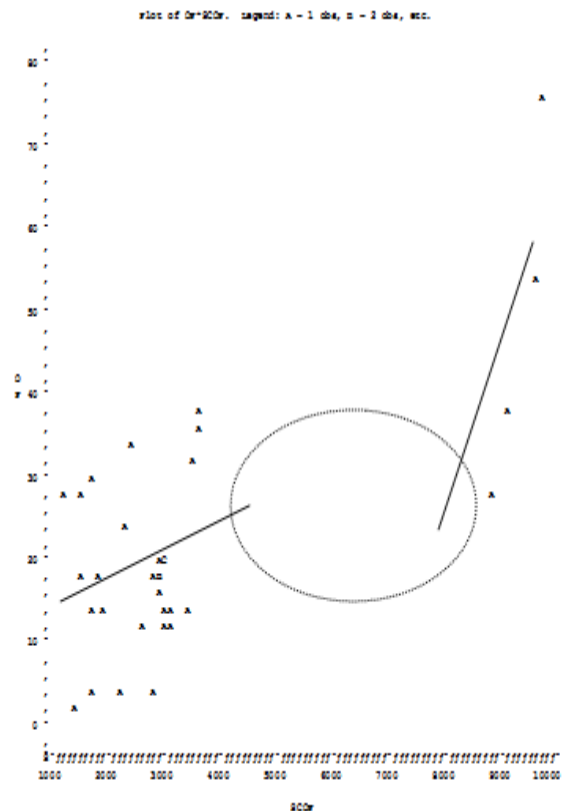
Fig. 2. Least square fit between OP and SCOP.

The reason to include $SCOP^2$ is because of EDA, as we suspect some non linear relation. Also, we interacted before year 2001 and after year 2001 with SCOP with $SCOP^2$ to see if there is an interaction effect. Therefore, if X_2 (the dummy variable) $= 0$, $OP_t = \beta_0 + \beta_1 SCOP + \beta_2 SCOP^2$. Otherwise,

$$OP_t = \beta_0 + \beta_1 SCOP + \beta_2 SCOP^2 + \beta_3 SCOP + \beta_4 SCOP^2 + \varepsilon_t$$

$$OP_t = (\beta_0 + \beta_5) + (\beta_1 + \beta_3)SCOP + (\beta_2 + \beta_4)SCOP^2 + \varepsilon_t$$

A plot of the least square fit between OP and SCOP as shown in Fig. 2 suggests there are two distinct groups. It appears that there is some kind of discontinuity (the circled area).

B. Change Point Analysis

Change-point analysis is a powerful new tool for determining whether a change has taken place. Change-point analysis is capable of detecting subtle changes missed by control charts [8]. Further, this type of analysis better characterizes the changes detected by providing confidence levels and confidence intervals, which, by definition, suggests a range of values where likely estimates are given. This would result in a collection of likely estimates that could be statistically significantly and, therefore creates an increased reliability of the estimates. Nevertheless, when analyzing historical data, especially when dealing with large data sets, change-point analysis can be preferable to control charting [8]. A change-point analysis is more powerful, better characterizes the changes, controls the overall error rate, is robust to outliers, is more flexible and is simpler to use [6]. As we suspect a change point due to discontinuity earlier, we decided to use a non parametric estimation technique rather than a parametric estimation. One of the methods that can be used is non- parametric regression (PROC LOESS in SAS) where a particular smoothening parameter can be selected and connect the gap between these two groups (circle area in Fig. 2). Thus, we need to test for a change point at year 2001; if there is a change point, then, as we not know a suitable parametric for the regression surface, we will need to implement a non parametric regression such as local regression (PROC LOESS). Another reason to use this process is that we may suspect couple of outliers [7].

IV. RESEARCH FINDINGS

By using the SAS program to form an ANOVA table with five degrees of freedom based on the five variables, we found that the overall model was significant, as shown in Table II. Then, by estimating the β parameters for the model, significant parameters are clear from Table II. This table reflects significant parameters for the X2 and interaction of X2 with SCOP and $SCOP^2$. As a result, the X2 parameter for the interactive term suggests that there is significance between the Saudi Crude Oil Production (SCOP) and the dummy variable of whether the oil was produced before 2001, which was before the sharp price increase, or whether the oil was produced more currently. Also, this is significant with

the square of SCOP that is $SCOP^2$, which means we are capturing some non linear effect, and selection of this model is justified.

TABLE II: LEAST SQUARE ESTIMATES OF MODEL

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	13.04357	8.31112	1.57	0.1267
SCOP	1	0.00230	0.00439	0.52	0.6041
$SCOP^2$	1	-6.71113E-8	4.469588E-7	-0.15	0.8816
SCOP*X2	1	1466.70890	695.11052	2.11	*0.0430
$SCOP^2$*X2	1	-0.35997	0.16197	-2.22	*0.0337
X2	1	0.00002196	0.00000937	2.34	*0.0257

*Significant at 95% Level.

Based upon these significant parameters, it is clear that the estimated Oil Price (OP_t) is significantly based upon whether we are estimating before the price increase or after. We would expect this from a logical perspective. However, that being said, more analysis must be performed to account for autocorrelation. ARMA results suggest that all the variables that were significant in OLS analysis are still significant, and we have taken care of autocorrelation. This suggests a better estimate than a model based just on OLS. The prediction model from ARIMA is shown in Fig. 3 below.

Predictions for Autocorrelation Model
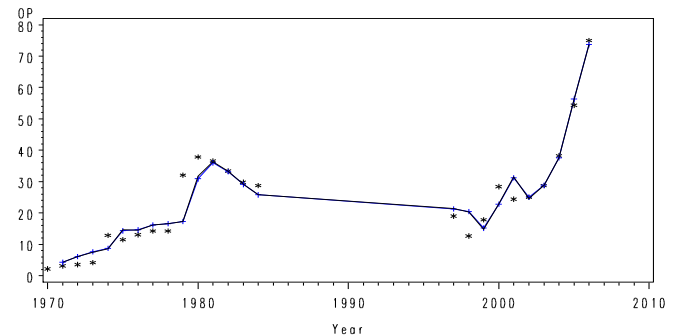
Fig. 3. Prediction model from ARIMA.

Results from the change point analysis, with a p-value is almost zero, provide some indication of the overall significance of model. The values of T_n, have a maximum value is 188.984, which corresponds to year 2001, indicating that it is reasonable to have a change point at year 2001. Studying the two cases we present in our study, stability in fluctuations in prices between 1970 to 2001 are clear, and then there is a strongly significant increase in oil prices and production between 2001-2006, for various reasons. In observing the historical events of the Saudi oil market, the war on Iraq has significantly affected the demand on Saudi oil. Specifically, Iraq was in oil market competition with Saudi Arabia. During the war on Iraq, Iraqi oil demand decreased, whereas, in contrast, the demand for Saudi oil increased, which effectively created a monopoly, or at least an oil market that reflects an oligopoly. In addition, with oil prices having doubled five times from 1970 until 2001, which includes the decline in price during the years of 1981 to 1988, the world is in the grip of an energy crunch that

promises to become even more difficult for oil consuming countries. A "perfect storm" of rapidly rising demand, political instability, environmental restrictions, signs of diminishing resources, and increasingly violent weather patterns are all contributors to pushing oil prices steadily higher. Finally, but not least, we ran PROC LOESS for a local regression estimation. To do this, we have to first select an appropriate smoothening parameter. The smoothening parameter that was selected on the basis of lowest Akaike Information Criterion (AIC) criteria was 0.4. After selecting this parameter, a local regression was fitted, as shown below in Fig. 4. Based on the 37 observations, which represent data for the last 37 years, the predicted oil prices line to move almost in a linear fashion with the oil prices historical data.
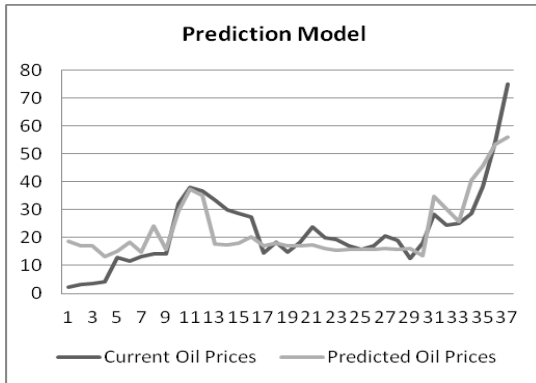
Fig. 4. Prediction model for oil prices.

V. CONCLUSIVE REMARKS

It is evident that Saudi Arabia has been consistently producing oil in a linear fashion before 2001. However, any international or Middle East dispute can change the trend, as is evident from our change point analysis. Thus, it becomes difficult to predict future oil production, as this is very much subject to the geo-political situation of other oil producing countries. It is likely that Saudi Arabia may increase their oil production during such times of conflict to meet the energy requirements of the world, and especially of industrialized countries like the U.S. This may increase oil prices, as demand for Saudi oil will increase. This project systematically analyzed a times series data and built up models to overcome statistical problems such as non linearity, autocorrelation, and change point. The end result was a prediction model for oil prices using Saudi Arabia's oil production as the primary independent variable. Future research should encompass cross checking the validity of such a model for oil prices in other parts of the world, and also possibly validating some policy implications in terms of whether the largest oil producer has some impact on the global oil prices and economy.

APPENDIX

Formulation for the Change Point Test; Data: $X_1, \ldots\ldots\ldots, X_n$ (n=37) is given below:

$$\hat{\sigma}_t^2 = \frac{1}{n}\left[\sum_{i=1}^{t}\left(X_i - \overline{X}_{1:t}\right)^2 + \sum_{i=t+1}^{n}\left(X_i - \overline{X}_{t+1:n}\right)^2\right]$$

$$\frac{L_1(t)}{L_0} = \frac{\prod_{i=1}^{t} f\left(x_i, \hat{\mu}_{1:t}, \hat{\sigma}_t\right) \cdot \prod_{i=t+1}^{n} f\left(x_i, \hat{\mu}_{t+1:n}, \hat{\sigma}_t\right)}{\prod_{i=1}^{n} f\left(x_i, \hat{\mu}_{1:n}, \hat{\sigma}_n\right)}$$

$$\log \frac{L_1(t)}{L_0} = \sum_{i=1}^{t} \log f\left(x_i, \hat{\mu}_{1:t}, \hat{\sigma}_t\right) + \sum_{i=t+1}^{n} \log f\left(x_i, \hat{\mu}_{t+1:n}, \hat{\sigma}_t\right)$$
$$- \sum_{i=1}^{n} \log f\left(x_i, \hat{\mu}_{1:n}, \hat{\sigma}_n\right)$$

$$= -t.\log\sqrt{2\pi} - \frac{t}{2}\log\hat{\sigma}_t^2 -$$

$$\frac{1}{2\hat{\sigma}_t^2}\sum_{i=1}^{t}\left(x_i - \hat{\mu}_{1:t}\right)^2 - (n-t)\log\sqrt{2\pi} - \frac{(n-t)}{2}\log\hat{\sigma}_t^2 -$$

$$\frac{1}{2\hat{\sigma}_t^2}\sum_{i=t+1}^{n}\left(x_i - \hat{\mu}_{t+1:n}\right)^2$$

$$-n\log\sqrt{2\pi} - \frac{n}{2}\log\hat{\sigma}_n^2 + \frac{1}{2\hat{\sigma}_n^2}\sum_{i=1}^{n}\left(x_i - \hat{\mu}_{1:n}\right)^2$$

$$= -\frac{n}{2}\log\frac{\hat{\sigma}_t^2}{\hat{\sigma}_n^2} - \frac{1}{2\hat{\sigma}_t^2}\left[\sum_{i=1}^{t}\left(x_i - \hat{\mu}_{1:t}\right)^2 + \sum_{i=t+1}^{n}\left(x_i - \hat{\mu}_{t+1}\right)^2\right] +$$

$$\frac{1}{2\hat{\sigma}_n^2}\sum_{i=1}^{n}\left(x_i - \hat{\mu}_{1:n}\right)^2$$

$$= 2\log\frac{L_1(t)}{L_0} = n\log\left(\frac{1}{n}\sum_{i=1}^{t}\left(X_i - \overline{X}_{1:n}\right)^2\right) -$$

$$n\log\left(\frac{1}{n}\left(\sum_{i=1}^{t}\left(X_i - \overline{X}_{1:t}\right)^2 + \sum_{i=t+1}^{n}\left(X_i - \overline{X}_{t+1:n}\right)^2\right)\right)$$

$$T_n = \max_{2\le t\le n-1} 2\log\frac{L_1(t)}{L_0}$$

$$\overline{X}_{1:t} = \frac{1}{t}\sum_{i=1}^{t} X_i$$

$$\overline{X}_{t+1:n} = \frac{1}{n-t}\sum_{i=t+1}^{t} X_i$$

$$t = \left(2\log\log nT_n\right)^{\frac{1}{2}} - 2\log\log n - \frac{1}{2}\log\log\log n + \frac{1}{2}\log\pi$$

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Corporate Social Responsibility versus Social Business

Ezgi Yildirim Saatci and Ceyda Urper

Abstract—**In this paper, it is aimed to contrast Corporate Social Responsibility with Social Business as defined by Prof. Muhammad Yunus. In accordance to that aim, primarily background of the corporate social responsibility (CSR) and social business will be described. Then, the main arguments in regard to both subjects will be emphasized. Subsequently, the main differences between CSR and social business will be identified.**

Index Terms—**Corporate social responsibility, poverty, social business, social problems.**

I. INTRODUCTION

Today, researchers and business practitioners highlight the potential of managing business-society relations more strategically. There is an intensive agreement that companies need to develop linkages between their business strategies and societal stakeholders' impact strategies. Therefore, corporate social responsibility becomes one of the most influential topics both in academic world and in real life practices. Relative to CSR, newer concept "social business" also attracts the attention of many practitioners from different disciplines especially after Nobel Prize Laureate Muhammad Yunus promoted the concept in Nobel Prize Ceremony.

According to the results of the paper, this perspective acknowledges potential trade-offs between short-term profitability and social and /or environmental goals, but still focuses on the opportunities for competitive advantage from building a social value proposition into corporate strategies. Additionally, these strategies range from simple form of donations to active engagement in Corporate Social Responsibility to Social Business. Although the ultimate goal of solving a specific social problem remains constant, the mechanisms, philosophies and strategies of all applications differ significantly.

II. CORPORATE SOCIAL RESPONSIBILITY

Corporate social responsibility (CSR) has a long tradition especially in family businesses but it really came to distinction in the last decade when large multinationals began to adopt it to demonstrate that they were serious about delivering a positive social impact on the communities in which they operated [1].

The societal contributions of companies have originated from different motivations – perceived moral or religious obligations, philanthropic considerations, or economic

self-interest as health and education services could also yield business benefits [2]. While there is substantial agreement that corporate social responsibility (CSR) is concerned with the social obligations of business, there is less certainty about the nature and scope of these obligations.

The development of corporate social responsibility has been carried out mainly in the North [3] from the 1950s onward, a considerable number of definitions and conceptualizations have been provided to the literature [4]. However, the notion of corporate social responsibility is sometimes hard to grasp for companies because of an abundance of unclear and biased CSR concepts. The confusion surrounding CSR is a potential problem for companies in terms of making socially conscious investing decisions that provide sustainability [5].

According to Weber, a researcher, the term CSR can be broadly defined as "*voluntary corporate activities to tackle social and environmental aspects.*" Correspondingly, CSR can be understood as a form of corporate self-regulation beyond mere compliance with the law [6].

Milton Friedman's argument of "*from a purely economic perspective that business' only responsibility referred to the profitable use of resources within the boundaries of the laws of those countries in which they work. Since only people could have social responsibilities, the only social responsibility of business was to increase its profits*" forms the basis of shareholder theory [7].

In contrast, stakeholder theory and researchers studying CSR from an ethical perspective counter that companies have social responsibility going beyond obedience to laws and regulations regarding safety, environmental responsibility, and financial integrity.

The term stakeholder (referring to those on whom an organization's activities have an impact) was coined by Edward Freeman [8] who promoted the idea of corporate owners beyond shareholders. While the shareholder (value) concept assumes that enterprises are obliged to pursue their investors' goals (i.e., long-term profit maximization), that entrepreneurial decision power lies with the investors (or their Managing Director), and business performance (profit or loss) correspondingly fully hits the investor, the stakeholder concept takes a more comprehensive view of companies, trying to consider their role within their socioeconomic context. Companies should do good for society.

Additionally, Parnell advocates contemporary perspective of social responsibility is linked with sustainability strategic management. Even though there is a debate continues on the notion of corporate social responsibility (CSR), most definitions do agree on the overall CSR covers 'doing good" for: workers, local society, as well as environment [9]. On individual's side, it is perceived that CSR is that engaging in

activities such as taking steps to preserve the natural environment, avoiding or minimizing social harm, enhancing quality of life for the society [10].

In practice, CSR is traditionally often designated as a charity fund set aside by companies to do some good in the local community, sponsoring sports events, donating money to cultural institutions or disadvantaged children. Apart from the most passive form of "Corporate Philanthropy", as it can be seen in Fig. 1, one level further, CSR engages in positive impact creation for the stakeholder and external relations. Next, "Social Investment" type of CSR actively considers the long-term impact of the environment where the company operates with all the social elements such as environment and labor health issues. The most active form of CSR, "Shared Value Creation", welcomes social issues as one of their integral business strategies embedded in core operations.

Till today the most passive form of CSR is regarded as the preferred and prevailed application in corporate world. But with companies increasingly operating globally, the characteristics of CSR have been changing and being practiced toward more active forms.
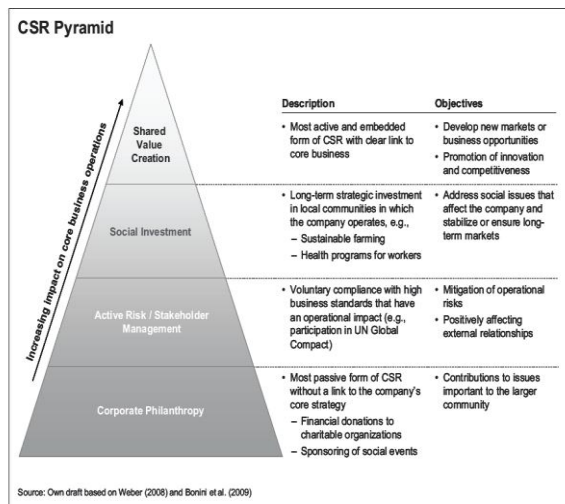
Fig. 1. Different levels of corporate social responsibility [11]

III. Social Business

Muhammad Yunus, the founder of the Grameen Bank in Bangladesh, introduced the term "social business" in the field and won the nobel prize. Since then, universities and business schools from all around the world started to analyze and foster the notion. Meanwhile, the examples set by Yunus to prove his theoretical concept turned out to be success stories.

The social business storm began with the foundation of the Grameen bank back in 1976. The Grameen bank was established to provide microcredit to poor people as an alternative to the conventional banking techniques [12]. The aim behind this idea is giving opportunity to solve their social problem by encouraging them to be an entrepreneur. Though Grameen Bank took three decades to receive full global recognition, the model has in fact strongly influenced the way of thinking in the banking, development, and non-profit sectors − promoting the idea that entrepreneurialism, rather than charity, was the way to overcome mass poverty [13].

Based on his experiences with Grameen bank and pro-poor business in Bangladesh, Muhammad Yunus started to

promote the idea of social business and defined the concept as follow:

"*As set by the examples, social business model does not strive to maximize profits but rather to serve humanity's most pressing needs. Therefore, the first motive of a social business is not profit maximization, and second, it does not pay its investors dividends. Instead, it aims at solving social problems with products and services at affordable prices, or giving the poor and marginalized people ownership in a business and therefore allows them to share in its profits. A social business pays back only its original investment and reinvests its profits in innovations or further growth that advance its social goals. Although the social business is pioneering in its aims, it is traditional in its management. Its workforce is professional and paid according to market wages. This type of business may or may not earn profit, but like any other business it must not incur losses in order to be able to sustain itself. In every sense the social business is sustainable: in its direct environmental impact, its impact down the value chain, and critically, in its financial independence. This is a key difference between social business and charity. Once its initial investment is repaid, the social business aims to be financially self-sustaining, giving it the independence and security to focus its efforts on the long-term improvement of the lives of the disadvantaged*" [14].

The major types of organizations are generally set as either profit-maximizing firms or social-benefit maximizing not-for-profit organizations. The first one seeks to provide the best for their shareholder whereas the other exists to provide best in regard to their social objectives. Social business is the social value maximizing enterprise with regular business functions such as marketing, production, human resources and finance. It is positioned in between of profit maximizing firms and not-for-profits, benefiting from their mechanisms in a new format. The organizational design, structure and functions work as profit-maximizing businesses (i.e. paying the HR as of market wage, procuring from suppliers and selling to retailers, etc) however the money earned remain in the business to allow the firm acting as a change agent for the world. Their owners never intend to make profits for themselves (which is explained with no-dividend policy), but they are entitled to get their initial investment back if they require. The profit remains within the company and surpluses generated are reinvested either to expand the business or provide benefits such as low-cost, high quality, high accessibility of services and products to the target beneficiaries [15].

He believes that self-sustainable social purpose companies could solve human challenges ranging from income poverty and pollution to inadequate healthcare and lack of quality education. Social business is not a simple concept of responding current poverty problems of the society, but it will be core issue in the markets of tomorrow since it combines the macroeconomic purpose of creating a world without poverty with a micro-level organizational implementation strategy through non-loss, non-dividend and sustainable companies [16].

Yunus' social business concept got international attention in 2006 when the Grameen Group launched its first consciously designed social business joint venture in

partnership with Group Danone, a multinational food company from France. The purpose of the joint venture called Grameen Danone Foods Ltd. is to fight malnutrition among children in rural Bangladesh by providing fortified yoghurt at an affordable price. Following to that example, the number of social businesses in Bangladesh alone reached sixties.

IV. CORPORATE SOCIAL RESPONSIBILITY VERSUS SOCIAL BUSINESS

Social business and CSR have much in common. Both want businesses to take the interests of all stakeholders and especially the non-shareholders, while taking a larger and serious role in addressing social and environmental problems. Yet, there are important and underexplored differences. The differences between two notions, based on their purposes, structures, targets, profit related policies, compliance issues and shareholders' perspective are listed below on the table;

CSR	*Social Business*
Profit sharing	Non-dividend
Profit Maximizing	Social benefit maximizing
Project based /Time Limitation	Company based/Enduring-Sustainable
Social projects within the companies' core business strategies	Social projects within the recognition of diversified social problems
Targeting general society / satisfaction of stakeholders expectations	Targeting the poorest of the poor, or the ones in most urgent needs
Temporarily solutions to social problems / non sustainable in general	Consequences oriented-permanent solution
Devoting a small portion of profit	Raising its financial funds
Compliance with the moral /religious or legal obligations to engage in a social problem solving	Compliance with the "selflessness" to engage in a social problem solving
Shareholders and entrepreneurs bias on allocating profit on social problems	Shareholders and entrepreneurs full support on allocating profit on social problems

Fig. 2. CSR *vs.* social business

Yunus also differentiates CSR initiatives of profit-maximizing companies from his concept of social business. With reference to an organization's primary purpose he argues that a profit-maximizing company could only devote a small portion of its resources to a social purpose. However, microcredit is used to establish social businesses that are self-sustaining .

According to Yunus [17]:

"*In the present-day economic system, CSR would run up against a basic problem – managers' legal obligation to their shareholders to maximize profits unless they mandate otherwise. They have to design the company to pursue profit first and then add the social features – provided that the social features don't interfere with maximizing profit*".

While social businesses try to reach poorest of the poor [18], companies aim to meet expectations of stakeholders [19]. By their very nature, traditional corporations are not equipped to deal with social problems, whereas social business (exempted from shareholders' monetary interests) can exclusively concentrate on delivering social benefits. Moreover, as the social benefits ratios are not universally set, motives of some CSR activities of firms remain questionable. Opponents of CSR, criticize some companies' misuse of the concept as a tool of public relations in the form of "window dressing.

Additionally, sustainable CSR projects mean cost for the companies and shareholders. Although CSR is valued by individuals, they would not bear that costs due to economic purposes of firms. Especially shareholders would not approve corporate spending on social problems when it is considered that a portion of profits are allocated to CSR. In this case, entrepreneurs would be responsible to pay all that costs. However, social business core purpose is to provide solution to a social problem. Therefore, shareholders or entrepreneurs would receive satisfaction to distribution of corporate profits to social problems [20].

CSR efforts usually focus very limited scope of social problems. In general CSR projects aim to reduce social and environmental negative impacts of a company. But, social business movement is anticipated to defy more specific social problems such as nutrition, child abuse, disabled. In addition; individuals who owned social business idea, are better than big companies at scanning problems that need to be overcome [21].

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Value-Aware Approach to Management of Innovative Software Products and Services

Aleksandra Karimaa

Abstract—The success of software products and services is greatly driven today by the process of innovation. Innovation encourages creation of unique first-of-the-kind products and services. The value and potential of such products can be difficult to assess and manage. The ambiguity increases the risk of taking strategically wrong decisions and investments concerning the product portfolio development. This contributes to business condition of the company, especially in case of so common today one product companies.

This work introduces the concept of value-aware approach to product and service management, reviews applicable methods and comments their usability in context of development and management of innovative software products and services.

Index Terms—Product management, software, value assessment, value monitoring.

I. Motivation

Awareness of the value potential in company's products and services is an essential asset of well managed company. Product value assessment defines product place on the market and targets customer base and possible competitors by defining price range acceptable for the customer in given business model. This in turn contributes to product vision and strategy and determines possible development directions. Ambiguous value of product is likely to have negative impact on product development increasing the risk of wrong investments as it is challenging to decide which features are worth to develop if the business value of current solution is not known [7].

Product value assessment is critical phase of many financial processes and provides a base for reliable decision making and profitability-oriented product and company management.

All consequences of above have great impact on value of not only product or product portfolio but also the value of company itself. Therefore, the ability to assess value of the product is one of the most important challenges for innovative software companies especially in case of portfolio being based on one type of product.

The value-aware management relies on value monitoring. It enables management decisions to be evaluated according to their estimation of value-adding capability. The advantage of value-aware product management is a possibility to see beyond traditional methods focused on comparing

production cost with profit forecast.

The value-based management is focused on delivering the product which satisfies the needs of strategically important markets, which means addressing uncertainties of: value of the market for the product and the market share the product can capture. These have to be compared against possible cost, and their financial measures to select suitable (business profitable) development strategy scenarios.

The ultimate goal for value-aware management is to understand relationship between product value and business itself and to create the model of the product value with helps to estimate financial value of the product when investigating different strategy scenarios.

II. Challenges and Goals of Software-Based Product Value Assessment and Monitoring

The subject of product value assessment is complex. One could also challenge if is worth effort - very often product decision are taken based on manager experience and certain assumptions, such as market trends or possible interest from customer side. However, this might be very difficult and not accurate method when it comes to innovative one-of-the-kind products and services

A. Quantitative Measures of Qualitative Value

Despite the fact, the (business) value of the product has a direct impact on company financial condition; its definition is rather informal and not precise. The quantification of value is challenging due to its qualitative nature and its quantitative measurements are often not accurate.

In general, software-based products below to the group of so called information goods. The value of such good lies in the value they present to their customers, and therefore it is focused around subjective attributes. The most common methods of accessing the product value are focused on end-user or customer valuation and do not reflect well the real market value and potential of the product. Furthermore, most of the methods used for customer experience are not sufficiently reliable- the most popular being customer survey could be easily challenged for lack of accuracy or lack of explanation of motivation behind customer choices.

B. Objective and Subjective Value

Despite the fact only some of researched value attributes could be completely quantifiable and measured, the qualitative attributes shall not be omitted and the value assessment shall research both objective and subjective values of the product. The objective values include the value of production which reflects the cost of the software production. The cost is proportional to so called production

effort (assuming the resources are available and utilized), which in turn is proportional to size of the software, processes and tools, personnel skills and other factors. The idea of this assessment to provide mathematical, statistical and possibly empirically verified method to model such effort and cost estimation before the project is executed (or even decision about its execution is taken).

The subjective values include product quality, user needs, the context of offering, and similar. Despite the fact, the character of such values is rather qualitative the assessment shall provide the means of their measuring or evaluation and deliver the value preferably (but not necessarily) in given currency. The subject of measuring such values will be explored in later chapters concerning the software and product quality as well as product fulfilling certain markets needs and user expectations.

C. Value Attributes

Different types of offering focuses on different product values. If the same product is offered as off-the-shelf product the focus of the value assessment will be different from the case when the product is part of complex system offering. In the first case the focus will be put in the aspects that can "encourage" product volumes, minimize the production costs and simplifies the maintenance and support. In the second case the value of the product will be high if the product has capacity to flexibly adjust to support given system scenario, the interfaces are open and standardized (which enables multiple vendor cooperation and healthy competition), the cost of integration are relatively low or any other aspects creating one-of-the-kind product offering.

Moreover, the product value depends also on assessment recipients. If the product value assessment is done to estimate development budget the outcome of such exercise might be different than it would be in case of preparing marketing material for the product or preparing the product pricelist by manager or product vendor. First one will be focused on quantitative values such as number of line codes, man-days, or money cost of new features; the second will concentrate on rather qualitative aspects such as competitive market demands and needs or target customer expectations; the third one will most likely benchmark the product features against features (usually it is considered as quantitative measure if the features are similar in different products) and price of similar products existing on the market (quantitative measure) taking into ac-count production cost vs. profit margins and strategic decisions to maintain or change given market share.

III. VALUE-AWARE PRODUCTION

The assessment and measurement of the production value provides the knowledge about the non-marginal value of the product. Non-marginal product value can be used by managers in process of business decision making.

The ultimate goal of value-aware production is to develop the methods of value monitoring and control that are the most suitable for specific product to be delivered. It means, addressing the formality of user requirements, the process and its acceptance by the end user, and finally the challenges of current management practices that must be addressed.

A. Agility of Management

Value-based production management is focused on human factors. The efficiency of implementation of value-aware production relies greatly on agility of software development methods and processes and their interaction with human perception of values that is Value Based Software Engineering (VBSE) practices. VBSE describes management practices which use "risk considerations to balance software discipline and flexibility and to answer other key "how much is enough?" questions [3].

Most of VBSE management practices are in fact defined well under the common term of project management for agile software development. Scrum is a management method [8], which was invented to address the problem of so called requirements churn. Requirements churn is very typical problem for management of complex software - during a project the customers are very likely to change their requirements. Scrum focuses on maximizing the team's ability to deliver quickly and respond to emerging requirements. Scrum relies on communication between all team members involved in the product creation. Scrum is a process skeleton that contains sets of practices and predefined roles. Scrum practices capture very well the dynamics and final value of the product.

B. Development Effort Management

Kanban management method introduced by David J. Anderson [1] improves the efficiency of development effort. The general idea is to display the queue of work, the individual tasks and their delivery for participant involved in development project. The visualization of tasks management has informational role and provides monitoring of value of production, which in turn enables management and control of such value.

C. Production Quality Management

Extreme Programming practices include two-person team programming (quality), code review practices and high focus on unit testing. The focus of this method is to monitor and improve software quality and address the problem of requirements churn while keeping short development cycles.

Agile Modeling method improves end-user/customer value-management by encouraging customers' participation in development modeling. Agile Modeling replaces UML –based modeling methods as not understandable for customers involved in development projects.

D. Life Cycle Management

Dynamic systems Development Method (DSDM) and similar Rapid Application Development (RAD) describe a general approach to management of software production lifecycle where the cost, quality and time are fixed and development tasks are categorized using MoSCoW prioritization model (Must, Should, Could and Won't Have). The product deliverable is adjusted to meet the given time constraint.

Feature Driven Development method is focused on management of requirements specification phase by splitting feature development requirements and software modeling into multiple phases and describing feature-oriented check-point for each of the phases.

E. Resource Management

The resource scheduling and practices of time reporting are one of the most crucial for efficient factors when it comes to production cost estimation as they provide the measurement tools to validate the estimates. The difference between estimated production cost and the final cost might come not only from wrong selection of estimation method but also from imperfect process of measuring the effort and distributing the effort within the team.

Typical approach to time or effort reporting is measurement of time spent by the team member on actual production process (design, coding and testing). McConnell [6] proposes to extend the reporting to include the non-production activities, such as holidays, sick leave days and support activities. The result of this operation will be effort measurement which better reflects availability and actual use of the production effort. This approach for improving time reporting system is continued further by Joel Spolsky [9], who claims the effort is utilized not only on production and non-production activities but it is also affected by other factors such as frequent interruption of normal tasks or non-job related activities performed (such as discussion over football game, surfing or longer coffee break) which are to some extend unavoidable. He has proposed the method called Evidence-based Scheduling where the measurement (so time reporting) is limited and is focus only on reporting job milestones. The advantage of this method is it more accurately reflecting the actual state of resources and used effort and therefore it can be trusted as a way of effort measurement.

The assumption that the value of the software as the cost of its production is proportional to the effort of production is valid if and only if the resources are available for given job and there is no idle resources waiting for job tasks. Classic scheduling methods might be sufficient for project of small size. However, multiple factors encourage applying more intelligent resource utilization tools can be found, these include: multiple multi-person development teams working on different development projects simultaneously, software modularity with modules interdependencies, uncertainty of correctness of job estimation caused by adaptation of new technologies, and tools.

Some software valuation methods also offer the mechanisms for resource utilization. PERT (Program Evaluation and Review Technique) method offer task scheduling mechanisms with parameters of effort and time to deliver. The method was created to handle the schedule planning for complex systems production [5]. The method allows scheduling paths of tasks, which paths can be dynamically routed depending on available time, resources and required quality to be achieved. One of the advantages of this method is that it can handle minimal effort reporting in the development team.

IV. Quality Assessment and Management

Let us consider the following case: two systems are under investigation. In system no.1 the investor decided to support the strategy expanding the list of software features to increase the market share. Shareholders of system no.2 business are choosing to concentrate on improving the quality of the existing product. When comparing two systems it can be noticed that in the offering or solution quoting phase system no.1 will be more attractive. However, if the implementation of the features has poor quality there is a significant risk there maintenance cost will increase (proportionally to market share), the customers will be lost or /and the owners are legally forced to deliver the correctly implemented functionality including possible fees for the project delays.

Considering the above scenario it can summarize that the general motivation towards assessing and managing software quality as a combination of two factors: cost and risk- both being crucial for business well-being.

The management of cost is an obvious motivation-profitable business is healthy business. Additionally, the software business is rather mature. It means the COTS soft-ware products are available even for high end market so far occupied by specialized and customized software. It created aggressive price-based competition in the market and therefore the cost management becomes of major importance. In general it should motivate the focusing on quality; however it can be noticed that the maturity of the market and price-based competition creates pressure on delivering new functionality. In this situation, the careful consideration of prioritization between quality and new functions should be done with special focus to be paid to the risk management.

The risk management is very important part of development of software product. Especially safety-critical software developers shall pay special attention to the risk management. The risks can also involve environmental disasters, political, military or social risks. The above concludes the risk management should receive special attention when evaluating the need and value of software and system quality.

Additionally, the implementation of quality management can lower the cost of production. It is especially the true in case of complex. The low quality of the software means the risk of software bugs and errors is higher. If the system is complex, it has many different customers using different sets of software functions and therefore the probability the bugs are discovered is high. The correction of such bugs is much more expensive (and might be even impossible) in later phase of software development. The development team in company overlooking product quality is likely to spend its work-force on correcting the old bugs instead of developing new functions.

However, the main motivation for implementing the quality management is to add the value to the product for both manufacturer and the consumer. Moreover, especially for safety-critical application the quality defines the product and becomes very important product differentiator. Quality, by having impact on efficiency of the processes, has also big impact on the value of the business itself especially if the quality driven thinking is present through the organization.

Often the quality is referred as measure of excellence similarly to value being a measure of worth. In this case the idea behind assessment of value of quality shall help to answer questions on how much will customer pay for certain level of quality. Such assessment should also display the

relation between cost and the quality. It is also worth to under-line that the quality in itself does not provide any value if the product itself does not carry any- the assessment of quality for the product which does not have economical sense would not make sense.

Traditionally, the system quality is defined by two relatively separate types: functional and structural quality. The quality of the software product intends to describe how well the product is fulfilling its purpose and functional requirements (software functional quality), and how well it follows general quality rules of software creation (structural qualities). Altogether, the quality assessment should verify the software is fulfilling general expectation towards such software, such as the level of availability, security, expected efficiency, etc. The focus of quality assessment is provide the arguments for management and control of the product to provide product with certain level of system attributes and system functionality while maintaining cost efficiency critical for business perspective. It is partially ensured by both structural and functional quality control but it required special attention in case of software product.

The functional quality is measured in the process of system testing – the functionality of the software is tested against test specifications and according to the test book. In case of software functional quality the assessment of value behind the quality will try provide the arguments to answer the question: what level of software testing is the best from product value perspective. On one hand, the more testing is done the more systems bugs are find and the software is better. On the other hand, testing increase the cost of software production and it does not guarantee the software is bug-free (just minimizes the risk of encountering the bug at the customer side). The problem of cost efficient functional quality testing is well visible on the example of testing of complex software products. The test book for such system does not exhaust all possible system capabilities. The time and resources are not unlimited, and therefore either the representative test cases are selected (which might be subjective) or only the new functionalities are tested (which might cause problems with backwards compatibility and support of existing functions). The structural quality assessment evaluates the product in terms of following general design rules (for the software of the type) including coding (including the specifics of the language), software architecture, etc.

A. Defect Count and Rework Cost

The simplest approach is typical representation of the manufacturer view for product assessment and it answers the question of defect count (number of defects detected during development and operation) and rework cost. Defect count is measured as number of defects per 1000 lines of code and it is a measure the quality of produced work.

Rework cost is the cost of fixing these defects and it includes development rework cost and operation rework cost. Development rework cost is the rework cost for work happening before a product is released. It is a measure of development efficiency. Operation rework cost is the rework cost for work happening after release- when a product is in operation. This is a measure of the delivered quality.

B. ISO/IEC 9126 Assessment Metrics

ISO/IEC standards define the industrial standards for quality assessment by defining quality models and proposing the metrics for measuring the quality.

ISO defines two types of quality models for evaluation purposes. The first describes metrics for measuring product internal and external quality, where the internal quality describes the general quality characteristics of the software design and the external quality characteristics are the ones which are visible externally when the software is used as part of a system. The second quality model defines metrics for so called "quality in use" which evaluate product quality evaluation in context of specific use.

V. VALUE IN INTELLECTUAL PROPERTY

The subject of intellectual properties and their value has been covered by multiple publications and it is in general a topic of high interest. Most important discussion is the estimation of value of intellectual properties (IP and understanding the role the value of IP plays in value of the business and the value of the company itself.

Stefano Zambron and Thomas Steward [10] claim, in case of the companies rich in intangible assets traditional financial statement (where reporting value of intangibles is voluntary) are not sufficient to reflect the real value of the company – there is a difference between market value and book value of such company. It is believed to be a case especially in case of companies creating and delivering intangible assets, such as software. Therefore, it is recommended for software manufacturers to assess and report the value of software intellectual assets. The recommendation is especially relevant for software and solution manufacturers on software market, which is very dynamic market in terms of the number of formed, acquired and closed business, but also in terms of innovative solutions and adapt technological novelty.

