American Journal of Business and Management
Vol. 3, No. 1, 2014, 39-51
DOI: 10.11634/216796061403501

The Effects of Chaos Theory, Six Sigma and Blue Ocean Approach on Firm Performance at Family Firms: An Empirical Study in Turkey

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In this study, the effect of the modern management models on general performance of the family corporations was analyzed with the questionnaire method. Blue Ocean Strategy, Six Sigma and Chaos Theory were used as the modern management methods. In the questionnaire, total 330 directors working in 17 different family corporations were asked questions under the title of Market Orientation, Modern Management Models and General Performance of the Corporation. In analysis part, it was clearly seen that Blue Ocean Strategy came into prominence compared to Chaos Theory and decreased the effects of Six Sigma on overall performance. While necessity of reaction formation has a high importance for all operations in a competitive environment, it is an inevitable fact that highly negative effect of the non-reaction affects the financial and growing performance of the business. In conclusion, it came out that Blue Ocean Strategy directly affects the business performance and that corporations try to wait for an opportunity and try to increase the business skills in an ambiguous competitive environment.

Key Words: Family business, chaos theory, six sigma, blue ocean strategy, firm performance

Introduction

*"The flap of a butterfly's wings in Brazil sets off a tornado in Texas."*Philip Merilees

Nowadays, we encounter the firms which are the backbone of present economic system and business world substantially. Therefore, since the managers of family firms are generally owners of the firm, significant management problems are encountered in these firms. The most important problem is to ensure the continuity of the enterprise through a sound management in line with family values and beliefs and hand down the next generations.

Hence, since many family firms could not grow due to the structure pursued through the logic of the owner retaining management of the firm, after a while it becomes as not capable of maintaining its existence. Due to this and similar reasons, family firms are not long-lasting and cannot maintain their existence. While the requirement for change matters for all enterprises found in a competitive environment, the family firms should attach more importance for this requirement. Thereof, whatever the size and developmental stage of family firms are, it is an inevitable fact that they have more difficulties about changes considering their qualifications different from other firms. This situation being disadvantage in firm management as reflecting family values, belief and relations brought as a result of being a family firm to the business environment, embracing the understanding of unchangeable culture, having less confidence to employers out of the family make changes almost impossible and became the biggest obstacle for family firms which are obliged to undergo a significant change in order to be institutionalised. While protecting and maintaining their existence in present competitive environment become difficult with each passing day for the firms which were not directed towards institutionalisation without comprehending the importance of being institutionalised; on the other hand, the firms institutionalising and performing their managerial functions effectively are growing and developing. Moreover, the firms wishing to survive within intense competition environment should integrate next-generation management approaches to their firms. Blue Ocean Strategy, Chaos Approach, Six Sigma and Market Orientation are in the lead. In the section of the conceptual framework, the importance required to be given for embracing institutionalisation process together with the importance of family firms in Turkey and the world, requirement for professional management, affinity with the market operating and customers and modern managerial approaches were emphasized.

In the methodology and application section of our research, as a result of questionnaire applied totally on 330 employees in large and small family firms operating in the province of Istanbul, determining demographic characteristics of firm employers, and examining the status of firms related to market orientation were analysed through scaling how modern managerial models being applied or applicable in firm management affect performance of the firm.

Theoretical Background

Definition of family firms

The concept of the family firm is one of the concepts putting excessive importance in recent years and becomes more important especially for the countries as Turkey having strong family bonds and closely conn ected family and business relations. Therefore, in the conducted academic studies, there are many different definitions expressed related to the concept of the family firm. Unfortunately, there is also no agreed definition related to the family firm. Because many factors as the establishment type of family firm, family values and beliefs, size of the family, the operating sector and power of qualified personnel affect the structure, formation and development of family firm. Therefore, it is difficult to fit the family firms into one agreed definition. When stating family firm, the profit-oriented social organisations being established by the individuals having family bond through gathering with the purpose of producing goods or services are generally understood (Güler and Akgün 2006, p.71). Within the above mentioned information, the scope and limitations about family firms without having a universally agreed definition may vary in accordance with the different point of views. “According to some authors, running in the same family and blood relation is grounded; to other authors’ opinion, capital share and management; and finally to others’ opinion, provision of family’s living or family members’ employment are grounded.” (Demir 2011, p.2). The ones establishing family firm and maintaining its sustainability are the persons connected to the family through birth, marriage or close personal relation (Bilgin 2007, p.6).

