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Analysis for Financial Soundness Indicator of Mongolian Financial System

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ABSTRACT

We did our research work for sustainability status of Mongolian financial section on the basis of interconnection between financial soundness indicator and financial section corporate governance index. In financial soundness indicator, 40 items of International monetary fund were included and corporate index contained illustrations which can define banks development of the world. From the result view of research done at the end of 2011, it was clear that Mongolian financial section had been unsustainable. In addition evaluation model for Mongolian financial soundness was developed, having taken financial soundness indicators from the first quarter of 2000 to fourth quarter of 2011 and other macro economic variables as well as major indicators, of deposit taking institutions, including capital adequacy, non performing loan,

profitability, financial leverage, liquidity, GDP growth into econometric research consideration. From the view of econometric research output, that R squared for capital adequacy is 94 % and it is 69 for performing loan, 73% for profitability, 97% for financial leverage, 64% for liquidity, 48% for GDP growth was made definite.

Key word: Mongolian financial system, financial soundness, financial soundness indicator, corporate governance of banking section, corporate governance index, economic growth.

INTRODUCTION

Even though defining and measuring the sustainability status of a country is rather difficult issue, it is not significant when there has been no crises and whereas as financial system is unsustainable, it is quite critical problem. Generally it can be said that sustainability of financial system positively influences on real section. As well, government, real and external sectors have direct impact on financial system sustainability, in opposition to this, financial system sustainability causes these sections development (O'Rourke, 2003).

For the last 20 years, learners and researchers from central banks have been doing analyze and making conclusion on financial system by developing system representing indicators in order to evaluate financial system sustainability, but it is unnecessary to completely do evaluation work through developed indicators and it is considered too that financial system sustainability is dependable to the governance of financial institutions. Bank system governance index needs to be learned to the greater extend taking interconnections among banking

system regulation and monitoring practice, banking system developments, effectiveness as well as weakness into essential consideration and these factors are regarded as having capability to correspond to the system enlargement.

Research goal: Do analyze for sustainability of Mongolian financial system by interconnecting the indicators of financial system sustainability and financial section indexes.

LITERATURE RIVIEW

Studies have been conducted in most cases on the purpose to define and suppose crises. Havkins. J and M Klau, Nelson made the application of methodology for estimating financial sustainability indicator, developed by the International monetary fund, broadened and they consider by the way of paying reasonable attention to the market pressure, bank and banking system weakness, vulnerability. As financial system sustainability indicators provide vital information necessary for ensuring the performance and flexibility of banking sector on the basis of the circumstance of the market of finance, fixed asset and non bank financial system as well as firms, households, Indicators representing risk, harmful to the whole financial system , must be concentrated on in particular(Girton and Roper, 1977).

Rita Babihuga did research work for defining dependence of financial system core indicators on macroeconomics using the biggest data and then he evaluated financial indicators by getting them interrelated with macro economic variables(Schaeck and Cihák, 2007)..

For our country, there are many small sized research works done for determining relationship between macroeconomics and

financial system and PhD Batsukh.Ts conducted a big paper work named “Econometric model for macro economic strategic planning and its main issue” in 1998 (van Hoorn, 1979).

In the 20th century, after Wall Street crisis happened in 1929, such legal sector scientists as Adolf Augustus Berle, Edwin Dodd, Gardiner C.Means developed new conception on the contemporary corporate management role in society and the developed concepts became fundamental of corporate governance. A Research work with theme “The modern Corporation and private property”, by Berle, Means in 1932 remarkably influenced on current conception of corporate governance and its future prospects. In addition to this, a paper work “The Nature of the Firm”, done by Ronald Coase from the Chicago university, deepened understanding of transaction cost and got it linked with motivation for firm establishment and act. 50 years later since that time Eugene Fama, Micheal Jensen conducted a research work named “The Separation of Ownership and Control”, which could formulate organization theory and accurately developed corporate governance conception. From the view of them, organization is carrying out its activity on the basis of continuously made plural agreements. Moreover, a work “Agency theory” done in 1989 by Kathleen Eisenhardt is considered to have made sensible contribution to corporate governance development (Parker and Ritson, 2005; Coffee, Jr., 2001).

Corporate governance codes do determine principle concepts for corporate activity and they are developed on the basis of perception to respect legally agreeable interest and right of participants.

For the last years, corporate governance related research was popularly conducted. Asian financial crises happened in 1997 and it caused Enron and Worldcom happening in America, which attracts many people attention and people consider this events

reason as corporate governance lack development. As well Blaise Gadanez, Kaushik Jayaram learned interest and information disagreement between shareholders and corporate managers of Amercian stock exchange. They made conclusion that governance structure and legal environment must be enhanced for an organization with supervisory officers, for whom personal well being is better than that of shareholders and It was defined that performance output is higher for the company with good governnance.

Ross Levine studied factors of legality and regulation policy on bank governance (Levine, *The Corporate Governance of Banks: The Concise Discussion of Concepts and Evidence*, 2003). Ownership framework and privatization program is so important. Main issue to be resolved for bank is generated from political system, bank inspection and regulation policies have been obstacles to effective corporate governance. Therefore bankruptcy system and legal environment are necessary to be improved in order to strengthen private and governmental monitoring system. It is definite that there is necessity to study a strategy to make fundamental change and there is an example of research for estimating correlation between corporate governance and risk management and corporate governance and bank performance in Indonesia and from the view of this study, that above correlation is dependable to ownership types of bank owners is made obvious (Levine, 2003; Claessens and Klapper, 2005).

CURRENT CIRCUMSTANCE OF MONGOLIAN FINANCIAL SYSTEM

About 20 years have been pasted since when Mongolia moved into society with free market based economy and financial system

components including financial institution and financial market are going on hardly at their developing stage.

From the view of financial structure of developed countries, financial markets development is almost the same and even as for our country, money market development is dominating. As of the end of 2010, banking section is 95.89%, non bank financial institution is 1.98%, Insurance company is 0.88%, Saving and loan union is 0.75%, Security company is 0.5% of financial system(Beck, et al., 2009).

As of the end of 2004, commercial bank asset to the asset of total financial system was 92.20% and in 2011 this percentage increased to 95.89%. This growth is directly dependable to banks passive and it can be said that commercial banks are representing Mongolian financial system. Since 1991, 32 particular permissions for bank establishment have been given and of those established banks, 16 banks had bankrupted because of illiquidity and two banks combined, currently 14 banks are carrying out its activity. At the end of 2008, money is going out of commercial banks and it worsened financial system circumstance. For the purpose to solve this problem law for “securitizing citizens saving in banks” was enacted with the resolution of Parliament made in 25th of November in 2008 and with the help of this enacted law, commercial bank deposit had increased from 1.94 trillion MNT to 4.29 trillion MNT in 2010.

Sustainability of major legal participants going on for profit is so influential to the sustainability of market economy system and its development. Even though there are many types of structure for business organizations activity for profit, of those company structure is the most popular. Company’s structure is an issue behind legal regulations and they are widely identified as united standard. This is not an issue of only company, but also of all participants. Corporate governance conceptions, firstly

enacted with the resolution of Economic collaboration and development Institution in 1999, have been generally accepted all over the world. These conceptions and standards are not only legal regulations, but also typical ethics for effectiveness and it is named as corporate governance codex. Corporate governance codex define proper procedure of board and executive management activity by establishing consistent interest connections among investors, financiers, business partners, workers and other participants and creating internally and externally favorable environment for company's well doing. Bank sector from financial system has leading role in economy and main branch for the construction of social infrastructure and other economic components. Strengthening corporate governance of banking sector is positively influential to a nation's economy and provides deposit owners with opportunity to save their money in sustainable and safe environment. I think that corporate good governance in banking sector would enhance the growth of finance and nations economy.