Another motivation is more general. The software is an asset which can is costly to produce, and very cheap to reproduce and distribute. This means there is high risk of business loss on the manufacturer side when the specifics of software intangibility and the value behind it are overlooked.

The motivation towards software IP value, its assessment and management can be explored further. Baruch Lev [2] claims the success of innovation and effective commercialization depends on smart management of intangible capital and its in-corporation in corporate processes and value creation. It means the IP in the company cannot be successfully managed without knowing the value of such IP and without assessment of such value and its attributes.

It has been known problem- very often (it depends on the country) the legal protection of IP is not well applicable to the software. Typical mechanisms existing in property laws have not been made to protect the software but to handle intangibility of modern media (see music copyrighting, etc). The laws when applied to software and soft-ware creation processes arise many controversies. In case of the software it

is not easy to identify which aspects of program shall be protected as being IP, which processes, what software modules and software deliverables (such as libraries, code, compiled programs).

In principle the value lies mainly in software behavior. However, the behavior itself cannot be protected by traditional methods of legal protection (copyright).

Also, the application of patents is controversial. The process of software creation is innovative, rather than inventive which means it is not easy to define which part of the process or the product could be a subject of patent. It also means the most of the value (in principle the patent should protect the value) is not identified and secured against duplication. Other way would be protection by trading secrets, but then it is not easy to use it as market differentiator – it could not be advertised as it would be secret.

The process of value assessment for company intellectual properties is a part of IP (Intellectual Properties) audit. As a result of this process each IP is turned into financial model according to selected International Valuation Standards, such as Financial Accounting Standards Board (FASB), Uniform Standards of Professional Appraisal Practice (USPAP), International Valuation Standards Committee (IVSC) (50 Countries) or International Financial Reporting Standards (IFRS)

In general, there are many different approaches to IP valuation where the most popular with their methods and metric will be described below.

A. Cost-Based IP Valuation

Cost- based IP valuation determines the value of IP based on the cost of purchasing, or producing asset of similar utility. It means the value behind e.g. innovation is the value of its functional substitute. The most common example of such valuation is evaluating software as an alternative against original functionality product, for example software-based movie rental services against movie rental stores. If such invention would be evaluated as a subject of IP valuation its value will be estimated based on the cost of professional video rental store business.

In general value assessment of this type can be done based on history (how new is the approach of providing movie rental software services), replacement cost (how much it cost to replace the online video rental with another way of providing movie rental functionality), replication cost (how much cost to produce the function of similar functionality). .

B. Market Supply and Demand-Based IP Valuation

The main idea behind this value assessment is that IP is a normal product which is a subject of market rules. This principle reflects the value of IP as the result of supply and demand combination. Practically, the idea boils down to the value estimation based on price estimation on which the transaction between the buyer and the seller will take place. In the case of assessing IP-value of particular software features the manager would have to investigate the customer motivations towards buying such features on the given market in the given date. Most probably the initial valuation is needed to be adjusted later based on the feedback from the buyers. This method presents a dynamic approach for software IP value assessment. .

C. Income-Based IP Valuation

These methods originate from assumption that IP value of intangibles is bringing wealth. In its most basic approach the value assessment is done based on estimation of future financial benefits (gross revenues and profits) coming from the particular IP item. These methods are applicable if the future economical benefits are possible to be identified and estimated precisely.

One of such methods is 25 Percent Rule which assess the value based on projected gross revenues. The 25 percent rule assumes the customer interested in particular IP item (usually software license or patent) would be willing to give up 25 percent of profits for the right to use a patented technology or device, keeping 75 percent. In addition to the fact the proposed proportions are not well applicable to high competition software market this method has also other disadvantages. It does not reflect changes on investment and risk so it is not well applicable to dynamic and emerging markets. Also it does not reflect different go-to-market and sales approaches (and their cost consequences) visible in today's software market. It is not well applicable in the environment of many alternative and competing technologies where proposed values and the level of commitment is too high cost for the potential user of IP. In summary, the method is considered being not reliable in case of non-matured software markets where the future value of the innovation is not known.

Another variant of Income-based method assume such valuation should be done based on income currently generated by given IP item. This, in turn requires small dynamics on the income generated by given software feature, so it is applicable only for the features existing long enough on the market. It also requires the feature to be well present on the market as well as well patented. This model is visible in software market for IP items such as coding algorithms.

In case of algorithms IP the Industry Standard Royalty Rate assess the value of the IP item based on rates in past transactions in an industry.

D. Real Options

The real options assessment method assumes the value of IP is proportional to the risk of compromising the IP (so in case of complex software - copying the feature). It assumes the value of the IP decrease in time. The method is based on complex mathematical method. It is used mainly in world of major software system players for IP expected to present significant value and high risk category and for high-risk strategic projects evaluation.

E. Competitive Advantage Valuation (CAV)

Competitive Advantage Valuation is a process of identifying business value of the IP by specifying market value of the functionality where IP are identified.

The method is performed in steps. First the IP (for example patent) is associated with product, the product is described by with set of competition parameters (such as accuracy, portability, etc) and then the IP is associated with these parameters. Second, contribution of the IP to the competitive

advantage is calculated. The calculation is done by comparing the product to average substitute product. Additionally, the IP within the product are compared against each other to calculate so called relative competitive ad-vantage. In third step the net value of the product is calculated and the fraction of this value is attributed to relevant functionality. Forth step is dividing further the value of the functionality by assigning fraction of net value to each IP based on proportions calculated in previous steps. In the last step the IP value is adjusted to reflect the IP risks.

The method is a good alternative for complex methods (such as Real Options) when manual assessment is preferred (such as in situation when IP value assessment is done for need of software development planning). It is applicable for complex development projects where multiple IP might be involved [4].

VI. User Value

The product value assessment is not reliable is it does not take into account the value perception of the end-user. The users' expectations towards the software product and the level of satisfaction with current solution are present in process of software production in form of customer requirements.

The customer aspect of product value is the most important – the value should have direct impact on price of the product and the customer(s) is there to decide if the valuation was correct. The customer also represent (to a lesser or greater extent) the requirement of given market sector and therefore should (indirectly) define the product strategically addressed for this sector. The interests of customers and the end users might vary depending on the product environment. Networking of different systems (which is natural trend in modern technologies) emphasizes the values of end user, such as ergonomics. The profitability aspects of product development put stress rather on customer.

The structure of this work might suggest the user value is yet another aspect of product value to analyze. However, it is indirectly or directly present in every valuation method. In general, product value assessment methods are reflecting user-values if they provide the means of measuring the functionalities and therefore measuring user's view. The simplest approach to measure user value in product delivery is to assess the amount of passes functional test cases. Such assessment is typically part of product deliveries and presented as a FAT (Functional/Factory Acceptance Test).

In order to efficiently design and deliver the product fulfilling customer expectations the cooperation with the user should be present already in very early phases of product creation. When traditional software creation methods might be suitable for some type of development, typically they don't give much attention to the user outside the phase of précising and freezing the requirements. In this work the author argues the advantages of agile software creation methods. These methods bring the attributes of user value into the product in every phase of product lifecycle. They are also great help in customizing management practices to reflect the care of user-values.

VII. Conclusion

The main motivation for improving product creation and management model is to improve the product or products profitability. This work gives an overview of product value assessment methods applicable in management of software products. Author believes the work provides a good base for indentifying present market value of software product and assessing the value of such products in future..

Future considerations for the topic of software value assessment should reflect the economic changes brought by modern technologies where significant value of the product originates not from its scarcity but its popularity. The best example can be presented by valuation of Facebook Company where the utility factor of the product is minimal, the product does not necessarily satisfy critical user's needs but the company value originates from information sharing and customer database.

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Discussion on the Shanghai Water Resources Accounting

Chen Kun and Liu Li Xia

Abstract—**This paper adopts physical accounting and value accounting method to evaluate the value of water resources in Shanghai. And thinks, for a long time, Shanghai economic growth pay a larger environment cost with water pollution losses accounted for 0.1 to 0.5% or so of GDP. In order to accurately measure the economic growth level of Shanghai and realize Shanghai economic sustainable development, it necessary to accurately evaluate Shanghai water resources value and formulate relevant policies to reduce the environmental pollution.**

Index Terms—**Water resources, the physical accounting, the value accounting, gross domestic product, sustainable development.**

I. STUDY REVIEW

Since the 1980s, our country has begun the study of water pollution losses accounting. Earlier scholars in this kind of study have Guo Xiaomin, Zhang Huiqinetc. They regarded environment losses as study object during the 6th five-year plan, and calculated out the water pollution losses of China was 6.6 billion yuan [1], with market value method, opportunity cost method, engineering cost method and human resource cost method.

After this, scholars like Xu Gao ling and Zheng Yisheng have studied the late 90s environment pollution losses of China with the two-step method, which is first confirm the physical losses result from pollution, and then confirm the dose-response relationship between pollution and destructed things, final transform physical losses into the amount of money [2].

Xia Guang accounted out the water pollution losses of China in 1992 were 35.6 billion yuan [3]. Zheng Yisheng etc conducted correction research of environment pollution loss of China in 1993 [4].

Since the late 1960s, Western countries have begun the environment pollution losses accounting. Their research areas mainly focused on two aspects. One is to assess the value of environment pollution losses from the perspective of economics with market value method, replacement cost method and willingness to pay method. The other is faces on the loss assessment of human and biological by different pollutants. Among those the influential are American scholar VaclvaSmli, who accounted out the water pollution losses of China were 11.85 billion in his special subject research report about "China environment problem: economic loss estimation" (account year: 1990), and the World Bank, which accounted out the water pollution losses of China were 32 billion in his report about "facing the 21st century China environment" (account year: 1997).

So far, at home and abroad, the estimation of water pollution losses of Chine is mainly concentrates on an area or a basin, rarely involved in the nationwide.

The measurement results of these researches appeared large difference and influenced its credibility due to the difference of measurement methods. At the same time, the lack of basic data also influenced the accuracy of measurement results. Here, we shall account the Shanghai water resources value with recovery cost method which is high precision in traditional market approach.

II. THE CAUSE ANALYSIS OF THE SHANGHAI WATER RESOURCES ACCOUNTING

China is one of the 13 water shortage country in the world, with per capita amount of water resources reaches 2730 m^3– one-quarter of the world average and 1870 m^3 per mu, only three-quarters of the world average [5].

Shanghai is a high quality water shortage area, which result from many reasons mainly including unreasonable water pricing and improper water resources management. Water price not fully reflects the management cost of water pollution in price system of water resources. Then, water resources users use water at a lower price, thus causing the waste of water resources and seriously leading to water pollution, which seriously affect the sustainable use of the water resources and the sustainable economic and social development in Shanghai.

Meanwhile, the price of tap water and water conservancy engineering water supply also not consider the value of water resources itself which go against the effective use and conservation of water resources.

From the macro perspective, the lack of comprehensive assessment indicators of water resources in the current system of National Accounts of Shanghai results that the local administrative institutions do not pay enough attention to rational development and utilization of water resources, thus causing declining water quality and having a greater negative impact on the environment as well as on the sustainable economic growth of Shanghai.

By water resources value accounting, we can grasp in a specific way the status of water resources and the relationship between water resources and economic development in Shanghai. It helps to provide decision basis in pushing the sustainable use of water resources and the sustainable development of economic and social in Shanghai.

In microcosm, it prompts water users to use water resources more reasonable. And in macrocosm, it helps to establish a reimbursable usage system on water resources and to lay the foundation of establishing the charging

standard of water resources and economic compensation system of water resources in Shanghai. It also helps to make clear the property of water resource. All of mentioned above shall promote the administration to management the water resources more effectively.

III. THE METHOD CHOICE OF THE SHANGHAI WATER RESOURCES ACCOUNTING

It's necessary to establish the basic principles of water resources accounting in order to account effectively. The first principle is useful. Water resources accounting is the basis of guaranteeing the compensated and sustainable use of water resources. Second is scarce. Shanghai will be water shortage sooner or later with the continued deterioration of water pollution, so to establish the idea of water scarcity would help the sustainable use of water resources in Shanghai. Third is difference. Establish price of different water quality. The last is policy. To establish water price reasonably should consider the water use and ability of different water body, so as to work out relatively scientific water use policy.

Meanwhile, establish water resources accounting content. Generally speaking, water resources (surface water and underground water) accounting includes physical accounting which uses physical unit measure water resources stock and flow, and value accounting which measures water resources wealth value in terms of currency and bring it into the national economic accounting account. This paper mainly studies the physical accounting and value accounting of surface water.

It's difficult and complicated to calculate water resources due to the liquidity and versatility features. Therefore, there are 3 steps in technology path choice. First is to do a physical accounting of water resources for both quality and volume. Second is to determine the price of different water resources with recovery cost method based on physical accounting. Third is to calculate the loss of water resources value and its impact on GDP.

IV. THE PHYSICAL ACCOUNTING OF THE SHANGHAI WATER RESOURCES

Certainly in terms of total volume, Shanghai water resources include surface water, underground water and foreign transit water. For the sake of convenience, this paper only considers surface water. According to Shanghai water resources bulletin, the surface runoff water of Shanghai is 2.201 billion m^3 at 50% guarantee rate.

From years of statistical data, Shanghai total water resources remained roughly constant. So the focus is on the change of water quality. For the sake of convenience, this paper adopts the "Surface Water Quality Standard" (GN3838-88) enacted by State Environmental Protection Administration and divides the surface water into 5 grades. Among them I to III grade apply to drinking water sources, IV and V grade mainly apply to industrial and agricultural water, while super V grade losses using function.

According to the collected water volume and quality information, from 1998 to 2010, the changes of water quality and volume in Shanghai are shown in Table II.

TABLE I: THE STATUS OF SHANGHAI WATER RESOURCES QUANTITY

Items		years on average	wet year (p＝20%)	normal year(p=50%）	dry year (p=75%)	Things dry years(p=95%)
Local water resources quantity	surface runoff	24.15	33.6	22.01	14.97	7.80
	allowable groundwater withdrawal	1.42	1.42	1.42	1.42	1.42
	total	25.57	-	-	-	-
Transit water quantity	Taihulake basin water	106.60	132.10	104.90	84.80	58.70
	Yangtze River transit water	9335.00	10570.00	9188.00	8232.00	7078.00
	total	9441.60	-	-	-	-

Unit: $10^8 m^3$ Data Source: Shanghai water resources bulletin 2005

TABLE II: THE MAIN RIVER WATER QUALITY IN SHANGHAI

years	water quality categories(%)						surface runoff(one hundred billonm³)(normal year: p=50%)					
	II	III	IV	V	Super V	total	II	III	IV	V	Super V	total
1998		5.9	37.9	38.5	17.7	100		1.30	8.34	8.47	3.90	22.01
1999		10.1	30.9	31.2	27.8	100		2.22	6.80	6.87	6.12	22.01
2000		6.8	41.4	23.6	28.2	100		1.50	9.11	5.19	6.21	22.01
2001		7.8	38.5	38.0	15.7	100		1.72	8.47	8.36	3.46	22.01
2003	3.8	9.3	28.7	18.0	40.2	100	0.84	2.05	6.32	3.96	8.85	22.01
2004	10.5	2.6	17.2	16.3	53.4	100	2.31	0.57	3.79	3.59	11.75	22.01
2005		14.0	17.7	22.2	46.1	100		3.08	3.90	4.87	10.15	22.01
2006		12.5	17.5	14.3	55.7	100		3.455	4.837	3.95252	15.39548	27.64
2007		12.5	17.9	12.9	56.7	100		3.495	5.00484	3.60684	15.85332	27.96
2008		26.0	14.8	22.2	37.0	100		7.7974	4.43852	6.65778	11.0963	29.99
2009		28.7	27.2	8.5	35.6	100		9.9302	9.4112	2.941	12.3176	34.60
2010		23.5	28.6	13.7	34.2	100		7.25445	8.82882	4.22919	10.55754	30.87

Data source: according to Shanghai water resources bulletin (1998-2010) calculated out

The primary treatment cost of urban wastewater is 0.5 Yuan per cubic meter, and secondarytreatment cost is 0.77 Yuan per cubic meter, according to the World Bank to China's research.

As Table II shows, in general, Shanghai water resources quality tends to get better from 1998 to 2010, the water yield of III grade has increased and IV grade after a period time (from 2004 to 2008) of decline begins to increase, the V grade still has no increase trend, but the bad V grade accounts for a larger proportion and remains high yet. In total, III and IV grade have surpassed 50%, while V and super V grade have dropped to below 50%. In general, water quality has improved in Shanghai.

V.   SHANGHAI WATER RESOURCES VALUE ACCOUNTING

Water resources value is closely related to water quality which mainly determined it. Therefore, the total value of water resources can be evaluated accurately by evaluating the value of different water quality. Water resources value accounting usually have three methods, they are traditional market method, substitute market method and contingent value approach. In this paper, we shall account the Shanghai water resources value with recovery cost method which is high precision in traditional market approach. The approach is to evaluate the value of different water quality, then add them up, that is the value of total water resources.

The value of super V grade is zero because it has no using function. If super V grade can be used to agricultural irrigation after primary treatment, this would be the equivalent of restoring V grade function, so the primary treatment cost is the value of V grade water resources. If

super V grade can be used to industrial after secondarytreatment, this would be the equivalent of restoring IV grade function, so the secondary treatment cost is the value of IV grade water resources. And so on, the value of different types of water resources can be evaluated with different recovery cost.

According to the World Bank to China's research, primary treatment cost of urban wastewater is 0.5 Yuan per cubic meter and secondarytreatment cost is 0.77 Yuan.

In Shanghai, the average cost of producing tap water, which taken from III grade water, is 1.072 Yuan per cubic meter in 2005 [6].

On these grounds, assuming the super V grade water price is zero, the price of V grade water resources is 0.50 Yuan per cubic meter in Shanghai when it reached the requirement of agricultural irrigation after primary treatment, and the price of IV grade industrial water resources is 0.77 Yuan per cubic meter when it reached the industrial water requirement after secondary treatment. The price of III grade water resources is 1.03 Yuan per cubic meter same to life with surface water, so calculate the price of III grade domestic water is 1.03 Yuan per cubic meter. The water operation cost is 1.072 Yuan per cubic meter when it reached the requirement of drinking water after a certain processes, so the price of II grade drinking water is 2.102 Yuan per cubic meter. The water resources price determined here is the value of itself, equals to natural water resources.

After establishing the value of different water in Shanghai, add them up, that is the value of total water resources. As it is show in Table III.

TABLE III: SHANGHAI TOTAL WATER RESOURCE VALUE

years	II grade		III grade		IV grade		V grade		Total value
	Water quantity (one hundred million cubic meters)	value quantity (one hundred million cubic meters yuan)	Water quantity (one hundred million cubic meters)	value quantity (one hundred million cubic meters yuan)	Water quantity (one hundred million cubic meters)	value quantity (one hundred million cubic meters yuan)	Water quantity (one hundred million cubic meters)	value quantity (one hundred million cubic meters yuan)	value quantity (one hundred million cubic meters yuan)
1998			1.30	1.339	8.34	6.4218	8.47	4.235	11.9958
1999			2.22	2.2866	6.80	5.236	6.87	3.435	10.9576
2000			1.50	1.545	9.11	7.0147	5.19	2.595	11.1547
2001			1.72	1.7716	8.47	6.5219	8.36	4.18	12.4735
2003	0.84	1.76568	2.05	2.1115	6.32	4.8664	3.96	1.98	10.72358
2004	2.31	4.85562	0.57	0.5871	3.79	2.9183	3.59	1.795	10.15602
2005			3.08	3.1724	3.90	3.003	4.87	2.435	8.6104
2006			3.455	3.55865	4.837	3.72449	3.95252	1.97626	9.2594
2007			3.495	3.59985	5.00484	3.853727	3.60684	1.80342	9.256997
2008			7.7974	8.031322	4.43852	3.41766	6.65778	3.32889	14.77787
2009			9.9302	10.22811	9.4112	7.246624	2.941	1.4705	18.94523
2010			7.25445	7.472084	8.82882	6.798191	4.22919	2.114595	16.38487

Unit:Cubic meters/Yuan

As Table III shows, since 1998, the value of water resources in Shanghai had a process of change that present a clear inverted U shape. From 1998 was 1.2 billion Yuan fell

to its lowest level 861 million Yuan in 2005, and then picked up to 1.64 billion Yuan in 2010. These accorded with the Environment Kuznets Curve, and shown that water environment of Shanghai is improving gradually after

deterioration.

VI. Water Resources Value Losses and the Adjustment of GDP

Water environment improved or not is judged by how much III grade water has. For the sake of analysis, use the magnitudeof value when all water quality in Shanghai reached III grade in 1998 as standard value, and to judge the changes of water resources value in Shanghai after 1998. Then, bring them into the GDP accounting system and adjust the GDP. Corrected results see Table IV.

TABLE IV: The Proportion of the Loss of Shanghai Water Resources Value in GDP

Years	P	Reference value	ΔP	GDP	EDP	ΔP/GDP(%)
1998	11.9958	32.8062	20.8104	3801.09	3780.28	0.547485
1999	10.9576	33.446	22.4884	4188.73	4166.242	0.536879
2000	11.1547	33.0083	21.8536	4771.17	4749.316	0.458034
2001	12.4735	31.7301	19.2566	5210.12	5190.863	0.3696
2003	10.72358	33.9926	23.26902	6694.23	6670.961	0.347598
2004	10.15602	37.3907	27.23468	8072.83	8045.595	0.337362
2005	8.6104	36.128	27.5176	9247.66	9220.142	0.297563
2006	9.2594	47.50625	38.24685	10572.24	10533.99	0.361767
2007	9.256997	48.10993	38.85294	12494.01	12455.16	0.310973
2008	14.77787	42.07717	27.2993	14069.87	14042.57	0.194027
2009	18.94523	43.31782	24.37259	15046.45	15022.08	0.161982
2010	16.38487	40.98857	24.6037	17165.98	17141.38	0.143328

Annotate: P is water resource value stock; ΔP is water resource Value loss; EDP is the value of GDP minus the ΔP.

As Table IV shows, water resources value losses are great in Shanghai due to water pollution. From 1998 to 2010 the average water resources value losses is 0.34% of GDP.

VII. Conclusions and Policy Recommendations

There are some deviations with the traditional methods when measured economic growth with GDP after the surface water resources value accounting in Shanghai. It does not take the environmental losses into account and overestimate the actual level of economic growth. From 1998 to 2010，the losses value of surface water resources in Shanghai was 0.34% to the GDP. At the same time, we could see that from the 1990s the value of water resources total losses as a proportion of GDP has been declining, dropped from highest year 0.55% in 1998 to 0.14% in 2010.The large decline states that the water quality of Shanghai environment has improved significantly.

Relatively speaking, due to the proportion of water pollution is still large; the quality of water has a direct influence on the economic and social sustainable development in Shanghai. So, it is necessary to formulate some relevant policies to further improve the quality of water environment.

At first, we should pay attention to the environmental accounting. Environmental accounting is an important way and content to realize the green GDP and the certain choice to promote economic and social sustainable development. It requires the transformation of economic growth mode, adjusting the industrial structure, and finding the way to balance the development of economic growth and environmental improvement.

The Second is to apply market mechanisms, and through the price means to improve water resource allocation. The serious water pollution trend in shanghai has something to do with the water price. Due to the cost of water pollution is not fully borne by the users of water resources, on the one hand caused excessive use of water resources on the other hand increased the pressure for environmental governance. Therefore, we could regulate the use of water resources through the price leverage.

The third is to strengthen the water resources management system construction. Because of the fluidity of water resources that water pollution has obvious characteristics of the cross-border. Addressing trans-boundary water pollution in the administrative division system efficiency is low. Therefore, from the system construction point of view, it is necessary to strengthen management cooperation in cross-boundary water pollution and establish collaborative model of cross-boundary water pollution prevention, mechanisms and systems. One of the most important is legal system construction. In the long run, it is very necessary in Taihulake basin water resources management uniform legislation. In the short run, we could establish a coordinating body of water laws and regulations to coordinate the Yangtze River Delta region water management laws and regulations. Coordination mechanism can be non-permanent institutions. Members can be the government officials, scholars, businessmen and other personnel of the Yangtze River Delta region, so it has broad representation. Its function is to promote the coordination of the central and the Yangtze River Delta region, promote the improvement of the water environment of the Yangtze River Delta region, enhance the governance capacity of the water environment of the Yangtze River Delta region, and improve the water environment management system of the Yangtze River Delta region.

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Will Indonesia Still Sustain? Assessment on Integrated Sustainable Development of Strategic Target and Implementation in Indonesia

Dwi Kartini, Yudi Azis, and Ismail Solihin

Abstract—Although the concept of sustainable development has become one of the mainstream on development in Indonesia and stated in the National Medium Term Development Plan (RPJMN) in 2010-2014, but the study shows that of the 35 Ministry of the study, there are only 4 Ministries that had explicitly incorporate dimensions of sustainable development which consists of the economic, social and environmental issues into the strategic objectives and Key Performance Indicators (KPI). Though Indonesia Indonesia has developed a National Sustainable Development Strategy (Agenda 21) which contains recommendations to the sector in the application of the principles of sustainable development by 2020. Formulation of National Sustainable Development Strategy as well as the mainstreaming of sustainable development is part of the government's strategic planning. The phenomenon that is often found when integrating strategic planning into the implementation of sustainable development strategy in Indonesia is the strategy gap, which is the disconnect between long-term goals with short-term budget planning which created a short-term budget to support the implementation of programs and activities.To address these gaps necessary strategy of strategic management models to integrate strategic planning with the implementation of sustainable development strategy in Indonesia.

The selected model is the model that has a balanced scorecard performance indicators (financial perspective and customer perspective) and the determinant indicators (internal business process perspective and learning and growth perspective) and connect the two types of indicators through a causal relationship (cause and effect relationship). Bureaucratic reforms in Indonesia has encouraged ministries and government institutions in Indonesia to have Key Performance Indicators that the majority of the models are prepared using the Balanced Scorecard. This phenomenon provides an opportunity for the integration of sustainable development strategy to mainstream the implementation of sustainable development which translates into a variety of programs and activities undertaken by the respective ministries and government.

Index Terms—Sustainable development, national sustainable development strategy, the national medium term development plan(RPJMN), gap strategy, balanced scorecard, key performance indicators (KPI).

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I. Introduction

Although Indonesia has developed a National Sustainable Development Strategy / NSDS (Agenda 21) in 1997 containing recommendations to the sector in the application of the principles of sustainable development (sustainable development) by 2020, but the contents of the strategic targets from various Ministries and Government Institutions of Indonesia as stated in the Strategic Plan (Planning) Ministry and the Government Institution does not reflect the adoption of the concept of sustainable development by the Ministries and Government Institutions in Indonesia. This is evident from the large number of the Ministry of the sample in this study that does not include the economic, social and environmental issues in their strategic goals. In fact, sustainable development has become a mainstream in the National Medium Term Development Plan (RPJMN) where the targets to be achieved through the mainstreaming of sustainable development are (1) the integral adoption consideration of economic, social, environmental into planning and implementation of development in various sectors and regions, (2) the maintenance of environmental quality as indicated by the improvement in environmental quality index in the next 5 years, (3) agreed, arranged and used environmental quality index as a tool to measure sustainable development. (Appendix Indonesia Presidential Regulation No. 5 Year 2010 on National Medium-Term Development Plan 2010-2014).

Yet adoption of dimensions of sustainable development into the strategic plan of the Ministry and institutions in Indonesia has the potential to cause problems of sustainable development, because the strategic objectives established by the Ministry and the Government Institutions as the regulator even operators within certain limits for the various sectors do not look at the economic, social and environmental integrally. Even based on the application of sustainable development practices carried out by some member states of the Organization for Economic Cooperation and Development (OECD), sustainable development should be considered intergenerational policy [1] so the absence of adoption of sustainable development's dimensions into the strategic plan of the ministry feared would result in various strategic objectives that do not include consideration of interests between generations as well as sovereign debt problems of energy reserves, natural resources and minerals. Opportunities for the adoption of the concept of sustainable development into strategic targets for various Ministries and Government Institutions in Indonesia arise when the government launched a bureaucratic reform activities aimed

at improving the performance of government agencies accountable by requiring all ministries and institutions have Key Performance Indicators/KPI (Key Performance Indicator). Key Performance Indicators of the ministries and institutions should reflect the outcome indicators [2] as well as indicators of impact of the various programs and activities undertaken by the Ministry and the Institute. As a logical consequence of the mainstreaming of sustainable development in RPJMN, then it is proper if the dimensions of sustainable development should become performance indicators and impact indicators in the performance management system that government agencies are now adopting the balanced scorecard strategic management model.

II. RESEARCH OBJECTIVE

This study aims to produce a strategic management model that can integrate the dimensions of sustainable development which consists of the economic, social and environment into the Strategic Plan of the Ministry and the Goverment Institutions so that the dimensions of sustainable development can be articulated in policies, programs and activities of the Ministry and Institutions.

III. LITERATURE REVIEW

The Brundtland Commission formulates sustainable development as "development that meets the needs of the present without compromising the abilitiy of future generations to meet their own needs" [3]. The concept of sustainable development has three dimensions, namely economic, social and environmental, as stated in the United Nations 2005 World Summit Outcome Document. Every UN member state that has ratified the results of the Earth Summit held in 1992, were asked to deliver the National Sustainable Development Strategy (Agenda 21) that contains a variety of strategic initiatives undertaken by each country to ensure the achievement of sustainable development. Problems arise when the indicators for each of the strategic initiatives that have delivered were differs so it will take the harmonization of the application of diversity indicators that will produce the same measurement for each country. To solve this problem, the United Nations has established a Commission on Sustainable Development (CSD) [4] where the commission has set a variety of indicators of sustainable development that can be used as guidelines by countries in implementing sustainable development indicators are divided into 15 themes, namely: (1) equity (2) health (3) education (4) housing (5) security (6) population (7) atmosphere (8) Land (9) Oceans, seas and coasts (10) Fresh water (11) biodiversity (12) economic structure (13) consumption and production patterns (14) Institutional framework (15) institutional capacity. There are several scenarios term sustainable development, which is sustainable development for a generation (25 years), two generations (50 years) to sustainable development that leads to the Millennium Development Goals [5]. NSDS is a sustainable development strategy that has a period of 25 years.

The phenomenon that is often found when integrating strategic planning into the implementation of the strategy of sustainable development is the emergence of strategy gap which is the disconnect between long-term goals with short-term budget planning [6]. Nan Chai [7] mentions the existence of three-gap strategy that typically arises when integrating strategic planning into the implementation of the government's development strategy. The third strategy gap is as follows:

Gap Strategy 1: Current system performance evaluation focuses on measuring the achievement of preset objectives and targets, but pays less attention to the strategic control of the translation and formulation of the strategy "Sustainable Development" to administrative objectives and plans.

Gap Strategy 2: Current performance evaluation system focuses on the financial and / or environmental performance, but pays less attention to integrated "Sustainable Development" objectives that Encompass social, economic and environmental in a balanced manner.

Gap Strategy 3: Current performance evaluation system focuses on the managerial accountability and performance improvement, but pays less attention to citizen satisfaction and participatory approaches.

The emergence of three types of strategy gap is partly due to the absence of causality (cause and effect relationship) a clear distinction between goals made with strategies and resources to support it. Based on this phenomenon Epstein and Wisner [8] used the concept of the balanced scorecard developed by Kaplan and Norton [9] as a strategic management model to describe the achievement of sustainable development as a result of the cause in the form of a variety of strategies, programs, activities and resource allocations organization. In this model, Kaplan and Norton [10] split the organization into two performance measures, namely the performance of organizations that fall into the category of objectives (primary objective) called with variable results (outcomes and impact) and the performance of organizations that belong to the category of secondary objectives is called the determinant variable (containing input and output). Which belong to the outcome variable is the financial perspective and the customer perspective. While belonging to the determinant variables are internal business process perspective and learning and growth perspective.

Kaplan and Norton BSC have revised their previous apartment, and in the year that the term strategy map (strategy map) [10]. Strategy map is an instrument panel that maps strategic goals (SS) organization in a causal framework that describes the entire journey of organizational strategy. Strategic Goal (SS) is the relevant strategies are mapped for each perspective [11]. Strategic Objectives can be a statement about to be achieved (SS is output / outcome), or what you want done (SS is a process) or what it should be owned by the organization (SS is input), [12]. Having developed the strategy map, then for each SS to be set Key Performance Indicators / KPI (Key Performance Indicators / KPIs) of each of these SS. Key Performance Indicators defined as a measure of success in achieving the strategic objectives of a Ministry or Agency [13].

Fig. 1 shows the relationship between the four perspectives of the input, output, outcome and impact in a strategy map

that puts the dimensions of sustainable development as an outcome variable or impact.
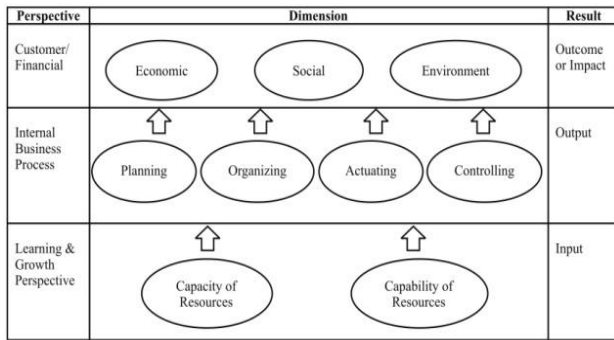
Fig. 1. Sustainable development strategy map for goverment agencies

IV. RESEARCH FINDINGS AND DISCUSSION

The samples in this study are all ministres in Indonesia totaling 35 Ministry. The reason for the selection the Ministry as the sample because the Ministry is implementing organizational strategies, policies and programs at the national level. Based on the results of the study, 35 Ministry of the current sample set Key Performance Indicators have been derived from the Strategic Goals contained in the Strategic Plan of the Ministry. The Ministry were reported their achivement of KPI in the Performance Accountability Report of Government Agency (LAKIP) each year which shows the form of government accountability to stakeholders.

Although the 35 Ministry in this study has established IKU, but there are only 4 Ministry alone that have adopted the dimensions of sustainable development in their KPI. This shows still incomplete process of ministry's strategic planning in supporting sustainable development into the mainstream in RPJMN. Besides the absence of KPI that contains the dimensions of sustainable development will lead to sustainable development dimensions are not articulated in the various programs and activities of the Ministry. This phenomenon indicates that all three hypothesized gap strategy as proposed by Chai [1] also occurred in Indonesia. Appendix A shows the relationship between the Program and Activities RPJMN Ministry.

In order to articulate strategic targets containing the dimensions of sustainable development into the programs and activities of the Ministry, the strategic targets should be placed as an outcome variable (either outcome or impact) and carried cascading into the upper echelons that are in a ministry. Appendix B shows the cascading process of strategic objectives from the Ministry's Strategic Objectives into the Echelon I and Echelon II Strategic Objective respectively. In accordance with Candy PAN No. 9 of 2007, performance indicators for Echelon I should be in form of outcomes while performance indicators for Echelon II should be in form of output and is referred to as Activities Performance Indicators / IKK.

V. CONCLUSION

It is still possible to integrate the dimensions of sustainable development as the development mainstream in the RJPMN

Republic of Indonesia to the Strategic Plan of the Ministry, by using balanced scorecard as a model of strategic management. This can be done by put the dimensions of sustainable development as the outcome variable at the ministerial level to be supported by internal business process and learning and growth at Echelon I and Echelon II. Where Internal Business Process and Learning and Growth of Echelon I and II showed a variety of programs and activities that will produce outcomes at the ministerial level.

APPENDIX

Appendix A The relationship between National Medium Term Development Plan (RPJMN) and Ministry Strategic Planning
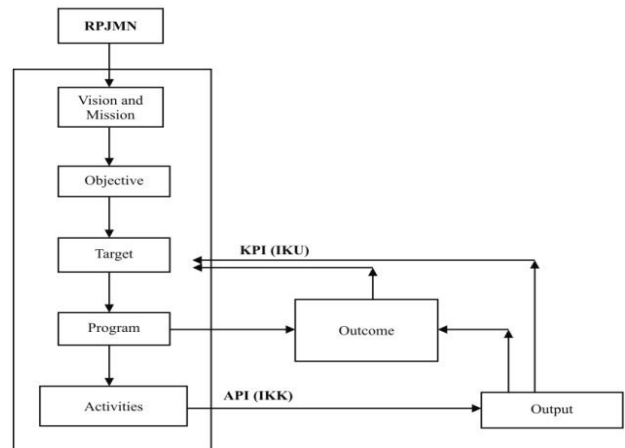
Note:
1. KPI (Key Performance Indicators)/IKU
2. API (Activities Performance Indicators)/IKK

Appendix B Cascading Ministry's Strategic Objectives into Echelon I and Echelon II Strategic Objectives
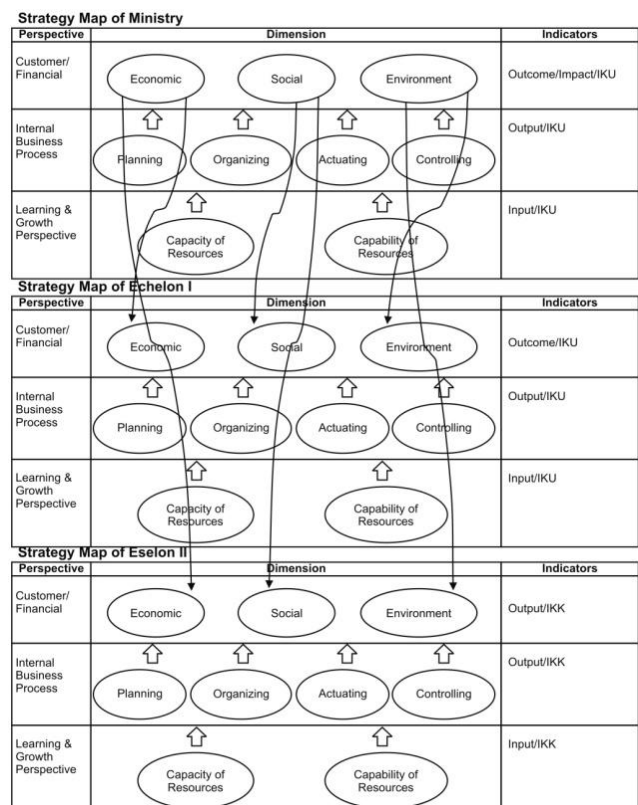
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Are Croatian Banks Ready for Pass on AIRB Approach?