In the widest sense, family business is an enterprise established in order to prevent the heritage dispersed or ensure the family living, employing at least two generation from the family, managed by the person ensure the family living, having managerial level mostly filled by family members and their major dominance on taking decisions (Gümüştekin 2005, p.74). Considering these definitions, even if it was established as a type of company and in order to prevent the heritage dispersed, they are relatively important as economic wealth, employment and value added aspects for all countries. “According to Fortune Magazine, 35 % of 500 big companies in USA are managed by families and 43 % of GNP is ensured by family firms. These firms employ more than 40 million employers in USA and pay 65 % of wages. Approximately 80 % of all firms compose of family firms in Germany as another significant economy and these family firms meet 66 % of German total GNP and 75 % of total employment.” The effect of family firms as becoming an inevitable part of socio-economic life is also very important in Turkish economy. “The rate of family firms to present firms is about 95 %. Moreover, it is calculated that more than 75 % of GNP in our country is created by family firms” (Zaim et. al., 2012, p.18-19).

On the other hand, there are some properties distinguishing family firms from another type of firms and characterising family firms. The family who is holding the management of a significant part of the capital in the common ground of these properties has a major share in the management and control on the significant part of the enterprise. In this context, the main criterion in the definition of the firm is to what extend the family is sensitive on managerial activities and effective within these activities. Differences distinguishing family firms from other firms are shown in Table 1.

Table 1. Basic Differences Between family Firms and Other Firms

Family Firms	*Other Firms*
There are emotional relations among individuals.	Relations are based on logic.
Dependence is based on affection.	Dependence is based on contract.
Participation to the firm is limited with new participation to the family.	Participation depends on experience, expertise and potential.
Membership is continuous.	Continuity of membership depends on the performance.
Rule of equity is dominant in the distribution of positions.	Experience and capabilities are at the forefront in the distribution of positions

References: Birbil and Özdemir, (2007).

While family is a social unit having strong emotions experienced inside, and interindividual interaction and communication becoming prominent, family firms are profit-oriented social structure having dominant logic and rules. While family firms affecting national economy and increase in employment significantly aim to ensure the living of family and sustainability of the firm for generations, they may be handled under four headings in terms of their types of establishment (Akçakoca, 2010, p.2):
- The firms established by holding majority of shares in senior member of the family and giving shares to partner, children and siblings until reaching to the number foreseen by laws,
- The firm mutually established by two siblings by also giving shares to other relatives and children,
- The firm established by family members through holding majority of shares and admitting a competent person as partner,
- The firm established through obtaining majority of the firm's shares by a family.

History of management structure in family firms goes back a long way and nowadays, it is the most common management type. Management at family firms is relatively different from the management in any other institution. Major reason is the difference between the persons establishing and managing the institution (Fındıkçı 2011, p.92). The family mostly assumes the duty of mediation in control and management of the firm in order to take strategically advantageous decisions by facilitating decision making processes within the firm and ensure sustainable firm performance. The aspects as increasing work load, insufficiency of entrepreneur especially in managerial issues and extending control field require an external manager after a while (Özçelik 2006, p.20). Therefore, it is possible to mention three management policies in family firms as centralist, participatory and professional management. No matter which management model is selected, the decisions should be taken within a structure in which employers make long-term career planning, having wide-spread autocratic management style and taking precedence for personal family interest all the time (Arslan 2006, p.72; Stewart and Hitt, 2012).

Within the scope of the research, it was aimed to determine and interpret how next generation strategies as market orientation, blue ocean strategy, six sigma and chaos approach affect the performance of family firms in Turkey. Basic research hypothesis is established as having positive and direct effect of this management models on firm performance. Basic purpose especially about the selection of family firms is to have the opportunity to generalise the results of the analysis to be emerged due to high rate of family firms in Turkey. Therefore, depending on the outputs of this experimental research on family firms, various suggestions have been suggested to academicians and managers, as well.

Modern management models

Blue Ocean Strategy

During extreme competition emerged along with the globalization continues affecting global markets, extreme competition in the market seriously exercised influence on the enterprises. Through the heavy influence of the competition of current markets, the enterprises could not be sufficient with the innovations realized in order to make a difference by ensuring advantage in competition. Instead of this, creating new market areas which will render current competition meaningless will make enterprises different. Herein, the enterprises foresee to penetrate uncontested markets which will render current competition meaningless in blue oceans instead of competing in existing red oceans.

Blue Ocean Strategy developed by Kim and Mauborgne in 2005 is established upon creating new markets by considering differentiation and low cost all together.This approach supports that fast and profitable growth can be possible through creating demands to new customers in the markets without having competition instead of in the markets having extreme competition and known customers. According to another definition, this strategy is a matter of fact using its all energy towards satisfying needs of customers by producing innovative and qualified good and services in a private market environment free from competition established by the firm itself. Firms creating blue ocean strategy do not interestingly compare themselves with their competitors. Instead, they implement a technique called "value innovation" having more different strategy logic (Güneş, 2011, p.7). According to Kim and Mauborgne, the enterprises struggle in red oceans having cruel competition and determined boundaries known as market area. The firms compete in these oceans for small market shares, and try to decrease price and cost in order to eliminate their competitors. Hereinafter, it is important for enterprises not to feel a need for competition and able to apply low price policy through becoming different instead of being head to head in the competition with their competitors around and fierce struggling (Kalkan and Alparslan 2009, p.3; Kim and Mauborgne, 2005). The enterprises wishing to be in new markets want to penetrate in blue oceans. Blue Ocean Strategy embracing the approach that red oceans make all enterprises weak since the competitors try to obtain market shares of each others in extreme competition emphasizes for most striking results in private market hollows (in undiscovered segments) to bring new product and service processes designed together with customers through different marketing techniques. In line with the information, differences between Red Ocean and Blue Ocean Strategies are indicated below mentioned table.