FINANCIAL SOUNDNESS RESEARCH OF MONGOLIAN FINANCIAL SYSTEM

Indicator of financial soundness

Capital adequacy, which is core indicator of financial sustainability indicator, was 28 percent in the first quarter of 2000 and it had been continuously decreasing and then became 10 percent in the fourth quarter of 2011. Average capital adequacy is 18,4 percent and currently is lower than its average level. That change in actual ratio between total capital and tier 1 capital risk weighted asset is normal shows that the most of capital is tier 1 capital. Asset quality is the most important

indicator to represent financial system sustainability. Ratio of non-performing loan to total loan was 10,4 percent and it reached its maximal point in 2000 and in the years with economic growth and from 2005 to 2007, it was lower than its average meaning. In the fourth quarter of 2011, above ratio was 11 percent and as a result of the world economic crises happened in 2008, it began dramatically increase and non-performing loan risk fund was 40 percent more than capital proportion, while 76 percent of bank system capital is non-performing loan risk fund. Ratio of non-performing loan risk fund to capital was averagely 38 percent and at present it is 2 times more than its average point.

Profitability indicator is fundamental of sustainable existing for that section and financial sustainability index is estimated by taking asset and capital return into representative consideration. Trends of return of asset and capital are the same and average ROA is 3,5%, ROE is -0.6 percent. These negative meanings are related with that banks profitability took negative point from 2008 to 2009, however commercial banks profitability is getting improved since the second quarter of 2010. Non interest expense has tendency to be more than its income and it is connected to writing off risk fund and banks policy targeted at their expansion. For instance, ratio of non interest cost to non interest income has been more than 1 since 2009. Whereas, banks with large amount of non-performing loan has been getting loss and some big sized banks are pursuing policy for making their activity extended.

Average ratio of asset with liquidation capacity to total asset is 25,6 percent and it is 28 percent as of 2011. Liquidity ratio sharply decreased from March of 2008 and became 17 percent at the end of the fourth quarter of 2008. This decrease is related with sudden deposit withdrawal and due to deposit growth and loan provision decrease, liquidity ratio has had tendency to grow since 2009. In addition to this, banks asset increased two times in

the last two years and lack of favorable market might be influencing to decrease in liquidity ratio. Non bank financial institutions share in the financial market gradually enlarging and proportion of its productions to GDP has tendency to grow too.

Because of decreasing trend of debt ratio of firms and companies, their profitability is tended to have improved. Households has been getting loan in the first quarter of each year and their debt amount has been increasing too. With regard to this, ratio of debt to households had been continuously increasing until 2007. It can be decreased with the help of increase in household income.

For security market, difference between purchasing and selling price has tendency to have decreased and daily average circulation is assumed to get improved. In order to do define financial sustainability of our country in comparison with the world countries, I conducted research on the world 52 countries and capital adequacy is 15,6 percent, 1 tier capital adequacy is 12,4 percent for the world countries, included in the research, for our country these indicators are 10 and 6 percent. In other words, it is not good enough. As compared with the Asian 9 countries, capital adequacy is less than those countries. Ratio of non-performing loan is 4.5 percent and for our country it is 11 percent. Average ratio of Asian countries is 4 percent and in comparison with previous years, percentage of non-performing loan has been decreased by 7 point. Capital return is 9.5 percent for the world countries and it is 6 percent for our country. In other words for our country capital return is 1.6 times less than average return and 2.3 times less than Asian other countries.

This indicator representing profitability was tended to have decreased from 2008 to 2009 and from the second quarter of 2010, it is getting better.

Governance index of financial system

We did research for determining Mongolian banking system governance index based on the paper work “Bank Regulation and Supervision: What works best?” by Barth, Caprio, and Levine (2001b) including 107 countries. Some parts of my research was carried out having asked questions from the officers of Auditing department of bank of Mongolia and I picked up necessary context and quantitative information from financial system related law and regulations, enacted from the first quarter of 1991 to the first quarter of 2011 and monthly statement of Bank of Mongolia. Research consists of 12 main chapter and 282 questions. Each chapter contained questions which can represent banking system governance by many sides. Banking system governance index is estimated by ordinary average method, having considered that all questions and subsequent chapters are equally weighted and estimation was made excluding second chapters related to saving insurance system and did work of comparison. At last subsequent chapters, stated in table 1 has been ordered by classification of “important and unimportant” and scores were distributed to them by importance weight for governance index comparison. Questions to be answered “Yes or No” are represented with 0 or 1 figures and other indicators are from 0 to 1. For questions with 4 answers to be chosen, if estimation related regulation is very accurate, there would be 1, if more than average, there would be 0.67, if comparatively lower, there would be 0.33 score, if zero, there would be 0 score. Besides that some special questions are indexed using the most important component defining method and by this method, components are calculated making factors to be with 0 averages and 1 standard deviation. Advantage of this is that each questions weigh can be different and disadvantage of this is that answers to the questions can be less influential to the index.

Table 1: General governance index

No	Variables	Average Index estimated from subsequent indexes	
1	Regulatory variables for banking activity	0.4444	0.4444
2	Regulatory variables for bank ownership	0.5000	0.5000
3	Regulatory variables for competition	0.6250	0.7917
4	Regulatory capital variables	0.3333	0.6667
5	Variables of inspector action of regulatory organization	0.6533	0.7848
6	Resource variables of inspector of regulatory organization	0.6000	0.7944
7	Personal inspection variables	0.7933	0.5267
8	Saving insurance system variables	0.0000	0.0000
9	Variables of market structure	0.4124	0.6341
	General governance index	0.4847	0.5714

From the view of each variable index, it was appeared that 6 of 9 variables are more than 0.5 and other three are less than 0.4 as well as governance general index is 0.5714. Therefore that banking system governance is not too good, but average became evident. But I did not want to make quick conclusion that governance is bad for Mongolia. Because sustainability related research was done firstly in Mongolia and it was impossible to compare our country's financial sustainability with that of similar countries to Mongolia due to lack of information. Therefore I

made conclusion on the basis of 9 variables representing general index.

Saving insurance caused general governance index to be near the 0.5 and there is no special fund for saving insurance and agency and only as long as bankruptcy is taken place, money of deposit owners is secured by state. So I reflect on financial infrastructure, which is supportive for banking system through insurance system, has not been created yet.

Variables index for bank activity regulators is less than average index with regard to financial infrastructure. That there are many small sized banks and one state owned bank caused market structure variable to be near the 0.5. General index is improved if subsequent index of saving insurance system is subtracted from its estimation and saving insurance poor development is making banking system index worsened. Whereas general governance index is 0.5502 as long as subsequent index is ordered and scored by its importance. This shows banking governance indicator of Mongolia is less than half of its meaning and is associated with that percentage of variables, which is comparatively more important for governance index estimation, is low and score for subsequent indexes is small.

Bank governance index is regarded in three situations and for general index one calculation, score was divided on the basis of consideration that 9 variables are the same for importance. For the estimation of index two, saving insurance system related variable is taken away from the 9 variables and index three was calculated by ordering and scoring 9 variables by their importance.

CONCLUSIONS

We did do this research work with the purpose to do analyze Mongolian financial system sustainability through the way of getting financial system sustainability indicator and financial system index interconnected and I have tight belief that by doing analyze Mongolian financial system sustainability, financial system current circumstance can be made clearer and we would be provided with an opportunity to estimate and forecast sudden changes to be happened for the future prospect.

Financial sustainability indicator from the first quarter to the fourth quarter of 2011 was estimated and as banking system is 95.7 percent of financial systems of our country, main output of sustainability analysis have been accurately done on the basis of capital adequacy, asset quality, profitability and liquidity estimation.