V. Vašiček, S. Broz Tominac, and B. Žmuk

Abstract—**This paper presents banks' fulfillment of preconditions for application on advanced internal rating based approach (AIRB). We investigated the level of qualitative and quantitative preconditions matched by Croatian banks in order to reveal readiness of Croatian banks for AIRB application. Results of the test on assumed value of proportion show that the majority of Croatian banks don't fulfill qualitative and quantitative preconditions for AIRB. Furthermore, according to the document of Public disclosures on solvency requirements that banks are obliged to disclose on their web sites, all Croatian banks are applying standardized approach for credit risk estimation. The main goal of credit risk management is to maximize a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. That is why banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits. Since exposure to credit risk continues to be the leading source of problems in all banks, the effective credit risk management is a crucial component of a comprehensive approach to risk management and essential for long-term success of all credit institutions. Nevertheless, more sophisticated methods of credit risk estimation are needed in order to adjust the level of regulatory capital with the risk profile of banks which leads to strengthening of financial system on local as well as on global level. Our paper thus provides analysis of preconditions fulfilled by Croatian banks.**

Index Terms—**AIRB, credit risk, qualitative preconditions, quantitative preconditions.**

I. INTRODUCTION

According to available information from the document of Public disclosures on solvency requirements that banks are obliged to disclose on their web sites, all Croatian banks are applying standardized approach for credit risk estimation. The main reason for that is that there is majority of small banks in Croatia [1] and there are just six large banks in Croatian banking system. For small banks it is just too expensive to implement internal ratings for credit risk management because the costs of its implementation would exceed its benefits. Just two of six large banks in Croatia are in the preparation process for internal ratings based approach (empirical research). In order to apply internal ratings based approach, i.e. advanced internal ratings based approach there is a set of qualitative and quantitative preconditions that has to be fulfilled according to supervisor's requirements. In Republic of Croatia, Croatian national bank has the role of banks' supervisor. The main hypothesis of this paper is: In

Croatian banks there are fulfilled qualitative and quantitative preconditions for passing from standardized approach to advanced internal ratings based approach. Because the final format of Basel II standard has been disclosed in 2004, Croatian banks have had enough time to take into account all its assumptions. Principally it is about key components needed for credit risk estimation. The main problem for small banks is that they do not dispose with enough historical data which complicates construction of database for credit risk estimation. The above hypothesis will be confirmed or refused by questionnaire method. In this research targeted population are all Croatian banks (31 of them) and research population is ten Croatian banks which is the result of returned questionnaires. The research was carried out from March till May 2012.

II. INTERNAL RATINGS BASED APPROACH

Internal ratings based approach is the main news from Basel II standard. By standardized approach all parameters needed for credit risk estimation are provided by external rating agencies, when banks, by internal ratings based approaches, are measuring key parameters inside a bank. In that way they can quantify key characteristics of credit capacity of their debtors when determining capital requirements. For every asset type under internal ratings based approach there are three key elements: credit risk components, risk weights and minimal capital requirements [2].

Key credit risk components are as follows [3]:
- Probability default,
- Loss-given default,
- Exposure at default and
- Maturity.

Those components have direct impact on the weighted assets calculation, i.e. on the capital requirements amount. That means that high amounts of those components implicate higher capital requirements and vice versa. For an IRB application, banks must have approval from supervisor according to which that approach can be introduced gradually through different categories of exposure.

A. Foundation Internal Ratings Based Approach (FIRB)

By this approach banks are estimating just one parameter – probability default, while other parameters are given by supervisor. For every exposure type banks are estimating, on the basis of historical data and statistical models, probability default (PD parameter) with the possibility of supervisor to define minimum amounts of that risk parameter for certain exposure types. For instance, according to Croatian national bank regulation minimum PD parameter for companies, institutions and citizens is 0.03%.

B. Advanced Internal Ratings Based Approach (AIRB)

By this approach all credit risk components are estimated inside of a bank. Banks that will use advanced internal ratings based approach will have maximum flexibility because almost all input data are estimated on their own. But for AIRB approach application banks must have data for loss-given default estimation as well as for exposure while the most of banks already have adequate data for probability default estimation. In that sense, banks should have data for certain time period for credit risk components estimation. For probability default that is two years for foundation approach and five years for advanced and for loss-given default and exposure that is seven, i.e. five years [4].

In order to pass on advanced internal ratings based approach, banks have to prove that they actually understand their risk exposures and that they understand mitigation techniques. Some of the encouragements for banks for AIRB approach introduction is profitability increase because it enables better risk and capital management.

III. QUALITATIVE AND QUANTITATIVE PRECONDITIONS FOR AIRB APPROACH APPLICATION

It is important to emphasize that Basel II allows banks to account with their own estimations of key risk parameters only if rigid qualitative and quantitative requirements are met. The accent is on the bank's ability to rank and quantify risk in consistently and confident way [5].

In Croatia, hence, the approval from Croatian national bank must be obtained which will be changed with the date of Croatia's entrance into European union. The reason is that then the responsible will be supervisor on consolidated basis which, regarding to ownership, in most cases would not be Croatian national bank.

Minimum preconditions that must be obtained by a bank for AIRB approach implementation are following:
- Development of documentary rating-system inside of which criteria and processes for rating, taking into account their risk characteristics, should be defined;
- Risk quantification in sense of risk parameters estimation (probability default, loss-given default and conversion factors). That estimation should include all relevant information, it should be based on empirical evidence and have materiality significance and also comprise certain conservatism level. When quantifying credit risk banks can use data from their own business or from external sources;
- Systematic data management (IT support), i.e. systemic analysis of available data and continuously estimation of data integrity, materiality and significance of available data;
- Development of stress test scenario where possible events or changes that could have unfavorable impact on institution's credit exposure should be identified. Also bank's own ability to bear through such changes should be estimated;
- Validation of internal estimations and models and corporate management and supervision that include

understanding and approval of all key components of rating systems and models.

Also, according to Basel II the application of IRB approach is possible just for those banks that meet certain qualitative and quantitative preconditions [6]:
- Designing allocation system – which imply quality distribution of bank's exposure through different risk levels without to high risk concentrations. According to Basel II, banks must have at least eight risk categories for allocation of its placements as well as clearly criteria for certain placements allocation into certain risk categories;
- Operational functioning - banks do not use AIRB approach just for credit approval process but also for credit price determining and credit risk management;
- Availability and quality of data - bank must use relevant data from internal or external sources which demands multiannual time series of data and also represents one of the biggest barriers for IRB approach application;
- System supervision and corporative management – all materially significant aspects of risk estimation process and rating determination must be approved.

IV. RESULTS OF EMPIRICAL RESEARCH ABOUT PRECONDITIONS FOR PASSING ON AIRB IN CROATIAN BANKS

The first question was about fulfillment of quantitative preconditions for passing on AIRB approach from standardized approach in Croatian banks. The answers from banks are as follows:

TABLE I: ANSWERS FROM CROATIAN BANKS ABOUT QUANTITATIVE PRECONDITIONS FULFILLMENT (AUTHORS EMPIRICAL RESEARCH)

Yes	30,00%
No	60,00%
Can't be evaluated	10,00%
Total	100,00%

TABLE II: Z TEST OF HYPOTHESIS FOR THE PROPORTION (AUTHORS)

Data		
Null Hypothesis	$p =$	0,5
Level of Significance		0,05
Number of Successes		3
Sample Size		9
Intermediate Calculation		
Sample Proportion		0,333333333
Standard Error		0,166666667
Z Test Statistic		-1
Upper-Tail Test		
Upper Critical Value		1,644853627
p-Value		0,841344746
Do not reject the null hypothesis		

It is assumed that the majority of banks have fulfilled quantitative preconditions for passing on AIRB. The test on assumed value of proportion in program PHStat2 is used. Test hypothesis are as follows:

$$H_0 ... p \leq 0,50$$

$$H_1 ... p > 0,50$$

With significance level of 5% zero hypothesis can't be rejected. Concrete, with that level of significance the majority of banks do not have fulfilled quantitative preconditions for passing on AIRB approach when measuring credit risk.

The second question was about qualitative preconditions fulfillment for passing on AIRB approach. The answers from banks are as follows:

TABLE III: ANSWERS FROM CROATIAN BANKS ABOUT QUALITATIVE PRECONDITIONS FULFILLMENT (AUTHORS EMPIRICAL RESEARCH)

Yes	40,00%
No	60,00%
Can't be evaluated	
Total	100,00%

It is assumed that the majority of banks have fulfilled qualitative preconditions for passing on AIRB. The test on assumed value of proportion in program PHStat2 is used. Test hypothesis are as follows:

$$H_0 ... p \leq 0,50$$

$$H_1 ... p > 0,50$$

TABLE IV: Z TEST OF HYPOTHESIS FOR THE PROPORTION (AUTHORS)

Data		
Null Hypothesis	p =	0,5
Level of Significance		0,05
Number of Successes		4
Sample Size		10
Intermediate Calculations		
Sample Proportion		0,4
Standard Error		0,158113883
Z Test Statistic		-0,63245553
Upper-Tail Test		
Upper Critical Value		1,644853627
p-Value		0,736455372
Do not reject the null hypothesis		

With significance level of 5% zero hypothesis can't be rejected. Concrete, with that level of significance the majority of banks do not have fulfilled qualitative preconditions for passing on AIRB approach when measuring credit risk.

V. CONCLUDING REMARKS

According to research results about level of qualitative and quantitative preconditions met by Croatian banks, set up hypothesis can't be confirmed. Concrete, in Croatian banks there are not fulfilled preconditions for passing from standardized approach to advanced internal ratings based approach for credit risk measurement. Only three from ten banks have fulfilled quantitative preconditions and four from ten banks have fulfilled qualitative preconditions. Currently, all banks in Croatia are applying standardized approach according to information available on their web sites in the document of Public disclosures on solvency requirements. Regarding to the above mentioned there is a lot to do in Croatian banking system, i.e. Croatian banks regarding fulfillment of qualitative and quantitative preconditions needed for getting approval for AIRB approach from Croatian national bank. As long as Croatian banks are applying standardized approach, the level of regulatory capital can't be adjusted with the risk profile of banks. Regarding Croatian entrance in European Union in 2013, supervisor on consolidated basis will be responsible for application as well as for approval of internal ratings based approaches for banks that are operating in Croatia.

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Perceived Image of Spain and Germany as a Tourist Destination for Dutch Travelers

Hasan Ayyildiz and Gulcin Bilgin Turna

Abstract—In this study, questionnaire was conducted in the Netherlands in order to measure how Dutch people perceive tourism destination image (TDI) of Germany and Spain. Significant differences were identified with Wilcoxon T test between the countries. Cognitive and affective country image factors on destination beliefs were measured by correlation analysis. It was found that affective country image has more effect on destination beliefs than cognitive country image. Confirmatory factor and multiple regression analysis results were shown. Participants were also asked some open ended questions about tourism image of the mentioned countries and how/where they gathered information about them. Media and experiences were found to be important sources of information of a country.

Index Terms—Country image, destination image, Germany, international tourism, Spain.

I. INTRODUCTION

The concept of ''image'' that has been studied for several decades in such disciplines as social and environmental psychology, marketing, and consumer behavior, was introduced into tourism studies in the early 1970s by Hunt [1], Mayo [2], and Gunn [3] and has since become one of the most researched topics in the field [4]. Image is the sum of beliefs, attitudes and impressions that a person or group has of an object. The object may be a company, product, brand, place or person. The impression may be true or false, real or imagined. Right or wrong, images guide and shape behavior. [5] Countries are also subject to comsumption like products. Country image is the sum of beliefs, ideas and impressions that a person has of a country [6]. It has been investigated in two relatively independent research streams, namely product-country image (PCI) and tourism destination image (TDI). The impact of country image on the response of consumers to products from a country has been termed the country of origin (COO) or product-country image (PCI) effect. [7] Tourism destination image is the expression of all objective knowledge, impressions, prejudice, imaginations and emotional thoughts an individual or group might have of a particular place. [8]

In this study, a questionnaire was conducted with Dutch people to analyze the tourism destination image of Spain and Germany.

II. CONCEPTUAL FRAMEWORK

About destination image the first study is Hunt's study [1]

about the importance of image on travel behavior. He concluded that place of residence is a significant factor in determining people's perceived image of a destination. Tourism is an industry that gains strength with image and tourism destination image have been studied for 35 years. Many researchers have investigated the image's effect on travelers [9]-[10], measurement of the image [11]-[12], and how it is formed [13]. It was accepted by many researchers [9], [12], [14]-[16] that the experiences of the visitors have significant effect on revisits. Pearce [9] found that the most important factors on TDI are shopping, people, culture, scene and beaches whereas Therkelsen [17] mentioned that the people's backgrounds also have a significant effect on the ideas of a country. Baloglu [18] found that the more destination familiarity, the better the image of a country. So in order to improve the familiarity, advertising, public relations and sales promotions should be used together in the marketing mix.

A great number of researchers [13], [15], [19]-[25] support the view that image is a multidimensional construct comprising of two primary dimensions: cognitive and affective. Cognitive evaluation refers to beliefs and knowledge about an object whereas affective evaluation refers to feelings about the object [21], [26]-[28]. In other words, cognitive element of destination image describes the beliefs and information that people have about a place. Affective element describes what people feel about a place; it is about loving or not loving somewhere [29]. Social and environmental psychological tradition regards cognition and affect as interrelated elements, where affect is largely dependent on cognition. However, Russell and Snodgrass [30] argued that behavior may be influenced by the (estimated, perceived, or remembered) affective quality of an environment rather than by its objective properties directly. The affective component of destination image expresses feelings toward a destination, which can be favorable, unfavorable, or neutral [4]. Gartner [21] suggested that the affective component comes into play at the stage when different travel alternatives are evaluated.

III. METHOLODOLOGY WITH FINDINGS

In this study, cognitive image constructs (quality of life, wealth, technology level, education) were adapted from Orbaiz ve Papadopoulos [31] and affective image constructs from Beerli and Martin [32] (pleasant), Echtner and Ritchie [11] (safety), Heslop and Papadopoulos [33] (trustworthy), Orbaiz and Papadopoulos [31] (friendly). Destination beliefs constructs were adapted from Elliot [34] (appealing scenery, suitable accommodation, quality attractions, lots to see and do, value for money, good overall destination) and

correlations were made to understand how cognitive and affective image affect destination beliefs. The target population for this study consisted of university students (between 18-30) in the Netherlands who had expressed an interest in taking a vacation in a foreign country. In addition to the questions about cognitive, affective image constructs and destination beliefs, respondents were asked about their information sources about the countries and the things come to their minds when they think of Spain and Germany.

TABLE I: DEMOGRAPHIC PROFILE OF RESPONDENTS (*N*=363)

Evaluation	Variable	The Netherlands (%)
Gender	Male	55.65
	Female	44.35
Marital Status	Married	3.03
	Single	69.70
	Living together	15.43
	Divorced	0.55
	Other	11.29
Number of children	0	97.24
	1	1.10
	2	1.66
Occupation	Student	84.02
	Teacher	15.98
Age	Less than 20	26.45
	20-24	55.65
	25-29	13.22
	30-34	3.58
	35-39	1.10
Education level	University Student	84.02
	University Graduate	15.98
Annual income of the household	10.000 EUR and less	12.67
	10.001 EUR – 20.000 EUR	8.54
	20.001 EUR - 30.000 EUR	10.19
	30.001 EUR - 50.000 EUR	26.72
	50.001 EUR - 75.000 EUR	19.28
	75.001 EUR - 100.000 EUR	9.37
	100.001 EUR - 150.000 EUR	7.72
	150.001 EUR and more	5.51
Trips to other countries	0 trip	2.20
	1 trip	2.74
	2 trips	5.51
	3 trips	9.63
	4 trips	8.82
	5 and more trips	71.10
Countries visited	Spain (Yes)	72.70
	Spain (No)	27.30
	Germany (Yes)	89.00
	Germany (No)	11.00

Respondents were 363 Dutch university students studying either tourism or marketing and some young faculty members selected from Has Den Bosch University (67) and Rotterdam Erasmus University (296). Most of them are between 20-24 year old university students who have income between 30.001-50.000 euros. Despite being young, they have traveled a lot and 97.80% of them visited a foreign country and 71.10% of them performed five or more trips to other countries in their lives. With the help of their major of study and travel experience abroad make them knowledgable about other countries. The items on the questionnaire were measured using a 5-point Likert type scale, ranging from "completely disagree" to "completely agree." Mentioned universities were visited for two weeks. Appointments were taken from the faculty members in order to conduct the questionnaire before or after class. With the support of the teachers, questionnaire was filled studiously in English.

40% of the Netherlands' population work part-time making it the first in the European Union. That's why they frequently travel. The Dutch economy is the fifth-largest economy in the euro-zone and is noted for its stable industrial relations, moderate unemployment and inflation, a sizable trade surplus, and an important role as a European transportation hub. It has a developed economy with its $42,700 Gross Domestic Product (GDP) per capita (2011 est.) [35].

TABLE II: WORLD TOURISM DATA (2011) [36]

	International Tourist Arrivals (million)		International Tourism Receipts (billion $)	
1	France	79,5	The USA	116,3
2	The USA	62,3	**Spain**	**59,9**
3	China	57,6	France	53,8
4	**Spain**	**56,7**	China	48,5
5	Italy	46,1	Italy	43,0
6	Turkey	29,3	**Germany**	**38,8**
7	The UK	29,2	The UK	35,9
8	**Germany**	**28,4**	Australia	31,4
9	Malaysia	24,7	Macao (China)	-
10	Mexico	23,4	Hong Kong (China)	27,7

Source: World Tourism Organization

In 2011, Spain was the most common tourism destination in the EU for non-residents (people coming from abroad), with 239.4 million nights spent in collective tourist accommodation, or almost a quarter (23.2 %) of the EU-27 total. Across the EU, the top three most popular destinations for non-residents were Spain, Italy (178.0 million nights) and France (123.0 million nights), which together accounted for 52.5 % of the total nights spent by non-residents in the EU-27 [37].

Normality test (Kolmogorov Smirnov) was used to determine whether a data set is well-modeled by a normal distribution or not and it was found that the data set was not normally distributed. For this reason, Wilcoxon T test which is a nonparametric test was used and significant differences between the countries were measured and found that all 18 items are significantly different.

Taking into consideration the fact that 72,70% (79,30% of them for tourism purposes) of the respondents have visited Spain, 89% (70,80% of them for tourism purposes)

of them have visitied Germany, it is obvious that they have a clear perception of both countries. In terms of cognitive country image, Germany is rated much higher than Spain by Dutch people. As Europe's largest economy and second most populous nation (after Russia), Germany is a key member of the continent's economic, political, and defense organizations with its $38,400 (2011 est.) GDP per capita [38] whereas Spain is facing a severe economic recession that started in mid-2008 and stil in a deep recession with its $31,000 (2011 est.) GDP per capita [39]. When it comes to affective country image, Germany and Spain are rated the same in average but Spain is perceived more pleasant and friendly and Germany is perceived safer and more trustworthy. Spain is more ideal to visit whereas Germany is more ideal to live. When destination belief constructs are considered, it is seen that Spain is rated higher than Germany which means they prefer Spain as a tourist destination for its appealing scenery, quality attractions, and good value for the money. Since Germany is the Netherlands' next door neighbor, it is convenient to visit Germany whereas Spain is more attractive since it is a Mediterranean country and more appealing to the countries in Northern Europe.

TABLE III: MEAN SCORES OF THE VARIABLES (5-POINT LIKERT SCALE)(STANDARD DEVIATIONS IN PARENTHESES)

Cognitive Country Image	Spain	Germany
1.Quality of life	3,49(±0,763)	3,93(±0,654)
2.Good economy	2,48(±0,868)	4,07(±0,790)
3.Rich people	2,83(±0,718)	3,67(±0,714)
4.Technology level	3,10(±0,729)	4,12(±0,700)
5.Good education	3,04(±0,676)	3,76(±0,697)
6.Modern country	3,40(±0,749)	4,09(±0,629)
Average score	3,06	3,94
Affective Country Image	**Spain**	**Germany**
1.Friendly people	3,57(±0,792)	3,44(±0,830)
2.Safe country	3,64(±0,780)	4,05(±0,685)
3.Trustworthy people	3,18(±0,718)	3,49(±0,730)
4.Pleasant people	3,66(±0,747)	3,52(±0,835)
5.Ideal to live	3,18(±0,955)	3,33(±0,969)
6.Ideal to visit	4,10(±0,680)	3,49(±0,932)
Average score	3,55	3,55
Destination Beliefs	**Spain**	**Germany**
1.Appealing scenery	4,11(±0,573)	3,62(±0,823)
2.Suitable accommodation	3,42(±0,777)	3,59(±0,854)
3.Quality attractions	3,90(±0,693)	3,71(±0,767)
4.Lots to see and do	4,05(±0,644)	3,81(±0,775)
5.Value for money	3,90(±0,729)	3,68(±0,775)
6.Good overall destination	4,16(±0,707)	3,62(±0,881)
Average score	3,92	3,67

Wilcoxon T test (p>0,05).

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy are 0,823 (for Spain) and 0,900 (for Germany), and Bartlett's tests of sphericity are significant. As a result of explanatory factor analysis results, four items with consistently poor loadings on their respective factors were dropped: good economy, safe country, trustworthy people, and suitable accommodation.

In order to understand how these constructs have impact on each other correlation analysis was made as in Fig. 1 (S represents Spain and G represents Germany). It was found that both for Germany and Spain, affective country image has greater influence than cognitive country image on destination beliefs. Correlations between affective and cognitive country image and between cognitive country image and destination beliefs are relatively higher for

Germany. It is accepted that Germany is a very developed country making its cognitive items very strong, whereas Spain is a desired tourism destination with its high affective image constructs despite its low cognitive items.
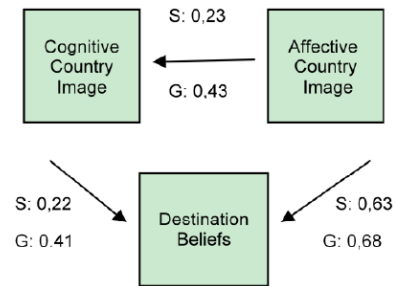
Fig. 1. Correlation analysis.

TABLE IV: CONFIRMATORY FACTOR ANALYSIS (CFA) (STANDARD ERRORS IN PARENTHESES) AND MULTIPLE REGRESSION ANALYSIS

Cog. Co. Im.	Spain	R^2	Germany	R^2	Av.R^2
1.Quality	0,42(0,48)	0,17	0,59(0,28)	0,35	0,26
2.Rich	0,75(0,20)	0,33	0,75(0,17)	0,46	0,40
3.Technology	0,58(0,35)	0,42	0,64(0,29)	0,47	0,45
4.Education	0,65(0,31)	0,56	0,68(0,28)	0,41	0,49
5.Modern	0,67(0,31)	0,45	0,69(0,26)	0,56	0,51
Affec. Co. Im.	**Spain**	R^2	**Germany**	R^2	**Av.R^2**
1.Friendly	0,44(0,73)	0,41	0,63(0,41)	0,40	0,41
2.Pleasant	0,76(0,23)	0,58	0,75(0,30)	0,57	0,58
3.Ideal to live	0,48(0,35)	0,20	0,71(0,46)	0,51	0,36
4.Ideal to visit	0,64(0,37)	0,23	0,74(0,39)	0,55	0,39
Destin. Bel.	**Spain**	R^2	**Germany**	R^2	**Av.R^2**
1.Scenery	0,47(0,32)	0,43	0,63(0,48)	0,58	0,51
2.Attractions	0,55(0,33)	0,31	0,66(0,34)	0,68	0,50
3.Lots to see	0,66(0,19)	0,58	0,73(0,37)	0,63	0,61
4.Money	0,69(0,26)	0,50	0,76(0,28)	0,44	0,47
5.Good dest.	0,76(0,17)	0,22	0,83(0,19)	0,40	0,31

Table IV includes the average R^2 values for each item, averaged cross the two CFAs, as a measure of the percentage of variance explained by the variable. For example, *lots to see and do* is strong, accounting for 61% of the variance. *Modern country, good education* and *pleasant* are also strong, accounting for 51%, 49% and 58% of the variances respectively.

TABLE V: TOURISM CHARACTERISTICS COME TO MIND

	Spain (%)	Germany (%)
Geographic places	42,55	50,44
Attractions	10,26	14,57
Activities	5,44	11,09
Nature related	31,03	7,61
Sport related	7,12	3,70
Food/beverage	1,05	3,04
Other	2,55	9,56
Total	100	100

The weather in Spain is much warmer than the Netherlands and Germany, making Spain a desirable destination for travelers especially in summer. That is why nature related items are more in Spain than Germany. The results of the open-ended questions showed that most of the respondents emphasized the nice weather and beaches in Spain mentioning the two famous cities: Barcelona and

Madrid. When it comes to Germany, Berlin, Berlin Wall, Cologne, Munich, beer festival and the mountains were the most written responses.

The application of the Echtner and Ritchie [11] framework provides the opportunity to identify promotional tactics to assist the design of effective destination marketing, which for example can be used for positioning. To connect well-known product categories or brands to a certain tourist destination can be an advantage [40].

TABLE VI: INFORMATION SOURCES

	Spain (%)	Germany (%)
School	43,25	80,99
Media	71,07	76,58
Experiences	64,19	76,03
Immigrants	13,77	21,49
What friends told	52,34	50,96
Family roots	4,68	10,74
Spanish/German friends	20,11	36,64

For both Spain and Germany, media and experiences are the most rated information sources. And since the Netherlands have closer ties with Germany, they learn about Germany and its history at school. What friends told is also important since word-of-mouth communication plays a significant role in choosing a destination for a vacation. Since international tourism activities constitute an important source of foreign exchange earnings and employment, countries started to develop new ways to attract foreign tourists. And it was proved that the image of a country plays an important role on destination choice, image has become an essential part of a country's strategic equity. Images of a travel destination are a mixture of both positive and negative perceptions [41]. If a destination that provides accommodation for the faithful tourists who repeat periodically, it will provide employment opportunities and economic benefits to its citizens. It will also contribute to form a solid foundation in the long-term development of the region [29].

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The Relationship between Service Guarantees, Empowerment, Employee Satisfaction and Service Quality in Four and Five Star Hotels in Malaysia

Aslinda Mohd Shahril, Yuhanis Abdul Aziz, Mohhidin Othman, and Jamil Bojei

Abstract—Despite the numerous benefits of the implementation of service guarantees in service organizations, there is a dearth of studies that explore the relationship between service guarantees, empowerment, employee satisfaction and service quality, particularly in the hotel industry. The aim of the study is to examine the relationship between service guarantees and employee empowerment and to investigate the correlation between empowerment and employee satisfaction and establish its links to service quality. This study employed the quantitative methodology based on survey questionnaires distributed to frontline employees in various four and five star hotels in Malaysia. The empirical findings provide evidence that service guarantees have a positive relationship with empowerment. However, the study found that empowerment has an insignificant relationship with employee satisfaction. Notably, it was found that employee satisfaction has a significant relationship with service quality. The study's limitations and suggestions for future research are discussed.

Index Terms—Empowerment, employee satisfaction, service guarantees, service quality.

I. INTRODUCTION

Currently, intense competition in the service industry has provided customers with variety of choices and confronted with this, companies face the challenging task of providing increased benefits and delivering excellent service quality to ensure customer satisfaction and loyalty. Furthermore, in this increasingly competitive global business, focusing on, meeting and understanding customers' needs have become key performance indicators for company success [1]-[2]. Due to its important role to service organization, service guarantees have been increasingly acknowledged by experts as a means to achieve organizational commitment in its service delivery process [3] and also to jump-start quality enhancement in service organizations [4]-[5].

This study identifies the importance of service guarantees and their related outcomes in relation to employee roles and involvement to support the management's vision and its subsequent impact on service quality. In developing and executing successful service guarantees, employee participation is vital as employees hold the service promise and are those dealing directly with customers. Without employee support, the service promise will be meaningless

and invaluable. The study will investigate the effects of service guarantees through management strategies such as employee empowerment and job satisfaction and how these are linked with service quality. In sum, service guarantees will not only assist regular checking of service performance, but serve as an interactive means between customers and organizations to enhance the organization's knowledge in the service delivery process.

II. LITERATURE REVIEW

A service guarantee is viewed as the company signaling of service quality [5] while Liden and Sanden [6] assume that guarantees act as a service development process for the company. A more recent definition by Hovgreve and Gremler [7] states that service guarantees are akin to promises from service organizations to deliver service at certain standards which if not met, will be remedied by the organization through some form of compensation. However, compensation could also mean that service organizations may do nothing in response to service failure.

Service guarantee is a relatively new service concept that has received attention only in recent years. Christopher Hart, a professor and quality guru from the Harvard Business School introduced the notion of service guarantees in his article, The Power of Unconditional Guarantees which has instilled an urgent and new practical business policy among corporate organizations to become more customer-driven [8]. Following Hart's introduction, research on service guarantees grew [7] and has since revealed the impact of service guarantees on the organization's reputation, operations and service quality [9]-[5]. Thus, it is important to understand the consequences of having service guarantees in an organization. Quality initiatives demand employee involvement, motivation and participation to ensure that the organization's commitment to deliver quality service to customers [10] is communicated to customers. Thus, management needs to select and train qualified employees to deliver the services.

Additionally, service guarantees is a means for firms to improve service quality and a commitment to offer standard services and compensate customers in some way during service failure inadvertently communicates to employees the desired level of service to customers that is expected of them [11]. Service guarantees differentiate high and low quality firms and firms with higher bond credibility will offer more meaningful services as promised.

Accordingly, employees must be given a clear picture of

the expected service delivery and the service outcomes to guide them. Employee interactions with customers is critical since it will build the customer's perception of quality and service guarantees motivate employees to focus on key service performances to meet customers' expectations. Similarly, service guarantees act as quality signals to customers and help reduce their purchase risk due to the intangibility of service offerings [5]. Based on the above discussion, it is argued that service guarantees will have a positive relationship with service quality. Therefore, the study proposes hypothesis one:

Hypothesis one: Service guarantees will have a positive relationship with service quality.

The relationship between service guarantees and empowerment was initially suggested by Wirtz [2] and Kashyap [11]. They argue that organizations need to empower the employees to be more independent, able to exercise some power to make decisions during service difficulties and deliver more satisfying service to customers. The term empowerment has been defined in many ways. Lee and Koh [12] present the definition of empowerment (1) as the attitude of supervisors that empower their employees and (2) the psychological state of employees. There is some agreement among scholars where empowerment is defined as sharing power [13], participative management [14] and job enrichment [15]. Empowered employees are believed to be more flexible and will be more productive, thus leading to favorable service delivery and outcomes. In the service guarantees context, empowerment is crucial as empowered employees play significant roles and have positive impacts on customers' perceived service quality. It is argued that empowered employees will be more proactive as they have stronger feelings about the organization and will be more enthusiastic to satisfy the customers and enhance service transactions. Additionally, empowerment is a major resource for bringing competitive advantage to organizations and is the key success factor for service delivery [16]. Hence, the next formulated hypothesis is:

Hypothesis two: Service guarantees will have a positive relationship with empowerment.

Following the power and authority given to employees, empowered employees are anticipated to have higher levels of job satisfaction. Several studies have revealed a significant correlation between empowerment and job satisfaction [17], [18] and [19]. Employees with higher levels of empowerment will be more satisfied with their jobs, have a better sense of performance control and can easily make changes to improve the quality of service in their organizations [16]. Additionally, empowered employees feel better about their jobs, are more satisfied and contribute to greater productivity. In the same light, empowered employees will play more active roles as they are recognized and valued by the management. In the hotel setting, consumption and production occur simultaneously and quick resolutions are required to promote customer and job satisfaction [18]. In a recent study on five star hotels in Turkey, Pelit, Ozturk, and Arslanturk [16] found that empowerment has a significant effect on job satisfaction and the effect is much greater when psychological and behavioral empowerment occur simultaneously. Consequently, empowered individuals that are more active in the organization and more independent in performing their tasks will feel increased job satisfaction and this, it is hoped, will contribute to organizational objectives and service quality improvement [20]. Therefore, the study proposes the next hypothesis:

Hypothesis three: Higher levels of empowerment will result in higher levels of job satisfaction.

Previous studies suggest the need for service organizations to pay special attention to employee satisfaction [21]. The relationship between job satisfaction and service quality has been suggested by the "Cycle of Success" model [22]. This model proposes that employee satisfaction leads to increased employee performance, which in turn leads to customer satisfaction, customer loyalty, and the increased financial performance of a firm [23]. Job satisfaction has also been empirically tested and positively related to customers' perception of service quality in several service industries such as banking [24], hotels [21] and education [25]. Gazzoli et al. [23] argue that job satisfaction leads to increased employee performance, which in turn, links to better service performance, customer satisfaction and loyalty and the firm's financial performances. Consequently, the empowerment of service employees is argued to have impact on job satisfaction and service quality. Based on a review of previous research on job satisfaction and service quality, this study predicts the following hypothesis:

Hypothesis four: Higher levels of job satisfaction will result in higher levels of service quality.

III. RESEARCH METHODOLOGY

To test these hypotheses, an empirical study was carried out, using the survey questionnaire. The questionnaire used for this study is a close-ended type and comprises 34 questions inclusive of the demographic section. Responses are recorded on a five-value scale to indicate employees' opinions of service guarantees; empowerment, job satisfaction and service quality. The respondents comprised 200 frontline employees in four and five star hotels in Malaysia. Descriptive statistics and reliability analysis were analyzed using SPSS 20.0. Descriptive statistics was used to disclose the characteristics of the employees.

The variables in this study were analyzed using structural equation modeling (SEM) via AMOS 7.0. The relationships among service guarantees, empowerment, job satisfaction, and perceived service quality were examined using SEM which estimates the relationships between latent variables and indicators simultaneously as well as determines the validity and reliability of the measures. Data was collected via self-administered survey and the convenient sampling method was employed for selecting the respondents as participation in the study depended heavily on the hotels' cooperation.

IV. RESULTS AND DISCUSSION

In this section, the findings of the study will be discussed. The following table shows the results of four research hypotheses.

TABLE I: SUMMARY OF HYPOTHESES TESTING

Hypotheses	Description	Result
H 1	Service guarantees have a positive relationship with service quality	Not Supported
H 2	Service guarantees have a positive relationship with empowerment	Supported
H 3	Higher levels of empowerment will result in higher levels of job satisfaction	Not Supported
H 4	Higher levels of job satisfaction will result in higher levels of service quality	Supported

Hypothesis 1 predicted that service guarantees will lead the organization to achieve higher levels of service quality. The examination of hypothesis 1 however showed that this hypothesis is not supported. This finding contradicts the proposed assumption that service guarantee will inspire the employees to deliver the expected standard of service quality. However, the findings is consistent with Chen et al.'s [26] study that found no significant relationship between both constructs.

Hypothesis 2 speculated that service guarantees will lead to higher levels of employee empowerment. Results indicated that this hypothesis is supported and this finding confirms the suggestion made by Wirtz [2] that empowered employees are required for the organization to implement service guarantees.

Hypothesis 3 posited that highly empowered employees will also experience job satisfaction. However, the results failed to support this hypothesis and this empirical finding contradicts with previous research done by Hartline and Ferrell [21] and Gazzoli *et al*. [23].

Hypothesis 4 postulated that employees with high levels of satisfaction will report service quality at work. The empirical results showed that this speculation was supported and found a significant relationship between these two constructs.

The statistical analysis and empirical findings of the study show that service guarantees have no significant relationships with service quality. The insignificant result does not mean that service guarantees do not have any impact on service quality but rather, indicates its incapability to adhere to and fully honor the service promised. Service guarantees require the firms to compensate customers for service failure. However, this has not been widely practiced in Malaysian culture and thus, service guarantees are not strong enough to support the relationship with service quality.

The findings from the study provide support for the relationship between service guarantees and empowerment. It is argued that empowered employees have something to offer to ensure the success of service guarantee implementation. It is important that companies provide clear visions and inform employees of the expected service standard; and that giving some authority to employees will maximize their participation and commitment to hold the management's vision.

The study fails to support the relationship between empowerment and employee satisfaction, as predicted in hypothesis 3. This may be attributed to the fact that employees may associate job satisfaction with the monetary and other rewards that they obtain from the hotels. The current rewards given could have impact on their motivation and the satisfaction was at moderate level.

The study has evidence that employee satisfaction is positively correlated with service quality. As speculated in hypothesis 4, satisfied employees feel better about their jobs and are more productive, thus positive outcomes of service delivery are anticipated. It appears that employee satisfaction contributes to promising service quality and leads to more satisfied customers.

The results from the testing of the proposed hypotheses offer mixed findings for the theoretical predictions made regarding these hypotheses. The study found that empowerment plays a crucial role to the success of service guarantees. It is believed that empowerment brings a lot of benefits to the hotel industry as employees will be more motivated, independent, creative thinkers and able to perform their jobs. Although the study did not find evidence on the relationship between service guarantees and service quality, it can be said that service guarantees have specific impact on service quality and serve as the organization's business strategy to gain competitive edge.

V. LIMITATIONS

Each research project conducted in any field of study is always constrained by various limitations. Due to the time constraint, this study is cross-sectional, and is limited by the survey method, which prohibits the collection of thorough information. The cross-sectional design limited the findings to the limited period for data collection. The research setting was only focused on four and five star hotels in Peninsular Malaysia. Replicating the study to other segments of the lodging industry will particularly benefit Malaysia's lodging industry.

For the practitioners in the hotel industry, this research revealed that management of employees is important as it may have significant impact on customer and business performance.

VI. SUGGESTIONS FOR FUTURE RESEARCH

The findings of this study draw attention to some directions for further studies to be conducted in this field. One important note is that future research should employ empowerment constructs that are represented by multi-dimensions in order to capture the essence and employ the fullest extent of empowerment in the final model. Caution should be exercised as empowerment has varied dimensions and researchers must adapt the suitability of each dimension based on the research objectives.

Future studies should employ both quantitative and qualitative methods as this can present more in-depth information and overcome the weaknesses of each methodology.

The study also suggests that future studies cover a wider area of the service industry. Since service guarantees are not

only confined to the hotel industry, similar investigations can be replicated in other service industries such as banks, fast food restaurants, heath and care, and the airline industry. Replicating the study is possible since service guarantee practice aligns with the nature of service act. Since this kind of study is relatively new in Malaysia, future studies will enrich the body of knowledge on the hospitality industry in Malaysia.

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Foodscape and Customer's Future Behavioral Intentions in Casual Dining Restaurant

Suria Sulaiman and Mahmod Sabri Haron

Abstract—**The trend of eating out has leads the food service industry to the needs of managing the customer and making sure that all their needs and preferences can be fulfilled. Foodscape been recognized as one of the factors to attract and retain the customers and at the same time increase the revenue of the restaurant. This is proven through the researches done earlier in the effects of foodscape on the consumer behavior in the restaurant industry. However, the questions of which foodscape dimensions have the most influence on the future behavior intentions of the customer in casual dining restaurant in Malaysia scenario is rarely been discussed. This study has surveyed 146 customers and proven that there is a relationship between foodscape and future behavior intentions. Through results, it revealed that presentation and freshness play an important role in capturing the customer heart and give positive impacts on their future behavioral intentions.**

Index Terms—**Foodscape, future behavioral intentions, casual dining restaurant.**

I. INTRODUCTION

Food and beverage industry is one of the four main components in the hospitality industry. The trend of eating out has leads to the growth of this industry supported by the other emerging trends such as higher income and higher population especially in urban area. This leads to the needs of managing the customer and making sure that all the needs and preferences can be fulfilled in order to increase the revenue of the industry. According to the demographic and economic indicators, consumer expenditure on food in 2009 was USD11, 989.34 million and is expected to rise to USD12, 473.13 this year [1]. On top of that, tourist's receipts also contribute to the revenue of food and beverage industry in Malaysia.