Table 2.Comparison Between Red Ocean and Blue Ocean Strategies

Red Ocean Strategy	Blue Ocean Strategy
Competition in Current Market area	Creating Market area without competition
Winning in competition	Render competition meaningless
Using current demand for own purposes	Creating and obtaining new demand
Making value-cost exchange	Eliminating value-cost exchange
Differentiate or make all system composed by firm activities comply with strategic choice with low cost	While trying to make differentiation and low cost, making all system composed by firm activities in compliance

References : Kim et al. (2005).

The enterprise proceeding in line with this policy creates a new market without having any competitor inside by going out of present market structure. In the concept of creating new market, collapsing and eliminating old values are found and the concept of innovation becomes prominent at this point. According to this, creating a profitable competition area within the present rules and boundaries of the market is possible through progressive innovation, creating boundaries of the enterprise, boundaries of the market and new markets require radical innovations (Kıyan and Özer 2011, 94).

While this understanding of innovation come up with Blue Ocean Strategy emphasizes the importance of the requirement for enterprises to produce new markets and new values, it foresees creating awareness about towards which understanding management and marketing style of enterprises develop. In the light of this information, in order to embrace such a strategy as an enterprise, firstly senior managers at the level of management should be persons who are capable of perceiving such a management understanding, vision holder and having prominent proactive characteristics.

Hence, Blue Ocean Strategy align seven principle below required to embrace by the managers (Kalkan and Alparslan 2009, p.8).

- Re-establishing the market boundaries,
- Not focusing on numbers
- Constructing implementation,
- Designing quality level of each activity in value chain,
- Reaching beyond demand,
- Overcoming key obstacles,
- Obtaining accurate strategic order by using an extreme leadership style.

Moreover, this strategy brings a different point of view to market boundaries for customer group from different sections. Solution for having very crowded and intensely competitive market and difficulties encountered before growth is to create reformist approaches and new areas for growing. Henceforth, being capable of applying low price policy by differentiating and no need for competition is important for enterprises instead of head to head competition with the competitors around and fierce struggling. Through value innovation, the enterprise may create a new market having no competitors inside by breaking the shell of current sector (Kalkan and Alparslan, 2009, p.3). In conclusion, this strategy having the purpose of winning out over competition and ensuring profitability and efficiency by decreasing contending crowded in the market along with growth focuses on new demands in blue oceans by getting through red oceans.

Chaos Theory

It is an inevitable fact that there will be complicated influence without having a clear process and end on the management through turning human behaviors which are the effective role within an enterprise emerging from social sciences into chaos. Chaos theory emerging through quantum physics instead of traditional positivist approaches caused different point of views towards business economics. While it is possible to manage uncertainty, risk and crises at the present day only through getting to the bottom of the problem, it would not also be possible to resolve the problem encountered at the enterprise through classical approaches. Post-modern views instead of management understandings having dominant classical science understanding give a different point of views to circumstances. “Post-Modern views developed approaches towards a better understanding and explaining present enterprises, their activities and places in social life through approaches considering both business organizations and their relations with others from different aspects and sometimes reflecting point of views of different disciplines” (Ödünç, 2011, p.2). Chaos approach is a promising structural framework which may give shape to firms’ management structures in highly changing dynamic environment. It is a management model which can lead the organization in order to survive for a long time through some managerial capabilities as flexibility and swiftly responding in the sectors especially in which making long-term estimations are almost impossible (Levy, 1994).

Chaos Theory is known as ‘Butterfly Effect’ which originally refers to Edward Lorenz’s experiment about climate change. Briefly it proposes that just a small change in the initial conditions can drastically change the long-term behavior of a complex system or organization (Cvetek, 2010, p. 250). While irregular, unsteady and inconsistent formation of many system in the world cause the emergence of Chaos Theory; everything about the concept and theory of chaos was firstly initiated with the studies of Jules Henri Poincare, French Mathematician at the end of 19. century (Kendirli, 2006, p.171). This theory primarily emerged as a result of research and developments in the scientific areas as physics, meteorology, astronomy, mathematics and chemistry, recently, the studies made in many scientific disciplines along with social sciences became prominent. Moreover, this new matter of fact also came into prominence in many scientific disciplines as business management, psychology, biology, economics and culture. Murphy (1996, p.95) emphasizes chaos theory is the most useful as an analogy to structure persistent image problems and to raise questions about organizational control of public perceptions. It includes many notions like uncertainty, open-endedness, plurality, and organizational change.