Besides that, as evaluation is made for the sustainability status of our country by comparing defined output with the world 52 countries respective indicators as of 2011, capital adequacy is 15,6 percent, for the world countries, 1 tier capital is 12,4 percent, these ratios are 14 and 11 percent. These are not too good circumstance. This indicator has been tending to decrease since 2000 and from the beginning of 2010, it is getting better.

Ratio of non-performing loan to total loan is 4.5 percent, whereas for our country, it is 3 percent. In other words it is less than other countries. However, non-performing loan percentage decreased by 7 points. Average capital return is 9.5 percent and for our country it is 27.22 percent. This profitability indicator had tended to have sharply decreased and from the second quarter of 2011, it has been getting better.

For the estimation of financial system governance index, we took banking system, which is 95,7 percent of financial system, as

research object and banking system governance index is estimated with the purpose to show connection between financial system development, sustainability and economic variables and signaling indicators. From the view of each variable index, it was appeared that 6 of 9 variables are more than 0.5 and other three are less than 0.5 as well as governance general index is 0.5714. Therefore that banking system governance is not too good, but average became evident. On the basis of research result, I would like to say that Mongolian financial system is tending to be better even though it is unsustainable as of 2011 and there are many factors, influential to financial sustainability and presently there is lack of research on this theme.

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The Maturity Structure of Volatility and Trading Activity in the KOSPI200 Futures Market

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ABSTRACT

This study examines the effects of trading activities on the maturity structure of the volatility in the KOSPI200 futures market. It involves estimation of a variant of the E-GARCH(1,1) model of futures returns. The empirical results suggest that the KOSPI200 futures market tends to be volatile right before and right after the nearest contract expires.

High volatility immediately prior to maturity can be explained within the framework of the well-known Samuelson hypothesis. However, it is not easy to explain why volatility increases right after the nearest contract expires. To do so, we estimate the volatility equation by using expected and unexpected trading volume relative to open interest as explanatory variables. The results show that the observed U-shaped maturity volatility structure reflects the trading activity right before and right after the expiry, and, to be noteworthy, in particular, is that volatility increases immediately after the nearest contract reaches

maturity, due to the high unexpected trading volume relative to open interest.

The trading activity in the KOSPI200 futures market is typically heavily concentrated on the nearest contract, which is indicative of low levels of market depth in the next-to-nearest contract. This, in turn, suggests that there has been a temporary market thinness right before and after the replacement of the nearest contract. The KOSPI200 futures returns display a U-shaped maturity structure of volatility, due mainly to the temporary market thinness at the time of the expiry.

Keywords: Samuelson hypothesis, maturity structure of volatility, trading volume, open interest, E-GARCH
JEL Classification code: G13, C50

INTRODUCTION

Since the introduction of the KOSPI200 futures contract in May 1996, the KOSPI200 futures market has seen enormous growth, with 4.7 billion contracts traded in 2006 alone, and it has become the fifth largest in the world's stock index futures markets. As such, its impressive growth has drawn much attention over the past several years. We hereby examine the effects of trading activities on the maturity structure of the volatility in the KOSPI200 futures market.

In his seminal article, Samuelson (1967) formulated a model where the volatility of futures returns tends to increase as the contract approaches maturity. As a result, returns of futures contracts close to expiration react more strongly to new information about the underlying asset than returns of more distant futures contracts. This is known as the Samuelson effect

that is just a price elasticity effect. What follows are alternative approaches to tackling limitations inherent to the Samuelson hypothesis. To begin with, the state variable hypothesis proposed by Richard and Sundaresan (1981), and by Anderson and Danthine (1983) argues that heterogeneous information flows lead to violations of the Samuelson effect. In addition, the speculative hypothesis argues against the Samuelson effect, basing itself on the asymmetric information of traders, and on the assumption of homogeneous information flow.

Much empirical research has been conducted into volatility in the futures markets, but it remains controversial whether the time-to-maturity pattern of volatility is monotonic or not [Castello and Francis(1982), Galloway and Kolb(1996), Keynon et.al(1987), and Khoury and Yourougou(1993)]. In this study, the maturity structure of volatility in the KOSPI 200 futures market is analyzed. Interestingly enough, it turns out that the volatility of the KOSPI200 futures returns follows a U-shaped curve as a function of days to expiry.¹ The focus of this paper, in short, is how the trading activity in the KOSPI200 futures market interacts to produce a U-shaped time-to-maturity volatility pattern.

It is well known that trading activity has effects on market volatility [Kyle(1985), and Bessembinder and Seguin(1993)]. Many researchers have been using trading volume and open interest as a proxy for trading activity. When trading volume increases, or open interest decreases, the futures market tends to be more volatile, and this proposition has been widely accepted. As an alternative, we propose the trading volume relative to open

¹ In addition, the realized volatility in the KOSPI200 futures returns turned out to have a U-shaped time-to-maturity structure, though it is not dealt with in this paper.

interest (VTOI) as an explanatory variable. Conventionally, absolute measures involving the use of trading volume and/or open interest themselves have been used. However, the proposed VTOI is deemed appropriate as a relative measure of trading activity to properly capture a set of characteristics of the KOSPI200 futures market.

On top of that, we examine the time-to-maturity volatility structure from a short-term perspective where less than three months are left to maturity. In the KOSPI200 futures market, trading activity is heavily concentrated on the nearest contract. Accordingly, we reckon that the U-shaped maturity volatility structure may reflect the extreme concentration on the nearest contract.

The remainder of this paper is organized as follows. Section 2 deals with the data set of the KOSPI200 futures market and with how to adjust price and trading volume series. In Section 3, the empirical methodologies are described. The empirical results and their interpretations are given in Section 4, with Section 5 concluding the paper.

DATA AND FEATURES OF TRADING ACTIVITY

The KOSPI200 futures contract is listed on the Korea Exchange. Its underlying asset is KOSPI200, which is the index consisting of top 200 stocks. The delivery months are March, June, September, and December each year, so the nearest contract is replaced with the next-to-nearest one every three months.

All the data used in this study are collected from the Korea Exchange database spanning the period from May 5, 1996 to March 30, 2007. More specifically, the data include daily closing prices, daily trading volume, and daily open interest. Trading

volume and open interest are measured in terms of contracts. However, the data used in this paper is only limited to the nearest and next-to-nearest contracts due to the negligibility of the trading activity relevant to other contracts.

There are a number of ways to calculate futures prices. Usually, price series are constructed by splicing together contracts near maturity; for the most part, the price series of the nearest contract are used. However, to avoid problems associated with expiration effects, the price series of the nearest contract in the delivery month are excluded. Instead, the price of the next-to-nearest contract in that period is used. Nonetheless, there remains the possibility of the expiration effects occurring: Right before and right after the replacement of the contract, volatility may be overestimated.

In order to minimize the effects arising thereof, some adjustment is made to the raw price series according to Rougier (1996). He suggests the optimal futures price index that is designed to change proportionally as the underlying spot price. The following optimal futures price index is defined as the weighted average of the prices of the nearest and next-to-nearest contracts.

$$(1) \quad F^* = \frac{m}{k} F' + \left(1 - \frac{m}{k}\right) F''$$

where F^* is the optimal futures price index, F' the price of the nearest contract, and F'' the price of the next-to-nearest contract. k is the difference between the maturity dates of two contracts, and m refers to the number of days left to the expiration of the nearest contract. When the nearest contract is

distant from maturity, the weights of the price of the nearest contract are large, and vice versa. It should be noted that the optimal futures price index changes proportionally as the underlying spot price. This allows us to obtain a constant cointegrating vector, regardless of how many days are left to the expiry.