It is one of the challenge face by the industry in providing not only a quality food but also compelling for the customer and superior than their competitors [2]. It is believed that tasty and fresh food plays an important role in the attempt to outpace the competitors but nevertheless, the quality food is the one of the best means to maximize success in the restaurant business [2]-[3]. This aligned with the earlier study, which found that food quality was the only factor that has a significant effect on return patronage [4]. Previous studies also had shown that food quality influence customer

satisfaction [5]-[7]. It was reported that the attributes serve as tangible que of service quality in the restaurants [2]. Research also shows that there is a significant effect between food attributes and return patronage [3], [4], [8]. The food attributes that had effects on the return patronage varies from the food tastiness, consistent food, menu variety and food quality. All this attributes falls under the dimension of foodscape.

The purpose of this study is to examine the relationship between customer behavior due to foodscape elements in the casual dining restaurant and its effects on their future behavioral intentions. It also hopes to reveal the important elements in foodscape that contribute to this positive future behavior intentions. The foodscape dimensions consist of temperature, taste; healthy options, presentations, variety and freshness are used to measure foodscape in this study.

II. LITERATURE REVIEW

A. Foodscape

In general, the term foodscape has been used to describe the spatial distribution of food across urban spaces and institutional settings [9],[10]. The term used to describe a social construction that captures and constitutes cultural ideas of how food relates to specific places, people and food system [11],[12]. Foodscape may also variously capture or obscure the ecological sites and social relations of food production, consumption and distribution [13].

Over the past ten years, the concept of foodscape becomes important for research in the field of food studies. This includes the concept of foodscape in food chains, food production, food ethics and food policy [14]. Foodscape is defined as a multiplicity of sites where food is found and/ consumed [10], whereas some look at it as structure in society forming the food environment [15]. Foodscape is used in a design approach exploring the meaning of the space, place and attributes [9] or as the interacting process of what is eaten, where and by whom [16].

Some researchers used the term foodscape to label the food landscape [17]-[20]. Nevertheless, it is argued that the usage is not suitable with geographical landscape terminology [9]. This is due to the use of the root term "food" is not a spatial concept appropriate for combining with "scape". In this study, foodscape is defined as the view of a particular object, as seen in a sum appearance of the food's visual features [21]. It is the evident in the actual preparation, presentation and eating of food which produce a quality food.

Foodscapes have many dimensions that may influence the food intake. The parameters include size, shape, texture,

colors and other qualities and may include other attributes such as divisions or demarcations apparent on the surface of food [9]. Previous research treated all the selected food attributes as one variable- that is food quality [4]. From the model of dining satisfaction and return patronage, the food quality been described in many attributes- presentation, tastiness, menu item variety and temperature [5].

In this study, it focuses more on presentation, freshness, temperature and variety. Presentation refers to how attractively food is presented and decorated as a tangible cue for customer perception of quality [22]. The presentation of food is a key food attribute in modeling dining satisfaction and return patronage [5]. It is also describes earlier by as one of the product and/or service factors in tangible quality TANGSERV scale [7]. This scale is based solely on the tangible quality elements of importance to restaurant patrons.

Freshness usually refers to the fresh state of food and appears to be related to crispiness, juiciness, and aroma [23]. It was found that freshness of food as a crucial intrinsic quality cue of food [5], [6], [24]. The crispiness of food refers to the food items such as taco, tempura and cookies. Juiciness can be in terms of meat items such as steak while aroma is referring to the smell of the food items. It was found that some people are emotionally and physically affected by the imaginary presence of an odor [11]. Some in house bakeries have been releasing synthetic scents to increase sales of bakery products such as Dunkin Donut and Starbucks coffee chain [25].

Temperature is a part of sensory element of food quality [5]-[6]. It can influence how the perceived flavor of food was evaluated, interacting with other sensory properties such as taste, smell and sight [26]. It can also be considered as one determinant enhancing pleasure in food experience [27]. Temperature is referring to the food that should be served hot is hot and vice-versa. The correct temperature will leads to satisfaction as it is related with taste, sight and smell.

Food variety involves the number or assortment of different menu items. This is where the restaurants can constantly develop new menus to entice diners and create an assortment of food and menu offerings [22]. It was found that menu item variety was a crucial attribute of food quality in creating dining satisfaction [5], [7], [8]. By giving more choices, the customer can select according to their food preferences.

The definition of future purchase intentions varies depending on the research context. The future purchase behavior can be in negative or positive ways. In this study, behavior/ intentions is defined as a customer's willingness to provide positive word of mouth, to visit the restaurant again in the future, to stay longer than anticipated, and to spend more than anticipated [28]. The behavioral intentions frequently develop from the service experience that the customer had in the organizations. Others describe it as a decision making process about whether to stay or leave the service firm [29]. It can also be referred as attitude of fairly stable like/ dislike of a product based on the experience and as an affirmed likelihood to engage in a certain behavior [30].

For the present study, future behavioral intentions is described as the likelihood to return to the restaurant, recommend the restaurant to family and friends and the power of separating the information through word of mouth. The dimensions are important in tracking the trend of the customers and at strategize the marketing concept of the organizations.

Foodscape is a fundamental of restaurant experience and there can be no doubt that it has and will continue to have a major impact on customer satisfaction and return patronage [22]. From their study, it shows that overall food quality significantly affects customer satisfaction and behavioral intentions. They revealed that the relationship between food quality and customer future behavioral intentions is mediated by satisfaction. It is revealed that taste and presentations were the two greatest contributors to customer satisfaction and behavioral intentions. This is similar with the earlier studies, which found that foodscape and satisfaction play an important role in determining customer behavioral intentions toward restaurant [3], [4], [8], [31]. It also shows that there is a significant effect between food attributes and return patronage [3], [4], [8]. The food attributes that had effects on the return patronage varies from the food tastiness, consistent food, menu variety and food quality. Nevertheless, setting and category of the restaurant also play parts in supporting this relationship [2]. Different setting and category have different effects toward future behavioral intentions of the customer.

III. METHODOLOGY

Data were collected through questionnaire and the sampling method was convenience sampling. The questionnaire was divided into 2 parts- foodscape and future behavior intentions. The dimensions of foodscape are presentation, variety, freshness and temperature. The dimensions for future behavior intentions such as repeat patronage and word of mouth are derived from the scales developed by Ziethaml et.al (1996). Respondents were asked to rate the items using the 5-points Likert type scale (1-extremely disagree; 5-extremely agree). The reliability of the scale was measured.

IV. RESULTS

A. Subject Demography

The results of the demographic profiles are based on 146 respondents consist of 48.6% (71) were male and 51.4% (75) were female, within the age of 15-64 years old who had experienced dining in a casual dining restaurant within the last 3 months. Most of the respondents had been visited the restaurant for two to five times. Purpose of visit to the restaurant were for brunch (34.9%) followed by dinner (21.9%), lunch (18.5%), supper (13%), business meeting (7.5%) and special event (4.1%). Majority of the respondents spent 1-2 hours in the restaurant eating 1 type food product in the restaurant. Set meal was the most popular food product consume by the customers followed by beverage, main course, dessert, appetizer and soup.

B. Factor Analysis

Factor analysis was performed on the independent variable (foodscape) which consists of 4 components- presentation, variety, temperature and freshness. The varimax method was used to determine any underlying components for the variable.

Factor analysis was run on 23 items measuring the independent variable. It was observed that the Bartlett's test of sphericity was significant and that the Kaiser-Meyer-Olken (KMO) measure of sampling is far greater than 0.6 with a value of 0.921 for foodscape. The KMO measure indicated sufficient intercorrelations. Therefore, the study proceeded with factor analysis.

C. Reliability

Part A consisted of 23 items that measured the perceptions of the customer towards the foodscape in the restaurant, which they experienced within the past 6 months. Reliability of 4 sub-dimensions was measured for presentation, variety, freshness and temperature. They respectively achieved the value of 0.89, 0.80, 0.85 and 0.92. Part B consisted of seven items related to future behavior intentions of the customers. Reliability of the dimension achieved the value of 0.92.

D. Descriptive Analysis

Descriptive data used to describe series of observation in a more meaningful way. Mean and standard deviations were obtained for the interval-scale dependent and dependent variables. The results are presented in the table below. Foodscape with sub dimensions of presentation, variety, freshness and temperature and future behavioral intentions were formatted into 5- point Likert scale format. The mean of all variables ranged from 3.71 to 3.95. For the standard deviations it ranged from 0.53 to 0.64. The variable with the highest mean for foodscape is temperature and the lowest mean is freshness.

TABLE I: DESCRIPTIVE ANALYSIS FOR THE VARIABLES

Variable	Mean	Standard deviation
Foodscape	3.89	0.53
Temperature	3.94	0.63
Presentation	3.95	0.58
Variety	3.92	0.64
Freshness	3.71	0.61
Future behavioral Intentions	3.87	0.54

E. Multiple Regressions

The result shows the R-Square and Durbin-Watson test. R-Square test result of 0.514 can be accepted for the regression analysis. The Durbin-Watson test result of 1.702, an indicator that the autocorrelation is almost reaching to zero (no autocorrelation) or there is significant difference that exists between the dependent and independent variables. It appears that the four predictor variables are not all equal to each other and could be used to predict the dependent variable, customer purchase intention as is indicated by F value of 37.31 and strong significance level of 0.000 ($p < 0.05$). The VIF value of less than 10 for all variables show that the problem of multi-collinearly has not existed and all data are mutually exclusive. In Table I, beta coefficient indicates which variables are important by looking at the largest value derived. The results show that two of the foodscape variables are significant ($p < 0.05$), which are presentation and freshness and have unique contributions towards future behavior intention of the customer.

TABLE II: RESULT OF COEFFICIENTS FOR FOODSCAPE DIMENSIONS

Variable	Standardized coefficients Beta	Sig	Collinearity statistics	
			Tolerance	VIF
Temperature	0.161	0.101	0.362	2.759
Presentations	0.349	0.001	0.307	3.524
Menu Variety	0.018	0.812	0.589	1.697
Freshness	0.261	0.006	0.395	2.532

V. DISCUSSIONS AND CONCLUSIONS

It is important to discover the importance of the elements that have effect towards the future behavioural intentions of the youth customer. Even though all the foodscape elements have significant relationship towards the independent variable, this preliminary study found that only two of the elements is significant and have unique contribution towards the future behavioral intentions of the customer, presentations and freshness.

Through results, it can be suggested that presentations and freshness play an important role in capturing the customer's heart. Presentations are important in foodscape as it indicate the first impressions of the food product to the customer. It can be in terms of color, food presentations, and even a showmanship of the chef in preparing the dishes for the customer with an open kitchen concept. The customer is also expecting a meal that worth the money that they are willing to spend in the restaurant. This inclusive the freshness of the product- the way the product been prepared, standardized recipe and fresh and quality product in preparing the menu. These two elements lead to good taste of the food, satisfaction of customer and positive future behavioral intentions towards the restaurant. It is one of the challenge face by the industry in providing not only a quality food but also compelling for the customer and also superior than their competitors [2]. It is believed that tasty and fresh food plays an important role in the attempt to outspace the competitors but nevertheless, the quality food is the one of the best means to maximise success in the restaurant business [2]-[3].

With the wide variety and options, customers now have the power to choose the best place that fit their preferences. The restaurant operators have to take some actions in marketing their food products to capture and retain their customers and compete with others. Several ways are through marketing in the physical of the restaurant, displaying of the products, transparent kitchen or a see through kitchen to give the guest some presentation and action, smell of a freshly baked cookies and brewed coffee to invite the guest to have and spend more in the restaurant. Presentation do plays an important role in foodscape. Through the sensory, customer perceive and evaluate the food that they are going to buy and consume. Not only foodscape, the other element that must be considered in marketing the restaurant is servicescape. Nevertheless, creativity and new ideas should be continuously developed to create positive intentions of the customer.

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Corporate Social Responsibility to Reflect Organization's Corporate Identity: A Content Analysis

Musdiana Mohamad Salleh, Nabsiah Abdul Wahid, and Malliga Marimuthu

Abstract—The authors propose corporate social responsibility (CSR) as a useful element in reflecting an organization's corporate identity (CI) to its target audiences. The inclusion of CSR highlights organization's role as a 'good' citizen in society and is the basis for any beneficial exchanges between the parties. Content analyses on CSR of 10 top ranked Malaysian companies supported this proposition.

Index Terms—Corporate social responsibility, corporate identity, content analysis.

I. INTRODUCTION

The issue on how corporate identity (CI) is reflected on organization's stakeholders is acknowledged that since mid-twentieth century, attempts to it have emerged from three perspectives; visual image (VI), corporate personality (CP) and corporate communication (CC) perspectives [1] and [2]. Although definitions from CP and CC perspectives seem more acknowledged, Balmer [3] argues that greater reliability of CI definition is achieved only through the integration of existing definitions. In this study, the authors propose that CI can be reflected through CSR philosophies carried out by organizations.

II. LITERATURE REVIEW

A. Corporate Social Responsibility

Extensive studies on CSR over the years resulted in increased recognition of its benefits in addition to stakeholders' demands for organizations to provide CSR reporting in their annual reports and on corporate websites. It has become a key in marketing strategies [4]-[5] due to its capacity in improving corporate image and brand [6]-[7]. Organizations often present themselves as social actors with primary mission to contribute to sustainable development of their environment through engagement with society in which they operate. Thus, they establish codes of conduct, report on social issues, stick to international declarations on CSR, try to be among the lists of socially responsible companies (Fortune 500) or to develop sustainability index in stock markets (Dow Jones Sustainability Index). Adapting Campbell's (2007) definition of CSR, we refer to it as organization's voluntarily

effort in integrating their stakeholders' social and environmental expectations and/or concerns into their daily operations and their interaction with the stakeholders.

B. Corporate Identity

Corporate identity (CI) has been used as the basis for other various corporate level concepts like image, reputation or corporate communications; and is even considered fundamental in corporate marketing field [1]-[2]. The traditional VI perspective sees CI being used at the early stage of organization's operation as it becomes the mean for CI transmission e.g. through logos, brand images and other visual manifestations representing them [3]. CI has evolved from this definition from focusing only on the minor elements of the organization to now emphasizing more on the core businesses, strategy, structure and culture [4], hence the popularity of CI definition usage from the CP and CC perspectives; as these perspectives believe that CI is made up of more than the name and corporate logo [5]. For instance, proponents of CP consider CI to derive from beliefs and shared values of the members of the organization, that it is defined as a means of expressing the personality of the company (the set of essential features that give individuality to differentiate an organization) or the CP [6]-[8]. CC proponents further suggest on the different ways of communication to help with the transmission of CI; i.e. through symbols, corporate behavioral communication (CB) or CC itself [9] when organization and stakeholders interact. Thus, the identity mix [5], [10]-[12] is essential in how CI is defined.

The discussion on the identity mix (CC, CB and symbol) led us to agree that they are crucial as tools in expressing organization's personality and characters that has also been described fundamental in building the CI through internal and external communications between the organization and its members and/or stakeholders. CI value lies mainly in the generation of clear and favorable business image, resulting in it being a valuable source of competitive advantage [5], [13] and marketing strategies [14]. For instance, CI helps to increase employee's motivation, inspire public confidence, align corporate strategy with the market, attract new investments and differentiate products and services [10], [15]. Since the issue on how organization target audiences relate to organization (in terms of credibility and legitimacy in the marketplace) is important, thus attempts to convey positive CI to them are necessary[13]. The 'identity mix' is done through a) corporate symbols (e.g. visual identity, logo, name, slogan, color), corporate aesthetics (architecture, design interior or furniture) and appearance of staff [5], [11], b) corporate behavior (CB) – i.e. all behaviors and initiatives

that support the organization [3] as well as non-verbal intangible communication [5] and c) corporate communication (CC) [10]. Following this approach, therefore, we defined corporate identity as "the central, distinctive and enduring characters of an organization, which expressed through symbols, behaviors and internal and external communications of the company and its members."

In transmitting CI, CB component is usually related to ethical action, actions towards the environment and labor contract issues [11], and direct communication, including the behavior of employees and directors[5], [11]. CC, in turn, acts as the company's tactical tool that complements CB when individuals want to form an image of the organization [16], since the message sent out can be controlled by the company. CC is also used as a tool to generate stable relationships with all stakeholders (van Riel, 1995). However, uncontrolled communication like word of mouth or previous experiences with the product or company can also be essential for image generation.

In sum, CI's potential strategic value can be created from two dimensions, the experience of the organization and its social responsibility [17]-[18], similar to the concept of 'corporate partnerships' used in corporate image study [19]-[20]. Here, experience refers to company positioning (skills in product category/service) whereas social responsibility dimension highlights the role of the company as a citizen in society, with reference to their moral, ethical and social character which provides the basis for the beneficial exchanges between the organization and its various target audiences.

III. METHODOLOGY

TABLE I: RANKING OF MALAYSIAN COMPANIES BASED ON FORBES GLOBAL 500 FOR YEAR 2012

Rank	Company	Industry
1	Maybank	Banking
2	CIMB Group Holdings	Banking
3	Sime Darby	Conglomerate
4	Public Bank	Banking
5	Genting	Casinos and Gamming
6	Axiata Group	Telecommunication
7	Tenaga Nasional	Electric Utilities
8	Petronas Chemicals	Chemicals
9	IOI Group	Food Processing
10	RHB Capital	Banking

TABLE II: RANKING OF MALAYSIAN COMPANIES BASED ON FORBES GLOBAL 500 FOR YEAR 2012

Company	Sales	Profits	Assets	Market Value
			USD Billions	
Maybank	7.2	1.6	141.9	22
CIMB Group Holdings	5.4	1.3	94.7	18.6
Sime Darby	13.9	1.2	14	19.2
Public Bank	3.7	1.1	78.7	15.6
Genting	6.1	0.9	17.1	12.9
Axiata Group	5.2	0.7	12.7	14.2
Tenaga Nasional	10.8	0.2	25	11.4
Petronas Chemicals	4.6	1	9.6	17.7
IOI Group	5.3	0.7	6.5	11
RHB Capital	2.2	0.5	48.1	5.7

TABLE III: CORPORATE SOCIAL RESPONSIBILITY PHILOSOPHY OF TOP 10 PUBLIC COMPANIES IN MALAYSIA

Company	CSR Philosophy
Maybank (Malayan Banking Berhad)	"Conducting our business in a way that enhances our performance both today and over the long term, contributing to the socio economic development of the countries in which operates. We continue to conserve the environment, enrich the livelihood of the community, care for the development and wellbeing of our employees and contribute to good governance."
CIMB Group Holdings	"We believe in long-term sustainable growth and giving back to society. Our initiatives are aimed empowering communities in a transparent, measurable and accountable way to enable them to stand on their own".
Sime Darby Berhad	"Sime Darby Berhad is a socially responsible corporate citizen committed to delivering a sustainable future. Towards this goal, four pillars – Environment, Community, Education and Sports – have been identified to support its corporate social responsibility initiatives, all predicated on the principles of nation building."
Public Bank Berhad	"As a leading financial services group in the country, the Public Bank Group is fully committed to responsible corporate practices, which have a positive impact on the social and economic development of the countries that the Group operates in, by conducting its business activities in a sustainable manner".
Genting Berhad	"We are a global leader in the leisure and hospitality industry providing responsible world-class entertainment within a sustainable business environment towards our guest, our staff, our investors and our environment."
Axiata Group Berhad	"We are mindful of our responsibility towards our stakeholders, particularly shareholders, customers, communities and employee, and as such our Corporate Responsibility (CR) efforts integrate social, environmental, and economic concerns so as to ensure that we continue to deliver sustainable value for our long term growth and success."
Tenaga Nasional Berhad (TNB)	"As the country's largest electricity company, TNB has taken on the role of 'Powering the Nation', and this forms the core of the Company's CSR policy. The Company also contributes significantly to the socio-economic development of the nation by promoting education, providing aid to marginalised communities, promoting the growth of small and medium sized companies and by supporting sporting talent. TNB also offers one of the most extensive employee benefits packages in the country."
Petronas Chemicals Group Berhad (PCG)	"PETRONAS carrying out business in a socially responsible and holistic manner to ensure continued growth and success for the benefit of present and future generations wherever we operate. PETRONAS focus on: shareholder value, efficient use of energy and water, and supporting the use of renewable energy, limiting emissions of greenhouse gases into the atmosphere, Biodiversity, Health, Safety and Environment, product stewardship and safeguarding human rights within our sphere of influence, contributing to community needs, ensuring fair employment practices, developing talents and conducting our business in a transparent manner."
IOI Group	"IOI's approach on Corporate Responsibility is to strike a Sustainable Balance between the conflicting demands of internal and external stakeholders in our pursuit of profits and growth. Our operating principles on "sustainability" are reflected in our VISION statement and Code of Business Conduct since 1995 – way before "social-environment" and "global warming" concern took global centre stage.
RHB Capital	RHB CSR philosophies are: To embark on initiatives that cut across and impacts the community at large, transcending cultural and religious differences. Voluntary contribution that is expected to create and instil positive social values not only to the group's employees, but also to the society as a whole.

This study applied content analysis technique of company web sites, annual reports and CSR reports available via downloadable in PDF format to identify their CSR philosophy that reflect their CI. This technique used to describe CSR patterns of selected organizations.

From the presence of certain words, concepts, themes, phrases, characters, or sentences within texts or sets of texts, it allows researcher to quantify their presence in an objective manner [22]. Samples used were top 10 Malaysian companies listed in Forbes Global 2000 (2012) (Table I)

Forbes Global magazine annually ranks top public companies worldwide based on four criteria namely sales, profit, assets and market value (Table II).

IV. RESULTS AND CONCLUSION

CSR philosophy and statements represent part of the identity mix (CB, CC and symbol) used by organization to transmit CI as an image (positive or negative perception of company's reality) is captured in the minds of their internal and external stakeholders.

CSR as CI comprises the essential features of the organization that differentiate one organization from the other in term of their reality, the way they perceive themselves and their behavior. The "soul" of each company is presented through their CSR statements for examples some company include the statement about their CSR commitment in "about us" pages in their website. Not much difference in terms of CSR philosophy/statement by the 10 companies was found (Table II); CSR is described mostly as a set of company beliefs, value, culture and direction towards sustainability of their environment and community that give the companies their specific and unique personality which concurs with definition of CSR as the personality of the company [11], [23]. These descriptions also fit the CI definition as they group essential features of each organization although they serve different market segments. It is observed that each company listed at least one value of CSR elements that relate to ethical practices, economical, social, and environment commitments. We can observe that the values refer to the observance of laws and regulations, internal rules, honesty, transparency, integrity or diversity in promoting community relations and environmental protection.

As a conclusion, we can consider corporate identity as the collection of essential features that make an organization. Therefore, in order to understand the identity of company, we should know the role of CSR at the same time. CSR serve as identity and also strategic planning of the company by not fulfilling their economic profit but also contribute to the growth and the development of society and environment. Thus, stakeholders can use CSR as a way to understand the identity of a company; and that company can also use it as a tool to build their CI.

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Feasibility of a Monetary Union in the East African Community: A Structural Vector Autoregression Model

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Abstract—The aim of this paper is to assess the suitability of a monetary union among the East African Community (EAC) members. EAC consists of five neighbouring countries situated in the eastern part of Africa, which include Burundi, Kenya, Rwanda, Tanzania and Uganda. The methodological approach of this paper is based on AD-AS framework. The study focuses on the symmetry and asymmetry of shocks affecting EAC countries; a four-variable structural vector auto-regression model was used to identify four types of shocks: global supply shock, domestic supply shock, monetary supply shock, and domestic demand shocks. After identifying the shocks, we considered cross country correlation analysis, analysis of variance, and impulse response analysis. The results of correlation shock analysis revealed that domestic demand shocks and external supply shocks were dominant in the region, while domestic supply shocks and monetary shocks were less correlated and asymmetry in the region. In conclusion, the study results did not show strong support for the formation of a currency union in the region at present, but nevertheless gives some hope to a successful monetary union in the future.

Index Terms—Optimum currency areas, SVAR, monetary union, East African economies.

I. INTRODUCTION

In recent years, the pursuit and interest of monetary union has become an important phenomenon in economic development. Many countries in the world have the incentive to form monetary unions with the intention of enjoying the benefits of increased economic integration and to avoid the monetary domination of larger countries [1]. Like other regional economic blocks, the East African Community (EAC) had been planning economic integration since 1999. EAC consists of five neighboring countries, situated in the eastern region of Africa (Burundi, Kenya, Rwanda, Tanzania and Uganda) [2]. EAC regional block is unique in Africa as it is the only regional block in Africa which had made considerable achievements towards the economic integration as they had established a Customs Union (2005) and Common Market (2010). They are subsequently planning to implement a Monetary Union by 2015 and finally a Political Federation of East African States [3].

The aim of this paper is to assess the economic feasibility of the proposed monetary union among the East African Community member countries using the Structural Vector Auto-regression model (SVAR). To do so, we identified the underlying structural shocks that these economies are facing and assessed the extent to which these shocks are symmetric; three different methods were applied: correlation analysis, analysis of variance, and impulse response. This paper seeks to contribute to the relatively scarce economic literature on the East African monetary integration; it also extends the 2 VAR model into a 4 VAR model, as previous EAC researches had used only 2 VAR models which are too restrictive and potentially misleading [4]. The rest of the paper is organized as follows: Section 2 discusses theoretical foundations and empirical reviews of the literature. Section 3 addresses the data and methodology. Section 4 discusses the results and findings. Section 5 concludes the paper with a summary.

II. LITERATURE REVIEW

The Optimum Currency Area (OCA) theory is used to analyze the suitability of a monetary union for a given region; it explores the criteria as well as the costs and benefits of forming a common currency area. The concept of currency areas was founded by Robert Mundell through his seminal paper titled 'A Theory of Optimum Currency Areas' [5], followed by Ronald Mckinnon [6], Kenen [7], Corden (1972), and Ishiyama (1975); these authors are the founders of the traditional Optimum Currency Area Theory (OCA). The traditional OCA theory describes the characteristics that potential monetary union members should possess before they form one common currency and surrender their national monetary policy and exchange-rate adjustment of their national currencies.

The New OCA theory is primarily concerned with potential benefits rather than costs, it gives a Meta analysis form of assessment which combines a broad range of OCA properties in a group of countries; the most popular methodological analyses of the New OCA theory are "symmetry of shocks" and "synchronization of business cycles". These two methods are the key requirements for a suitable monetary union. Proponents of the New OCA theory include: De Grauwe [8], Tavlas [9], Krugman [10], Bayoumi and Eichengreen [11], Darvas & Szapáry [12], Kwan & Yan[13], Frankel and Rose [14], etc. In summary, most of the literature on the OCA theory outlines "symmetry of shocks" and "synchronization of business cycles".

The empirical literature of OCA theory on the EAC is scarce; the following authors have studied the viability of a monetary union in the EAC: Buigut & Valev [2], Kishor &

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Ssozi [15], Mafusire & Brixiova [3], Mburu [16], and Mkenda, [17] Falagiarda [18], Sheikh, et al., [19], and Opolot & Osoro [20]. These studies had used different models and they have reached different conclusions. For example, Buigut, Kishor, Mafusire, and Mburu applied a two-variable SVAR model to test for shock correlation in the EAC countries; they found that forming a monetary union in the EAC is not feasible. Conversely, Mkenda and Falagriarda employed the G-PPP approach which uses co-integration analysis; they concluded that having a monetary union in East Africa could be a viable option. Lastly, Sheikh and Opolot have studied the feasibility of forming a monetary union in the EAC using the business cycle synchronization approach of Hodrick-Prescott and Baxter-King filters. They found a low degree of synchronization among EAC members, but with improved results in recent years.

III. Methodology and Data

This paper addresses the question of the prospects of a monetary union in the East African Community based on Mundell's theory of optimum currency areas. The study uses the SVAR model premised on the AD-AS framework introduced by Bayoumi and Eichengreen (1992), with some extension in variables. The data considered were drawn from the World Economic Outlook database of the International Monetary Fund and the World Bank's World Development Indicators; it ranges from the period of 1980-2010. Before running the models, we performed a unit roots test in order to see whether the data is stationary or not; fortunately we found all variables at I (0). To conserve space, details of the results of the unit root test are available upon request. This paper uses a four-variable SVAR model to examine the shocks according to the OCA predictions. These variables are global real GDP (y^*), domestic real GDP (y), real exchange rate (e) and domestic price level (p).

$$X_t = A_0 \epsilon_t + A_1 \epsilon_{t-1} + A_2 \epsilon_{t-2} + ... = A(L) \epsilon_t$$

$$\Delta y^*_t = A_{11}(L) \epsilon_t^{s*}$$

$$\Delta y_t = A_{21}(L) \epsilon_t^{s*} + A_{22}(L) \epsilon_t^{s} + A_{23}(L) \epsilon_t^{d} + A_{24}(L) \epsilon_t^{m} \quad (1)$$

$$\Delta e_t = A_{31}(L) \epsilon_t^{s*} + A_{32}(L) \epsilon_t^{s} + A_{33}(L) \epsilon_t^{d} + A_{34}(L) \epsilon_t^{m}$$

$$\Delta p_t = A_{41}(L) \epsilon_t^{s*} + A_{42}(L) \epsilon_t^{s} + A_{43}(L) \epsilon_t^{d} + A_{44}(L) \epsilon_t^{m}$$

where $Xt = [\Delta yt^*, \Delta yt, \Delta et, \Delta pt]$', comprising of world real GDP (y^*), domestic real GDP (y), real exchange rate (e) and domestic price level (p), which are all in log difference forms. The matrix Ai is a 4x4 matrix that provides the impulse responses of endogenous variables to structural shocks. $\epsilon = [\epsilon ts^*, \epsilon ts, \epsilon td, \epsilon tm]$', comprising of external world supply shock (ϵts^*), domestic supply shock (ϵts), domestic demand shock (ϵtd), and monetary shock (ϵtm), respectively, which are assumed to be serially uncorrelated and are orthonormal.

To identify the structural shocks, we imposed the following long run restrictions: i) global output is considered to evolve exogenously so that domestic supply, domestic demand and monetary shock do not affect global real GDP in the long run. This means $A_{12} = A_{13} = A_{14} = 0$; ii) In the long

run, domestic real GDP is affected only by supply shocks, this means $A_{23} = A_{24} = 0$; iii) Monetary shocks do not have effects on real exchange rates in the long run. These restrictions can be rewritten in matrix form:

$$\begin{bmatrix} \Delta y_{t*} \\ \Delta y_t \\ \Delta e_t \\ \Delta p_t \end{bmatrix} = \sum_{i=0}^{\infty} \begin{bmatrix} A_{11\,i} & 0 & 0 & 0 \\ A_{21\,i} & A_{22\,i} & 0 & 0 \\ A_{31\,i} & A_{32\,i} & A_{33\,i} & 0 \\ A_{41\,i} & A_{42\,i} & A_{43\,i} & A_{44\,i} \end{bmatrix} \begin{bmatrix} \epsilon^*_{s\,t-i} \\ \epsilon_{s\,t-i} \\ \epsilon_{d\,t-i} \\ \epsilon_{m\,t-i} \end{bmatrix}$$

IV. Results and Discussion

After extracting shocks from the SVAR models, the study used cross country correlation analysis to examine the co-movements of economic disturbances in the East African Countries. Co-movements of shocks across countries are considered a crucial condition towards integration in a common currency area [21]. Table I through 4 report the correlation coefficients of the identified supply and demand shocks among the EAC. The idea is that the more symmetric the shocks as indicated by positive correlations, the more feasible it becomes for a group of countries to establish a monetary union (Kandil, 2009).

TABLE I: CORRELATIONS OF SUPPLY SHOCKS 2001-2010

Countries	Burundi	Kenya	Rwanda	Tanzania	Uganda
Burundi	1.0000				
Kenya	0.1190	1.0000			
Rwanda	0.6650	-0.3928	1.0000		
Tanzania	0.7431	-0.3205	0.7284	1.0000	
Uganda	0.3137	-0.1466	0.1146	0.0972	1.0000

Table I presents the correlation coefficients of domestic supply shocks across EAC countries, for the period of 2001-2010. As the table shows, the domestic supply shocks are less correlated between EAC countries than domestic demand shocks and global shocks. The highest three correlation coefficients are found to be Burundi-Tanzania (0.74), Rwanda-Tanzania (0.72) and Burundi-Rwanda (0.67). Kenya had a negative domestic supply shock correlation with the rest of the countries in the sample, signifying major structural differences. Thus, the costs of Kenya's participation in the EAC monetary union would be higher than the benefits of joining the EAC currency union.

TABLE II: CORRELATIONS OF DEMAND SHOCKS (PRICE), 2001 TO 2010

Countries	Burundi	Kenya	Rwanda	Tanzania	Uganda
Burundi	1.0000				
Kenya	0.6997	1.0000			
Rwanda	0.5446	0.7024	1.0000		
Tanzania	0.4376	0.5578	0.3733	1.0000	
Uganda	0.4120	0.4630	0.7729	0.7284	1.0000

Table II presents correlation coefficients of demand shocks across EAC. Demand shocks are somewhat stronger than supply shock. The correlation coefficient of the domestic demand shocks ranges from 0.37% (Rwanda-Tanzania) to 0.77% (Rwanda-Uganda). Burundi & Rwanda show a strong demand shock with the other

members of the region; this can be explained by the fact that these two countries are small & landlocked countries that are hugely connected with the other bigger EAC countries. This evidence reflects the symmetry of adjustments to demand shocks in these two countries. To sum up, the findings of demand shocks suggest that EAC countries tend to be affected by similar domestic shocks. Buigut & Valev (2005) found asymmetric demand shocks in the EAC.

TABLE III: CORRELATIONS OF MONETARY SHOCKS 2001- 2010

	Burundi	Kenya	Rwanda	Tanzania	Uganda
Burundi	1.0000				
Kenya	-0.5453	1.0000			
Rwanda	-0.7133	0.6580	1.0000		
Tanzania	-0.1094	0.3284	0.1351	1.0000	
Uganda	-0.4493	0.7711	0.3924	-0.2553	1.0000

The results in Table III and Table IV display the correlations of monetary and external supply shocks among EAC countries. Most of the monetary shocks of EAC members are positively correlated with the exception of Burundi. On the other hand, the global supply shocks of EAC range from 0.65% (Uganda-Tanzania) to 0.97% (Burundi-Uganda); this is high compared to the domestic supply and demand shocks. This shows that the effect of global supply shock in the region is strong and affects symmetrically.

TABLE IV: CORRELATIONS OF WORLD SUPPLY SHOCKS 2001-2010

	Burundi	Kenya	Rwanda	Tanzania	Uganda
Burundi	1.0000				
Kenya	0.9657	1.0000			
Rwanda	0.9873	0.9523	1.0000		
Tanzania	0.7224	0.7595	0.8065	1.0000	
Uganda	0.9680	0.8830	0.9563	0.6499	1.0000

Table V provides the summary of results for both one-way

Anova tests. As shown by the Levente test in Table 5, the external supply shock, domestic supply shock and domestic demand shocks of EAC countries were identical. Only the monetary shocks of EAC were not stationary. Thus, we can proceed to the next step of the analysis of variance. In the Anova column, it is shown that external supply shock, domestic supply shock and domestic demand shocks of the EAC countries do not differ from each other; thus we can say that EAC countries had identical macroeconomic shocks for the period of 2005 to 2010.

TABLE V: ONE-WAY ANOVA TEST

Countries	Levente (P-value)	ANOVA (P-value)
Supply Shock	0.5746	0.6871
Demand Shock	0.1412	0.5456
Monetary Shock	0.0000	0.9888
Global Shock	0.0983	0.5901

After the correlation analysis of supply and demand shocks, it is beneficial to look at the impulse response function (IRF) to evaluate the magnitude or the size of the response of each economy to the various shocks. To conserve space, we limit the analysis to the IRF of real domestic output to each shock within each economy during the 1st, 5th, and 10th year. Details of IRF are available upon request. Table 6 summarizes the dynamic responses of domestic real output to various shocks. In general, the IRF of output in EAC countries to the shocks are small and dissipating within the following 10 years, reflecting a high speed of adjustment. On the other hand, the table shows that external and domestic supply shocks have more impact on domestic output; while domestic demand and monetary shocks have less impact on domestic output. In summary, the IRF of the EAC countries have shown small correlated disturbances and exhibited relatively rapid adjustments to the equilibrium.

TABLE VI: THE SIZE OF IMPULSE RESPONSES OF DOMESTIC OUTPUT

Countries	Time	World Supply Shock	Domestic Supply Shock	Domestic Monetary Shock	Domestic Demand Shock
Burundi	1st period	0.000047	0.036910	-0.006250	-0.015940
	5th	0.002936	0.033897	-0.017090	-0.011350
	10th	0.006944	0.026194	-0.021290	-0.007480
Kenya	1st period	0.014037	0.019865	-0.007790	-0.007280
	5th	0.019743	0.019096	0.001929	-0.006020
	10th	0.014908	0.015148	0.012576	-0.005880
Rwanda	1st period	0.005623	0.042865	-0.007690	-0.015060
	5th	-0.020420	0.014308	0.006513	0.022044
	10th	-0.004390	-0.008245	0.026705	0.019016
Tanzania	1st period	0.005676	0.013401	-0.001640	-0.001850
	5th	0.005077	0.029518	-0.011950	0.002946
	10th	-0.002008	0.019327	-0.038860	0.008517
Uganda	1st period	0.012441	0.026419	-0.007870	0.003802
	5th	0.058933	0.034863	-0.022450	0.010306
	10th	0.021476	0.014122	-0.003770	0.016068

V. CONCLUSION

This paper empirically evaluated the feasibility of a monetary union among the East African Community members. The study had used a four-variable SVAR model that comprises four shocks: global supply, domestic supply,

domestic demand and monetary shocks. The correlation analysis reveals that domestic demand shocks and external supply shocks were dominant in the EAC, while domestic supply shocks and monetary shocks were less correlated and asymmetry in the region as Kenyan domestic supply shock had shown a negative correlation while Burundi had a

negative monetary shock. The Anova and IRF analyses had shown relatively favorable results. In general, the results were in line with previous researches. Finally, although EAC members had shown some degree of symmetric shock, they still need to increase policy co-ordination in order to achieve the desired level of symmetry of shocks. This study recommends future researchers to use quarterly data series & industrial production index to get desirable and better outcomes.

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Hedging with Interest Rate Swap

H. Jaffal, Y. Rakotondratsimba, and A.Yassine

Abstract—**Despite the importance played by Interest Rate Swaps (IRS), it appears that sounding analyzes related to the hedging of portfolios made by swaps is not clear in the financial literature.**

We provide here the analysis corresponding to a parallel shift of the interest rate. The suitable swap sensitivities to make use in hedging and risk management obtained here may be seen as some generalization of the well known bond duration and convexity in the swap framework.

Our present results might provide a support for practitioners, using portfolio of swaps and/or bonds, in their hedge decision-making.

Index Terms—**Hedging, optimization, zero-coupon, swap.**

I. INTRODUCTION

Interest Rate Swaps (IRS) appear to be instruments largely used by market participants (companies, local governments, financial institutions, traders ...) for many purposes including debt structuring, regulatory requirements and risk management. According to the BIS June 2011 statistics, the Interest Rate Swap (IRS) represents 78.25% of OTC derivatives while the corresponding equity part is just about 0.97%.