The concept of chaos reminds of expressions as complexity, irregularity, uncertainty and even anarchy with its lexical meaning in daily language (Kendirli 2006, p.171). Moreover, this concept is also used in the scientific meaning as order in irregularity along with its meaning in daily language.According to Gökmen (2009, p.76) Chaos Theory is the theory analyzing nonlinear dynamic movements of aperiodic inconsistent systems. This theory analyses uncertain and constantly changing structures which are not foreseen within the system. According to another generic definition, Chaos expresses that the existence of the incidents whose process and result cannot be estimated and the relations among factors inside these incidents are highly sensitive with each other and unpredictable (Ertürk 2012, p.5). In other words, uncertainty of reactions that may emerge against the effect created in the systems is defined as chaos. The concept of chaos is nowadays used in order to explain complicated situations.

Definition of chaos made in business is not generally different from other disciplines. “However, the management of chaos in enterprises was presented through gaining a different meaning as trying to understand the nature of chaos, taking precautions, seeking rational solutions, using necessary struggle sketches at the right time. Hence, in the working environment of the enterprises emerged from social sciences, it is possible to encounter possible chaos’s in production stage and service area. Along with developing internet technology, while changes experienced in knowledge acquisition area cause the formation of new business processes through increasing workloads, this matter of fact experienced causes chaos in working environment. “For example, the concept of information pollution was brought to the agenda together with increasing information resources, and a new process as a selection of correct information in existing work processes was included. Since the communication channels increased, there are information flows through more than one communication channel, and the information reaches over complicated levels that cannot be managed occasionally”. Improvement in knowledge acquisition channels in parallel with technological development causes information pollution and opposing views together with complaints about the situations. Problems as stress caused by work responsibility, problems encountered in time management, e-mails waiting replies, projects started without completing previous ones, equipment breakdowns, internet interruption, and virus are some examples for chaos experienced at work environment in an unexpected time. While irregular, inconsistent and unsteady operation of many systems currently found in the enterprises cause the emergence of Chaos Theory; this theory brought a new point of view for analyzing social systems and made changes in discussion style of these systems. Moreover, point of views of persons who worked in management and organization were seriously changed. Subsequently, managing chaos seems possible through taking precautions avoiding the emergence of chaos, seeking solution evenly and rationally when it occurs, using time effectively and keeping motivation high. Due to these reasons, the enterprises should have the necessary equipment with all employers considering the environment of chaos which may emerge. In the situation of chaos; employers who are capable of managing time and motivation, managers having information and capability related to project management, change management, crisis management will reach success easier in their enterprises, they can turn the chaos into an opportunity (Dereliet al.,2006, p.24-29).

Moreover, in order to manage chaos in the enterprises, common principles of the enterprise should be shared, it should be focused on creativity and innovations in order to overcome the process of complexity, structure and principles should be simplified; qualified communication should be provided, and employers should be highly motivated about their works.

Six Sigma

Nowadays, while rapid change process and the globalization fact reshape the rules of the business world, competition environment of industrial era gave its place to competition environment of information age. In this context, global world companies wishing to improve work processes try to embrace and apply different strategies and reforms in order to survive within an environment having fierce competition. The companies operating in the global area both in production and service sector aimed to gain significant incomes in their operation revenue by using six sigma approach in their processes in recent years.

Six Sigma is a management technique applied firstly by Motorola company in the field aimed to decrease errors through reducing cycle time, focusing on customer needs with the purpose of having 3.4 errors per million. While this approach ensures profitability, efficiency and increase in market share for the institutions applying this approach aiming to have process perfection; it also presents an opportunity to be the best in their class. Six Sigma which is a business making philosophy with the purpose of eliminating errors through processing basic process data provides restructuring profitable and result-oriented institutions by applying to all functions (Park, 2003).

Six Sigma providing opportunity to reach the objectives determined with customer-focused approach through the most effective way was started to implement by Motorola Inc., which is an American company in 1980s in order to provide competition power against Japanese products (Bircan and Köse 2012, p.108). Six Sigma approach established in order to resolve current problems in the enterprises; design new products and restructure work processes was started to implement by many important companies in the world after the success of Motorola through becoming a management and business philosophy. Especially after 1995, it drew the attention of significant big companies in the world and the exponential increase was experienced in the number of companies implementing this approach (Çabuk and Karayılmazlar 2010). After completing its historical process, six sigma approach used in work processes of many significant companies in the world continues its journey which was started in USA towards European and Asian countries. For today, is seen that six sigma is rapidly diffuse in European Countries majorly in England, Germany, Switzerland, Sweden, Italy, Spain and Turkey and also some Asian countries as Japan, China, South Korea.