It is likely that strong seasonality in trading volume series arises from the rolling over of positions from the nearest contract to the next-to-nearest contract. As a result, trading volume increases drastically just before the contract reaches maturity. Given that the increase in trading volume is attributable only to the replacement of the nearest contract with the next-to-nearest one, it is deemed not suitable to use trading volume as a proxy for information arrival.

In order to minimize the effects resulting from the replacement of the nearest contract with the next-to-nearest one, we adjust the trading volume series according to the approach proposed by Holmes and Rougier(2005). First, the rollover-induced volume is calculated as follows:

$$(2) \quad 0 \leq r \leq \min \left\{ \frac{1}{2}(v' - \Delta oi'), \frac{1}{2}(v'' + \Delta oi'') \right\}$$

where r is the rollover-induced trading volume, v' the volume of the nearest contract, and v'' the volume of the next-to-nearest contract. In addition, $\Delta oi'$ refers to changes in the open interest of the nearest contract, and $\Delta oi''$ to changes in the open interest of the next-to-nearest contract.

Second, we calculate the sum of the trading volumes of the nearest and next-to-nearest contracts, and then subtract the rollover-induced trading volume from the calculated sum. The rollover-adjusted trading volume is obtained as follows:

$$(3) \quad \hat{v} = v - 2 \times r$$

where \hat{v} is the adjusted trading volume, and v is the (raw) unadjusted trading volume. The rollover-induced trading volume is subtracted from the raw trading volume.

It is well known that there are contemporaneous relations between trading activity and price volatility. As a proxy for information arrival, trading volume has positive contemporaneous relations with price volatility [Bessembinder and Seguin(1992)]. According to them, when volume is partitioned into expected and unexpected components, unexpected volume shocks have a larger positive effect on price volatility.

Likewise, the relation between price volatility and open interest has been examined. Open interest is used as a proxy for market depth [Bessembinder and Seguin(1993)], demand for hedging [Chen, Cuny and Haugen(1995)], and difference of traders' opinions [Bessembinder, Chan and Seguin(1996)]. Bessembinder and Seguin(1993) suggest that there are negative relations between price volatility and open interest. When open interest is partitioned into expected and unexpected components, unexpected open interest shocks have a larger negative effect on price volatility.

Fig.1 shows the time-to-maturity pattern of the trading volume (a), open interest (b), and trading volume relative to open interest (c) in the KOSPI200 futures market. All the data are the sum of two sets of data on the nearest and next-to-the nearest contracts. As shown in Fig. 1, the values are daily averages by less-than-120 days to maturity. Also, the trading volume is free of the rollover-induced volume as a result of using the methods of Holmes and Rougier (2005). The remaining days to maturity are on the nearest contract. On May 2007, the daily volume averaged 181,111 contracts, and the daily open interest averaged 84,620 contracts. The daily average of the trading volume relative to open interest is about 2.14. There seems to be a time-to-maturity pattern in the data.

Here, our focus is how the trading volume relative to open interest (VTOI) affects price volatility. VTOI measures trading volume relative to open interest. Fig.1 (c) shows the time-to-maturity pattern of VTOI by days to maturity. VTOI is high right before and right after the replacement of the nearest contract. The reason for high VTOI is because the open interest is low during that period, not because the trading volume is high. It is thought, therefore, that the time-to-maturity pattern of price volatility can be explained by VTOI which is a relative measure, rather than by trading volume or open interest.

EMPIRICAL METHODOLOGIES

To analyze the impact of trading activity on the KOSPI200 futures market volatility, an E-GARCH(1,1) variant is employed in this study. It allows for several effects in the return equation and in the volatility equation. We use a model as parsimonious as

possible in order to minimize the number of parameters to be estimated.

First, the return equation is the error correction model (ECM), which is based on the cointegration relation between the futures price and the underlying spot price. The return equation is given as follows:

$$(4) \quad \ln(s_t) = a \ln(f_t) + v_t$$

$$(5) \quad \Delta \ln(f_t) = c_0 + \pi \hat{v}_t + \varepsilon_t, \text{ where } \varepsilon_t \sim (0, h_t)$$

Eq. (4) is the cointegration equation, where $\ln(f_t)$ is the log of the futures price, and $\ln(s_t)$ is the log of the underlying spot price. Also, \hat{v}_t in Eq. (5) is the estimate of the cointegration errors in Eq. (4). The estimated cointegration errors are used as an explanatory variable in the volatility equation. Eq. (5) has no lagged variables for the futures and spot returns by Akaike's information criterion.

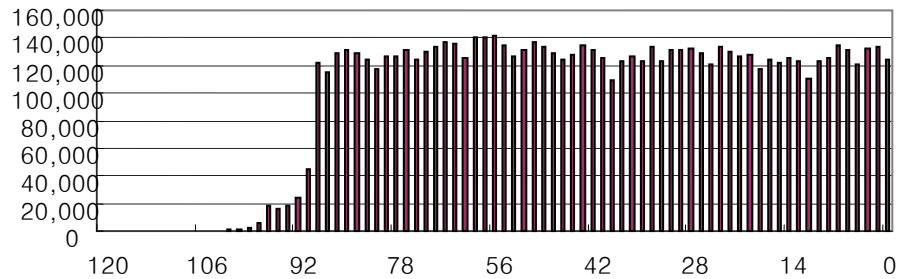
Second, the volatility equation is the univariate E-GARCH (1,1) model which allows for the leverage effect, weekday effect, error correction effect, maturity effect, and trading activity effect. The volatility equation is expressed as follows:

$$(6) \quad \log(h_t) = \gamma_0 + \gamma_1 \frac{|\varepsilon_{t-1}|}{\sqrt{h_{t-1}}} + \gamma_2 \log(h_{t-1}) + \gamma_3 \frac{\varepsilon_{t-1}}{\sqrt{h_{t-1}}} \\ + \beta_1 \text{ mon} + \beta_2 \text{ tue} + \beta_3 \text{ thu} + \beta_4 \text{ fri} + \beta_5 \text{ sat} + \beta_6 \hat{v}_t + \beta_7 \hat{v}_t^2 \\ + \alpha_1 m_t + \alpha_2 (m_t)^2 + \delta_1 \text{ evtoi}_t + \delta_2 \text{ uvtoi}_t$$

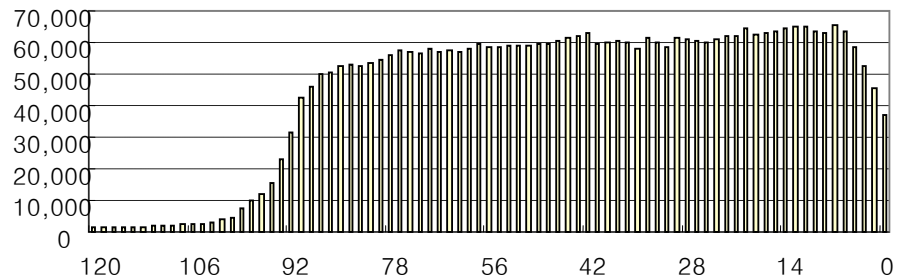
where h_t is the conditional variance at time t , and ε_{t-1} is the lagged value of the residual in Eq.(5). The first line of Eq. (6) is the original form of Nelson(1991)'s E-GARCH(1,1) model which allows for asymmetric responses of volatility to news. Negative γ_3 implies the leverage effect.