Despite this market importance played by IRS, it appears that sounding analyzes related to the hedging of portfolios made by swaps is not clear in the financial literature. To partially fill this lack, we provide here the analysis corresponding to a Parallel Shift (referred in the sequel as (PS)) of the interest rate. Though such an underlying assumption is little bit less realistic, both practical and theoretical reasons lead to grant a consideration to this particular situation.

Some of the arguments are presented in our (lengthy) working paper [1], where we have already analyzed the portfolio hedging using swaps and bonds. Parts of our findings are summarized and reported here. In our numerical illustrations we consider the hedge of a swap portfolio by another swap portfolio, a case which has not been considered before. The suitable swap sensitivities to make use in hedging and risk management are obtained here as a byproduct of our analyses. They may be seen as generalizing the well-known bond duration and convexity [2]-[3] in the swap framework. These obtained sensitivities are in line with the bond situation, for which the need to take into account both the passage of time and horizon hedging are analyzed in [4] and [5].

Our aim in writing this paper is to provide a theoretical support which shed light practitioners in their decision-making related to the hedge of a position sensitive to interest rate and by using a portfolio made by swaps (and/or bonds). For the time being, there are various broker advertisements and leaflets about switching to alternative instruments (as VIX futures, inverse ETF, Swap future ...) for the hedging purpose instead of just using a classical bond portfolio. However the arguments used in these leaflets are essentially based on (particular) numerical situations which are certainly attractive but unfortunately do not reflect all other cases which may arise in reality. Systematic analysis of the portfolio hedging mechanism, as performed here, cannot really fully describe over commercial flyers.

Our present project is essentially focused on the hedge of a position sensitive to the interest rate by a portfolio of swaps. The use of a bond portfolio as a hedging instrument has been investigated in [5]. It may be noted that the hedge with a bond future was previously studied in [6] and empirically investigated in [7]. Here we do systematic analyses of the hedging mechanism in the sense that they are essentially based on the portfolio instrument characteristics and, in contrast with various academicals papers and commercial leaflets related to hedging, they do not lean on particular historical data. Our results provide an approach and formulas which may be directly implemented in order to get the suitable hedge ratio and corresponding hedging error estimates for any given portfolio of swaps. Of course the interest rate curve, at the hedge horizon, is assumed here to make a parallel shift belonging to some closed finite interval. Though this last seems to be a restrictive assumption, any realistic interest rate curve movement is always inside some band which may be determined based on the market view. It means that we have derived here some sort of robust hedging approach in the sense that it avoids to use involved dynamical stochastic model for the interest rate.

In Section 2, we make a survey of our results, whose technical details are presented in [1]. Then a numerical illustration is displayed in the next Section 3.

II. SURVEY OF OUR RESULTS

After recalling features on Zero-Coupon-Bond and Interest Rate Swap in 2.1, we present in Subsection 2.2 the underlying idea to the hedge of a portfolio of swaps by another portfolio. Our main contribution is on the derivation of the sensitivities and the associated optimization.

A. Zero-Coupon and Interest Rate Swap

The present time is denoted by t. By $P(t,T)$ we mean the time-t price of a Zero-Coupon-Bond which, can be seen as an instrument paying one unit of the currency to its holder at the

maturity T, where $t < T$ Commonly it is taken that

$$P(t,T) = \exp[- y(t;T-t)(T-t)] \quad (1)$$

where $T-t$ is the time-to-maturity. The nonnegative real number $y(t;T-t)$ represents the interest rate applied at time t for this time-to-maturity and very often known under the name of yield-to-maturity.

A plain vanilla Interest Rate Swap is a contract between two counterparties. The first agrees to pay to the second, during a given period of time, regularly a cash flow equal to the interest corresponding to a predetermined fixed rate on the contractual notional principal. In return, the first counterparty receives an interest at floating rate on the same notional principal and for the same period of time. It may be seen [1] that, the time-t value for such a swap (with respect to the point of view of the counterparty paying the fixed rate) is given by

$$value\_Swap_t = notional \times$$

$$\begin{pmatrix} P(t,t_1)\{y(t_0;t_1) - rate\_Swap_t\}\tau(t,t_1) \\ + \{P(t,t_1) - P(t,t_M)\} \\ - rate\_Swap_t \times \sum_{i=2}^{M} P(t,t_i)\tau(t_{i-1},t_i) \end{pmatrix} \quad (2)$$

.

where

$$0 \le t_0 \le t \le t_1 < ... < t_i < ...t_M$$

such that $t_1...t_i...t_M$ correspond to the cash-flow time-payments. Here $\tau(t_{i-1},t_i)$ denotes the annual measure of the time-elapsed between t_{i-1} and t_i. For a semi-annual frequency one has $\tau(t_{i-1},t_i) \approx 0.5$. By rate_Swap we mean the contractual predetermined rate, such that at the contract time inception the swap has a zero market value.

The swap market value, as in (2) are one things, but for the position management and hedging the change of the market value matters. Therefore for the (future) time-period $(t,t+\delta)$, let us set

$$change\_value\_Swap_{t,t+\delta}(.) = \\ value\_Swap_{t+\delta}(.) - value\_Swap_t \quad (3)$$

To simplify we only consider the case $t+\delta < t_1$ such that no payment takes place during $(t,t+\delta)$ When such an assumption is not satisfied then at least an effective cash-flow is paid or received and the analysis becomes little bit complicated. The assumption used here relies on the fact that in practice the horizon under consideration is preferably short enough in order the associated projected view to be more and less credible. However the real hedging horizon may be for a longtime, and consequently it is usual among the practitioners to roll their hedging positions. It means that it is important to have at a disposal an accurate analysis for the single-period hedging and it is exactly our main focus in this paper. The explicit value of change value of the Swap during the period $(t,t+\delta)$ may be written as

$$change\_value\_Swap_{t,t+\delta}(.) = notional \times$$

$$\begin{pmatrix} -\{y(t_0;t_1) - rate\_Swap_t\}P(t,t_1)\delta \\ + (1 + \{y(t_0;t_1) - rate\_Swap_t\}\tau(t+\delta,t_1))\begin{pmatrix} P(t+\delta,t_1)(.) \\ - P(t,t_1) \end{pmatrix} \\ - \{P(t+\delta,t_M)(.) - P(t,t_M)\} \\ - rate\_Swap_t \times \sum_{i=2}^{M} (P(t+\delta,t_i)(.) - P(t,t_i))\tau(t_{i-1},t_i) \end{pmatrix}$$

$$(4)$$

With this last expression the swap market value change during the time-period $(t,t+\delta)$ arises as a linear combination of changes of zero-coupon bonds with various maturities t_i's. It means that we have to make use of features concerning zero-coupon changes

$$P(t+\delta,t_i)(.) - P(t,t_i)$$

For such a purpose, a model for the future evolution of the interest rate is needed. In this paper we will focus on the common hypothesis "Parallel Shift (PS) of the yield curve" at the future time $(t+\delta)$ which is described by

$$y(t+\delta;\tau)(.) = y(t;\tau) + \varepsilon(.)$$

where $\varepsilon(.) = \varepsilon(.,t,\delta)$ In this last, we mean that the shift ε depends on the present time t and horizon δ. The strong fact here (and likely less realistic) is that the shift does not depend on the maturity τ.

B. The Hedging Mechanism and Sensitivities $P(t,T)$

Let us denote by V_t the present time t-value of a portfolio assumed to be sensitive to the interest rate which is made by swaps or/and bonds. At the future time horizon $t+\delta$ this portfolio may suffer from a loss, in the sense that $V_{t+\delta} < V$. So to try to maintain the (future) value $V_{t+\delta}(.)$ to be close to V_t, the portfolio manager has to put in place a hedging technique. The idea relies on using another portfolio, referred in the sequel as a hedging portfolio (or instrument), such that this last would lead to a nonnegative profit compensating the loss on the initial portfolio. Therefore instead of the absolute change

$$V_{t+\delta}(.) - V_t = P\&L\_naked\_portfolio_{t,t+\delta}(.) \quad (5)$$

associated with the initial naked portfolio, at the horizon $t+\delta$, the change for the covered portfolio is given by

$$P\&L\_covered\_portfolio_{t,t+\delta}(.) = V_{t+\delta}(.) - V_t \\ + P\&L\_hedging\_instrument_{t,t+\delta}(.) \quad (6)$$

The hedging portfolio H is assumed at time-t to have the value

$$H_t = \sum_{i^{**}=1}^{I^{**}} H_{t,i^{**}}^{**} n_{i^{**}}^{**} - \sum_{i^{*}=1}^{I^{*}} H_{t,i^{*}}^{*} n_{i^{*}}^{*} \quad (7)$$

It means that H is made by I^{**} types of instruments $H_{t,i^{**}}^{**}$ in long positions and I^{*} types of instruments $H_{t,i^{*}}^{*}$ in

short positions. For a given type i^{**} (resp. i^*), we make use of $n_{i^{**}}^{**}$ (resp. $n_{i^*}^*$) number of instruments $H_{t,i^{**}}^{**}$ (resp. H_{t,i^*}^*). The Profit&Loss corresponding to the use of the hedging instrument is (roughly) given by

$$P \& L\_hedging\_instrument_{t,t+\delta}(.) = \left\{ H_{t+\delta}(.) - H_t \right\} - \cos t\_H_t \tag{8}$$

such that

$$P \& L\_\text{cov}ered\_portfolio_{t,t+\delta}(.) =$$
$$V_{t+\delta}(.) - V_t + \sum_{i^{**}=1}^{I^{**}} \left\{ H_{t+\delta,i^{**}}^{**} - H_{t,i^{**}}^{**} \right\} n_{i^{**}}^{**} \tag{9}$$
$$- \sum_{i^*=1}^{I^*} \left\{ H_{t+\delta,i^*}^* - H_{t,i^*}^* \right\} n_{i^*}^* - \cos t\_H_t$$

where

$$\cos t\_H_t = \left\{ \frac{1}{P(t,t+\delta)} - 1 \right\} \times$$
$$\left(\sum_{i^{**}=1}^{I^{**}} \left\{ v_0^{**} + v^{**} \left| h_{t,i^{**}}^{**} \right| \right\} N_{i^{**}}^{**} n_{i^{**}}^{**} - \sum_{i^*=1}^{I^*} \left\{ v_0^* + v^* \left| h_{t,i^*}^* \right| \right\} N_{i^*}^* n_{i^*}^* \right) \tag{10}$$

With $v_0^{**}, v^{**}, v_0^*, v^*$, are fixed constants such that $0 \le v_0^{**}, v_0^* < 1$, and $0 < v^{**}, v^* < 1$ The numerical values of these constants depend on the market practice under consideration. In (10), we have used the fact that the instrument value, $H_{t,i^{**}}^{**}$ is the product of its notional $N_{i^{**}}^{**}$ with its one unit value $h_{t,i^{**}}^{**}$. For an instrument satisfying $h_{u,i^{**}}^{**} \ne 0$ during its life-time, as in the case of a (risk credit free) bond for example, the corresponding cost at time t is very often defined a $v^{**} H_{t,i^{**}}^{**}$; so that here one can take $v_0^{**} = 0$. The introduction of v_0^{**} nd v_0^* relies on the fact that for some instruments as a swap, one can have that the corresponding market value satisfies $H_{t,i^{**}}^{**} = 0$. In this case, practitioners [8] take as a base for fees the corresponding notional $N_{i^{**}}^{**}$ such that the cost is rather $v_0^* N_{i^{**}}^{**}$ since the term $v_0^{**} H_{t,i^{**}}^{**}$ vanishes.

The hedging problem for the initial portfolio V is reduced to suitably choose the financial instruments with values

$$H_{.,1}^{**} \dots H_{.,i^{**}}^{**} \dots \dots H_{.,I^*}^{**} \text{ and } H_{.,1}^* \dots H_{.,i^{**}}^* \dots \dots H_{.,I^*}^*$$

and the corresponding security numbers

$$n_1^{**}, \dots, n_{i^{**}}^{**} \dots, n_{I^{**}}^{**} \text{ and } n_1^{**}, \dots, n_{i^{**}}^{**} \dots, n_{I^{**}}^{**}$$

such that the value of

$$\left| P \& L\_\text{cov}ered\_portfolio_{t,t+\delta}(.) \right|$$

should be small as possible. The difficulty here is linked to

the fact that the future values of the hedging instruments at time $(t + \delta)$, are unknown at the present time t where the hedge strategy is built. The choice of the hedging instruments is dictated by the willing that the resultant effect of their change variations would roughly offset (i.e. going in the opposite direction) the change of the portfolio V to hedge. Then, the problem is reduced to a minimization problem of finding suitable allocation for the security numbers

$$n_1^{**}, \dots, n_{i^{**}}^{**} \dots, n_{I^{**}}^{**}, \dots n_1^{**}, \dots, n_{i^{**}}^{**} \dots, n_{I^{**}}^{**}$$

Under PS or (5) the point is to assume that for any nonnegative integer p one has the approximation

$$U_{t+\delta}(.) - U_t \approx Sens(0;t,\delta,U)$$
$$+ \sum_{k=1}^{p} \frac{(-1)^k}{k!} Sens(k;t,U)\varepsilon^k(.) \tag{11}$$

where U is one of V , $H_{t,i^{**}}^{**}$ and H_{t,i^*}^*. In (11) the notations

$$Sens(0;t,\delta,V) \quad \text{and} \quad Sens(k;t,\delta,V)$$

are used to refer respectively the zero and k-th sensitivities order of the considered financial instrument V, computed at time t and are assumed to prevail for the horizon δ. A main point on the efficiency of (11) in the hedging operation relies on the suitable choice of the integer p such that the approximation-error

$$R(.) = \left| U_{t+\delta}(.) - U_t - \left(\begin{array}{c} Sens(0;t,\delta,U) \\ + \sum_{k=1}^{p} \frac{(-1)^k}{k!} Sens(k;t,\delta,U)\varepsilon^k(.) \end{array} \right) \right| \tag{12}$$

is small from the perspective of the hedger, as for example $R(.) \le 10^{-2}$. Such a strong requirement may be useful since very often in practice one has to deal with positions having large notional size as nU_t with n = 107. Making use of (11) for $U = V$, $U = H^{**}$ and $U = H^*$ and taking (9) and (10) into account, then one has

$$P \& L\_\text{cov}ered\_portfolio_{t,t+\delta}(.)$$
$$\approx \left(\theta_0^V + \sum_{i^{**}=1}^{I^{**}} \theta_{0,i^{**}}^{**} n_{i^{**}}^{**} - \sum_{i^*=1}^{I^*} \theta_{0,i^*}^* n_{i^*}^* \right) \tag{13}$$
$$+ \sum_{k=1}^{p} \frac{(-1)^k}{k!} \left(\theta_k^V + \sum_{i^{**}=1}^{I^{**}} \theta_{k,i^{**}}^{**} n_{i^{**}}^{**} - \sum_{i^*=1}^{I^*} \theta_{k,i^*}^* n_{i^*}^* \right) \varepsilon^k(.)$$

where

$$\theta_0^V \equiv Sens(0;t,\delta,V) \tag{14}$$

$$\theta_{0,i^{**}}^{**} = Sens(0;t,\delta,H_{.,t^{**}}^{**})$$
$$- \left\{ \frac{1}{P(t,t+\delta)} - 1 \right\} \left\{ v_0^{**} + v^{**} \left| h_{t,i^{**}}^{**} \right| \right\} N_{t,i^{**}}^{**} n_{i^{**}}^{**} \tag{15}$$

$$\theta^*_{0,i^*} = Sens(0;t,\delta,H^*_{.,i^*})$$
$$-\left\{\frac{1}{P(t,t+\delta)}-1\right\}\left\{v^*_0+v^*\left|h^*_{t,i^*}\right|\right\}N^*_{t,i^*}n^*_{i^*} \qquad (16)$$

$$\theta^V_k \equiv Sens(k;t,\delta,V) ,$$
$$\theta^{**}_{k,i^{**}} = Sens(k;t,\delta,H^{**}_{.,i^{**}}) , \theta^*_{k,i^*} = Sens(k;t,\delta,H^*_{.,i^*}) \quad (17)$$

The idea for obtaining the sensitivity for a portfolio is that this last is a linear combination of various instruments. So we are reduced to compute the sensitivity for each instrument. Next the sensitivity for a given instrument (linear with respect to the zero-coupon bonds) depends just on the sensitivities of the involved zero-coupons. It means that the main point is roughly speaking to derive the sensitivity of a zero-coupon. Due to the space limitation, these sensitivities $Sens(k;t,\delta,V)$'s are not reported here but the full details may be seen over our complete technical paper [Ja-Ra-Ya; 2012].

We refer as a view on the interest rate shift $\varepsilon(.)$, the hypothesis that there are nonnegative real numbers $\varepsilon^\bullet$ and $\varepsilon^{\bullet\bullet}$ for which

$$-\varepsilon^\bullet \le \varepsilon \le \varepsilon^{\bullet\bullet} \qquad (18)$$

Though $\varepsilon(.)$ is a random quantity, not known at the present time t, with historical data on zero-coupon prices, it is not hard for the practitioner to infer deterministic values of $\varepsilon^\bullet$ and $\varepsilon^{\bullet\bullet}$ corresponding to the available past prices. But she can also incorporate her view for the situation at the considered future horizon δ. Starting from (13), using the view (18), and neglecting the remainder term then the quantity $\left|P\&L\_cov ered\_portfolio_{t,t+\delta}(.)\right|$ is essentially bounded by

$$F(n^{**}_1,...,n^{**}_{i^{**}}....,n^{**}_{I^{**}},n^*_1,...,n^*_{i^*}....,n^*_{I^{**}},\varepsilon^\bullet,\varepsilon^{\bullet\bullet}) =$$
$$\left(\theta^V_0 + \sum_{i^{**}=1}^{I^{**}}\theta^{**}_{0,i^{**}}n^{**}_{i^{**}} - \sum_{i^*=1}^{I^*}\theta^*_{0,i^*}n^*_{i^*}\right) \qquad (19)$$
$$+\sum_{k=1}^{p}\frac{(-1)^k}{k!}\left(\theta^V_k + \sum_{i^{**}=1}^{I^{**}}\theta^{**}_{k,i^{**}}n^{**}_{i^{**}} - \sum_{i^*=1}^{I^*}\theta^*_{k,i^*}n^*_{i^*}\right)\varepsilon^k(.)$$

This last may be seen as the objective function associated with a minimization problem and related to the hedging issue presented above. All remainder terms may be removed after choosing the expansion order p sufficiently large. For the function F as defined in (19), we are lead to an integer optimization problem defined by integer linear constraints, since the objective function is both non-linear, non-convex and non-differentiable at the origin. To overcome these difficulties we make use of a linearization technique as introduced in [9] and which7 consists to replace the initial problem by an equivalent linear problem. However at last, a solver as the commercial CPLEX solver 9.0 is useful to solve the resulting Mixed Integer Linear Problem we introduce.

More details are given in [1].

III. NUMERICAL ILLUSTRATION

The present time-t shape of the yield curve may be seen as interpolated from available market interest rates by using the Nelson-Siegel-Svenson model [10] as

$$y(t;\tau) = \beta_{t;1}+\beta_{t;2}b_2(\tau\gamma)+\beta_{t;3}b_3(\tau\gamma) \qquad (20)$$

with

$$b_2(u) = \frac{1-\exp(-u)}{u} \text{ and } b_3(\tau\gamma) = b_2(u)-\exp(-u)$$

here $\beta_{t;1},\beta_{t;2},\beta_{t;3}$ and γ depend on time t but not on the time-to-maturity τ. The model is assumed to be calibrated as

$$\beta_{t;1}= 0.0758;\beta_{t;2}= -0.02098;\beta_{t;3}= -0.00162;\gamma = 0.609$$

We consider a hedging horizon of $\delta = 90days$ To take into consideration hedging costs, the deposit rates linked to holding the position (either for payer or receiver swap) are assumed to be given by $v^{**}_0 = v^*_0 = 20\%$. For the time-horizon $t+\delta$ the interest rate is supposed to make a PS with respect to the view $-\varepsilon^\bullet = -3\%$ and $\varepsilon^{\bullet\bullet} = 3\%$.The choice $p = 12$ is chosen here in order to insure remainder terms with small sizes, which consequently can be neglected. The notations with tilde ($\sim$) are used in the sequel to refer the portfolio to hedge. We are interested here to hedge a swap portfolio by another swap portfolio. The portfolio to cover is assumed to be made by five types of payer swaps $\widetilde{S}^{**}_1$ to $\widetilde{S}^{**}_5$ and three types of $\widetilde{S}^*_1$ to $\widetilde{S}^*_3$. The characteristics of these swaps are summarized in Table I.

TABLE I: CHARACTERISTICS OF THE POTFOLIO TO HEDGE

type	number	maturity	frequency	rate_Swap
S^{**}_1	100	3years	6months	6.65%
$\widetilde{S}^{**}_2$	200	4years	6year	6.82%
$\widetilde{S}^{**}_3$	300	7years	6year	7.11%
$\widetilde{S}^{**}_4$	100	10years	6months	7.25%
$\widetilde{S}^{**}_5$	200	5years	6months	6.94%
$\widetilde{S}^*_1$	200	4years	1year	6.93%
$\widetilde{S}^*_2$	100	6years	1year	7.17%
$\widetilde{S}^*_3$	100	7years	1year	7.24%

Names of the types of swaps used are displayed in the first column of this Table I. The numbers of swaps used for each type are presented in the second column. Maturities of the considered swaps are given in the third column. We have written in the fourth column the corresponding swap payment frequency, as semi-annually or annually frequency-based. Each swap is assumed to have the notional value of 1 Million Euro. The fair rate swap of each swap is given in the fifth

column. Assuming that the present time corresponds to the time-inceptions for all of these swaps, and then the portfolio under consideration has zero value.

In order to decide to hedge or not the considered swap portfolio, it is valuable to have a projection of the low and high bounds for the portfolio change value at the given horizon and under the view of (more and less severe) parallel shift mentioned above. When applying a criterion we introduce in our full paper [1], then one obtain the result which is summarized in Table II.

<div style="text-align:center">TABLE II: BOUND OF THE PORTFOLIO TO COVER</div>

Channels	$\in^*$	$change\_value$ $\_portf_{t,t+\delta}(\in^*)$
$change\_value$ $\_Swap_{t,t+\delta}(.)_{\min}$	-3%	$-2.36*10^7$
$change\_value$ $\_Swap_{t,t+\delta}(.)_{\max}$	3%	$-1.93*10^7$

In Table II, by $\in^*$ we denote the value of $\varepsilon \in [-3\%;3\%]$ which allows to attain the minimum or maximum of the portfolio change value. It is seen here that in the worst case, the potential loss when dealing with just a naked portfolio position can attain the size of 20 Millions of Euros, which corresponds roughly to 20 swaps. So it might be useful to hedge the position as we consider now.

To hedge the previous portfolio introduced in Table II above, we make use of another swap portfolio made by one type of payer swap S_1^{**}, and three types of receiver swaps S_1^*, S_2^*, S_3^* The characteristics of all of these instruments are summarized in Table III.

<div style="text-align:center">TABLE III: CHARACTERISTICS OF THE HEDGING INSTRUMENTS</div>

type	number	maturity	frequency	rate_Swap
S_1^{**}	n_1^{**}	2years	6months	6.41%
S_1^*	n_1^*	3years	1year	6.76%
S_2^*	n_2^*	10years	1year	7.37%
S_3^*	n_3^*	8years	6months	7.17%

The amount required for the hedging depends actually on the number of instruments used for that purpose, and consequently is not known in advance. As detailed in [1] here we can take D = 65 Million Euros. The numbers n_1^{**} and n_1^*, n_2^*, n_3^* of swaps S_1^{**} and S_1^*, S_2^*, S_3^* 3respectively required for the hedging, obtained from the approach introduced in this work are finally summarized in Table IV.

<div style="text-align:center">TABLE IV: RESULT OF THE HEDGING</div>

n_1^{**}	n_1^*	n_2^*	n_3^*	Max Profit Loss
0	122	0	84	883 737.24

The real Profits or Losses (PL) corresponding to some shifts $\varepsilon \in [-3\%;3\%]$ are presented in the second column of Table V. So by PLport we mean the PL corresponding to the

naked portfolio change value (that is the portfolio PL in absence of hedging

<div style="text-align:center">TABLE V: WEALTH FOR ANY SHIFT AFTER THE HEDGING.</div>

$\in$	PLport	PLinst	PLport_cov	ret_port_cov	Ret_port
-3%	-23889286	23614943	-857471	-1.32%	-36.75%
-2.5%	-19631335	19388781	-825683	-1.27%	-30.20%
-2%	-15513978	15291407	-805700	-1.24%	-23.87%
-1.5%	-11530194	11318597	-794726	-1.22%	-17.74%
-1%	-7673324	7466276	-790176	-1.22%	-11.81%
-0.5%	-3937044	3730514	-789658	-1.21%	-6.06%
0%	-315358	107520	-790967	-1.22%	4.92%
0.5%	9917602	-10120810	-786336	-1.21%	15.26%
1%	6606704	-6814674	-791098	-1.22%	10.16%
1.5%	9917602	-10120810	-786336	-1.21%	15.26%
2%	13134977	-13328061	-776212	-1.19%	20.21%
2.5%	16263436	-16439598	-759291	-1.17%	25.02%
3%	19307348	-19458483	-734263	-1.13%	29.70%

Profits and losses for the hedging instruments, denoted here PLinst and defined in (8) are displayed in the third column. In the fourth column one can see the PL for the overall portfolio (portfolio to hedge and hedging portfolio). These last quantities include the hedging costs as defined in (9). By ret_port, in the fifth column, we mean the ratio

$$ret\_port\_\text{cov} = \frac{PLport\_\text{cov}}{D}$$

It may be noted that it is not the return linked to the covered portfolio as we just take as a basis the maximal amount allowed for the hedging operation. Indeed for swaps whose the initial values may be equal to zero, the notion of return should be taken with care as it is analyzed by A. Meucci [8]. Observe that the portfolio to hedge is not assumed to be unwound at the considered horizon, and the amount D is freezed for the hedge though the cost really involved in the operation is strictly less than D. For the last sixth column by ret_port we mean the ratio

$$ret\_port = \frac{PLport}{D}$$

The compensation between the loss related to the portfolio to hedge and the gain associated with the hedging portfolio may be understood from the alternated signs for the quantities displayed in the second and third columns. For $\varepsilon = 0\%$ one has $ret\_port = 049\%$ This an indication that the time-passage matters in hedging, and consequently should be taken into account as is the case for the sensitivities we have introduced in this paper. For the interest rate shift $\varepsilon = -2\%$ it may be seen, from the last two columns, that $ret\_port\_\text{cov} = -1.24\%$ and $ret\_port = -23.87\%$. This means that a loss appears though the portfolio position is hedged or not. However the magnitude is clearly more important than the one involved in absence of hedge. Under the shift $\varepsilon = 2\%$ one has $ret\_port\_\text{cov} = -1.19\%$ and $ret\_port = -20.21\%$ That is, in absence of the hedging operation, the considered portfolio has lead to an important

gain. The hedge has an effect to get at worst a loss, but the corresponding magnitude (when taking into account D as a reference basis) is fortunately small. The cost of the hedging instruments is about 583128.94. Here the resulting loss can be viewed as the price of uncertainty and fear about the interest rate behavior at the considered horizon. At this point, it may be important to recall that the hedging operation has mainly as purpose to roughly maintain the portfolio at its initial level, but not to make any profit.

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WeCIM – Web Competitive Intelligence Methodology

Joaquim Fonseca and António Grilo

Abstract—**Disruptive change causes value displacements in today's competitive economic environment. To enhance survival capabilities organizations are increasing efforts in more untraditional business value assets such the intellectual capital and intelligence. Dynamic capabilities theory states that companies have to develop adaptive capabilities to survive disruptive change and increase competitive advantage in incremental change phases. Taking advantage of the large amount of information in the Web we proposed a methodology to develop an application to gather, filter and analyze web data and turn it into usable intelligence (WeCIM). In order to enhance information search and management quality it is proposed to use ontologies that allow reasoning over knowledge concepts without human intervention. Two case studies were conducted with satisfactory results. Two software prototypes were developed according to the proposed methodology that validated the approach in two specific real-life situations.**

Index Terms—**Competitive intelligence, ontologies, WeCIM, World Wide Web.**

I. Introduction

Companies face an environment of increasing competitiveness. Many theories try to characterize organization strategy in their market and their ability to survive. It is accepted that changes in technology are a serious threat. The most acknowledged theory in strategizing has been proposed by Porter [1]. The author identified five factors from which companies should shape their strategy that would yield the best competitive advantage.

Why companies fail to survive is also a matter of great interest in today's academic research. Authors have classified big technology changes and general innovations has a disruptive change, capable of changing market equilibrium, displacing product value and contributing to companies rise and fall.

These two subjects collide in a way that good strategizing should prevent failure in a presence of a disruptive change. What should be the ideal organization's capabilities that prevent failure and yield great competitiveness? Studying companies' survival capabilities some authors' proposed different strategizing theories. One of the most recent and most complete theories considers the capability of a company to adapt to a new environment and create new sources of value. This adaptation capability is surely necessary when disruptive change occurs. Since the pace of changing is increasing [2], [3], those capabilities have to be dynamic and therefore, one company's survival capability is related to their dynamic capabilities [4]. The theory addresses why and how companies should adapt.

Aiming to study one of the many factors of why a company fails to adapt or even detect the occurrence of disruptive change that may determine that a strategic move is necessary, our work focus on data analysis in the biggest source of information, the Internet. We propose that companies could generate better insights on strategic position by "listening" to information available on web. This information seeking should be part of an active Competitive Intelligence and Knowledge Management strategy. Companies could better detect strong and weak signals that may support decision-making, allowing then to gain competitive advantage and survive in the competitive global economy.

II. Objectives

The present work has the objective to conceptualize a methodology for the development of decision making aiding tools based on web collected data. This framework focuses on Competitive Advantage and Knowledge Management subjects based on semantic search of information sources.

The challenges for this task can be enumerated as:

- To conceptualize a framework which can manage information gather from the web and store on an ontology based data set.
- Integrate tools responsible for simple tasks regarding extraction, managing, analyzing and presentation of data.
- Guarantee interoperability capability to ensure that multiple tools can operate over the same library of ontologies.

The value of the framework is to provide a superior information management with automated and semantic capabilities that enhances the organization ability of gathering and process contextualized information. These could play and determinant role to enriched dynamic capabilities and survival abilities of the company in the present of disruptive change. During incremental change the framework would enhance competitive capability maintaining automated set of information management processes.

III. Literature Review

A. Disruptive Change vs. Companies

In 1980 digital cameras appear in the market and Kodak had already invented their product. A tremendous change had to be made on Kodak's business orientation. Kodak didn't pursue its invention because it was necessary to shift his high profitable film industry to a new digital one. Kodak had to cannibalize their human resources and R&D structure from a chemistry based operation to electrical and physicist research

areas [5]. The internal restructuring Kodak made as a response to the emergent competition in digital photography lead Kodak's workforce to fall from 145.000 to 27.000 employees between the 90's and 2007.

This subject is well known and many researches pointed different reasons for Kodak's failure. Regardless what was the key reason or bundle of factors for Kodak's downsizing and profit lost the fundamental cause is clear: a disruptive change.

Although changing factors can be very industry specific a broad definition of disruptive change can be export from the Christense [6] view on disruptive technology as the appearance of products with a very different value proposition which often are *cheaper, simpler, smaller* and *more convenient* to use.

Rohrbeck [7], on the other hand, summarized why companies had difficulties in their ability to adapt to changes in the environment. There were three main categories for failure:
- High rate of speed
- Ignorance
- Inertia

Disruptive changes lead to business failure because they are not able to catch up with innovation speed, don't capture signals of an imminent change or are enable to adapt due to organizational complexity. To change the company's ability to adapt, top level decisions have to be made, in other words, strategizing. Organizations need to focus in their expertise and develop difficult to imitate competencies.

B. Dynamic Capabilities for a Successful Strategy

The most successful framework in the last decades to shape the organizations strategy and achieve competitive advantage was Porter's five competitive forces [1]. The framework stated that companies should analyze five different forces that shaped the industry and defined how they could integrate and gain competitive advantage.

Teece et al [4] discussed other strategizing theories to conclude that they all lack competitive factors that shape successful organizations. Strategizing according to competitive forces and industry specific assets fail to pursue and create new sources of value. They propose Dynamic Capabilities as the:

"(...) role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competences to match the requirements of a changing environment."

The main point in dynamic capabilities is that companies should develop a set of assets combined with knowledge and routines creation to produce a difficult to replicate or imitate value proposition.

The linkage between dynamic capabilities and knowledge management is demonstrated by Eisenhardt and Martin [8]. Their view of dynamic capabilities reinforced the idea that the concept is based on well-known processes, product development and strategic decision making. This dynamic capabilities and knowledge management relation is even more evident in Cepeda and Vera [9] view. They claim that

with knowledge-based transformation processes, managers are able to create, join and codify knowledge configuration which allow new improvements in the organizations routines.

C. Information in Dynamic Capabilities

Dynamic capabilities have a core competency that should drive management practices, but base on what? How can managers and decision makers base their policies? How can they even assess the need for change? What feeds their decision actions in order to achieve procedure changes? Strategic foresight answers those questions in the management perspective: where to look, what to retain, how deeply, how often, but what is the pure raw material?

Three decades ago Kantrow [10] mentioned the need to incorporate the technology information discipline within the strategic decision making. Strategy and technology were unsociable. Just a couple years later, Porter and Millar [11] explained how information could yield a competitive advantage to any organization with IT adoption and how game changing this technology would be.

Information can be a characterized by the way company uses it. Rohrbeck [7] described as the elements of information usage and it plays important roles in his propose for a strategic foresight framework:
- Reach
- Scope
- Time Horizon
- Sources

It is important that any improvement in intelligence have concerns over the four information elements.

D. Competitive Intelligence for Competitive Advantage

Chawner [12] exported the Society of Competitive Intelligence Professionals to define CI as the

"the process of ethically colleting, analyzing and disseminating, accurate, relevant, specific, timely , foresighted and actionable intelligence regarding the implications of the business environment, competitors, and the organization itself ."

Authors had the necessity to clearly distinguish information from intelligence. Rouach and Santi [13] review that information is factual data and needs to undergo a process of filtering and treatment to become usable intelligence. The authors also classified a process to accomplish accurate CI. It starts by planning and defining a direction for a course of action. Collection of information and the correspond analysis to turn it to intelligence. Dissemination is the end activity where intelligence should reach the appropriate management level.

IV. WEB COMPETITIVE INTELLIGENCE METHODOLOGY

The basic objective is the creation of a simple methodology to develop, implement and manage Competitive Intelligence tools based on information collected from the web.

The tools consist in the interaction of four elements organized in a three-component framework illustrated in Fig. 1. These concepts are correspondent with Lixto classification

of data course: *sources, integration, storage* and *usage* [14]. The crawler component deals with information *sources*; information is *integrated* by wrappers in an ontology based *store* system from where data analysis tools *use* the collected information.
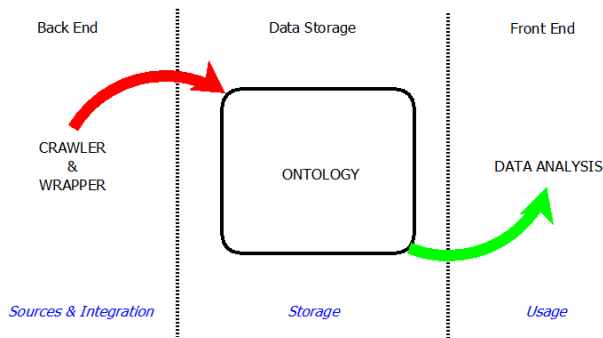

Fig. 1. Software elements with data classification.

Phases of development follow the four component of the framework.
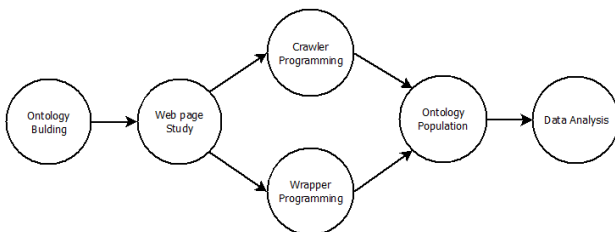

Fig. 2. WeCIM's tasks precedencies.

A. Ontology Building

The ontology building methodology states that it should start with the requirements definition. They inherit from the competitive objectives that the software proposes to accomplish. Simple and focused objectives need simple ontologies schemas. Simple schemas are favorable to integrity control.

Some typical objectives can be proposed provided that they are published on the web:

- Competitors products price monitoring.
- Raw materials price in stock markets.
- Public calls from international organizations.
- Transportations and other services strike warnings.
- Business related news.
- Exchange rates.
- Competitors stock value.
- Business related scientific papers.

With the requirements set the ontology definition should start. In this matter an iterative procedure is done until the final ontology is approved. The final result as to be capable of:

- Represent the knowledge field of the target information.
- Allow all data analysis proposed to gained competitive advantage.

B. Web Page Study

The web page study serves two proposes. How the crawler algorithm is going to be program to access the target web page where information or documents are being hold, and how the information in the HTML or documents is organized

for the wrapping procedures.

The first step is to understand where the target information is kept on the web page and how it has to be accessed. Information can be hold in various formats, can be structure or unstructured. Some sites already provide semi-structure formats like CSV or XL documents or even complete structure formats life XML. Information has to be collected in order to program the algorithm. Examples of pertinent information are the URL structure, key strings to identify second level URL in the HTML document, variables that control the algorithm behavior, textbox and buttons names for automated procedures and other information to control errors and event exceptions.

In order to correctly program wrapper function a different set of information is needed to identify all key elements that guarantee the correct collection of data and the text structure in order to clean unnecessary substrings. The crawler output may be unstructured or structure file formats. Some file formats may require converting to readable formats. Different procedures have to be idealized according to file converting and reading requirements.

C. Crawler Programming

We defined crawling procedures as the operation of interpreting the target web site URL and HTML structure to correctly access the target web page or documents from where information is to be collected.

The crawling structure may also depend on the periodicity of information publishing. In the first case study presented, the information was gathered in a daily basis and the URL was structured accordingly. The output of the crawling activity would be a list of URLs that represent either web pages or documents to be downloaded, such as PDF's, containing desired information. These URLs can be saved in a file for future use or saved internally in the program.

Some concerns while programing crawler features are: accessing the first URL, retrieve second level URLs, check string encoding, adding the root element, undergo log-in search and log-in procedures, and navigate through multiple pages.

D. Wrapper Programing

Wrapper programing performs the key element of collecting strings containing the target data. Those strings may represent entity names or values. Three possible scenarios may occur depending on the crawler output, its formats and the methods chosen to reach information.

- Extract data from file formats that can be directly read with no necessary conversion such as TXT, HTML, XML, CSV and other Excel formats.
- Extract after converting formats into readable files using specific add-ins or methods libraries. Complete Excel or Word formats have to be managed to extract the text content. XML or TXT are possible outputs of these file conversions.
- A third case can take place. Structure formats can be queried such as XML.

Therefore the main concerns in wrapping programing are: determine is conversion methods are necessary, plan extraction according to structure or unstructured formats and

perform consistency checks to determine the output integrity.