Six Sigma approach which is a measurement scale measuring sufficiency of the products, services and processes and providing the opportunity to compare is defined under different point of views. In 1980s, Harry and Schroeder who took the lead of Six Sigma in the company of Motorola defined Six Sigma as a business improvement approach focused on the recycling success of investments, using higher operation active and satisfying customer expectations better, increasing efficiency, decreasing cycle time and cost of operations, finding and eliminating the reasons of error and failures in the production and service processes (Özveri and Çakır 2012, p.18). According to another definition, Six Sigma method is a cultural and managerial change program based on the assumption as zero error is achievable in whole process in case the variables are taken under control, having objectives as increasing customer satisfaction, decreasing errors, improving outputs, and increasing business efficiency; a quality management tool providing information about process performance, based on process variables and statistical calculations (Çabuk and Karayılmazlar 2010, p.94). Six Sigma approach targeting process perfection in defining and resolving problems encountered by the firms considers organizational improvement as a purpose. In another definition made, it is stated that Six Sigma methodology is a comprehensive and flexible system implemented in order to achieve, continue and maximize success in the activities related to business (Tezsürücü and Tunail 2010, p.131).

In conclusion, Six Sigma approach is a technique possible to implement for all kind of enterprise and starting with process and perfection oriented philosophy within the management based on information. It would be a step taken in favour of all companies targeting quality and wishing to survive in the global environment having fierce competition to restructure their own processes accordingly by analyzing this approach.

Methodology

The research sample includes of large and small enterprises operating in regional, national and international area located in the province of Istanbul. Questionnaire study was applied on 330 managers in total working within 17 enterprises. As the reliability analysis of the scale has an important position within the research, reliability analysis was applied to the findings obtained in order to measure the consistency of questions among each other after the completion of the questionnaire study. Reliability of questionnaire data was measured through Cronbach Alfa method. In case any variable broke the reliability of the scale and accordingly the variable should be eliminated, the relevant variable(s) was extracted from the scale by considering there will increase in the value of Cronbach Alfa coefficient and afterwards the analysis among variables was conducted. Reliability coefficients obtained as a result of the analysis applied totally in 70 components were shown in Table 1. Moreover, general reliability coefficient alfa (α) calculated for the scale was found as 0,883. This rate can be expressed as highly reliable scale by considering the scale generated within the scope of the research.

Table 3. General Reliability Statistics

Factor	Croanbach Alfa (α) Values
Market Oriented	,704
Forming Information	
Diffusing Information	
Unresponsiveness	
Modern Management Models	
Chaos Theory	,916
Blue Ocean Strategy	,778
Six Sigma	,872
Firm Performance	,925

"Factor analysis is an operation as carrying data associated with each other and degraded small variables or factors formed data sets representing this data" (Yılmaz et.al., 2009, p.132). Factor analysis was applied in order to ensure the provision of less, independent and simple variable sets by merging associated variables through reduction method. By this way, each size or sets degraded was entitled with a factor title by ensuring the reduction of many variables to several size or sets.In order to present the issue much more evidently, variables having factor loading rate lower than 0,50 were not taken into assessment.

Factor analysis used for this purpose is a widely used technique in many areas especially as physiology, social sciences, education sciences, political sciences, sociology, biology, geology and business administration.

Variables having factor loading rate lower than 0,50 in the area of Forming Information, Diffusing Information and Unresponsiveness which are three sub dimensions involved in factor distribution of market oriented variable were not taken into the assessment in order to present the issue much more evidently. As a result of the analysis conducted, 20 variables were gathered under 3 factors, 9 variables having factor loading rate lower than 0,50 were not taken into assessment.Factor loads related to the variables within the obtained results were determined between the values of ,474 and ,881.When the variables are subject to reliability analysis, Cronboach Alfa value changed between the values of ,798 and ,857.

"Kaiser-Mayer-Olkin (KMO) value which is another indicator was determined as ,763 in this scale. Kaiser-Mayer-Olkin (KMO) is a criterion developed for the consistency of variables' values. KMO is valid for data set composed by all variables and it is referred as the sample conformity scale. It is an indicator related to whether the data can be modelled in the factors determined. In the variables related to chaos theory, 22 items out of 26 was gathered under one factor. Four variables whose factor loading rate is lower than 0,500 were not taken into the assessment. While Kaiser-Mayer-Olkin (KMO) value is detected as ,886 in this scale, Cronbach Alfa value related to these variables were detected as ,937.

All variables related to Blue Ocean Strategy was gathered under one factor same as the Chaos Theory. Factor loads related to the results obtained were detected between the values of ,663 and ,823 and Cronboach Alfa value was detected as ,778. Kaiser-Mayer-Olkin (KMO) value was detected as ,635 in this scale.

In the factor distribution of the variables related to Six Sigma, 11 items out of 16 was gathered under one factor, the variables whose factor loading rate is lower than 0,50 were not taken into the assessment. While Kaiser-Mayer-Olkin (KMO) value is detected as ,787 in this scale, Cronbach Alfa value related to these variables were detected as ,880.