Fig. 1. Trading activities observed when less than 120 days are left to expiry

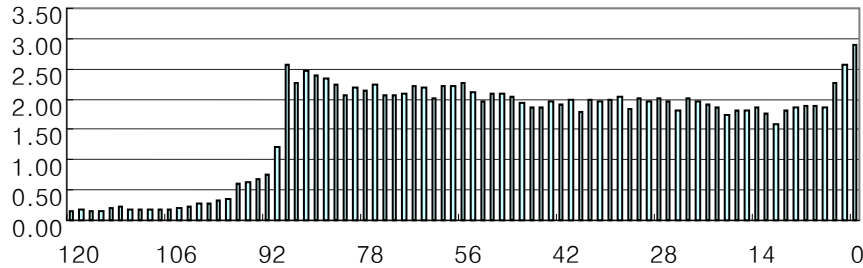
(a) Trading Volume Series



(b) Open Interest Series



(c) Trading Volume Relative to Open Interest



Note) All the data are the sum of two sets of data on the nearest and next-to-nearest contracts. The given values are daily averages by less-than-120 days to maturity. The trading volume is free of the rollover-induced volume. The days to maturity are on the nearest contract.

mon, tue, thu, fri, sat are the dummy variables which take a value of one for Monday, Tuesday, Thursday, Friday, and Saturday, and which take a value of zero otherwise. The model tested here includes the cointegration errors \hat{v}_t for capturing the error correction effect of the approach taken by Zhong et al.(2004). Also included are the squared values of the cointegration errors \hat{v}_t^2 as an explanatory variable. We conjecture that the cointegration errors have not only the sign effect but also the size effect.

m_t is the number of calendar days left to the expiration of the nearest contract. m_t and $(m_t)^2$ capture the maturity structure of volatility, which is expressed as $\alpha_2 [m_t + \alpha_1 / (2\alpha_2)]^2$. If α_2 is positive and α_1 negative, the volatility is represented by a usual quadratic

form of days to maturity. And if $0 < \alpha_1 / (2\alpha_2) < 90$, the volatility shows a U-shaped pattern for days to maturity.

$evtoi_t$ is the expected trading volume relative to open interest, and $uvtoi_t$ is the unexpected trading volume relative to open interest. According to the Akaike information criterion, the AR(17) model is employed to partition the trading volume relative to open interest into expected and unexpected components.² Also, constant, trend, and weekday dummy variables are used in the proposed model as explanatory variables. The fitted values are defined as an expected component and the residual as an unexpected component.

Nelson(1991) proposes the generalized error distribution(GED) to capture fat tail distributions usually observed in financial time series. The probability density function of GED is given by

$$(7) \quad f(x) = \frac{\exp\left[-(|x|/b)^{2/c} / 2\right]}{b(2^{c/2+1})\Gamma(1+c/2)}$$

where b is a scale parameter and c is a shape parameter. $\Gamma(\bullet)$ is the gamma function, and c is a positive parameter that governs the tail behavior of the error distribution. b and c are estimated as part of the MLE procedure.

² The main results obtained in this study are robust with respect to the ARMA specification concerning the trading volume relative to open interest. As is shown in Section 4, the ratio of trading volume to open interest is stationary.

Under GED, we estimate Eqs. (5) and (6) jointly using maximum likelihood estimation. Furthermore, the Broyden-Fletcher-Goldfarb-Shanno algorithm is used as a numerical optimization tool in this study.

RESULTS

We present the results of testing the unit root and cointegration, and the results of estimating the volatility equation. In addition, we summarize the features of the trading activity in the KOSPI200 futures market and thereby interpret the empirical results.

Table 1. ADF tests for futures prices and returns, and ratio of trading volume to open interest ratio

Variables	When constant is only included	When constant and trend are both included
Futures price	-1.09	-2.71
Futures returns	-29.31	-29.33
Ratio of trading volume to open interest	-6.35	-7.11

Note) At the significance levels of 1%, 5%, and 10%, critical values are -3.43, -2.86, -2.57, respectively when constant is only included, and -3.96, -3.41, -3.12, respectively when both constant and trend are included.

Table 2. Engle-Granger tests for the KOSPI200 Index and futures price

Model	Results
$\ln(f_t)$	1.0003 (4346.41) ***
Engle-Granger test statistics	-43.04 ***

Note) Critical values of the Engle-Granger test statistics are from MacKinnon(1991)'s response surface regressions, and at 1%, 5%, 10% significance level are -3.90, -3.34, -3.05 respectively. . Figures in parenthesis are t-values. (***), (**), and (*) represent significance at the 1%, 5%, 10% significance levels.

Results of Unit Root and Cointegration Tests

First, we test the unit root hypothesis using an augmented Dickey-Fuller(ADF) test wherein constant is only used, or constant and trend are both used. The results are reported in Table 1. The lag length is determined using the Akaike information criterion. As is usual, log of the KOSPI200 futures prices is I(1), and the difference of them is I(0). Also, trading volume relative to open interest is I(0).

Second, we test the cointegration hypothesis for the futures and underlying spot prices. Table 2 shows the results of an Engle-Granger (EG) test. Critical values of EG test statistics are from MacKinnon(1991)'s response surface regressions. The EG test leads to rejection at the 1 percent level of the hypothesis that the futures and underlying spot prices are not cointegrated. Because the cointegration vector is close to (1,-1)', basis can be interpreted as the cointegration errors which are stationary.

Table 3. Estimation of ECM and E-GARCH(1,1) for KOSPI200 futures ontracts

Variables	When variables of trading activity are excluded			When variables of trading activity are included		
Eq. (5)						
constant	0.0018	(4.25)	***	0.0019	(4.60)	***
\hat{v}_t	0.1524	(6.90)	***	0.1523	(5.86)	***
Eq. (6)						
constant	-2.2772	(-11.18)	***	-2.3352	(-10.89)	***
$ \varepsilon_{t-1} /\sqrt{h_{t-1}}$	0.5592	(14.58)	***	0.5433	(13.06)	***
$\log(h_{t-1})$	0.7497	(34.10)	***	0.7458	(33.07)	***
$\varepsilon_{t-1}/\sqrt{h_{t-1}}$	-0.0669	(-2.22)	**	-0.0660	(-2.21)	**
<i>Mon</i>	0.1805	(1.41)		0.1627	(1.31)	
<i>Tue</i>	-0.2685	(-2.19)	**	-0.2778	(-2.28)	**
<i>Thu</i>	0.0631	(0.44)		0.0552	(0.38)	
<i>Fri</i>	0.0906	(0.64)		0.0793	(0.56)	
<i>Sat</i>	0.2059	(1.15)		0.3136	(1.52)	
\hat{v}_t	5.6633	(7.38)	***	5.5877	(6.84)	***
\hat{v}_t^2	6.0598	(3.96)	***	6.5418	(4.08)	***
m_t	-0.0038	(-1.68)	*	-0.0036	(-1.56)	
$(m_t)^2$	$10^{-4} \times$ 0.4739	(1.93)	*	$10^{-4} \times$ 0.3874	(1.53)	
<i>evtoi_t</i>				0.0306	(1.17)	
<i>uvtoi_t</i>				0.2201	(2.96)	***
shape (<i>c</i>)	1.6887	(25.84)	***	1.6872	(25.95)	***
likelihood		6490.0			6496.1	

Note) Figures in parenthesis are t-values. (***), (**), and (*) represent significance at the 1%, 5%, 10% significance levels.

Estimation Results of Volatility Equation

First, Eqs. (5) and (6) are estimated without using the trading volume relative to open interest as an explanatory variable in the volatility equation. As reported in the second column of Table 3, the results are mostly consistent with the literature. In Eq. (5), the estimate of the error correction term is significant and positive. This means that the futures price is not weakly exogenous to the cointegration relation in the context of Johansen (1992).