E. Ontology Population

Ontology population defines how gathered information will be introduced in the ontology file. Automatic procedures should be capable of dealing with the wrapper output and compile it in the ontology.

Our ontology file has a RDF/XML format. During development some problems arise when combining schema file with files containing individuals. The solution approach was a file with classes and relations (schema) that is kept separated from files with information. Another reason to do so is information size. To mitigate processing time problems, multiple files can be created according to time parameters.

F. Data Analysis

The key element of data analysis is to plan relevant data configurations that represent a support for decision making. According to the CI objectives planned in the first step, data analysis can be program. They should be design in a way that answer strategic questions and support market and competitors characterization.

Data analysis uses queried information from the ontology file and further processing. Data is collected according to different parameters or logical relations in order to capture pertinent intelligence.
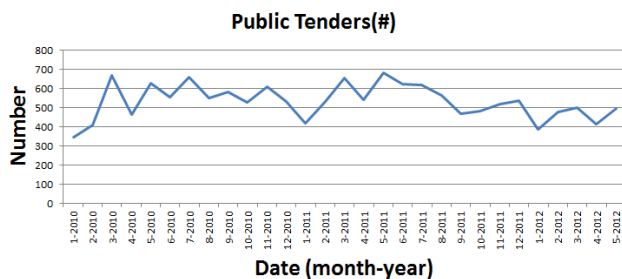

Fig. 3. Number of PT from 2010 to Mat 2012.

A user interface can be design not only to visualize analysis results but also to search and query specific information. Filters should be created to limit the scope and amount of data. Often, ontology classes are a clear suggestion to relevant filters.

In our case studies, however, we only exported information to an excel spreadsheet to demonstrate possible analysis. This proof of concept was necessary since time constrains wouldn't allow full development of a user interface and correspondent analysis procedures.

V. CASE STUDIES

A. Open Public Tenders from Diário da República

The first case study arises from the need for companies to assess public tenders (PT) they may be interested applying to. In the business competitive intelligence point of view we want to prove that our software could automatically gather web related information and characterize the related business market to support top level decision making.

The target page was "dre.pt" the official Portuguese Government Publication. The developed software has a crawler and wrapper capabilities, and stored the information in a specifically created ontology and data analysis where made based on 2010, 2011 and 2012 data.

The crawler was able to know the last successful run. It repeats that run and continues to the next day until no more information is found. This prevented that information could be missed if late documents were published.

Wrapping procedures are triggered in between successful crawling activities. The information is gathered, consistency checks are made to ensure no error occurred and each PT's information is inserted in the ontology.

To gather past information, the software was forced to use variables corresponding to data from 2010, 2011, to May of 2012. After past data collection, the programed is capable of autonomously collect up to date information.

From the populated ontology, information from 2010, 2011 and 2012 was massively gathered and data analyses were made. 15432 valid instances were collected.

The results were very interesting since a high level of efficiency was obtaining will minimal fails. For consistency reasons, the software creates reports over all information collection and missed data errors for a continuous improvement of the algorithm's.

B. Closed Public Contracts from Base

The second case study relates to the first one but an independent approach was intended. In this case we gathered information about all public contracts, including public tenders. Again the software must have to retrieve all related information in an autonomous manner. Public tenders from private companies are outside reach because only public institutions have to present sealed contracts information.

The target web page is a Portuguese governmental site called "base.gov.pt". The crawler capabilities were able to collect daily data from sealed public contracts. The wrapper features, made sense of the output document to retrieve data and store in a designed ontology.

Similar procedures were adapted from the first case study that showed that a base structure can be designed for this kind of software. Therefore not only a methodology can be proposed but a solid scheme foundation could be created.

To gather past information, the software allows the introduction of an initial and final date inputs from which it collects all data in-between. Using those input fields, data from January 2012 to July 2012 was collected.

Due to a bigger amount of information, a different ontology approach was developed. Instead of having one central ontology file, each month has a correspondent file. All ontology files share the same base schema.

The results allow us to study public organizations buying behavior. Critical business areas, most active organizations, and spending values can be characterized. Competitor's contracts can be tracked to gain competitive intelligence that allows a comparison between the organization and its competitor's market share.

VI. CONCLUSIONS AND FUTURE WORK

In current days, gaining competitive advantage depends much on the ability to filter and be able to rapidly analyze

available information on the web. The case studies have preliminary validated the applicability of the semantic web–based competitive intelligence approach, though much research work still needs to be developed.

An interesting future work will be to analyze the use and reuse of already formulated ontologies to accelerate the process of software development and enrich capabilities. The global acceptance of the Semantic Web practices could also improve the development of such applications.

It is also of great importance the development of a high level ontology that could represent the enterprise knowledge field. That ontology should be integrated in a base framework upon small application modules could be implemented. This complete approach sustains not only competitive intelligence objectives in different sectors of organizations but to also internal processes according to business models and strategic premises.

VII. CONCLUSION

The development of the software prototypes showed it is possible two create simple, efficient and reliable applications responsible for gathering, filtering and store web information for data analysis with competitive intelligence value.

Both cases demonstrated a high level of effectiveness with minimal errors, most associated with problems of information structuring from the web site side. Although no user interface was developed due to time constrains, data analysis are viable and reflect the main value component if they are capable of transforming information into intelligence.

The development of the second case study showed a high level of similarity between software architecture suggesting not only that the methodology is solid and replicable but also that a common software structure can be proposed. For instance, crawler and wrapper are highly integrated; common phases of information treatment and document handling are present.

Regarding the value of the two applications we think we demonstrated two value components. The first is the competitive advantage that one organization can withdraw from data analysis and how it can support strategic decision making. The second has functional value in internal procedures if the application itself has capabilities already developed in the organization process. Information search by human work can be automatically processed by the application and workforce can focus on other tasks.

The application helps achieving superior competitive advantage if it is capable of support strategic decision that enhances survival capabilities. All four information gaps suggested by Rohrbeck [7] are somehow filled with the development of such applications. They enhance *reach* capability since they can be responsible of gathering information from otherwise difficult to intensively search web sites. *Scope* if they intend to widen the business related information. *Time Horizon* element is present by the storage of all gathered data allowing tendencies to by study. Multiple

configurations of software modules can decrease the *Source* gap. Humanly impossible information search can now be easily achieved with the right deployment and with pertinent intelligence objectives.

For all the presented work we considered of great value the presented methodology.

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Franchisors' Relationship Marketing and Perceived Franchisor Support on Franchisors' Performance: A Case of Franchise Food and Beverage in Thailand

Khanungnit Hnuchek, Ishak Ismail, and Hasnah Haron

Abstract—Nowadays, Franchise business is the contribution of income to the economy of developing countries. Especially, among small and medium size enterprises (SMEs) have taken opportunities for developing a business. Hence, the big challenge to franchise system is how to position the business and clearly differentiate it from more competitors. This study is undertaken to investigate the franchisees' satisfaction, which is a measurement of franchisors' performance. In particular, how franchisor can better manage their franchisees so as to ensure sustainability of their franchisees. It is also established that the perceived franchisor support mediates the relationship between relationship marketing and franchisors' performance. 111 Thai franchisors in food and beverage of Thailand, this will match to their franchisees. 80 questionnaires were collected from franchisees that represent a 72.07% response rate. The results of this study have presented evidence that perceived franchisor support (PFS) is the contribution in the franchise business system. The mediating effect of PFS is the key structure of franchisors' performance to keep in touch for future success in the franchise system.

Index Terms—Franchisors' performance, franchisee satisfaction, perceived franchisor support (PFS) and relationship marketing.

I. INTRODUCTION

Franchise business is an attractive business for small and medium enterprises (SMEs). The business format of franchise requires the relationship between franchisors and franchisees, as savvy entrepreneurs to take up the challenges of self employment. In Thailand franchise business has been initiated since 1983, it is the main contributor of income and potential to the economy of Thailand. In the economic environment, both franchisors and franchisee can provide a variety of benefits to their business. This study selected the franchisees food and beverage industry to be the sample of the study. This industry has been highly competitive in the franchise business. On the other hand, each year the number of franchises is increasing but at the same time the number of franchise closure is also increasing [1]. One of the main reasons for the closure of the franchisee in Thailand is due to the poor relationship between franchisor and franchisee [2]. This is similar to franchisors who are not concerned with

developing the already established franchisees [3]. Thus, the increase in the failure rate of franchisor is due to the dissatisfaction amongst the franchise holders. Despite franchisee satisfaction is related to franchisee buying behavior, there have been limited attempts to evaluate empirically the factors which contribute to a satisfactory franchise relationship, particularly from the perspective of franchisees and identifies the final stage of the buying process [4]. Therefore, franchisee satisfaction as the biggest predictor of whether a franchisee will recommend their franchisor to a prospective franchisee that is their level of satisfaction with their performance [5]. Thus, this study proposed that relationship marketing contributes positively to franchisors' performance. Furthermore, this study tests the mediating effect of perceived franchisor support on the relationship between relationship marketing and franchisors' performance. The results show the strong relationship between the franchisor marketing strategy variables and franchisors' performance of which is perceived by franchisee satisfaction. The findings are meaningful and useful to small and medium enterprises involved in franchise businesses. These are important and critical knowledge to the success of franchise.

II. LITERATURE REVIEW

A. Franchisors' Performance Perceived by Franchisee Satisfaction

Organizations have used the performance measurement to implement system in the cooperation management between parties. It often includes issues related to satisfaction of customer and stakeholder. Franchisor Performance also refers to the satisfaction of the franchisee with the services given by its franchisor [6]. Franchisee satisfaction is the extent to which a franchisee is contented with the franchisor as it affects his or her role in the franchise organization. Satisfaction with the franchisor will positively affect franchise performance [7]. Moreover, managerial implications on franchise system show the efficiency operation and customer satisfaction as the indicator of franchisor's performance [6].

The distribution of franchisee responses for the satisfaction items associated with purchasing and operating a franchised outlet, the measurement of franchisee satisfaction required their appraisal of certain costs and benefits and initial and ongoing franchisee support services provided by franchisors [8]. Being satisfied as the behavior in franchise relationship, franchisees' satisfaction is contingent upon their expectations. Thus franchisors should focus on the specific dimensions that contribute to franchisees' dissatisfaction and emphasize

specific dimension of continuing service to improve the relationship both parties to fulfill the contractual duties and responsibilities [9]. Thus, franchisors must design a proper system of distribution of goods or services that will help the franchisees to market their products. This will lead to improve satisfaction of franchisees with respect to the services provided by the franchisor [10].

B. Relationship Marketing and Franchisors' Performance

Relationship marketing is concerned with attracting new customers and keeping existing customers to be loyal. A key strategy in relationship marketing is the design and maintaining and in multi-service organizations enhancing customer relationship around which a customer relationship can be established [11]. The various dimensions of relationship marketing are found to be important to business manager to ensure customer satisfaction, and also important for a franchise system. This includes the services provided by the franchisor as a basis for improving the quality of franchise relationship [12]. The relationship marketing has important strategic implications for both the managers of the franchising companies and the franchisee satisfaction [11], [13]. Trust and communication are shown as important dimensions of relationship marketing to create value between parties [14]. Trust and communication can improve the relationship between franchisor and franchisee toward franchisee satisfaction and there are important antecedents for a franchisee's intention to remain in the franchise system [12].

Trust is the belief that another party can rely on with confidence to perform role responsibilities in a fiduciary manner [15]. Trust as the expectation held by the consumer that the service provider is dependable and can be relied on to deliver on its promises [16]. Especially, in franchise business, trust is a result in the franchisee's belief in the franchisor's integrity which is a necessary prerequisite for contractual norm [17], trust as an antecedent of satisfaction in marketing channel relationship. Thus, franchisee's satisfaction on the franchise systems is an outcome variable that is influenced by trust and a high level of trust is important to the success of franchisor- franchisee relationship [7].

Communication is a formal relationship review in each partner's performance such as discussion of any changes in marketplace or production condition [18]. Communication is further complicated in franchise business as the power balance between franchisee and franchisor is efficient. When communication is clear and consistent, both franchisees and consumers learn to trust the responsibility of the franchisor to steer the system in the right direction [19]. Relationship marketing is very important for franchise system and in reinforcing franchisee satisfaction.

C. Perceived Franchisor Support

According to, in the marketing literature there is a focus on customer's perception of service and product that will have an influence on long term purchasing behavior [20]. Customer perceived value in a relationship marketing need to focus on customer's perception to develop value in the relationship between parties [21]. The human resource management is often focused on satisfaction of fellow-worker. This is similar to the franchisee is a fellow-worker of franchisor that the franchisees always focus

on the satisfaction from their business [22]. However, in the context of business to business relationship studies have related perceived organizational support (POS) relationship between two parties, especially in the sale context [23]. Perceived organizational support will lead to job satisfaction and organizational commitment and will enhance organization performance [24]. The findings of previous studies, it was found that perceived organizational support and perceived managerial support do play a mediating role [25]. This is because perceived organizational and managerial support measure the support by an organization and this is similar to the measure of franchisor support perceived by the franchisee. Perceived franchisor support (PFS) relates to the continued services given by the franchisor to its franchisee both in the initial stage and throughout (ongoing) the franchise agreement. For example, business assistance is the franchisor generally offers services to the franchisees such as target market analysis, sales forecast and analysis, new product development and product improvement [9]. According to, franchise business is a relational exchange between parties on contractual agreement and shows the franchisees perceived relationship from franchisor in making business decisions. It is essential to each party to achieve sustainable profitability [26]. The franchisor should develop the business to motivate franchisees to uphold their satisfaction in the relationship decision to continue a franchise business by increasing support or assistance to franchisee. Franchisor who provides the assistance required to the franchisees will be viewed by the franchisees to be better than those who did not [27]. Thus, based on the literature review this study will identify perceived franchisor support is related to franchisees' satisfaction that can be enhanced franchisor performance, and the ongoing business assistance as the dimension of perceived franchisor support whether the perception of franchisee will influence the relationship marketing on performance of franchisor in business.

III. OBJECTIVES OF THE STUDY

The objectives of this study are undertaken to investigate the franchisees' perception of franchisors' performance in the franchise food and beverage industry in Thailand. The study examines the factors that lead to the franchisees' perception of the performance of the franchisor and tests the mediating effect of perceived franchisor's support on the relationship of relationship marketing to franchisors' performance. This study seeks to achieve the following objectives: (i) to examine the relationship between relationship marketing and franchisor's performance and (ii) to examine the mediating effect of perceived franchisor support on the relationship between relationship marketing and franchisor's performance.

IV. RESEARCH METHODOLOGY

As the results of the previous empirical researches on the relationship marketing and franchisors' performance should be further developed. With regards to the objectives, this study looks at four main hypotheses as follows:

H1: There is a positive relationship between relationship marketing and franchisor's performance.

H$_{1.1}$: There is a positive relationship between trust and franchisor's performance perceived by franchisee satisfaction.

H$_{1.2}$: There is a positive relationship between communication and franchisor's performance perceived by franchisee satisfaction.

H2: There is a positive relationship between relationship marketing and perceived franchisor support.

H$_{2.1}$: There is a positive relationship between trust and ongoing business assistance.

H$_{2.2}$: There is a positive relationship between communication and ongoing business assistance.

H3: There is a positive relationship between perceived franchisor support and franchisor's performance.

H$_{3.1}$: There is a positive relationship between ongoing business assistance and franchisors' performance perceived by franchisee satisfaction.

H4: Perceived franchisor support mediates the relationship between relationship marketing and franchisor's performance.

H$_{4.1}$: Ongoing Business assistance mediates the relationship between trust and franchisor's performance perceived by franchisee satisfaction.

H$_{4.1}$: Ongoing Business assistance mediates the relationship between communication and franchisor's performance perceived by franchisee satisfaction.

A. The Sample Framework

The data collection was conducted amongst franchisees who are the currently involved in franchise food and beverage industry in Thailand. Respondents of the study include the Thai franchisees, with more than 5 franchisees. Respondents of the study comprise 80 franchisees, with a response rate of 72%. Each franchisee is required to rate the performance of each franchisor. The questionnaires for this study are adapted from previous studies with acceptable reliabilities ($\alpha > 0.70$). The questionnaires consisted of the following section: (1) demographic profile of the franchisees, (2) relationship marketing, (3) perceived franchisor support, (4) franchisee satisfaction. Franchisors' performance is measured by franchisees' satisfaction and thus will be used inter-changeably in the paper. Respondents(franchisees) are asked to indicate their responses on a five-point Liker scale ranging from (1) "Strongly disagree" to (5) "strongly agree" and from (1) "Very dissatisfied" to (5) "Very satisfied".

Data of this study was analyzed by using the Statistical Package for Social Science (SPSS) version 20.0 for window. Cronbach-alpha coefficient of all construct was greater than 0.70.

V. RESULTS

A. Respondent's Profile

The respondents participating in this study is franchisees, sixty eight (85%) owner and twelve (15%) manager (Table I). With regard to gender, the data showed fifty one (63.75%) female and twenty nine (36.25%) male. A majority of respondents are aged less than 50 years. All the respondents obtained an undergraduate education forty three (53.75%),

twenty six (32.50%) have a high school education, and just only eleven (13.75%) have a postgraduate education. In terms of the experience in franchise business, fifty six (83.75%) franchisees have experience less than 5 years and twenty four (16.25%) franchisees have experience more than 5 years. Fifty seven (71.25%) franchisees have employee less than 5 people per outlet. Most of franchisees had the capital invested less than 500,000 Baht. The location of the franchisee shop/outlet will open in commercial districts 36.25% and shopping malls 36. 25%.

TABLE I: SUMMARY OF RESPONDENT'S PROFILE (N = 80)

Profiles	Frequency	%
Job Title		
Owner	68	85.00
Manager	12	15.00
Gender		
Male	29	36.25
Female	51	63.75
Age		
20-29	20	25.00
30-39	31	38.75
40-49	22	27.50
50 or above	7	8.75
Education		
High School	26	32.50
Undergraduate	43	53.75
Postgraduate	11	13.75
Number of year in business		
Less than 1 year	21	26.25
1-2 years	21	26.25
3-4 years	14	17.50
5 years	11	13.75
More than 5 years	13	16.25
Number of employee in business		
Less than 5 people	57	71.25
5-10 people	16	20.00
11-20 people	5	6.25
More than 20 people	2	2.50
Capital invested		
Less than 100,000 Baht	33	41.25
100,000 - 200,000 Baht	15	18.75
200,001 - 300,000 Baht	8	10.00
300,001 - 400,000 Baht	4	5.00
400,001 - 500,000 Baht	3	3.75
More than 500,000 Baht	17	21.25
The location of your shop		
Commercial districts	29	36.25
Shopping malls	29	36.25
College towns	8	10.00
Residential area	14	17.50

B. Measure Development

This study is able to discover some interesting insight. The results of the study show that there is no multicollinearity and it can conclude that the discriminate validity has been established. It can be used to reinforce the competitive advantage of business on franchise food and beverage industry. In the context and methods applied in this study have been a satisfying certain levels of research assumptions (Table II).

TABLE II: MEANS, STANDARD DEVIATIONS, AND PEARSON'S CORRELATION BETWEEN VARIABLES

Variables	Mean	SD.	Reliability	Trust	Communication	Ongoing Business Assistance
Trust	4.01	0.75	0.855			
Communication	3.48	0.86	0.813	.518**		
Ongoing Business Assistance	2.95	1.15	0.877	.378**	.586**	
Franchisors' Performance	3.62	0.86	0.948	.696**	.707**	.624**

Note: ** p value < 0.01

C. Hypothesis Testing

Table III summarizes the results of hypothesis testing.

Trust ($\beta = 0.540$, $p < 0.001$) and communication ($\beta = 0.316$, $p < 0.01$) were significant and positive relationship with the franchisors' performance. Therefore, $H_{1.1}$ and $H_{1.2}$ were supported by the data. Furthermore from the regression model, it can be observed that trust ($\beta = 0.456$, $p < 0.001$) and communication ($\beta = 0.380$, $p > 0.001$) also have a significant and positive relationship with ongoing business assistance. Hence, both $H_{2.1}$ and $H_{2.2}$ were supported. However, ongoing business assistance was proceeded with the addition of results to show ongoing business assistance ($\beta = 0.745$, $p < 0.001$) has a significant and positive relationship with franchisors' performance perceived by franchisee satisfaction. Thus, $H_{3.1}$ was supported.

TABLE III: SUMMARIZES THE RESULTS OF HYPOTHESIS TESTING

Hypothesis	Independent	Dependent	β	R²	
H1	$H_{1.1}$: Trust	Franchisors' Performance	0.540	0.622	Supported
	$H_{1.2}$: Communication	Franchisors' Performance	0.316		Supported
H2	$H_{2.1}$: Trust	Ongoing Business Assistance	0.456	0.657	Supported
	$H_{2.2}$: Communication	Ongoing Business Assistance	0.380		Supported
H3	$H_{3.1}$: Ongoing Business Assistance	Franchisors' Performance	0.745	.555	Supported

Fig. 1 presents that relationship marketing as independent variable affects distal franchisors' performance as dependent variable through perceived franchisor support as a mediating by Baron and Kenny [28] to respectively take competitive model to fulfill the following four steps. Under the step four condition, ongoing business assistance to franchisee satisfaction has reached significant level of $p < 0.001$, the effect of communication and trust to franchisee satisfaction is reduced from $\beta2$, 0.456 to $\beta4$, 0.342 and $\beta2$, 0.380 to $\beta4$, 0.303 respectively, and reaches the significant level of $p < 0.001$ and $p < 0.01$ respectively.
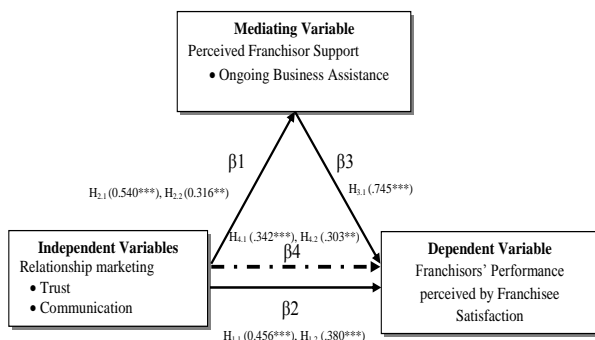

Fig. 1. Mediation structure of perceived franchisor support in the relationship between relationship marketing and franchisors' performance

As the results, $H_{4.1}$ and $H_{4.2}$ were supported by the data. These results showed that ongoing business assistance has partial mediating effects on the relationship among trust, communication and franchisors' performance perceived by franchisee satisfaction.

VI. DISCUSSION AND IMPLICATION

The result of this study is to be able to identify how franchisors can better manage their franchisees so as to ensure sustainability of their franchisees. The finding it can be seen that ongoing business assistance has a mediating effect on the relationship of relationship marketing and franchisors' performance. This study has shown that both

dimensions of relationship marketing have a positive relationship with the franchisors' performance. Trust and communication consist of contractual and perceived relationship quality. It is important for franchisor to drive the franchise system and develop good relationship with their franchisees [17]. An interesting of the study is that although both trust and communication are significant to ongoing business assistance. Furthermore, ongoing business assistance is also significant to franchisors' performance, and the results showed that ongoing business assistance has a mediating effect on the relationship among trust, communication and franchisors' performance. The results of this study have presented evidence that perceived franchisor support is the contribution in the franchise business system. Ongoing business assistance was provides additional effect in the relationship between franchisor and franchisee.

As the results show that trust and communication have an influence on franchisee's satisfaction towards the franchise business. Therefore, franchisor on food and beverage industry in Thailand should address trust and communication in their relationship with their franchisees. It can be concluded that both trust and communication are important factors for franchisees' satisfaction which is a measure of franchisors' performance [12]. It can also be deduced that the mediating effect of perceived franchisor support can support the relationship between franchisor and franchisee. It is also essential to support the small and medium size companies because entrepreneurs who do the franchise business can be achieved sustainable profitability. This supports the marketing strategy of the franchisor to ensure the effectiveness franchise system. Henceforth, it is expected that Thai franchise would be able to organize these advantages to the interest of franchise business. Franchisor could provide the information that influence to franchisees' experience, and they can be evaluated the franchisors' performance to support their decision making in the future. Furthermore, the practitioners can provide solutions to overcome the closure of the franchisees this can be done by looking at the survival of franchisor and franchisee in the franchise food and beverage industry in Thailand. Specifically, it can also be used to assist the small and medium-sized companies in franchise business to formulate their market strategies in order to sustain franchisee satisfaction in long-term.

VII. CONCLUSION AND RECOMMENDATIONS

Based the finding of the study and discussed the results, the finding of this study still have important implication to theory and practice. The findings of the study provide evidence on the empirical justification in the relationship between franchisor and franchisees. The results obtained in this study are in line with the survey conducted previously in the other countries. This study investigates the selection criteria using franchisees who are currently doing the franchise business. The results show that Thai franchisor on food and beverage industry should increase the relevant relationship marketing to enhance franchisee perception through perceived franchisor support. However, for the future research, should be conducted on data from the franchisee that is already out of business. Because it is might measure franchisors' performance through the franchisee that

has experience in the business and already decision to leave from franchise market. Furthermore, the data from franchisor might also be useful as then the perceptions of both franchisor and franchisee can be examined. Thus, future researches may want to consider the dyad data analysis to include in the sample that helps the study examine the convergence in the franchise system.

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The Future of Global Financial Analysis eXtensible Business Reporting Language

Nazik S. Roufaiel and Magdy S. Roufaiel

Abstract—**eXtensible Business Reporting Language (*XBRL*) is expected to have a profound impact on financial data and business reporting through the world. Its underlying data structure taxonomy provides valuable tools for defining, aggregating, classifying, and reporting of financial data. The combined metadata – created by the taxonomy and tagging – provides financial analysts, investors, and interested parties with analytical instruments to search, assemble, and process financial data to be readily accessed and analyzed electronically. In 2009, the Securities and Exchange Commission (SEC), in the United States of America (USA), has mandated the use of *XBRL* for financial and reporting purposes, yet its application has been widely spreading all over the world and in the global financial markets. By year 2012, over eighteen countries have already adopted the use of *XBRL* as an aggregate tool for financial market reporting purpose. This research presents an update assessment of the use of *XBRL* based on the authors' training in the field and the review of previous relevant literatures. The paper focuses on providing a view of its technical aspects, benefits and limitation with less emphasis on detailed technical implementation.**

Index Terms—**Electronic financial reporting, *XBRL* technical structure, XML-based financial statements, electronic financial analysis, standardized financial reporting, EDI.**

I. INTRODUCTION

XBRL (eXtensible Business Reporting Language) is an application of *XML* (eXtensible Markup Language) to business information. The use of tag structure, to describe the data, makes it immediately reusable and highly interactive. It is also "extensible" therefore it can be customized for unique situations and reporting concepts. It makes the process of creating, distributing, reporting and analyzing business information more efficient and effective. The use of the technology itself is free with no loyalty fees, but customized written application programs are not free. Software developers created various applications to convert business data to *XBRL* format and translate the data into human readable forms. The leading development is under the auspices of the *XBRL* International (XII) which is a world-wide consortium of over 600 organizations devoted to creating international open standards for computerized business reporting presentation. Using *XBRL*, allows data analysts to directly extract published data on the Web to spreadsheet software format. In *XBRL*, data are identified by

utilizing tagging [enclosed in angled brackets <>] system to standardize its collection and analysis.[1] The *XBRL* has its rules and syntax (structure) that can be used to build any set of relational information. The flexibility of *XBRL* language allows businesses to report electronically with a high semantic reliability which may change the way accounting and financial data are reported. It enables data segregation and integration which is considered a desirable auditing feature in areas such as tax compliance, internal and external auditing, and loans management paper. [2]
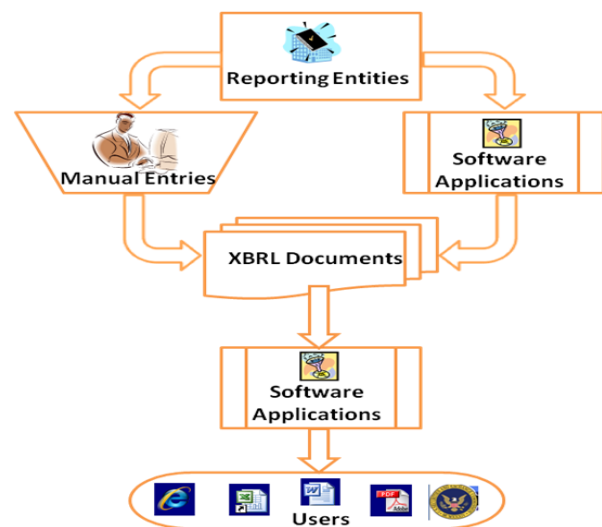
Fig. 1. *XBRL* concept.

II. HISTORICAL PERSPECTIVES

The initial idea of using *XBRL* in business reporting started as early as in April 1998, when a Certified Public Accountant (CPA) named Charles Hoffman thought of using *XML* in financial reporting. The idea took various paths and in 1999. The American Institute of Certified Public Accountants (AICPA) created a business plan for *XML*-based financial statements, originally named *XFRML* (eXtensible Financial Reporting Markup Language). In July 2000, *XBRL* version 1.0 was formerly released and Securities and Exchange Commission (SEC) recommended more development. In 2001, the development and use of *XBRL* have started to spread across the world. The International Accounting Standards Board had, then, released a draft of the International Accounting Standards (IAS) taxonomy for review. The Institute of Chartered Accountants in England and Wales announced the formation of a working group to develop a United Kingdom's (UK) version of the *XBRL* taxonomy. Membership of using *XBRL* climbed to include U.K., Australia, Canada, Japan, Germany, and Netherland

with a combined effort to support the development of *XBRL*. In 2002, SEC announced its effort in developing version 2.1. The year 2005, highlighted the inception of "Interactive Data Initiative" where the SEC encouraged its registered companies to voluntarily report their financial data using the *XBRL*. The U.S. Federal Deposit Insurance Corporation (FDIC) required member banks to submit quarterly - "Call Reports" in *XBRL* format - directly to a Central Data Repository established by the U.S. Federal Financial Institutions Examination Council (FFIEC). [3] Also the International Accounting Standards Committee Foundation (IASCF) released a final version of IFRS-General Purpose taxonomy. In 2006, other countries joined the effort of using and developing *XBRL* specific to their needs. The SEC in the USA released a Request for Information (RFI) to the software industry concerning interactive financial data, as it continues to explore the use of *XBRL*. In 2007, *XBRL* concepts were mapped to Generally Accepted Accounting Principles (GAAP) in the USA. In 2008, the SEC required mandatory filing using *XBRL* in 2009, and made it mandatory in 2011. The top 500 publicly traded companies had to comply with SEC's rule from June 2009, with three-year phase-out for mandatory implementation for the rest. In 2010, iPhone application and quality review were introduced. In 2011, corporate action taxonomy and other applications were implemented. Since the SEC's mandate announcement, companies across the Globe have been preparing various applications using *XBRL*. [4] In 2012, the *XBRL.US* supported the Digital Accountability and Transparency Act of 2011, and recommended to the USA House of Representatives the implementation of *XBRL* as being a uniquely suited reporting language to financial, accounting and performance-related data for business and government reporting. Bringing *XBRL* to financial data processing improves its integrity, decreases data automation processing cost, and increases its quality. *XBRL* has becoming a reporting requirement for organizations around the world, including the United States [by January 2013, 9,120 companies filed with SEC; 56,528 XBRL submissions], securities regulators in China and Japan, numerous banking regulators in Europe and government agencies in Australia, the Netherlands and the United Kingdom (UK)., IASB (IFRS), Ireland, Israel, Korea, New Zealand, Spain, Taiwan, Thailand, and others. In the U.S.A. in 2012, a new updated taxonomy was approved for filing and currently the 2013 new taxonomy draft has been out for comments. [5]

III. *XBRL* TECHNICAL STRUCTURE

XBRL uses *Specifications* [grammar like in other computer languages] that are used to build an application *Taxonomy* [dictionary like of all rules applied and definitions] for financial and accounting *Instance* [reported document] including some *Element and Attributes* [sentence formation] without going into too much technical details. Converting the financial data into *XBRL* format helps in maintaining business information in digital form. That form enables various interested parties to exchange financial data in multiple formats for various purposes [financial, taxes, government] without spending the effort to rebuild the data

structure but rather extract the needed data into the desired format for analysis and decision-making.

XBRL structure have audit-ability feature that is called *Validation* to conform to its contents. It can also adapt to various applications that is why it is deemed *Extensible* [expandable]. *XBRL* allows modeling of information and expression which has semantic [has meaning relevant to its context] meanings. It uses *XML* and its related technology such as *XML Schemas* (define an item or concept given a name such as "NetIncome" "CostOfGoodsSold"). When *schemas* are linked together they form taxonomy (relational structure and sequence)]. The X*Link* links data entry to a certain source for conformity and comparability purposes. For example, to write the date we have to conform to "ISO 8601" format that is yyyy-mm-dd. This practice is to maintain uniformity in interpreting data for comparability. It may also include unit that is representing an item such a monetary unit where we have then to use "ISO 4217" format of three letters or numbers to represent the monetary unit of a country, that code is used to report the financial data of businesses in different countries. For example, the code for United States Dollar is "USD or 840", European Union is "EUR or 246", Italian Lira is "EUR or 380 and/or ITA or 380", and for United Kingdom Pound Sterling is "GBP or 826". The expression *XPath* combines and defines relationship between concept such as *label, reference, presentation, calculation, and definition's linkbase*. and *NameSpaces* to articulate its structure. It is a way of communication that is defined by metadata [data about data] set of taxonomies. *XBRL* International supports and sponsors a membership system of those who are interested in building new applications. The main purpose is to validate and approve these applications.
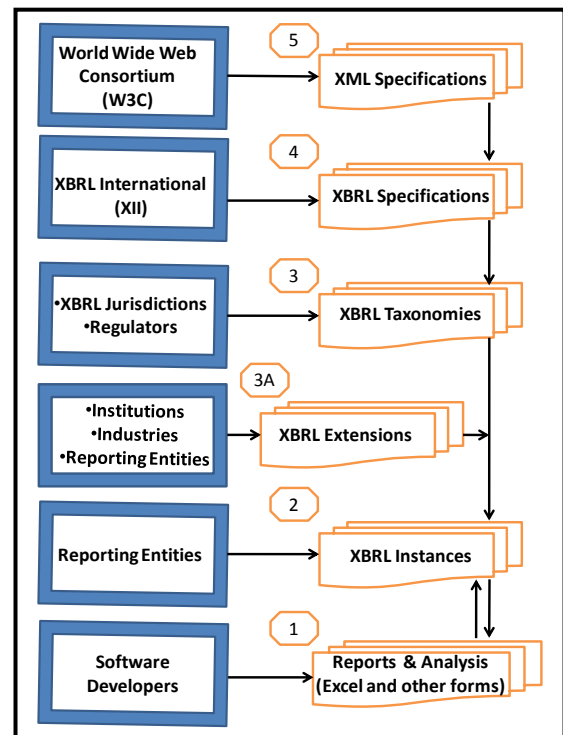

Fig. 2. XBRL Resources and Organization

XBRL, when compared to *HTML* and *XML*, is considered a

multi-dimensional language. *HTML* (Hypertext Markup Language) is a standard way of marking up a document so it can be published on the World Wide Web and viewed in a browser. It provides a set of pre-defined *tags* [marks] that describe how contents appear in a Web browser. For example, it describes the font and color of a published and/or searched text. It gives little information on meaning or context. On the other hand, *XML* is a standard language – that is maintained by the World Wide Web Consortium (W3C) - uses tags to identify the meaning, context and structure of data. *XML* does not replace *HTML*. It is a complementary format that is platform independent, allowing *XML* data to be rendered on any device such as a computer, cell phone, Personal Digital Assistant (PDA) or tablet device. *XML* enables rich, structured data to be delivered in a standard, consistent way. Whereas *HTML* offers a fixed, pre-defined number of tags, *XML* neither defines nor limits tags. Instead, *XML* provides a framework for defining tags (i.e. taxonomy) and the relationship between them (i.e. schema). *XBRL* is an *XML*-based schema that focuses specifically on the requirements of business reporting. *XBRL* builds upon *XML*, allowing accountants and regulatory bodies to identify items that are unique to the business reporting environment. In *XBRL* sentence structure defers from spreadsheet in terms of its flexibility and processing speed.

In contrasting *XBRL* with spreadsheet application, we may identify the columns and rows in the spreadsheet as being coordinates for data's location. For example column "A" first row cell is identified as A1. Consequently when we write formula using spreadsheet software such as in *Excel*, we rely on coordinates to locate the variables [amount, quantity, text, date] needed for certain operation [formulas, display, and comparison]. In *XBRL* instead of using columns and rows identifiers, value has entity name, date, time, and measurement unit. As demonstrated below, these aspect values are used by *XBRL* in place of coordinates [cell in Excel] when specifying its inputs and outputs. For example if we want to determine the value of net income, we have to identify the coordinates for each item of the formula to reach to net income. These coordinates would then be sales, cost of goods sold, and another coordinate cell for the resulted output. In *Excel*, if we want to apply the same formula for another year or another business we have to look at the cells location. In *XBRL* we define the entity that is "Sales", entity "CostOfGoodsSold", and entity for "NetIncome". Then the new entity would be "NetIncome=Sales– CostOfGoodsSold". This aspect or meaning will be applied to any company in any period without having to refer to a specific dimension data range. The flexibility comes from the freedom from using or tying-up to any location. Any item or concept that has the same definition will be exposed to the same operation.

IV. DOCUMENT STRUCTURE

This section provides a clarification of how accounting or financial document are converted from its regular traditional written format to the *XBRL* and back to human readable financial reports. For our clarification purpose, we would consider that the *instance* is representing the Balance Sheet

of ABC Corporation as December 31, 2008. When we used the terminology to consider balance sheet as instance means we ta [mark it between angled brackets < >] it. Once we tag it, we can use the taxonomies created by *US GAAP* to convert the balance sheet into *XBRL*. From the *US GAAP* classification list we are going to select the equivalent tags, schemas and taxonomies that match the selected "tagged < >" balance sheet. If we convert the ABC data (Fig. 3) intro *XBRL* taxonomy we have to define the hierarchy of these elements as presented in the *US GAAP XBRL* below:

<element name = "Entity" ….>, <element name="Assets"…>, <element name="CurrentAssets"….>. Then we apply this hierarchy of names to the reported entity that is ABC: <Entity>ABC Corp</Entity>, ContextRef="Balance Sheet", <CurrentAssets>120</CurrentAssets>, ContentRef="USD" decimals="INF">120000000</usfr-pte:CurrentAssts>,<PeriodOfReport>2008-12-31</PeriodOfReport>.