In the factor distribution of the scales used in the research for firm performance, while the factor loads in firm performance scale change between the values of 0,646–0,900, Cronbach Alfa value was detected as ,906 in factor 1 and ,824 in factor 2.Kasier-Mayer-Olkin (KMO) value was detected as ,889 in this scale.

After the determination of modern management models applied in family firms and reliability analysis of variables related to firm performance scales in the research, factors related to firm performance and modern management models by calculating means of variables being loaded to each factor were generated, and correlation analysis were applied in order to analyse one-to-one relations among the factors. Correlation analysis related to all variables was interpreted by generating through Spss programme.

"Correlation is a coefficient being expressed as a percentage showing the power of relation between dependent variable and independent variable or variables as degree" (Orhunbilge, 2002, p.12). The purpose in correlation analysis is to determine whether there is a relation between two or more variables and to realize which direction these independent variables change. "The correlation coefficient close to 1 shows that the relation is powerful, the correlation coefficient close to 0 means the relation is weak.Although there is no generally agreed principle regarding when the correlation coefficient shows powerful relation, when it shows medium relation or weak relation, it can be used as a general approach about the direction and degree of scale relation mentioned below" (Güler 2005, p.254).

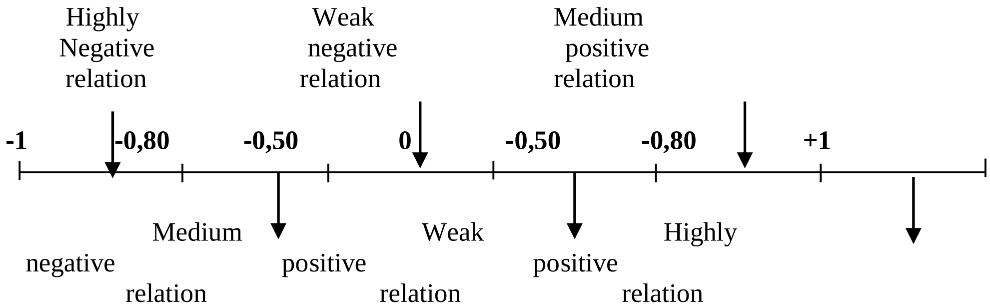

Figure 1: Direction and Degree of Correlation Scale Relation, References: Güler (2005).

When examining correlation analysis, high correlation rate (,507**) between Blue Ocean Strategy factor and General Performance factor is the first prominent aspect. Blue Ocean Strategy and its usage directly and positively affects (,424**), general performance of the firm at relatively high level. Similarly, with its correlation rate as (,424**), Diffusing Information factor is another variable affecting general performance highly. Transferring technical data and market information of the firm to all departments and employees especially in the environment having fierce competition affects the firm's performance directly. While the factors of Chaos Theory (,356**) and Forming Information (,218**) affect firm performance positively even if they are not at a high rate, the effect of Six Sigma (,116*) factor on firm performance is scarcely any.

On the other hand, it is realized that Unresponsiveness factor (-,532**) has negative effect on general performance of the firm. This rate shows a sense of management without responding request and needs of customers and remaining unresponsive against changes. In the light of this information, it is impossible for these enterprises to obtain and maintain their existence.

As a result of this research, while a high correlation is realized between financial and growth performance of the enterprise; it is clear that both these factors have a high correlation with general performance of the firm. There is also a high correlation between financial (,962**) and growth performance (,938**) and general performance of the firm.

Table 4. Correlation Analysis

	Forming Information	Diffusing Information	Unresponsiveness	Chaos Theory	Blue Ocean Strategy	Six Sigma	Financial Performance	Growth Performance	General Performance
Forming Information	1	,121*	,027	-,039	,268**	,128*	,173**	,250**	,218**
Diffusing Information		1	-,309**	,335**	,190**	-,134*	,413**	,390**	,424**
Unresponsiveness			1	-,365**	-,202**	,026	-,586**	-,405**	-,532**
Chaos Theory				1	,353**	,059	,382**	,285**	,356**
Blue Ocean Strategy					1	,149**	,462**	,508	,507**
Six Sigma						1	,084	,144**	,116*
Financial Performance							1	,809**	,962**
Growth Performance								1	,938**
General Performance									1

Regression analysis giving information about the relation among the variables is dealt under two heading as the simple regression and multiple regressions. When assuming functional relation between X and Y series are linear, simple regression model emerges. At the same time, “the multiple regression model emerges when the number of independent variables is more than one” (Karagöz 2006). Basic purpose in regression analysis is to determine which direction dependent variable changes when the independent variable changes and the power of relation between these variables.