Next, the volatility equation is estimated, and the main results are described in the following way. The coefficient estimate of $\varepsilon_{t-1}/\sqrt{h_{t-1}}$ is significant and negative. This means the volatility in the futures market displays an asymmetric response to news. The coefficient for the dummy variable for only Tuesday is also significant. In addition, the coefficients for the cointegration errors and their squared values are significant and positive. This indicates that the cointegration relation has both the sign effect and the size effect. The volatility in the futures market could intensify when the futures price deviates from the long-run equilibrium relation.³ Notably, deviations have a larger impact on the volatility when the futures contract is overpriced. The estimate of the shape parameter (c) is about 1.69. This implies the tails of the distribution are thicker than a normal distribution.

Of particular importance is the finding that the coefficient of m_t is negative and that of $(m_t)^2$ positive. The point estimate of m_t is -0.0038, while that of $(m_t)^2 \cdot 10^{-4} \times$ is 0.4739. These results support the quadratic maturity effect of $\alpha_2 [m_t + \alpha_1 / (2\alpha_2)]^2$. The

³ These results corroborate the long-run hypothesis of Zhong et al.(2004).

KOSPI200 futures market is highly volatile immediately after the replacement of the nearest contract at the time of about 90 days left to expiration. Over time, however, volatility decreases. The estimated value of $\alpha_1/(2\alpha_2)$ is about -40.5. Thus, the volatility reaches its minimum when 40.5 days are left to maturity, and afterwards, it moves up. Once again, the KOSPI200 futures market becomes highly volatile immediately prior to the replacement of the nearest contract. As far as we know, this is the first-ever finding on the U-shaped maturity structure of volatility.

Given that volatility is high just prior to maturity, the result of this study supports the Samuelson hypothesis. However, it is a puzzle that goes beyond explanation: Why is volatility high immediately after the nearest contract reaches maturity? In figuring out this puzzle, trading activity is introduced in the volatility equation. Eqs. (5) and (6) are estimated by using explanatory variables such as expected VTOI and unexpected VTOI, days to expiration, and their squared values. The results are reported in the third column of Table 3.

Coefficient estimates for other explanatory variables are not qualitatively altered by inclusion of expected and unexpected VTOI, with the exception of m_t and $(m_t)^2$. The coefficients of m_t and $(m_t)^2$ are not significant, whereas the coefficient of unexpected VTOI is significant and positive. The significance of unexpected VTOI is also confirmed by the likelihood ratio test statistics computed as twice the difference of the two log-likelihood values in Table 3. The numbers calculated show that the chi-square test statistics with two degrees of freedom equals 12.2, and it is highly significant. Such results suggest that an unexpected increase in the trading volume relative to open interest, or an unexpected decrease in the open interest relative to trading volume has positive effects on volatility. This follows

the results obtained by Bessembinder and Seguin(1993): The more unexpected trading volume and the less unexpected open interest, the more volatile the futures market becomes.

As suggested by Bessembinder and Seguin(1993), unexpected trading volume and unexpected open interest, instead of unexpected VTOI, can be arguably included as explanatory variables. Of course, results not reported here suggest that unexpected trading volume and unexpected open interest are significant. In the equation, however, the coefficients of m_t and $(m_t)^2$ are significant. In this context, we suggest that unexpected VTOI is more appropriate for explaining the U-shaped maturity structure of volatility, in light of our empirical findings (See the next subsection) on the features of the trading activity observed in the KOSPI200 futures market.

We suggest that VTOI is more useful in describing market depth in the futures market. Open interest is a variable that is dependent on the contract life cycle. This is in contrast to the number of shares outstanding in the stock market. VTOI, a relative measure, can represent dependence on the contract life cycle which trading volume and/or open interest themselves cannot. We expect much research into VTOI will be conducted.

In a word, the KOSPI200 futures market has a U-shaped volatility pattern that can be explained by the unexpected VTOI. From now on, we deal with the features of the trading activity dependent on the contract life cycle in the KOSPI200 futures market.

Features of trading activity in the KOSPI200 futures market

Periodically, the old nearest contract expires, and the next-to-nearest contract becomes the new nearest. In the KOSPI200 futures market, the new nearest contract replaces the old nearest

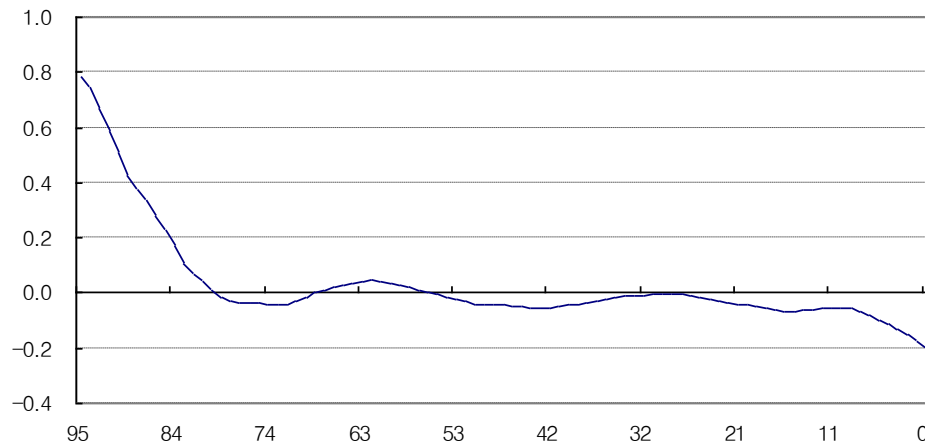
one at an interval of 90 days. As shown in Fig.1 (a) and (b), the trading volume and open interest are not large during the period when the nearest contract is replaced by the next-to-nearest contract. Notably, open interest is small during that period. That's because in the KOSPI200 futures market, trading activity is heavily concentrated on the nearest contract; trading activity in the next-to-nearest contract is relatively thin before the next-to-nearest contract becomes the nearest contract.

Therefore, as shown in Fig.1 (c), after the replacement of the nearest contract, the trading volume relative to open interest begins to increase dramatically due to the decrease in open interest rather than to the increase in trading volume. This suggests that there is temporary market thinness during that period. Of more importance is the fact that there definitely is a huge increase in the unexpected trading volume relative to the open interest, as shown in Fig.2.

Fig.2 shows the time-to-maturity pattern of unexpected VTOI, which is the result of Nadaraya-Watson kernel estimation. We use Epanechnikov kernel of which the bandwidth is $0.79 \times IQR / N^{1/5}$, where IQR is the interquartile range (75 percentile-25 percentile) of days to expiration and N is number of data points. Just after the replacement of the nearest contract, the unexpected VTOI is extremely high.

During this period, the unexpected VTOI ranges from 0.5 to 0.8. Compared with an average VTOI of 2, this unexpected VTOI is relatively high. These results indicate that an increase in unexpected VTOI leads to the high volatility occurring immediately after the nearest contract is replaced by the next-to-nearest contract.

Fig. 2. . The time-to-maturity pattern of the ratio of unexpected trading volume to open interest



Note) The above graph is taken from the Nadaraya-Watson kernel estimation using Epanechnikov kernel. The bandwidth is $0.79 \times IQR / N^{1/5}$, where IQR is the interquartile range (75 percentile-25 percentile) of days to expiration, and N is the number of data points.

In the KOSPI200 futures market, this phenomenon is fundamentally the result of an intense concentration of trading activity on the nearest contracts. Thus, the old nearest contract cannot be replaced by the new one smoothly because of the low levels of open interest in the new nearest contract. Just after the replacement of the nearest contract, the KOSPI200 futures market tends to experience a jump or a discontinuity in trading activity. It is interpreted as temporary market thinness, the cause for an increase in volatility.