The tagging process in this scenario packaged information - such as definition, label, reference, time, and date - around individual number to build an *instance*. The *instance* represents reportable business facts. As it is explained earlier, *Schemas* are expressions used to define elements or items. Consequently the value of $120 million has an element that is current asset, which has date [as of December 31, 2008], numeric value (US Dollar), scale [million], and perhaps other optional scenarios such as audited, unaudited, or actual versus projected value.
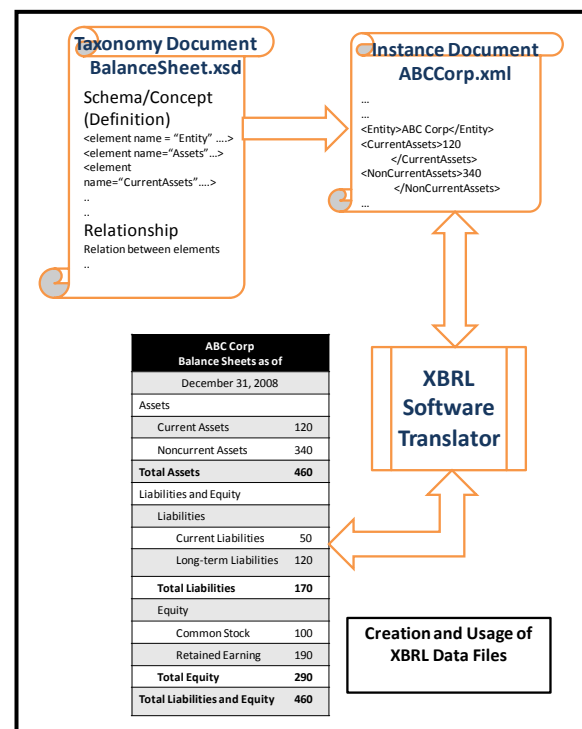
Fig. 3 XBRL Document Structure and Use

Current software tools allow accounting users to map charts of accounts and other structures to *XBRL* tags. Data from accounting databases can be extracted in *XBRL* format. It is not strictly necessary for an accounting software vendor to use *XBRL*; third party products can achieve the transformation of the data to *XBRL*. Yet, the recent updated

accounting and financial software, including taxation, have considered the integration of *XBRL* in its programing structure.

Another valuable development on the same line of accounting application is *XBRL GL* (Global Ledger). It is intended to enable the efficient handling of financial and business information contained within an organization. The Global Ledger allows the representation of anything that is found in Enterprise Resource Planning (ERP) systems such as: setup files, master files, transaction files and history files, and deals with information in both form; financial and non-financial. It collects general ledger and after-the-fact receivables, payables, inventory and other non-financial facts, and then permits the representation of that information using traditional summaries and through flexible links to *XBRL* for reporting. It is supposed to be able to represent information in great details, summary and functions integrating the interaction of *US GAAP* taxonomy.

V. Application of *XBRL*

Since its inception and throughout its development process, *XBRL* has been adopted for various applications around the Globe. Its current application has not been limited to but includes the following objectives:

- Enhancing companies' internal and external financial reporting system.
- Securing a business reporting mechanism to various regulators, including tax and financial authorities, central banks and governments.
- Filing of loan reports and applications; credit risk assessments. Used by FFIEC/FDIC for quarterly data collection from US banks since 2005.
- Monitoring loan processing system and data collection for quarterly reporting, reporting to regulations, tax purpose, decision-support; business activity management, benchmarking and analysis, budget and forecasting by HUD (Housing Urban Development)/FHA [loan and property administration].
- Filing for taxes by various countries.
- Filing and reporting with SEC.
- Combining data by governmental agencies.
- Exchanging of information between government departments or between other institutions, such as central banks.
- Maintaining an authorities accounting literature - providing a standard way of describing accounting documents provided by authoritative bodies
- Preparing financial and statistical data where there is a need to be stored exchanged and analyzed.
- Enhancing tax compliance and reviewing business data before filing for the purpose of obtaining advices on the proper treatment of certain revenue and expenses for various tax purposes. It enables the exercise of more control by the regulators and government agencies to monitor compliance with their published rules.

Strengthening the internal auditing and regulatory filing: process efficiency, cost saving and supporting a new collaboration model with external auditors. The International Auditing and Assurance Standards Board (IAASB) plans to release an exposure draft in June 2012 in its ongoing project on the auditor's reporting model with additional information to be provided on the XBRL tagging data. [6]

In addition, the IAASB has formed a working group to explore issues such as auditing or assurance on:

- Controlling the process of mergers and acquisitions specially the use of" real time" feature in general share data and actual rule. It is centralized, consistent and application independent.
- Integrating detailed data with end reporting
- Tracking information regarding fixed assets management.
- Establishing (OECD, v2,1) central standards for exchange of business financial information for tax purpose USA (Internal Revenue Service, FDIC, SEC), UK, the Netherlands, Canada, Australia, South America, Japan, Chili, Mexico, China, etc.
- Designing various applications in human resources management, payroll, and inventory control.

VI. Implementation Assessment

XBRL has been proven, through its various implementations, to be an effective flexible tool in building various applications for financial and business reporting systems that include both quantitative and textual information. Among its beneficial features are, but not limited to, the following:

- Adoptability to universal application including integrated translation into up to 40 languages.
- Richness and powerful structure allows very efficient handling of business data by computer software.
- Validation process included in its structure provides an audit trail to validate consistency, existence, and value assertions.
- Augmented formula chaining where one output is the input for another formula [A=B+C, C=D+F, we solve C first then replace its value in the first formula] provides a way of underlying a complex formula into a chain of sequential operations speeding processing time and enhancing data storage.
- Flexibility in supporting all the standard tasks involved in compiling, storing and using business data eases the process of searching, selecting, exchanging or analyzing data by computer, or to be published for ordinary viewing.
- Standardization of recording, storing and transmitting business financial information delivers major cost savings and gains in efficiency, improving processes in companies, governmental and other organizations.[7]
- Enhanced usability of financial statements information. Eliminate the need to re-key financial data for analytical and other purposes. By presenting its statements in XBRL, a company can meet the requirements of regulators, lenders and others consumers of financial information, who are increasingly demanding reporting in XBRL. This will improve business relations and lead to a range of benefits.
- Automated Data collection make the data integration from different company's divisions with different accounting systems can be quickly assembled cheaply and efficiently.

- Reduced data manipulation and validation time, reduces compliance burden, and reduces production time for same data for different representation..
- Wide adaption for various needs and format anticipated by all participants in the financial information supply chain makes planning processes to be more effective and efficient.
- Feasibility of exchanging information and collaboration across-government enhances the compliance with regulation.
- Streamlined traceability of information and enhanced financial reporting transparencies, increases information reliability.
- Adaptability to abstraction of business rules that can be applied across a wide range of software application reduces its operating cost.[7]
- Availability of broader set of monitoring controls and assessment ultimately enable continuous auditing and commit resources to specific data concepts. In addition, it enhances reports' reviews process and assembly to comply with the requirement of Sarbanes-Oxley (SOX) Act in the USA.
- Elimination of data redundancy across disparate information source streamlines the creation of financial reports for internal and external use.
- Employing mapping concepts with appropriate taxonomy provides consistency, completeness and promotes sustainable reporting, and improves the ability of companies to more precisely direct and publish financial information to investor, regulators, analysts, lenders, and other interested parties.

Total Detections	Data Issue
253,445	Negative Value Reported for a Concept that is expected to have a Positive Value
227,262	Invalid Axis Member Combination
67,802	Incorrect Calculation Weight Used
39,080	Missing Calculation
30,177	Positive Value Reported for a Concept that is expected to have a Negative Value
29,837	Context Date is Subsequent to the Period Reported
28,324	Value Reported for a Concept that should be Zero or Empty
28,088	Value Reported for a Concept Appears Unreasonably Large or Small
27,695	Deprecated Element is Reported
21,689	Duplicate Value that does Not Match
18,000	Invalid unit of measure
15,581	Duplicate Extension Concept
15,401	Required Value that is Not Reported
15,342	Calculation Error
12,565	Invalid Line Item Used with an Axis
9,851	Required Value that Should be Reported if Another Value is Reported
9,486	Incorrect Decimals Defined
7,964	Negative Value Reported for an Extension Concept
7,204	Value Reported for a Concept is Different than the Dimensional Equivalent
6,171	Value that Should be Zero or Empty if Another Value is Not Reported
4,633	Extension Element Should be Considered
3,303	Inappropriate calculation component
2,947	Reported Value that is Not Less Than or Equal to a Related Concept
1,863	Cash Flow is Represented as an Accrual
591	Accrual is Represented as a Cash Flow
544	Value that Should be Zero or Empty if Another Value is Reported
341	Incorrect Date
161	DTS Processing Error
148	Reported Value that is Not Greater Than or Equal to a Related Concept
103	Filing is Invalid XBRL
2	Other Error
31 issue categories - **view a sample of top issues detected**	

Fig. 4. Error in SEC Filing Using XBRL

While *XBRL* use in financial reporting has gone through a continuous improvement process since its inception in 1994, yet it has not reached yet the high level of accuracy that is expected when dealing with various financial reporting on the global and national scales. In January, 2013, the xbrl.us reported that 9,121 public companies filed 56,536 XBRL submission, and 885,600 data issues and errors reported.

We have to be aware of the real scope of using *XBRL* without rushing to its implementation in all financial and accounting reporting before completing a feasibility cost-benefit study. Companies need to evaluate auditing process and compliance with SEC mandates and identifying priory areas that are logical considered as candidates for the application of standardized approach and other manual control processes where automation would be considered.

VII. CONCLUSION

The paper presented how the *XBRL* adds meaning and contents to the financial reports and provides extensive and integral analysis of data for various purposes. The paper started by an introduction of the *XBRL* and its use in financial reporting and the technique used in tagging mechanism of the financial data and transforming data into usable information for multiple purposes and locations. There are pros and cons of XBRL implementation in financial reporting and analysis, yet the non-financial reporting may not be cost efficient. Also the maintenance process of updating the tagging process and involved labor in programing and training may pose a financial burden on businesses to comply with its technicality and audit-ability. Nonetheless, the application of *XBRL* by financial analysts is proliferating in the financial markets and beyond. [8] Consequently, more training and study are needed in this field and also the need to educate business graduates about the *XBRL* use in business. *XBRL* is here to stay and to be more efficient through the efforts of continuous improvement.

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Creating Value for Customers on International Scale-from Host Country Perspective

B. Stępień

Abstract—**The aim of this article is to show difficulties in creating value for the customer on international scale. The conditions on host markets manifest themselves in, for instance, an array of standardization barriers and diversified value perception among customers. As an example of those difficulties to create both cohesive and fitted CRM on international scale some empirical results are shown and discussed here (gathered by questionnaire distribution among Polish customers and enterprises) showing how different can be perception of value by customers and enterprises on the same market and then how ineffective the whole CRM and CSM between customers and companies can be.**

Index Terms—**Value for customer, MNCs, host market, CRM (Customer Relationship Management).**

I. Introduction

Creating value for a customer is a marketing concept covering a complete company, originated as a result of practical and theoretical conclusion that, in the contemporary world of sophisticated means of competition, a clever use of active sale instruments is no longer sufficient [1]-[4]. Value-creating activities consist in identifying, creating, communicating and delivering value to a customer and are undertaken on all levels of structure, in all fields and processes that occur in a company. Care to win and retain a customer might be reflected in increasingly sophisticated, customer cooperation-related activities where we start from the simple utilization of selected sale instruments and gradually aim at incorporating customer care into company philosophy and its daily activities.

Creating value for customers actually seems to bring marketing to its ideological roots, where customers regain their position from being often treated as mere source of income into coming back to the centre of interest for marketers [5]-[6]. Of course, it does not mean that marketing activities do not actually aim at boosting sales, and increasing markets' share but adopting customers value perspective allows to do it in more sophisticated manner where both sides could feel satisfaction from long term cooperation

The concept of creating value for customer is based on few, but quite fundamental, empirically proven observations, namely:

1) The cost of winning new customers exceeds the cost of retaining the present ones. This regularity requires a reasonable economic entity to focus their efforts on acquiring new customers, yet retaining present ones in particular by building close mutual links which enhance customers loyalty [7];

2) A product or service value is created in a number of stages in a technological chain, hence cooperation and building long term relations with a customer is highly desirable on each and every stage of goods development, in order to create additional value of goods/services that is equally valuable for both parties,

3) The value of an offer is relative and changes over space and time. A bidder's and recipient's perception of an offer differ, and the grounds for these discrepancies might be as follows:

- Perception of a good's or services value depends on the knowledge, emotional attitudes and previous experience of customers; it can also be different before purchase and after it [8] thus customer value analysis plays vital role in proper creation, communication and development of longer term relations with customers
- Value perception by a customer is conditioned by the market: it depends on a variety of economic, institutional and cultural factors characteristic of a given area.

The last remark is especially intriguing when we think about creating value on international scale and try to answer the question if it is viable to match both effectively and efficiently company's policy strategy with diverse value perceptions and expectations of customers from different countries.

II. Creating Value-International Companies' Perspective

MNCs strategies and operations are peculiar balancing between an inclination to unify organizational practices on a world scale and, at the same time, a tendency to customize them to fit into local markets, which results in their structures, strategies and operations being hybrid in nature [9]-[11].

The pursuit of a standardized offer and customer approach on a world scale is driven by firms' desire to utilize competitive advantages acquired on a local market, a necessity to work out a homogenous corporate identity or – and often above all – savings in operating costs. A characteristic standardization pressure gains in intensity along with increasing spending on research and development of international companies, the capital-intensive nature of production and technological advance in industries. Standardization of offer and customer approach are additionally boosted by a growing homogeneity of customer tastes and a number of international companies acting as global customers.

On the other hand, however, a full standardization in international company's operations is hindered by various environmental factors. By developing a unique national management system[1] [12]-[13] each market wields influence on entities' operations. The impact of host market environments on international companies' operations, resulting in adaptation, might act twofold. A company might:

1) Act voluntarily despite the lack of pressure of formal or customary requirements on the market's or competition's side. In this case, it acts proactively; it adapts an offer to tailor it to the needs of local recipients, to increase own market share and thus to outdistance the rivalry,

2) Operate within legal and administrative constraints of the market and under pressure on the customers' and/or employees' part.

The latter type of adaptation is of a forced character; it is a response to predefined conditions of environment or intra-business, and it is either unrealizable or too costly to modify these factors that exert adaptation pressure when compared with taking adaptation measures[2]. Such formal barriers that enforce alterations to be made in a programme of creating value for a customer are, e.g.:

*   Customs barriers, administrative bans and import restrictions,
*   Regulations concerning the safety of product sale and use that condition marketing authorization on a given host market that demands certification, attestation or general product inspection for compliance with local requirements, etc. Yet, it should be emphasized here that these are requirements common for all economic entities prone to manufacture and/or trade in specific merchandise on both local and foreign markets,
*   Regulations prohibiting the use of certain means of sale promotions with regard to selected products or a general legal ban on certain trade practices,
*   Limited access to resources, e.g. distribution channels, media,
*   Limited access to some groups of customers.

It should be stressed here that the institutional dissimilarities on both home and host markets also have an effect on how a trade partner is perceived. Additionally, they determine the scope of property protection or rights of trading parties. In order to explain better the relation between these factors and the nature of the concept of creating value for a customer, ideological determinants of markets and patterns of thoughts of entities deriving from these areas should be referred to.

The scope of possible standardization/adaptation of the concept of creating value for a customer is also dependent on the degree of this market openness and acceptance of different practices, products or services. It has been observed that such inclination towards adopting foreign methods of operation or operating procedures is greater when a host market is less developed economically and undergoes the phase of an intense growth combined with major instability and ineffectuality of an institutional order. Well-tried and effective solutions are being sought for on such a market on macro, industry and micro levels, so that they could be implemented and thus economic and social growth would be enhanced. International companies that are successful on a world scale provide specific benchmark here, i.e. a source of desired products, services and organizational solutions. On the markets that are characterized with a non-stabilized legal system, poor consumer rights protection and general ideologically-driven distrust of a partner of exchange, customer-relation management systems will be developed differently than it is in the case of highly-developed economies. Introducing truncated and reduced systems of relations with customers will in this instance be a result of economic calculation (since an economic objective can be accomplished at lower costs, it would be unreasonable to push them up above a necessary level).

An inclination to undergo standardization is also of cultural origin and is dependent on, among others, "security distance". It is a historically-shaped, defined system of behaviors that prevent wrecking or serious upsetting of own identity and culture. The greater the security distance, the greater the cultural identity and lower susceptibility to changes and a tendency to accept an offer that is standardized world-wide. W. Head claims that a large security distance is manifested through explicitly shaped society's morality parallel to condemnation of behaviors departing from these norms, high self-discipline, formalized class relations and social roles or high regard for institutions and law, to name a few [15]. Susceptibility of a given nation to accept foreign standards of behavior is besides usually inversely proportional to the level of ethnocentrism or prejudice and hostile stereotypes regarding individual elements of marketing mix or manufacturer's home country in general.

The factors listed above seriously hinder the initiation of a standardized programme of creating value for a customer worldwide, yet, this does not mean that the shape and nature of the concept itself need to change in all its constituents when impacted by local market pressure. Caution should be exercised to avoid "trade determinism". Even in the case of substantial modifications of product's/ service characteristics stemming from, e.g. administrative and legal restrictions, the idea of a customer approach might remain uniform across the world; an approach to cooperation with customer at the stage of product/service development or generating a message to customers about values the product represents.

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[1] "Business systems are particular arrangements of hierarchy – market relations which become institutionalized and relatively successful in particular contexts" in [12, p. 6 and following]. Three model national business systems (NBSs) were described by R. Whitley: collaborative business environment (like in Germany or Japan) showing a substantial level of cooperation between enterprises, mature market institutions and substantial role of the state in regulating business environment; arms' length NBS (like in USA, Great Britain or in Canada) were market rules of the game are the most important ones and state does not interfere in business life; and particularistic NBSs - the weak new democracies trying to implement market rules into their economies.

[2] If the pressure is driven by either formal or informal institutions, such phenomena are referred to as isomorphic behaviors. For more see e.g [14]

III. Host Country Pressures on MNCs Value Creation

From the political perspective and the theory of resource dependence, the strength of impact of a given market will

depend on its qualities, available resources and recognition of these resources/qualities as attractive. We can speak about attractiveness of a market resulting from: its size, geographical location, resources available or formal institutions fostering economic entities.

The environment of host markets, different from the home market, is more difficult for a multinational entity than for the local enterprises because the latter, embedded in a given environment, perceive its character as given and obvious, frequently without realizing what kind of specific features it possesses. Entering a host market is linked with a necessity to incur additional costs of recognition and adaptation, including institutional and cultural diversities existing there.

Liability of foreignness (LOF) [16]-[18] as these are the costs in question, shows degree of institutional and cultural distance between the home market and the host market. It seems that this liability will decide about the possibilities of standardization of MNCs' value creation and communication activities (and not only those) on the host markets. When diversities between the markets as well as the LOF are negligible, transplantation of economic practices worked out elsewhere onto the host market will not encounter any significant institutional barriers and, therefore, economic practices typical of the host market will not easily be adopted by the MNC. This dependence is confirmed by results various empirical studies, see e.g. [19]-[23]. For example, institutional, ideological and cultural similarities between the markets increase effectiveness of transfer of various types of organizational practices between subsidiaries of transnational concerns and then agency costs connected with supervision and coordination of branches are reduced [24][3].

If a low LOF allows international transfer of economic practices, one should consider whether a reverse dependence can also occur: will a direct transplantation of organizational practices worked out in a given environment and transferred to a place with different economic, institutional and cultural conditions, encounter more difficulties when the LOF is bigger? Such a thesis does not seem to be viable for the institutional environment of all markets. It can be undermined, e.g., by a successful expansion of transnational corporations (with their already worked out, clear and tested routines derived from an institutionally mature home market of arms length or collaborative environment characteristics) onto institutionally weak, unstable markets with certain features of particularism (e.g. Polish, Czech, Hungarian market, etc. [10], [12]. Particularistic markets, or those whose features approach this model, seem to be willing to adopt the solutions worked out on a multinational company's home market, particularly when this market is perceived as a kind of economic benchmark. Therefore, when defining model conditions under which standardization and transplantation of practices are most probable, one should point out the situations in which the markets are institutionally, economically and culturally similar, or when the host market is unstable and permissive at the same time,

and MNC as well as the market it comes from are perceived positively as a model to be followed [25]-[26] In other cases the probability of transplantation seems to be lower. Taking into account above relations it can be stated that despite a popular opinion about the growing convergence in corporate strategies and a widespread phenomenon of openness of economies (making them similar, which means that the mutual effects of the markets are less visible in corporate strategies and structures), the functioning of multinational companies is rather linked with a necessity to adjust its practices to the local environment than with a possibility to standardize its activities on the global scale.

Summarizing the considerations on the effect of host markets on the activity of multinational companies, it should be noted that:

3) The force of impact of the host market on the activity of a multinational company is a function of the LOF between the home market (as well as those already occupied by the multinational company) and the host market,

4) Institutionally and culturally "foreign" host market's effect on the activity of a multinational company is the stronger , the higher the assessment of its attractiveness,

5) Particularistic markets seem to be permissive and willing to adapt practices of MNCs coming from different institutional settings in spite of the fact that LOF is substantial.

IV. Mncs' Value Creation and Communication-Customers Views versus Mncs Position

Below are presented some findings and conclusions of the research project "Creating value for a customer in international companies – Polish host market perspective". A general objective of the project was to examine the approach of international companies operating in Poland to shaping value for a customer and building up mutual relations on the Polish market.

The research was carried out in three stages:

1) A questionnaire that regarded Polish customers' perception of value and the asssessment of scope and character of cooperation with local and international entities in the field of creating value and satisfying customers' needs (the survey included 550 respondents from Poland, of different age. A prevailing group of subjects were university-educated, young people living in cities with a population exceeding 50 thousand inhabitants),

2) An interview with the representatives of marketing departments in the Polish branches of international companies regarding their activity of creating and communicating value for customers in Poland when juxtaposed with analogous concerns' operations on other host markets and on the home market (35 interviews)

3) An internet questionnaire directed to 5000 of both Polish and foreign companies operating in Poland [4] - the

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[3] This, however, does not mean that the host market with the low LOF does not exert any impact on the activity of a multinational company, but measuring this impact is difficult due to the fact that those areas are similar; the impact becomes more visible when exerted by a different phenomenon from the previously known.

[4] By foreign companies we mean those with more than 50% of foreign capital

questions were analogical to the content of questionnaire directed to customers (we received more than 700 replies, but as basis for further analysis we took only 432 completed) .

The general results and conclusions of this survey are:
1) Polish respondents have major difficulties in understanding the concept of value (what is not country specific but seems to be a general problem, see e.g. [27],)
2) Polish respondents do not feel as partners for MNCs in creating and developing value for them,
3) Concept of CRM and creating value for the customer implemented by MNCs in such a host market like Poland, (which still does possess particularistic features), is limited and narrowed, partly due to the result of economic calculation, since the planned revenues or market share can be simply accomplished at lower costs,
4) In majority of companies examined Customer Satisfaction Measurement (CSM) does not work properly mainly due to inefficient methods (in terms of frequency, content, methodology etc.) of measuring customer satisfaction and their perception of value, and these findings are in line with those expressed in [28]-[30].

The results presented below are not representative of a total population of Polish consumers and companies, yet the size of the sample welcomes a cautious search for certain regularities.

Overall, the research shows that it is a product/service price and a product brand/image that the Poles consider to be the vital medium of conveying information on an offer's value. It is worth emphasizing that a greater number of respondents think that a low price equals low product's value (86% of the subjects) than it is observed in the case of high price and high value (72%). It should be stressed that only 62,5% of respondents believe that a product's value should be evaluated in terms of relation between the price and a broad offer's value. The word "only" has been used here intentionally, as when collated with other data it indicates, in the author's view, still visible market immaturity and low consumer awareness in Poland. The data below seem to corroborate this working hypothesis:
1) Considerably more respondents pointed to the price rather than product's quality as a determinant of product's/service's value; 72% of respondents associate value with high price, while only 45 % with quality of the product,
2) Poles decidedly trust brand power, i.e. over 70% of the respondents equate value with the marketing conception of a product/service, which is further confirmed by the following results; 60% of the respondents think that marketing operations increase a product's value,
3) 72% of the respondents believe that nowadays companies are becoming more often interested in cooperation with customers and increasing products' value, yet this interest clearly seems uncommon or the quality of this cooperation is far from expected. The "more often" statement should thus be interpreted with utmost care, what is discussed below,
4) Over 60% of the Poles under the study express the view that companies make customers believe that the value

offered is becoming higher, whereas an underlying and genuine desire is to make money, and not to promote cooperation with recipients.

Data collected from consumers' questionnaire also show that respondents (66% of indications) are unable to look after their interests and are unaware of their consumer rights. International companies identify this weakness perfectly, which, in the respondents' view, is reflected in the Polish market being treated as immature parallel to worse customer care and poorer care for satisfying their needs when compared with, e.g. a German or French client. The Poles under the study feel as lower-category clients and additionally express it in various answers. For instance, only 23% of respondents believe that Polish consumers are offered the value equal to that proposed to customers in other countries.

However, the most alarming is the fact that as many as 40% of respondents claim that the influence on what and how they buy is getting out of their control.

By comparison, the results of interviews conducted in Polish subsidiaries of MNCs operating in Poland together with results of internet survey (done among both Polish and foreign companies) show quite a different – much nicer picture, being rather compatible with those normative arguments about CRM and creating value concept than with results outlined above. From the gathered data we can see that:
1) Vast majority of interviewers and electronically questioned companies claim that main sources of value for their customers are good quality products/ services to (86%) and serving customers better than competition (63%); only 4% of respondents tend to claim that the source of value lies in good promotion,
2) About 80% of questioned companies think that Polish customers look after their interests very well and can execute them efficiently,
3) In general, respondents can clearly characterize their customers needs and sources of their satisfaction but at the same time more than 30 % of surveyed companies do not examine those needs at all or do it very sporadically; 36 % do it once a year and 22% do it several times a year,
4) 35 % of respondents claim that they try to modify their products according to the customers comments gathered by cyclical CSM, but when asked what kind of information they acquire, only 17% gather information about customers needs and opinions about products,
5) Although respondents claim that their marketing competitive advantage derives from superior quality and competence in serving the customer they still see much space for improvement not only in the area of quality of the products, but in almost every aspect of marketing activities including those connected with communication and building stronger relationship with them,
6) 48 % of respondents claim that they treat customers equally, regardless of the country they offer their products, 10% sell their products for the higher price abroad, while the other 10% care about their foreign customers more than for Polish ones, offering them e.g. better quality.

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Service Brand Equity: Cross-Sectional Analysis of Four Service Schemes in Malaysia

Sharizal Hashim and Ernest Cyril deRun

Abstract—It has been noted in the literature, service brand is considered to be one of the most discussed in the service industry. Because service is dominated by experience and credence attributes; therefore an extrinsic cue like brand may help to reduce customers' purchase risk and optimize their cognitive processing abilities towards the service. One of the emerging service brand concepts that used extensively by marketing reseachers is service brand equity. However, there is limited interest looking at the broader application of service brand equity concept across different service categories. This is important to provide service marketers with useful and broader managerial insights in order to establish greater brand managerial sophistication in marketing the services. Hence, the aim of this research is to determine the dimensions of a successful branding strategy of services, to note each specific service sectors requirement, and its differences. The survey method is used in this study. The findings showed that different service category such as health service, retail, hotel and banking in Malaysia posited different dimension of service brand equity. This tends to suggest that, although service brand equity concept provides a significant description of how to brand a service; different services require different approach of branding process. Thus, this may help brand managers to prioritize and allocate which brand equity dimensions is suitable for their service. The principal contribution of the study is that it provides evidence for the validity of service brand equity used in various service contexts.

Index Terms—Service brand equity, hotel, health service, retail, banking.

I. INTRODUCTION

There are many countries including Malaysia, has taken several steps to liberalize its services sector as the principal engine for their future economic growth. However, liberalization of the service sector is not an easy task due to the issue of credence qualities and intangibility of the service consumption [1]. Thus, the introduction of extrinsic cues such as branding provides creative solution to reduce customers' purchase risk, "tangibilizing the intangible" and optimize their cognitive processing abilities towards service [2]-[4]. One of the emerging service brand concepts that used extensively by marketing researchers is service brand equity. Reference [5] and [6] asserted that service brand equity is important in a service industry. In addition, due to its intangible nature, a service firm that appropriately manages brand equity is more likely to sustain their

competitive advantage [7]. Moreover, brand equity allows the top management of service firms to evaluate their brand's positioning relative to their competitors, keep track of the firm's brand equity value and build corrective strategies when necessary [8].

However, one of the various issues faced by today's brand managers is there are limited attention given to investigate the broader application of service brand equity concept across few service categories in the same study [7], [9]. If this is not dealt with, it may have adverse impacts on the branding as well as marketing of the services [10]. Therefore, the objective of this study is to investigate the application of service brand equity across a few service categories in Malaysia as an effort to provide service marketers with useful managerial insights in order to establish greater brand managerial sophistication in marketing services.

II. LITERATURE REVIEW

The specific service brand equity concept is based on the cultivation of customer's brand awareness and brand meaning toward a service [4]. The creation of brand awareness is the first step in building brand equity [11], which represents the customers' ability to identify a brand from memory and increase the likelihood of the brand name coming to mind with or without outside aids [12], [13]. On the other hand, brand awareness refers to a customer's knowledge of a brand name and understanding the service category in which the brand competes [14]. Despite its importance, brand awareness is inadequate to build service brand equity. In most situations, customers will consider other aspects such as brand meaning in their brand evaluation process. As the second component of Berry's service brand equity concept, brand meaning is best defined as the customer's perception about a brand that is held in the mind with ideally strong and unique brand associations [4], [15]. Basically, the perception depends on a customer's search attribute information that occurs prior to a purchase and after consumption of the brand [12].

However, the main critique of the service brand equity concepts pertains to the issue of its generalisations. Most studies have described and validated service brand equity using specific service type rather than conduct a comparison study into the various service types. The diversity in the service sector has rendered it difficult to find managerially useful generalizations such as branding to relate to marketing practice [16]. In addition, previous service brand equity model is viewed as more effective in enhancing positive customer hedonics outcomes rather than behavioural changes because the concept explicitly rely on the emotional motives of the consumer buying process [17].

Therefore, investigating the application of brand equity model in various contexts is crucial in legitimising the service brand equity in service marketing. Such effort is able to provide a new insight of brand equity discussion and implication in the context of service.

Services categories are generally distinct from product categories and are more complex. For instance, Shostack [18] has put together a continuum which ranges from tangible dominant to intangible dominant, while Zeithmal [19] has placed more value on the simplicity of how a service can be evaluated and produced a continuum ranging from easy to difficult to evaluate. Recently, Lovelock [20] has proposed a more process focused in order to bring together several previous suggested classification schemes into a cohesive framework (Table I). The formulation of multiple dimensions of service process as the basis of the classification scheme provides a superior approaches to understanding the differences between service organizations [21]-[23]. This also aligned with Bowen [24], where he claim that the multiple dimensional approach permits analysis of a greater number of characteristics which may differ from one service organization to another.

TABLE I: THE NATURE OF SERVICE ACT

People Processing	-People (customers) as the integral part of the service process where they have to physically enter the service system such as health care service. Customers must be prepared to spend time interacting and cooperating actively with the service providers.
Possession Processing	-Limited to the treatment of the items; problems or enhancement of the items that belong to the customer such as retail service. It can refer to the customer dropping off the items or the service providers go to the customer's item that needs the treatment.
Mental Stimulus	-Service that interacts with customer's minds that has power to shape the attitudes and behaviour such as hospitality service. Receiving these service requires an investment of time and do not necessarily have to be physical present in a service factory.
Information Processing	-Service that is highly dependent on effective collection and processing of information such as financial service. The customer involvement in information processing is determined by face-to-face approach for complex service nature or interactive technology approach for standard service nature.

III. CONCEPTUAL FRAMEWORK

In an effort to broaden the application of brand equity in the service marketing, this study will incorporate Lovelock's service category scheme [20] and Berry's service brand equity [4]. Broadening the service brand dimensions across service boundaries will have a positive impact on the brand legitimise in services marketing and; also provide a greater knowledge to the industry of the appropriate brand development strategy in various service typologies.

IV. METHODOLOGY

In order to adequately capture the description of service brand equity construct in Malaysia, the measurement is developed on the outline by Churchill and Iacobuoci [25].

The summary of instrument scale items used is listed in Table II uses a 5-point Likert scale (agreed to disagree). The instrument is based on a pre-test of 40 respondents with alpha = 0.74. Convenience sampling is best used to efficiently acquire some basic information in the exploratory phase [26]. The questionnaire was distributed to 400 respondents across 5 regions in Malaysia in four service categories such as banking, retail, hotel and health services. The decision for selecting these services is in line with example given by Lovelock [20] in Table I. Then, respondents in one service category were excluded in the survey for other services to ensure the independence of the individual observation [27].

TABLE II: SERVICE BRAND EQUITY INSTRUMENT SUMMARY

Dimension	Definition	Instrument
Advertisement (BA1)	-The symbolism and imagery around the services which will result in a relationship between the service brand and the customer [29], [30].	4 items [31]*
Brand Name (BA2)	-A symbolic meaning which assists in both the recognition of the service and the decision-making process [32].	5 items [15]*
Country-of-origin (BA3)	-The country where corporate headquarters of the company marketing the product or service brand is located [33], [34].	4 items [15]*
Word of Mouth (BA4)	-The extent to which a customer informs friends, relatives and colleagues about an event that has created a certain level of satisfaction [35].	4 items [15]*
Public Relation (BA5)	-Reputation with the aim of earning understanding and support, and influencing opinion and behaviour towards the brand name [36].	4 items [37]*
Service Performance (BM1)	-The ways in which the service attempts to meet customers' more functional needs [14].	4 items [15]*
Employees (BM2)	-Customer's functional and emotional values of the brand's staff or representative [38].	5 items [15]*
Service Ambience (BM3)	-Facility aesthetics, layout accessibility, cleanliness, seating comfort, electronic equipment and display [39].	5 items [39]*
Service Features (BM4)	-Other functional values such as convenience and distances functions [40].	3 items [31]**
Perceived Fees Value (BM5)	-A perceived balance between the price of a service and all its utilities [41], [42].	4 items [43]**
Self-brand image (BM6)	-The images and symbols that relate to, and indeed, exploit, the needs, values and life-styles of customers in such a way that the meanings involved give added values, and differentiate the brand from other brands [44].	4 items [15]*
Brand feelings (BM7)	-Customer's emotional responses and reactions with respect to the brand [14].	4 items [15]*
Brand personality (BM8)	-The set of human characteristics associated with a brand [11].	4 items [15]*

* Adapted
**Adopted

In order to elicit the responses necessary to establish mere identification of the service brand equity construct, service brand name stated by the respondents would be used as the brand stimuli with minimal interference. For the analysis, the service brand equity measure used in this study is

formed by summing (composite) the individual item of sub dimensions of brand awareness and meaning as the average score of the variables [28].

V. FINDINGS AND DISCUSSION

A total of 1542 out of 1600 responses (96.3% response rate) were obtained from this survey. The remaining responses were deleted due to incomplete information. The composition of respondents for the 4 services categories is almost equal (range 384 to 388 samples). The sample size exceeded the minimum of 384 samples which appropriate to represent the population and to ensure a good decision model [26], [45]. The analysis of the respondents' demographics revealed that 54 per cent are female while the highest age group distributed falls under the age group of 26 to 30 years old. The educational level is divided into five main groups and the majority of the respondents possess a university degree. In addition, the survey's region composition is made up of approximately 35% from the central region of Malaysia which consists of Kuala Lumpur and Klang. It is worth noting that such composition does reflect the actual overall proposition of the population by region in Malaysia (Appendix 1).

TABLE III: SUMMARY OF RELIABILITY, MEAN AND STANDARD DEVIATION

Dimension		Health	Retail	Hotel	Banking
BA1	Mean	2.91	3.85	3.52	3.60
	Std Dvt	0.49	0.42	0.43	0.41
BA2	Mean	3.72	3.22	3.57	3.38
	Std Dvt	0.46	0.70	0.43	0.72
BA3	Mean	3.10	3.00	3.05	3.13
	Std Dvt	0.79	0.89	0.75	0.75
BA4	Mean	3.86	4.00	3.71	3.71
	Std Dvt	0.43	0.42	0.44	0.42
BA5	Mean	3.13	3.47	3.55	3.45
	Std Dvt	0.62	0.63	0.43	0.56
BM1	Mean	4.00	4.08	3.77	3.91
	Std Dvt	0.45	0.41	0.44	0.41
BM2	Mean	4.09	3.84	4.00	3.88
	Std Dvt	0.41	0.37	0.34	0.33
BM3	Mean	4.29	4.17	3.95	3.85
	Std Dvt	0.55	0.57	0.37	0.42
BM4	Mean	3.69	4.14	3.68	4.21
	Std Dvt	0.39	0.36	0.47	0.44
BM5	Mean	3.97	3.88	4.18	4.20
	Std Dvt	0.44	0.52	0.46	0.50
BM6	Mean	3.60	3.66	3.82	3.84
	Std Dvt	0.57	0.48	0.44	0.45
BM7	Mean	3.57	3.44	3.64	3.68
	Std Dvt	0.52	0.39	0.45	0.44
BM8	Mean	3.64	3.71	3.67	3.59
	Std Dvt	0.44	0.42	0.39	0.45
Alpha		0.82	0.77	0.84	0.81

The reliability coefficient (α) for the sample data is illustrated in Table III; an overall construct that is greater than 0.7 is high, reliable and valid [46]-[48], [28]. In short, the final set representing 13 construct of service brand equity for four service category is reliable and adequate for further analysis. In addition, Table III shows the mean for the service brand dimensions that respondents perceived as an important brand dimensions for service organisations in Malaysia. The service brand dimensions such as employees, environment and fees exhibited the strongest mean for all four service categories. On the other hand, service brand dimensions for country of origin shows the lowest mean.

In order to achieve the objective, factor analysis is used because it allows condensing a large set of variables and summarizing the underlying patterns of the variables group's correlation. A principle components extraction of 13 brand equity dimensions is used to estimate the number of factors with Eigen value of more than one. In addition, only variable with minimum factor loading of 0.35 is considered in the analysis. This is aligned with the suggestion of 0.35 as the minimum factor loading value for sample size above 250 respondents [28].