Cause effect relation between the variables in the research by involving totally 330 managers working within large and small 17 firms operating in regional, national and international area located in the province of Istanbul within the scope of the research was analysed through SPSS 18 package programme. Regression analysis results related to questionnaire data obtained within the scope of the research are shown in the table 5. While the value R^2 (certainty coefficient) in the tables is specified as how many dependent variables can be defined by independent variable, the value F states whether the model established is statistically significant.

Regression analysis findings of Market Orientation and Modern Management Models on Firm Performance are shown in Table 5. As it is seen in the table below, by also dealing the assessments of manager and firm owners as a result of the research, Market Orientation and Chaos Theory having the factors of Forming Information, Diffusing Information and Unresponsiveness examined under three headings, effects of modern management models having the factors of Blue Ocean Strategy and Six Sigma were analysed and interpreted.

Table 5.Effects of Market Orientation and Modern Management Models of Firm Performance

Independent Variables	Model 1		
	β	t	P
Forming Information	,119	2,362	,019
Diffusing Information	,163	5,430	,000
Unresponsiveness	-,236	-9,133	,000
Chaos Theory	,015	,311	,756
Blue Ocean	,308	7,691	,000
ix Sigma	,103	2,344	,020
	Dependent Variable : General Performance R^2= ,516 F = 57,290		

Market Orientation is to form the most appropriate marketing understanding according to the customer needs by determining a market oriented strategic understanding in order to ensure long term success and display better performance related to the enterprises within a competitive environment. While the value R^2 affecting the firm performance is determined as ,516 in this strategic orientation; it is realized that this value has an effect on the firm performance with the rate of 51,6 %. As the variables having a significant level higher than ,005 which is the extreme value is not taken as basis, the variables which are equal or lower than ,005 are taken as basis. In this case, the factors as Diffusing Information, Unresponsiveness and Blue Ocean Technology seem significant. When analysing all variables, the coefficient BETA (β) which is a value showing whether the model is strong varies between the values of ,015 and ,308.

When analysing the regression model, some independent variables shadow others since six independent variables were included into whole model. If the dependent variable is considered as a general performance, it is clearly understood that especially Blue Ocean Strategy became prominent, and it decreases or shadows the Chaos theory and Six Sigma technique and their effects on general performance. One of reasons why the Blue Ocean Strategy highly affects (β = ,308) the general performance is the desire of firm managers as the possibility to earn high profits and to be in the markets without having competition inside. The Chaos Theory -in other words ‘Butterfly Effect’- gaining importance in the business world especially in last decade relatively falls in value when considering along with the Blue Ocean Strategy and other factors.

Regression analysis results related to the effects Chaos theory and Blue Ocean Strategy which are among Modern Management Models on firm performance are shown in Table 6.

Table 6. Effect of Chaos Theory and Blue Ocean Strategy on Firm Performance

Independent Variables	Model 1		
	β	**t**	**P**
Chaos Theory	,220	4,076	,000
Blue Ocean	,397	8,750	,000
	Dependent Variable : General Performance R^2 = ,293 F = 67,640		

While the value R^2 is determined as ,293 in the model; it is realized that this value has an effect on the firm performance with the rate of 29,3 %. At the same time, the high rate in value F (F= 67,640), the high rates of the value R^2 and the coefficient β indicate the effect of the Chaos Theory and Blue Ocean Strategy on the firm performance. Both two factors having significant level as ,000 are considered as significant. Two independent variables are included in the whole model, and there is no variable detected as shadowing the others, however one of the variables which is the factor of Blue Ocean Strategy clearly became prominent. In the light of this information, when considering the general performance as the dependent variable, it is seen that the Blue Ocean Strategy especially became prominent referring to the Chaos Theory. One of reasons why the Blue Ocean Strategy highly affects (β = ,397) the general performance is the desire of firm managers as the possibility to earn high profits and being in the markets without having competition inside. According to the results of regression analysis conducted, it is seen that the Chaos Theory and Blue Ocean Strategy positively affect the general performance of the firm by supporting each other.

Regression analysis findings related to the firm performance of another Market orientation and the Chaos Theory are shown in Table 7.

Table 7. Effect of Unresponsiveness, Forming Information, Diffusing Information and Chaos Theory on Firm Performance

Independent Variables	Model 1		
	β	t	P
Unresponsiveness	-,418	-8,929	,000
Forming Information	,207	4,809	,000
Diffusing Information	,224	4,784	,000
Chaos Theory	,137	2,894	,004
	Dependent Variable : General Performance R^2 = ,411 F = 56,696		

While the level of significant in the table varies between the values of ,000 and ,004, all factors seem significant. While the value R^2 affecting the firm performance is determined as ,411 in the model; it is realized that this value has an effect on the firm performance with the rate of 41,1 %. When analysing Table 7, since four independent variables are included in the whole model, the factors of Forming Information (β = ,207) and Diffusing Information (β = ,224) clearly became prominent by shadowing other factors. While the Chaos Theory factor is shadowed by other factors, it is realized that the Unresponsiveness factor (β= -,418) has a negative effect on general performance of the firm. As the requirement for reaction formation matters for all enterprises in the competitive environment, all large and small enterprises should attach more importance to this situation in terms of long-term survival. Non-institutionalised family firms generally encounter difficulties about responding the requirements of changing conditions due to accelerating environmental changes. Therefore, protecting and maintaining their existence against the situations emerged by remaining unresponsive get difficult for the companies not having innovations and involving in global markets without responding the requests and desires of various customer groups as living closed to external world with each passing day. On the other hand, the companies using their all functions effectively and minding the requests and desires of the customer by showing reaction to the external environment are growing day by day.