CONCLUSIONS

This paper analyzes the effects of trading activities on the maturity structure of volatility in the KOSPI200 futures market. We estimate a variant of the E-GARCH(1,1) model of futures returns. The empirical results confirm the leverage effect and the weekday effect. They also substantiate the view that error correction terms have effects on volatility, which creates the sign effect as well as the size effect. Most importantly, the U-shaped maturity structure of volatility is observed. This means that the KOSPI200 futures market tends to be volatile right before and right after the nearest contract expires. In this respect, our observations are in contrast to those in the existing literature.

The high volatility observed right before the expiry can be explained within the framework of the Samuelson hypothesis, but the high volatility found right after the expiry is a mystery that is beyond explanation. In order to tackle the puzzling phenomenon, we estimate the volatility equation by using expected and unexpected trading volume relative to open interest as explanatory variables. The results show that the coefficient of unexpected trading volume relative to open interest is only significant and positive. On the contrary, the coefficients of days to expiration and their squared values are not significant. This leads us to conclude that the U-shaped maturity structure of volatility reflects the trading activity around the expiration date of the nearest contract. Volatility tends to be higher just after the expiry because of high unexpected trading volume relative to open interest.

Notably, the trading activity in the KOSPI200 futures market is heavily concentrated on the nearest contract. This is indicative small open interest in the next-to-nearest contract. The open interest in the next-to-nearest contract is too small so that

the next-to-nearest contract cannot replace the nearest one immediately prior to the replacement of the nearest contract. In addition, even after the new nearest contract has just replaced the old nearest one, small open interest in the new nearest contract do not guarantee getting back to normal levels of market depth; it takes much time to achieve a sufficient level of open interest. This, in turn, suggests that there has been a temporary market thinness right before and right after the nearest contract is replaced by the next-nearest contract. As is well-known, low market depth tends to increase volatility. The same goes for the volatility in the KOSPI200 futures market which tends to increase right before and right after the replacement of the nearest contract with the next-nearest one. The observed U-shaped maturity structure of the KOSPI200 futures returns is attributable mainly to the temporary market thinness before and right after the nearest contract expires.

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Work Pressure and Social Skills An Analysis Based on the Fourfold Typology of Emotional Labor

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ABSTRACT

In the past decades, most studies on emotional labor have used the traditional framework developed by Hochschild, relating to deep acting and surface acting. Recently, the Bolton's fourfold typology has attempted to broaden this perspective by showing that emotional labor may not only bring negative consequences. Emotional labor may also bear positive aspects for the workers when it allows them to mobilize resources in order to do their job. Using the new framework of emotional labor, this paper aims to understand how the CSRs of a call center can apply different strategies of action in their work that are related to the four

aspects of emotional labor (pecuniary, prescriptive, presentational and philanthropic). Results show that emotional labor is not always a constraint. It can also bring up the capacity of the workers to mobilize some of their social skills in order to give a sense to their work.

Keywords: Fourfold typology of emotional labor, call centers, work pressure, social skills, strategies of action

INTRODUCTION

Call centers have considerably developed in many countries for the two last decades. In Canada, the revenues of these organizations have increased from 424 millions to 2.76 billion Canadian dollars between 1998 and 2006 (Vincent and McKeown, 2008). Moreover, the employment of this industry has grown from 146,000 to 650,000 jobs between 1995 and 2005 (Contact Centre Canada, 2006), which represents about 3% of the total workforce in this Canada (Batt, Holman and Holtgrewe, 2009). Elsewhere in the world, according to the data compiled by Batt, Holman and Holtgrewe (2009), approximately 4 millions of United States' and 742,000 of the UK's population worked in call centers in 2005. The number of jobs in this sector also greatly increased in emerging economies because of significant development of their information technology sector. As a matter of fact, D'Cruz and Noronha (2008) indicate that jobs in this sector increased from 107,000 to about 550,000 in India between 2001 and 2007.

Since the main issue in call center is to minimize operating costs while improving customer service, the scientific literature on labor has mainly highlighted the negative consequences of electronic surveillance on the CSRs. On one hand, the stream of

structuralism underlines the highly regimented character of work in this sector. According to Fernie and Metcalf (1998), call centers look like the new sweatshops where employees are largely dominated and exploited by hierarchical managerial control. Although Taylor and Bain (1999) reject such an extent, they insist on the idea that the work in call centers is widely based on the Taylor's division of work. Moreover, Bain *et al.* (2002) also point out that the managers in this sector look for an increasingly formalized customer service quality control. This generates additional pressure on CSRs since it constantly restrains their creativity when interacting with customers. Thus, call quality practices show that when the CSRs are online, their behaviour is devoted to match the hierarchical expectations as correctly as possible (Taylor *et al.*, 2002). Even when the CSRs are allowed some creativity, their actions still fit within the managerial expectations since their behaviours are built from monitoring tools, developed and applied by the managers (Winiecki, 2007). Hence, when some multinational companies relocated their call centers, for instance in India, the CSRs' work standardization took proportions that had been unreached until now, demanding employees to adopt an American or a British accent and must use occidental pseudonyms (Poster, 2007; Mirchandani, 2005; Taylor and Bain, 2005). In short, studies within the structuralist stream of social domination showed that the work of CSRs in call centers is strongly restrictive. The CSRs' space of autonomy is thin and they remain under constant managerial control, which generates negative consequences for them.

On the other hand, the stream of duality (Frenkel *et al.*, 1999; Korczynski, 2002; Korczynski *et al.*, 2000) attempts to reconcile structure and action notions when suggesting that work in call centers is built on two contradictory principles: the standardization of the production process and the customer

orientation. The first principle is based on the mass production model. Its fundamental objective is to serve as many customers as possible, at the lowest cost. In such conditions, managers control the production process with the help of efficient quantitative standards in order to limit the duration of the calls and to enhance the service level. The second principle of customer orientation is based on the post-fordism model, relating the call center performance to the customer satisfaction. Its main objective consists of securing the customers' loyalty to the firm by offering a personalized service and putting emphasis on the quality of service.

Both these analytical streams highlighted that CSRs can experience high stress levels, and could show clear signs of emotional exhaustion as a result (Deery, Iverson and Walsh, 2002). In that sense, many studies indicated that the CSRs could apply some form of resistance in order to reduce the negative impacts of their work (Bain and Taylor, 2000; Barnes, 2007; Schalk and Van Rijkevorsel, 2007; Taylor *et al.*, 2003). Although some studies have referred to social skills and emotional labor to understand how the CSRs can cope with high pressure levels (Belt, Richardson and Webster, 2002; Jenkins, Delbridge and Roberts, 2010; Mulholland, 2002), few studies have tried to understand how the CSRs develop and apply social skills and emotional labor tools in order to not only survive but also give meaning to their work. Consequently, this understanding becomes the purpose of this research while looking at the process by which CSRs use different skills and develop some strategies of action in order to be more comfortable in their job. Using the fourfold typology of emotional labor of Bolton (2005), this paper should help call center managers in identifying the main elements of the CSRs' work experience which they could build on in order to make this

experience more satisfying and in turn, possibly improve the overall performance of the organization.

CONCEPTUAL FRAMEWORK

Emotional Labor

The emotional labor concept was originally introduced by Goffman (1968), and later developed by Hochschild (1983). This concept refers to the fact that workers in the service sector suppress or change their feelings when they interact with the customers. According to this concept, the workers are “deep acting” when they change their feelings during the service relationship in order to meet organizational and customer expectations adequately. According to Grandey (2003:87), the deep acting workers are ‘faking in good faith’ because they inhibit their own emotions in order to demonstrate, but also feel empathy for the customer. In the contrary, workers are “surface acting” when they modify the expression of their emotions by pretending to be empathetic towards the client. They seek to demonstrate an appearance of empathy without really trying to feel it. In such circumstances, the workers are ‘faking in bad faith’ (Grandey, 2003: 87).