TABLE IV: FACTOR ANALYSIS (HEALTH & RETAIL)

	Health			**Retail**		
	Load	Comm	Alpha	Load	Comm	Alpha
BA1	0.585	0.514	0.568	0.963	0.935	0.611
BA2	0.61	0.575	0.769	*	*	*
BA3	0.871	0.777	0.808	*	*	*
BA4	0.815	0.704	0.735	0.722	0.587	0.721
BA5	0.843	0.742	0.795	*	*	*
BM1	0.817	0.711	0.693	0.764	0.635	0.665
BM2	0.829	0.745	0.795	*	*	*
BM3	0.798	0.815	0.854	0.815	0.708	0.842
BM4	0.603	0.567	0.6	0.647	0.489	0.707
BM5	0.547	0.399	0.616	0.559	0.407	0.647
BM6	0.77	0.659	0.795	0.775	0.611	0.751
BM7	0.85	0.728	0.726	0.686	0.479	0.734
BM8	0.611	0.53	0.735	0.807	0.671	0.715
Eigen values	8.467			5.523		
% of Variance	65.13			61.367		
KMO	0.836			0.771		
Sphericity	1928.396			576.155		
Sig.	0.000			0.000		

TABLE V: FACTOR ANALYSIS (HOTEL & BANKING)

	Hotel			Banking		
	Load	Comm	Alpha	Load	Comm	Alpha
BA1	0.66	0.465	0.616	0.919	0.867	0.662
BA2	*	*	*	*	*	*
BA3	*	*	*	0.792	0.832	0.719
BA4	0.728	0.532	0.689	*	*	*
BA5	0.754	0.569	0.652	*	*	*
BM1	0.77	0.594	0.726	0.636	0.694	0.729
BM2	0.776	0.607	0.764	0.633	0.566	0.706
BM3	0.62	0.485	0.673	0.803	0.693	0.723
BM4	0.553	0.48	0.779	0.884	0.805	0.749
BM5	*	*	*	0.8	0.766	0.666
BM6	0.72	0.666	0.729	0.866	0.774	0.814
BM7	0.714	0.651	0.603	0.798	0.646	0.735
BM8	0.756	0.59	0.684	0.748	0.724	0.722
Eigen values	5.641			7.365		
% of Variance	56.400			73.640		
KMO	0.843			0.812		
Sphericity	1187.163			1520.097		
Sig.	0.000			0.000		

* 0.35 as the minimum factor loading value for sample size above 250 respondents [28]

APPENDIX I: SUMMARY OF RESPONDENT/SERVICE SECTOR BY REGION

SECTOR

Region	Banking	Hotel	Health	Retail	Total	%
Central	135	138	133	135	541	35.29
North	65	66	66	65	262	16.99
South	76	75	76	76	303	19.61
East	57	57	56	57	227	14.71
Borneo	52	52	53	52	209	13.4
Total	385	388	384	385	1542	

Table IV and Table V represent the findings for the factor analysis across four service categories. The result indicates that all factor analysis appear to fit the data well as each KMO and Alpha exceeds 0.70 in each of the service category [28], [48], [49]. The finding supports Berry's service brand equity components (brand awareness and brand meaning) in describing a brand with regards to service. In addition, the lowest total variance explained for service brand equity concept is 56.4% for hotel, and the highest is 73.64% (banking).

In addition, the cultivation of brand awareness and brand meaning play an important role in explaining the service brand equity concept across the different service categories. However, in this study, different service categories require different set and cultivation of brand awareness and brand meaning toward describing service brand equity. For example, in the Health service all 13 dimensions to describe service brand equity rest in the People Processing. On the other hand, Banking posits 10 dimensions, while Retail and Hotel include 9 dimensions. This is echoed by Zeithaml and Bitner [50] as well as Clemes, Mollenkopf, and Burn [10], in which different classifications of services cause problem in brand concept generalisation. Therefore, this study concludes that although service brand equity has significant application in services; the cultivation of service brand awareness and brand meaning is different across services type. Service providers need to use different brand strategy or customize for different type of services.

In the bid to raise service brand awareness advertisement has becomes one of the most significant tactic used in Malaysia, because it regarded as a major factor in leveraging brand equity [29], [30]. Furthermore, according to Meenaghan [51] and Hsieh, Pan, and Setiono [52], the function of advertising is to create the symbolism and imagery around the services which will result in a relationship between the service brand and the customers. Another important communication source of brand awareness in service is word of mouth. The reason is pertaining to the intangibility and inseparability of service; customers find it very difficult to evaluate alternatives and customers rely heavily on personal sources of information. For instance, previous research on hotel service by Knowles and Howley [53] has concluded that word of mouth is the most frequent dimension mentioned by the respondents. Therefore, in an attempt to tangibilise the services, service organisation need to develop good advertisement strategy and good 'word of mouth' management [54].

In addition, the finding also shows that almost all dimensions of brand meaning have significant contribution in the service brands equity model. Interestingly, service ambience exerts the strongest influence on customers' brand meaning variable (recorded the highest loading for all service categories). This finding is parallel with other studies, where posited services ambiance such as facility aesthetics, layout accessibility, cleanliness, seating comfort, electronic equipment and display provide valuable tangible brand clues and later can affect customers' emotional, cognitive, and physiological responses toward the service [40], [55]-[57].

In retail service, surprisingly, employees do not exert significantly to customers' brand awareness. However, it is found that an employees' service experience can make a customer feels less important. This alignes with Ton [58] and Ittner and Larcker [59] finding where they posited that there is no significant effect of store's staff on store brand and profitability. On the other hand, perceived fees value in hotel service is of less significance. This is a result of recent competitive structure in Malaysia's hotel industry. As one of the most promising industries in Malaysia, various approaches are used to describe hotel operators in Malaysia. One of the approaches used is star rating to allow hotel guests to evaluate the fees for value structure. With a strong governing body in monitoring the Malaysian hotel industry, the star rating can reassure consumers that the business is reliable and trustworthy [60]. This is one of the possible reasons why perceived fees value is not significant in hotel due to the effectiveness of star rating in building the customers' expectation of the hotel.

As a conclusion, brand awareness is not enough to influence the behaviour of the service customers. Hence, factor such as brand meaning is needed to support the development of brand equity in the service industries in Malaysia. Hence, service brand awareness and brand meaning of a service brand need to be improved on in order to gain positive views by the target audience. However, different service organisations need different personalized approaches to service brand equity possibilities. This study gives service industry managers a structured approach to formulate their branding strategies. Its straightforward approach illustrates how different service categories contribute to branding strategies effectiveness. As managers often have limited resources to implement branding strategies, this framework helps them to prioritize and allocate resources across brand equity components. Therefore, allowing organizations to focus on the unique nature of their service that significantly provide an edge with their competitors.

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International Theories of Corporate Governance: Critical Analysis and Evidence of the Italian Model

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Abstract—The corporate governance is an international topic deeply studied in accounting management and economic literature, but a unique and agreed definition of governance is not achieved yet, because every firm has its own features so it is difficult to define in general terms. Literature agrees that two archetypes exist: the Anglo-Saxon and German-Japanese models that focus on agency and stakeholder theories respectively. It is relevant to notice that the Italian model does not belong to the two previous archetypes, because some features completely differ from them. In addition, the relationship between the Italian case and the international corporate governance theories is not clear. Thus, the aim of this paper is to understand the connection between the Italian model and the international theories of corporate governance.

Index Terms—Corporate governance, international theories, Italian model.

I. Introduction

In the last few years, we are facing a worldwide and fast change in the environmental conditions where the companies operate. The firm, in fact, is not to be analyzed as a unit isolated from the environment because it rises and growths within it [1].

The importance of the manager skills come out vigorously in that dynamic and changing contest in which it is fundamental to establish the government rules and then the "*governance*". The Latin verb "*gubernare*" means "hold the rudder" or "steering" from which comes the noun "*governance*". Thus, it is fundamental the role and the responsibility of the management, the board of directors. The noun "*corporate*" comes from the Latin, too; in particular from "*corpus*" and it means "body".

The company and the economic manage of the productive unit, influenced by the environmental changes, should be considered also as the mixture of the relations and the dynamics that are created between the different *stakeholders* [2]. The firm's aim is the attainment of *economic equilibrium* [3] over time: the earnings must "pay" or cover the input costs and the cost of capital. The aim of the *economic equilibrium* should become the ability of the company to satisfy all the expectations of the people that for different reasons are interested in the company management. This means that a lack of effective governance could damage the stakeholders interests, compromise the *economic equilibrium* goal and as a consequence stop the positive performances.

At first, before explaining the correlation between the corporate governance and the economic performance, it is necessary to focus on the study of the corporate governance and more precisely on the *theoretical models*. Models are the result of the presence of different power and interest equilibrium in the corporate which have to shack up/live with economic and social forces with different legal and economics traditions. It becomes very important to analyze these models or understand how companies operate and to consequently be able to find out those elements, that are internal and external to the productive combination, that influence the performance.

In the following paragraphs, after the analysis of the corporate governance models, the attention will focus on the international theories of governance and it could be possible to clarify the relationship between the international and Italian models and the international theories. This is important to understand the company strategies that the productive units have chosen.

This paper is part of these studies and in particular it wants to give its contribution in order to clarify the relationship between the *Italian corporate governance model* and the *international theories of corporate governance*.

The paper is formed by six paragraphs: in the *second paragraph* the aim, the research question and the research method are defined. In the *third* the different definitions of corporate governance are compared, in a critical way, to understand what is the *humus* from which the theories models are developed. In the *fourth paragraph* the international and Italian models of corporate governance are compared through a comparative conceptual map worked out using the most relevant studies in the field. From this analysis the details of the Italian companies' management are underlined. In the *fifth* the results of the research are exhibited. In the last paragraph (the *sixth*) some reflections drawing briefly the possible future developments of the research are outlined.

II. The Aim, the Research Question and Method

This paper is part of a wider research project developing during the three year PhD. This project aims to analyze the relation between the corporate governance and the economic performances of the Italian companies. This research project use a methodological *deductive-inductive approach* [4] composed by three phases. The *deductive phase* is based on the critical analysis of the national and international literature and the empirical methods applying on a number of stocked Italian companies. The *inductive phase* consists on the empirical step of the research in which the intention is to test the empirical methods. In the *feedback phase*, it is possible to understand the results, after the models application verifying the informative skills related to the correlation "governance-companies performances". It will be possible to

evaluate the necessity to eventually modify the models in order to have more significant results, with the scope to improve the informative skill.

This paper represents the first step of this *in progress* research.

Particularly, in the *de quo* study the attention is paid on the Anglo-Saxon, German Japanese models and also on the national and international theories of corporate governance in literature. After that, the attention is focused on the relation between the model and the international theories of corporate governance, fully studied and clarified in the literature. The relationship between the Italian model and the international theories of governance is not so clear and evident in literature. This research has as an object the *aim* to understand what corporate governance theories are referring to the economic management of the Italian companies. This is fundamental to understand, in the following research step, what are the empirical (or quantitative) models applicable to the stoked Italian companies. Before that, it is a necessity to identify what are the perspectives and the corporate governance theories that the company use and, only after that, it is possible to choose the empirical models. This is important because the theories that are the base of the economic management many other quantitative models have developed the measured "*corporate governance-performance*" correlation. The *research question* is RQ1) *Does one or more international theories of corporate governance that can be applied to the Italian companies considering their peculiarities exist?*

As far as the *methodological approach* is concerned, the research aim is pursued by a *deductive approach*. It precisely consists of a critical analysis of the principal literature contributions, both international and national, in the corporate governance field. This analysis aims to delve into the theoretical models and the theories applied to the Anglo-Saxon, German Japanese and Italian companies.

III. COMPARISON OF CORPORATE GOVERNANCE DEFINITIONS

International literature regarding the corporate governance field is many but a unique and agreed definition of economic management is not achieved yet. Ahrens, Filatotchev e Thomsen actually reckon that it is not possible to define it in general terms because every firm has its own features [5]. In the following section, two principal approaches of corporate governance are detailed: the *restricted* and the *extensive* interpreting consequently the economic management both as a *process* and as a *structure*.

The *restricted approach* focuses the attention on the study of two principal aspects: a) *shareholders* considered, in this analysis perspective, are the only company stakeholders; b) the existence *conflict* between the property (shareholders) and the control (manager). This point of view has been defined in 1960 by Eells who used for the first time the word "*corporate governance*" to denote «*the structure and the functioning of corporate policy*» [6]. In the restricted approach of corporate governance, it is possible to identify two different concepts of economic management. This can be understood as a) *process* and b) *structure*. The common element is the fact that the analysis object is the shareholder

and the dichotomy relationship with the management. The majority [7] assumes that the corporate governance is a *process* and particularly «*the relationship among various participants in determining the direction and performance of corporations. The primary participants are (α) the shareholders, (β) the management, and (γ) the board of directors*» [8]. Other researchers [9], on the other hand, assume that the company management is a *structure* or the structured interface of a productive unit, essential to achieve the economic balance.

The exact opposite is the *extensive approach* of corporate governance, according to that is "a mixture of rules, organizations, habits and formal organs that aim to achieve the interests of the different stakeholders"[10] of the company. As for the restricted concept of corporate governance, even in this case there are two different economic management perspectives. The last one could be considered as a) *process*; b) *structure*. The majority of the researchers considers the economic management as a set of *process*, rules, rights, procedures and mechanism that merge together in the company system of managing, controlling and communication with the stakeholders [11]. The minority [12], on the other hand, support the theory that the corporate governance is a *structure* and a function of the control and supervisory board of a company, focused particularly on the relations between the corporate organs and the management structure [13]. A diagonal concept that supports both the theories, in the field of corporate governance extensively speaking, is the one regarding the *institutional asset* [14] of the company. The latter describes a number of mechanisms designed to govern relations of influence and control referred to single subjects and to correspond contributions and payoffs [15].

In summa, the *Anglo-Saxon* model uses the concept of corporate governance strictly speaking (*restricted*) while the *German Japanese* and *Italian* model prefer the concept in a wide sense (*extensive*) (Fig. 1).
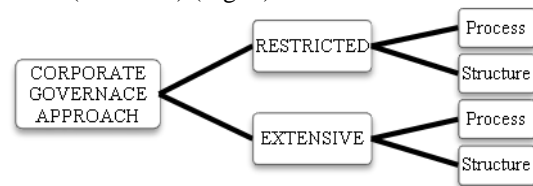

Fig. 1. The corporate governance approaches.

IV. COMPARISON BETWEEN INTERNATIONAL AND NATIONAL CORPORATE GOVERNANCE MODELS

In this paragraph, the international (Anglo-Saxon and the German-Japanese one) and the Italian corporate governance models are compared both through a conceptual map that create a comparison using the principal contributions of the field literature. It is important to underline that "every country-system has corporate governance systems with different peculiarities because of the strong influence that the rules, the institutions and the social regulation, developed and strengthen in the years, have on the characteristics and on the function of the company's management mechanism"[16].

Literature [17] agrees on the fact that the corporate

governance models can be connected to two archetypes: the Anglo-Saxon and the European (or German-Japanese). The Italian model is defined as the "mixed" one, the hybrid this means that has some features in common and other distinctive with the international model [18], [19].

The *Anglo-Saxon countries* adopt an *outsider system model*: the financial market rules the conflict between the stakeholder and the management. In particular, the capital market can regulate the management and can develop the creation of value for shareholders, which is the key to success in today's marketplace (i.e. *"market for corporate control"* [20]). The "strong division of the ownership that is peculiar of the stocked companies on the ruled financial market" [21] originates a company spread in that contest an example is the *Public Company* characterized by a capital fraction. It is assumed that the relationship between the different classes of economic agents created on the almost completed absence of ruled duties. Self-discipline could give an impulse for the creation of durable and trustee relationship in the govern bodies. So the financial market supervises and guides the managers. This is the common law system. The law asset used by the Anglo-Saxon countries is *the one-tier system* or *monistic model.* It means that there is only one appointment level by the shareholders' assembly, the latter appoint the board of directors.

On the other hand, the *German-Japanese model* adopts the *insider-system,* known also as "*relationship based*" that is a *network-oriented corporate system.* In this case, the presence of the financial market is insufficient whereas the financial intermediation that issues the risk capital is very influent. This model uses a bank-oriented perspective. Differently from the Anglo-Saxon countries, the company ownership is focus on few stakeholders that own the majority of the capital shares. Thus, the firm's institutional asset is characterized by a high degree of ownership concentration and the main shareholders are banks, others family firms and the internationals investors (the so called *blockholders*). Last but not least, it is compulsory to assume that the company prefers to find a compromise between the interests of the different stakeholders because of the capital division [22]. This model is more developed in a civil law contest: the law asset endorse

and protect the interests of the people that "give interests". The law asset adopted by German-Japanese model is the *two-tier model* or *dualistic model.*

The *Italian researchers* agree on the fact that the foreign literature focused its analysis mainly on two archetypes of governance models described before. They assume that the Italian situation is not directly linked to them. In Italy, the big spread ownership companies (as seen in the *outsider system*) and the financial intermediation inner in the management (as seen in the *insider system*) does not exist. The credit institutions, then, do not vest risk capital but credit capital: for this reason they do not interfere in the management of the productive combinations. The Italian companies characterized by a high ownership concentration can be reconducted to two different classes: a) family or public pyramidal group [23]; b) small/ medium family enterprises or joined together [24]. As a general fact, firms are distinguished by a majority shareholder or a shareholder group linked by a union agreement. In order to protect the high concentration of the company ownership, the management control system is committed to the board of directors instead of the market. The Italian model is characterized by a *Latin insider system* which is different from the German-Japanese insider system. The former considers the majority shareholder is the managers' watchdog through the board; the latter considers a employees' and bank's high involvement in the control [25], [26]. The common Italian law asset's governance is "*traditional*" or in other words is defined as "*dualistic horizontal*". This expression points out that the shareholders' assembly appoints both the board of directors and the board of auditors [27]. Thus, there are not the two appointment's levels, like the *two tier system*. The board of directors has the task of directing/managing the company in terms of making the industrial and financial strategic plans. The board of auditors, instead, is called to ensure that laws and by-laws are observed, respecting the principles of best practice. It is relevant to highlight that in Italy [28], basically in the last years, a number of *standards* and dispositions have been issued with the intent to improve corporate governance and to adapt to Anglo-Saxon standards (Table I).

TABLE I: COMPARATIVE CONCEPTUAL MAP OF THE CORPORATE GOVERNANCE MODELS

Countries	Gov.Systems	Financial Source	Ownership	Firm	Board Systems
UK -USA	Outsider system	Market	Strong division	Public company	One tier
D - J	Insider system	Bank	High concentration	Blockholder	Two tier
IT	*Latin* Insider system	"irregular case"	High concentration	Pyramidal group + SME's	Traditional

V. CORPORATE GOVERNANCE INTERNATIONAL THEORIES IN THE ITALIAN MODEL

After the description of the corporate governance theoretical models, the attention is focused on the relationship between the corporate governance of the English, European and Italian companies and the international theories. Literature agrees on the fact that the Anglo-Saxon and the German-Japanese models are based on the *agency theory* and on the *stakeholders* one respectively [29]-[31]. Saying that on the atypical Italian model there are no important contributions that clarify the relationship between the National corporate governance and the corporate governance theory, we will try to define what could be the

theories on the base of the Italian model. Basically, it is relevant to notice that the choice of the corporate governance theory is fundamental to identify an empirical model to measure the relationship between the corporate governance and the economic performance in the Italian firm.

Regarding the *Anglo-Saxon model*, the base theory is the *agency theory* focusing on the conflict between the *principal* (shareholders) and the *agent* (managers). As reported in international economic literature, the agency theory has been outlined by Berle and Means, Coase and then Jensen and Meckling [30]-[32]: these are the international major proponents. Cerboni who is the maximum exponent of the *personalistic theory of accounts* and introduced the accounting method called *Logismografia* had the intuition of

the conflict interests between ownership (*shareholders*) and the management [33]. *Logismografia* is the result of juxtaposition of two *"logismological"* personalities: the principal and the agent that are economically and legally related. The accounting method proposed by Cerboni is based on the contrast of the rights and obligations of the two *logismological* personalities, the principal and the agent. Thus, it could be possible to identify in these studies the origins of the agency theory. The agency problems come out when there is a power mandate of the stakeholders to the managers because both aim completely different goals [34]. So, it become necessary a management structure that defend the stakeholders interests: in the monistic model is the board itself that designate their representatives.

As far as the *German-Japanese model* is concerned, the base theory is the *stakeholders'* that was launched by the critics to the *agency theory* [35]. The stakeholder theory- as opposed to agency theory increases the analysis focus: it emphasizes the relevance of the *fulfilment* of stakeholders *interests*. A firm cannot sacrifice all the stakeholders' interests only to maximize the stakeholders' profit [36]. The manager has to negotiate, involve and coordinate all the people who "give" interests to the company. In the *dualistic model* and in particular in the supervisory board the participation, also, of the worker representatives and the institutional investors is expected. This happens because of the importance of the stakeholders in the productive combination management.

For what concern the *Italian model*, as already said at the beginning of this paper, literature is not so fecund in the corporate governance theory field linked to this model and it studies the function and the topical aspect of the "*Italian case*". It is defined as irregular, mixed, spurious and hybrid. The national model cannot lead back to the two over described archetypes. The theory that is the base of the national corporate governance is not possible to link totally with no one of the over mentioned theories. It is assumable that, in sync with the *contingency approach*, it is not possible to identify only one theory with the Italian model but it is possible to find similar aspects with other theories. It is relevant to notice that it does not exist *one best way* to understand and define the best corporate governance; thus, only one corporate governance theory could not exist for the Italian firm and theories could change according to economic, financial, social environment conditions [37]. Actually, it has recently been highlighted in literature that the need to abandon the agency theory framework and that it could be better to focus on an *eclectic approach* of corporate governance, such as integrating different theories [38]. For this reason it will be possible to notice similar peculiarities with *the agency, the stakeholders and the resource dependence theories*. The *resource dependence theory* provides a framework to understand the relationship between a firm and its environment. A firm cannot "*produce all the resources they need to operate; therefore they must engage in exchanges with the external environment in order to acquire the resources they need to survive*" [39].

The Italian companies are mainly marked out as a concentrated ownership and they are familiar style for this reason the management is formed by the referenced stakeholders and the minority ones. In the pyramid group, for example, the strategy formulation process is centralized to the group top and so it could be fulfilled by the Holding majority shareholders' interests. The consolidated financial statement could be a valid accounting instrument in order to give clear and transparent information about Group structure and the minorities protections; yet some empirical researches show that financial statement is not always understandable, clear and fair and it does not give the transparency needed [40]. The conflict that comes out is between the majority and the minority shareholders. The controlling system managed by majorities allows their self to take advantages of private benefits. They are called *Private benefits of control* that is taking advantages from firm using the company resources and create disadvantages to the company and to the minority shareholders. Instead the *shared benefits of control "arise from the superior management or monitoring that can result from the substantial collocation of decision rights and wealth effects that come with large-block ownership"* [41]. In fact, some empirical researches highlight that "*firm valuation increases with cash flow ownership in the hands of the largest shareholders*" and "*increases in control rights by the largest shareholders are accompanied by declines in firm values*" [42]. The agency problems, marking the Public Company, could be the same that of the Italian reality. This means that the *agency theory* is the base of the "Italian case".

It is interesting that different researchers [43] focus their attention on the tight interaction between company and stakeholders. Authors assume that the satisfaction of them is functional in reaching the *economic equilibrium* since this one is reachable even protecting the interests of all stakeholders. The failure of Parmalat, Cirio and Alitalia highlights that a lot of stakeholders (e.g. employees, suppliers, customers, etc.), as well as shareholders, paid the consequences of these bankruptcy. Thus, it could be necessary to consider the corporate governance from a wider point of view: the management should mediate the different stakeholders' expectations in the occasion of defining firm aims [44]. It is possible that only few people concretely rule or manage a company, but actually all the firm members or stakeholders are interested and attend indirectly in the business choices [45]. The requirement of interconnection of the firm economic performance and the fulfillment of stakeholders interests rises and growths from the actual economic financial and social context which is so changeable, dynamic and globalized. The market globalization, the widespread and quick information flowing among the different organizations firmly highlight the high connection between the firm performance and the fulfillment of stakeholders interests [46]. The Italian context is characterized by *Small Medium Enterprises* (SMEs), thus the main or the only shareholder is often the manager. Thus, concentrated ownership structure is one of the main features, and then the owner should have a central role in the market in order to get relationship with other subjects. SMEs need to get some connection with all the stakeholders (e.g. customers, suppliers, institutional subject, competitors, bank and so on) that can contribute to foster the economic performance, because the firm can take advantage of relationship and business network. So the owner/manager should create informal and formal links to increase the firm value, in fact they could belong to the so called *Intangibles*. In SMEs, the owner/manager has the strategic, controlling and interests synthesis flowing into the company functions [47], [48].

Thus, it is necessary to focus on minority shareholders and stakeholders and their interest in order to create "*good governance*" and so a "*good performance*" [49]. The result is that the *stakeholder theory* could be the base of the Italian companies.

A further aspect is that many Italian firms are distinguished by "aggregations as constellations and localizations inside their industrial districts". The *Italian industrial Districts* (IDs) are defined as closed manufacturing systems of SMEs embedded in local contexts able to interact with the outside only at the two ends of the value chain and where well-identified firms were in charge of managing the relationships with final markets [50]. This concentration of firms in a clear area *allows* having a privileged access on the input. In order to reduce the uncertainty of the external environment and in this way to grantee the resources availability for the company life, the management should have also the *networking function*. This means that the manager of the companies (called in this contest *interlocking directors*) should also cooperate more intensively to reach the goal in order to "get the information sources on the market trend and on the competitors to get a privileged access to the resources; to contrast the possible threats and to influence the activity of other companies" [51]. Some Authors argue that the networking function of the management comes out in two main situations: i) during a firm crisis; ii) in a regulated market, such as IDs. When firm gets negative performance, the board tries to collaborate with others companies in order to make sure of and share with resources, necessary inputs to foster the economic growth. In addition, in a regulated market (e.g. IDs) the board should strengthen the networking with others stakeholders and other boards of directors in order to get some external resources. These are the most salient finding of an empirical research lead to Italian large-sized companies in 2003 that are similar in principal with others main previous Anglo-Saxon researches. [52]-[54]. This approach makes a further step in the stakeholders view, because according to the resources dependence theory SME'S management as well as getting relationship with other stakeholders should find and combine resources barely obtained without the network creation, in order to increase the innovative development, fundamental for the firm to be competitive [55]. Hence, the corporate is plunged in the so called "*environment system*" that holds and influences the corporate in its strategy [56]. From that it comes out the Italian governance model that could be based on the *resource dependence theory* (Fig. 2).

COUNTRY	UK - USA	D - J	IT
CORPORATE GOVOVERNANCE	restrited	extensive	extensive
MODEL	market-oriented	bank-oriented	irregular
THEORY	agency	stakeholder	- agency - stakeholder - resource dependence

Fig. 2. Comparative map and summary

VI. CONCLUSION

The corporate governance debate becomes very important mainly in a moody, dynamic and confusing context as the actual one. The changes, created also by the global competition, contribute to enforce the function of control, of strategies definitions and of manager networking.

Literature interprets the corporate governance field using two antithetic interpretative tables: the Anglo-Saxon and the German-Japanese. The corporate governance Italian model, instead, is an uncommon case because it is similar with no one of the two cases studied in literature. The national and international contributions, underline the relation between the Anglo-Saxon model with the agency theory and the German-Japanese model with the stakeholders theory. The literature does not clarify what is the base theory of the economic national management. Starting from the point that the Italian model is a unique model that has similar characteristics of both archetypes, the corporate governance theory cannot be the same as the international models. This paper contributes to understand the relationship between the national corporate governance model and the theories existent internationally.

Answering the research question, comes out that the *Italian model* is based mainly on three different contrasting theories: the *agency*, the *stakeholders* and the *resource dependence theories*. The coexistence of the different perspective is to ascribe to the influencing "typical social-economic features of the national environment." Those ones are the result of the existence of various interests and power balances marking out the company itself.

Once identified the perspective that is the base productive combination theory, it could be possible to identify the empirical models of "corporate governance – performance" to use to test a set of stocked Italian companies. In this way it could be possible to conclude the deductive phase of the widest research project developing in the 3-year PhD. Then, it will be possible to start the application stage of the research (inductive phase) and at last to interpret the results, achieved as a consequence of the empirical models (feedback phase).

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Application of a Neural Network Model for Solving Prediction Problems in Business Management

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Abstract—In the field of business management many prediction problems such as prediction of market demand, product prices, project cost flow, product quality, etc., are very complex, uncertain, dynamic, mutable, and usually they are not adequately modeled by statistical or classical mathematical methods based on crisp sets and traditional logic. This paper shows benefits that could be achieved by applying a model based on Artificial Neural Network (ANN) for solving certain type of prediction problems, because it can better deal with uncertainty, partial truth, incomplete data and complexity. A model based on ANN for solving prediction problems is first defined and explained. A case study for price estimation of the apartments in the city Budva, Montenegro, is considered and the results are discussed. The main factors influencing the apartment prices are established and analyzed. The benefits of the ANN model are pointed out.

Index Terms—Apartment price calculation, artificial neural network, prediction model, price evaluation.

I. INTRODUCTION

Prediction problems are very frequent class of problems encountered in many fields of management. For example: calculation of product prices, forecasting time of building construction, prediction of market demand, project cost flow, prediction of product quality, etc. These problems can be mathematically defined as the problems of finding the relationship between two sets of variables.

Most of the traditional methods used to solve this kind of problems are based on regression techniques whereby the best fit is sought. In practice, these methods usually are not capable of giving satisfactory solution because the relations between the considered variable (market demand, product price, etc.) and the factors on which those variables depend on are very complex. Apart from this, the factors that determine the shape of relations are often difficult to quantify or it is not clear which factors the considered variable depends on and degree of effect such factors may have. Also, the relationship between the inputs and outputs in the regression models are very complex since there could be some unknown combined effect.

Further, one of the difficulties in applying these models is accounting for the existing correlation among the input variables modeled as random variables, even if the correlation among random variables is known. Thus, it is difficult to perform such multi-attribute nonlinear mapping by using a regression model. It has been proved that problems with multi-attributes can be solved better by ANNs then by traditional methods [1]. Also, it has been proved that any arbitrarily irregular patterns can be mapped by ANNs [2]. Apart from this, ANNs can learn by themselves, generalize solutions, and respond adequately to highly correlated and incomplete data.

II. DEFINITION OF THE ANN MODEL

The model for solving prediction problems is defined following the logic shown in Fig. 1. A sample three-layer neural network illustrated in Fig. 2, is used in this model. There are many publications describing development and theory of ANN from the introductory level to more advanced stages. A detail and comprehensive description of several types of ANNs is given in [3], [4]. A clear summary of the feed-forward network and the back-propagation method for network training is presented in [5]. A statistical interpretation of the methods used to train ANN is given in [6]. In the model proposed, a feed-forward ANN with back propagation training algorithm is used. Several phases (steps) are distinguished in order to facilitate problem solving.

A. First Step: Definition of Input and Output Data

Definition of the input and output variables is a delicate part of the problem solving process. It is important to choose only the input variables which are influencing the output in order not to overload the network.
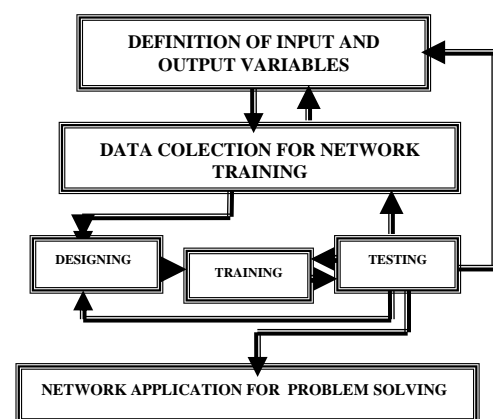

Fig. 1. Graphical representation of ANN model

A consequence of that can be a request for a larger set of training data or a greater number of hidden nodes/layers. In general, output of the network is a vector of variables $Y = (y_1, y_2, \ldots y_n), j = 1, 2, \ldots n,$ which are to be calculated (project price, market demand, client satisfaction, product reliability, etc.). Input of the network is a vector of variables $X = (x_1, x_2, \ldots x_m), i = 1, 2, \ldots m,$ on which the output vector Y

depends on (quantities of the materials, characteristics of the product, characteristics of the technology production, etc).

Generally, for each project the number of input/output variables, (*m* and *n*) are different. In special cases, the output vector can have only one variable (construction time, market demand or degree of the product quality). It should be pointed out that the input or output variables need not to be mutually independent which gives a great flexibility to this model in solving practical problems.

B. Second Step: Gathering a Set of Data for Network Training

After defining the set of input and output variables, the next step is the collection of a set of training data. That is, for each vector of the input values a corresponding set of the output values should be collected as well. In other words, a set of data for network training consists of the pairs of values of the input-output vectors, $\left(X^k, Y^k\right)$, $k = 1, 2, \ldots q$, where q is the total number of training vectors. On the basis of these vectors the ANN model learns to approximate required output variables by determining the strengths of connections (weights) between the networks nodes [7], [8].

The number of training vectors to be supplied depends on the total number of input-output variables and complexity of their interrelationships. Generally, the greater the number of variables the greater the training set is required. It is recommended that training data cover whole expected field of input values as evenly as possible.

C. Third Step: Network Design, Training and Testing

Network design directly depends on the number of input-output variables as well as the complexity of their interrelationships. The number of input/output nodes of the network is equal to the number of input/output variables, i.e., to each variable is assigned one node, Fig. 2. Number of the hidden layers and number of their nodes is determined experimentally during the phase of network training and depends on the number of input and output variables as well as the complexity of their interrelationships [4]. Overall, the greater the number of variables the greater is the number of hidden layers and their nodes. For the practical problems, in most cases, two hidden layers with an appropriate number of nodes are usually sufficient for successful modeling and problem resolving.

Satisfactory level of the network training is checked by the testing data (contains both input and output values). When the output values calculated by the model "are close" to the output values from the testing set of data, i.e. the error is within an assigned interval, the training process is finished and the model is ready to be used. Otherwise, the number of the hidden nodes and/or layers should be modified until the satisfactory results are reached.
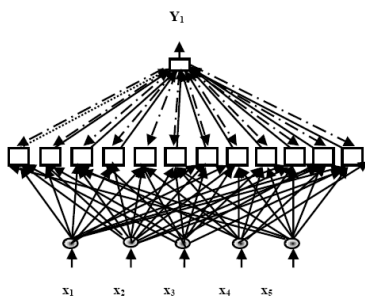

Fig. 2. Graphical representation of ANN for the apartment price calculation.

A degree of required precision for the ANN models is established in advance (before network training) and for each problem can be different.

III. CASE STUDY

A problem of the apartment price estimation in the city Budva, Monte Negro, is considered. Evaluation of the apartment prices is important for all those who have intention to invest money in real estate, construct new flats or sell one, as well as for the banks allowing loans to the clients investing in the real estate sector. There are many factors influencing apartment price. The most important are given in Table I. They are divided into three categories: General characteristics, Interior apartment quality, and Building quality.

In general, evaluation of all factors influencing the apartment price, Table I, is a very demanding and expensive task and therefore is rarely executed. Also, many of the listed characteristics (maintenance of the building, quality of the bath and kitchen furnishing, quality of the façade and roof construction, apartments view, etc.), are subjective categories and could vary significantly depending on the estimators preferences. Therefore, an approximate value as close as possible to the real value is usually sought.

TABLE I: THE FACTORS INFLUENCING APARTMENTS PRICES

General characteristics	Apartment Area, City zone, Number of rooms, Apartments floor position , Apartment view,
	Local surroundings of the apartment, Noise, Proximity of the important buildings (hotels, parks, universities, etc.).
Interior apartment quality	Apartment insolation, Bathroom and kitchen furnishing, Walls and floors finishing, Carpentry.
Building quality	Maintenance of the building, Year of construction, Quality of the façade, Quality of the roof construction, Global quality of the building.

Apart from the listed characteristics (factors), a great influence on the apartments prices has political and economical situation in the country. Also, global economical and political situation is starting to have an increasing impact on the real estate sector of almost each single country in the world. These factors are not considered in this paper but they could be the topic of further research.

Taking into account the availability of the data recorded by the Real Estate Agencies in Budva, Monte Negro, on one side, and the most important characteristics of the apartments regarding the costumers opinion on the other, the following factors are taken into consideration for the apartment price prediction:

1) Apartment area,
2) City zone,
3) Number of bedrooms,
4) Interior apartment quality,
5) Building age.

Total number of the data collected in the Real Estate Agencies in Budva, Monte Negro, was 237. A part of them is shown in Table II. For the assessment of the interior apartment quality, the agencies were used descriptions

"excellent", very good, and "good", but in cases of a poor quality, they left out any description. It meant that the interior apartment quality was poor. In order to quantify these qualitative ratings: excellent, very good, good and poor, the numbers 6, 4, 3 and 1 are ascribed to them respectively. Quantification of the city zones is given as follows: 1 for downtown, 2 and 3 for the zones less attractive. For the "building age", quantification is made as follows: number 1 for the building less than 10 years old, 2 for less than 20 years old building, and so on, up to 7 meaning more than 60 years old building. The values of the apartments area and their number of bedrooms are taken in their original state.

TABLE II: INPUT DATA AND CORRESPONDING RESULTS

Building age	Apartment area (m^2)	Number of bedrooms	City zone	Interior quality	Apartment price (euro)	Calculated apartment prices (euro)
3	65	3	2	1	43500	45476
7	84.77	3	2	3	64000	64901
5	76	3	2	6	77800	73870
2	120	3	3	4	97200	98656
1	111	3	3	3	77000	72091
2	60	3	3	4	51200	54550
3	72.5	3	3	6	70000	67017
1	41	1	2	6	41000	39107
3	57.7	2	2	3	47000	47552
6	80	2	3	3	60000	59392
1	57	2	3	3	38000	41240
1	90	3	1	4	94600	89958
2	90	3	1	3	83500	86024

For the calculation of the apartments prices, the network with 5 nodes in the input layer, 1 in the output layer and 15 in the hidden layer is designed. In the hidden nodes the sigmoid transfer function is used and for the output node the linear one. For the network training the back-propagation algorithm is applied. During network training, the number of nodes in the hidden layer was modified from 15 to 12 in order to decrease learning error. All calculations were done using the computer software for ANNs which is incorporated in the computer package Matlab 6.5.

IV. RESULT ANALYSIS

On the basis of the results obtained for the set of testing data, Table II, it can be concluded that the ANN model is well trained because 85% of the results have deviations less than 5% and the rest of them have maximal deviation no more than 8%. This is a satisfactory solution for the problem in question. A greater accuracy could be obtained by providing a set of data covering more evenly the field of input data for the "interior apartment quality" and "building age".

From the results obtained, it is shown that variables "apartment area" and "city zone" have the greatest impact on the apartment price while the "interior apartment quality" has a moderate one and the "building age" little less of it. Variable "number of bedrooms "has the smallest impact on the apartment price.

These results can be explained by the fact that "apartment area" and "city zone" are the most important criteria (attributes) for the costumers and they are not willing to compromise on them. Conversely holds for the "interior apartment quality". The impact of the "building age" on the apartment prices is complex, because a durability of the building depends also on its maintenance, type of materials used, construction process applied, etc., and therefore inexpert costumers could be easily confused with external appearances of facades. Regarding the low impact of the variable "number of bedrooms", it can be concluded that for the majority of costumers this is the least important factor and that they are willing to pay for apartment adaptation according to their needs if the other factors are satisfactory.

V. CONCLUSION

Application of the ANN model is convenient for solving prediction problems where the multi-attribute nonlinear mapping is required. The input variables need not be mutually independent. This fact is very important because majority of the practical problems are presented in that way. Complexity of the relations between input/output variables is not a limiting factor for the ANN model, which can therefore be applied for solving a large number of practical problems. Apart from this, one of important advantages of this method is its capacity to solve problems even if the set of input data is not complete. This has been demonstrated in the case study regarding the prediction of apartments prices. Namely, for the apartment price estimation seventeen characteristics are proposed to be examined, in Table I. However, for the model in question only five of them were taken into consideration and the results were satisfactory, as shown in Table II. This facilitates the problem solving to a great extent.

Another important fact is the simplicity of the model application. On the software market place there are many computer programs for the ANN calculations which facilitate the model use.

The main disadvantage of the ANN model is in the difficulty of providing input data. However, this limitation in the "computer era" is decreasing as the electronic way of data storage is becoming prevalent.

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