At the final stage of this section, regression analysis findings related to the effects of the Modern Management Models Chaos Theory, Six Sigma and Blue Ocean Strategy on Firm Performance are shown in Table 7. As the variables having the significant level higher than ,005 do not considered as basis, the variables which are equal or lower than ,005 are considered as basis. In this case, the Chaos Theory factor and Blue Ocean Strategy factor seem as significant. While the value R^2 affecting Firm performance is determined as ,294 in this model; it is realized that this value has an effect on the firm performance with the rate of 29,4 %.

Table 8. Effect of Chaos Theory, Six Sigma and Blue Ocean Strategy on Form Performance

Independent Variables	Model 1		
	β	t	P
Chaos Theory	,220	4,069	,000
Six Sigma	,044	,856	,392
Blue Ocean	,391	8,545	,000
	Dependent Variable : General Performance R^2 = ,294 F = 45,301		

When analysing Table 8, Blue Ocean Strategy and the Chaos Theory shadow the Six Sigma factor since three independent variables are involved to the model. Considering general performance is the dependent variable, especially the Blue Ocean Strategy became prominent according to the Chaos Theory and it is clearly seen that it decreases or shadows the effect of Six Sigma technique on the general performance. It is seen that Blue Ocean Strategy has high rate (β = ,391) of positive effect on firm performance.

Result and Discussion

In the analysis section of the study, direct and positive effect of Blue Ocean Strategy's sub dimension related to Modern Management Model on firm performance cause the technique of the Chaos Theory also referred as "Butterfly Effect" and Six Sigma being shadowed or decrease in effect. It is seen those company managers attach more importance to Blue Ocean Strategy in order to gain high profits through satisfying the requests and desires of the customers in peaceable markets without having fierce competition along with fast growth avoiding intense competition environment. In other words, the company managers foresee how a successful future strategy is created by avoiding uncertainties and how they will be applied rapidly with a low cost in blue oceans.

In market orientation, the top level managers of family firms attach the highest importance to produce goods or services to satisfy the customer and meet their needs in the sector. In this case, the family firms should ensure good supply and demand balance in order to strengthen their present situation in the market or take place in a strong market. In the analysis section of our study, it was observed that there is direct and highly negative effect of "Unresponsiveness" sub dimension on market orientation. The reason of having direct but negative effect while expecting direct and positive effect is the possibility to remain insensitive against the incidents encountered by the companies. Non-institutionalised family firms generally encounter difficulties about responding the requirements of changing conditions due to accelerating environmental changes. Maintaining their existence against the conditions emerged by remaining unresponsive against possible situations emerged gets difficult for the companies not having innovations and involving in global markets without responding the desires of the customers with each passing day.

When making a general assessment, Modern Management Models and Market Orientation have a valid result of firm performance, and it is seen that highly positive effect of Blue Ocean Strategy and highly negative effect of Unresponsiveness factor directly affect financial and growth performance of the company.

Through establishing institutionalised healthy organisation structure, superior aspects in line with company interests should become prominent in order to transfer family firm assets to the next generations; the strategies keeping the weak aspects at low level should be developed. For this purpose, fundamental changes are required to apply firstly on the point of views of family members to the company and the world. Therefore, through restructuring the family firms, managers should embrace a Professional management understanding depends on rules, standards, and procedures and without having a authoritarian values in order to develop accurate and effective strategies. Hence, communication should be continuous and fluent in order to realize information flow easily, rapid solutions should be sought by expressing the problems experienced, necessary importance should be attached to long-term strategic plans as well as short-term plans, necessary motivation should be ensured in order to provide the dependency of employees to the company and their efficiencies.

It is an inevitable fact that family firms applying modern management techniques in their institutions will provide their sustainability successfully along with a corporate structure and they will have an important place in national economy. It should be reminded that the firms embracing modern management models in world markets being globalised fast and having a dynamic structure and including them into their processes as application will gain a unique advantage in competition. Contribution of next generation approaches as the Chaos Theory and Blue Ocean Strategy to problem solutions as different point of view and diversification of management models of the organisations encounter as an important access barrier for the other companies in the sector. In summary, using these approaches are not a choice anymore but an obligation in order to achieve high management power and privileged institutional identity.

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