Over the years, the emotional labor concept has attracted the attention of many researchers without changing the analytical perspective already defined by Hochschild (Lewis, 2005). In the call center literature, for instance, Rose and Wright (2005) as well as Deery *et al.* (2002) have attempted to understand the emotional labor impact on the CSRs in terms of work dissatisfaction especially. Using a pecuniary perspective, Callaghan and Thompson (2002) and Mulholland (2002) stressed that the CSRs managed emotional labor with the adoption of behaviours that were mostly related to surface acting. Korczynski (2003) also

demonstrated that workers developed collective survival strategies in order to cope with difficult emotional situations at work. Finally, in a study where the CSRs had to be emotionally detached from their customers, Russell (2009) raised the possibility that the CSRs behaviours are more related to the deep-acting dimension than previous studies demonstrated.

More recently, some studies have attempted to broaden this perspective by showing that emotional labor may have consequences that were not always negative (Asforth and Humphrey, 1993; Callaghan and Thompson, 2002). Bolton (2009; 2005; 2000) and Boyd (2003) pointed out that the Hochschild perspective focused on the pecuniary aspect of emotional labor essentially. She had neglected the fact that actors could also manage their emotions at work, within their narrow spaces of autonomy. Emotions, expressed or camouflaged, by actors in their work can not only be an extension of managerial commitment brought on to them, but can also correspond to the actors' capacity to mobilize some of their social skills in order to give a sense to their work. As a result, Bolton developed a fourfold typology of emotional labor that highlighted various skills required by employees to manage emotions. First, the pecuniary and the prescriptive types relate to the employees' ability to recognize organizational requests. In line with the Hochschild perspective, these types emphasize that employees manage their emotions according to the management's expectations, either to save their jobs (pecuniary typology), or to positively respond to corporate obligations in a truly sincere or utilitarian perspective (prescriptive typology). Then, the two other types relate to presentational and philanthropic emotional management. They represent spaces for the human beings and thus describe emotional work as being based on social relations. The philanthropic type implies that a service provider gives the

customer extra care. This care is not intended to follow organizational rules, but rather to provide great satisfaction in the act of doing so. The presentational type implies that the service provider uses unmanaged spaces outside of work in order to deal with emotionally stressful work situations. For example, the CSR may find some form of comfort from his colleagues, may use humour during his breaks, may make fun of the boss' decisions or of the customers' behaviours, etc. According to Bolton (2005), these types show that an actor can be considered an effective emotional manager at work for he is able to develop skills to interact effectively with others, depending on the situation. In such circumstances, it appears more than relevant to apply the Bolton's typology in order to understand how CSRs use their skills in the service relationship in order to cope with their emotions and to give meaning to their work.

Social Skills

Generally, the concept of skills refers to knowledge, know-how, attitudes or behaviours that are possessed by an individual in order to perform in his work (Bouteiller, 2009). In terms of knowledge, the CSRs use a set of contextual knowledge-based material related to the interpretation of various informations, such as problem solving procedures or organizational policies. In terms of know-how, the CSRs must possess a set of technical skills related to the use of a computer. The dimension related to attitudes and behaviours, which is considered to be the most important aspect in call centers (Russell, 2009; Korczynski, 2003, Callaghan and Thompson, 2002; Belt *et al.*, 2002), relates to the fact that the CSRs must possess a set of social and communicational skills inherent to their personality, and must have an ability to properly manage their emotions during the service relationship. According to Ferris, Witt and Hochwarter

(2001: 1076), “social skill reflects interpersonal perceptiveness and the capacity to adjust one’s behaviour to different situational demands and to effectively influence and control the response of others”. Thus, any social competence is closely associated with a social capacity to properly interpret behaviours in order to create a socially dynamic and constructive relationship with another person. In a call center context, these social skills are often considered to be critical since they govern CSRs performance in difficult situations (D’Cruz and Noroha, 2008). In fact, CSRs continuously have to position themselves in compromise between the contradicting expectations of customers and management, while remaining calm, empathetic and insightful, and not to say, dealing with the emotional pressure forced upon them (Ashforth and Humphrey, 1993). They must have the ability to handle difficult situations and bring forward solutions that satisfy expectations coming from the market, the organization, and their own values. In such circumstances, the CSRs use their emotional intelligence (D’Cruz and Noroha, 2008) because they show “the ability to monitor one’s own and other’s feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions” (Salovey and Mayer, 1990: 189). This research thus focuses on such social skills because it can highlight that the CSRs are able to use their work experience and their competences in order to control the service relationship, to preserve their dignity and to play an active role in their job.

Role Expectations and Role Distance

These approaches in defining and analyzing emotional labor and social skills involve the taking into consideration of two more concepts: role expectations and role distance. According to the interactionist approach, the concept of role is defined as ‘(...) all the requirements (standards, expectations, responsibilities) that

come from the social structure and that are associated with a given position in this structure' (De Montmollin, 1977: 184). In other words, the organization expects that the CSRs can satisfy the customer while respecting the quantitative efficiency requirements of the service production process. However, it has to be noted that CSRs try to answer expectations of customers who do not mind the requirements of the production process of the organization. Furthermore, the CSRs also have their own expectations about their work; for example, expecting to have adequate resources to solve customer issues (Korczynski *et al.*, 2000), or having the capacity to negotiate with clients, etc. While their own expectations or those of the customers may conflict with those of the organization, the CSRs face potential role conflict situations (Troyer *et al.*, 2000), which correspond to the work pressure they experience in their work.

Moreover, Callaghan and Thompson (2002) point out that the CSRs must keep a distance between them and the customer. In fact, to preserve their dignity, the CSRs must apply role distance principles: the idea is that an individual is "capable of adopting an intermediate position between the identification and opposition to the institution and be ready at the slightest pressure, to react by changing its attitude in one way or another to regain its equilibrium" (Goffman, 1968: 373). According to Goffman, the organizational or institutional requirements tend to impose a social role on the individual. He can then decide whether to reject or to accept this role. However, as Goffman noted (1968: 231), "the individual stands mostly apart from these extreme positions". Often, the individual reduces his involvement while seeking to ensure that it is not visible. In the informal dimension, the individual applies principles of integrated secondary adaptation (Goffman, 1968: 255) in fulfilling his major obligations while being

somewhat detached in order to preserve his 'ontological security' (Giddens, 1987).

The Objective of the Research

Based on the study's main concepts, the literature review brought to suggest that the workers in call centers are continuously exposed to a double work pressure from the expectations of both the organization and the customers. Under such conditions, various reactions from consentment to resignation, through resistance and constraints appropriation, remain possible.

The main intent of this paper is to examine how the CSRs respond to the pressure through the emotional labor typology defined by Bolton (2005). More precisely, the research tries to understand the reasons behind their behaviours at work in the light of their situational interpretations. The idea is to overcome the traditional analytical framework on employee resistance in this sector. Secondly, the study wishes to show that emotional labor may correspond to the capacity of the workers to mobilize some resources in order to be more comfortable in their job.

The general proposition of this research may be read as the following: the CSRs are able to use social skills and their emotional intelligence in order to respond adequately to the emotional work pressure, building a system of actions that follows Bolton's fourfold typology. In other words, this study aims to describe how the CSRs are engaged in the emotional labor process according to the philanthropic, prescriptive, presentational or pecuniary perspectives. In consequence, it would be possible to better understand that some social skills may help CSRs to not only survive in this kind of job, but also socially affirm themselves and give meaning to their work. Finally, call center managers could then better grasp elements of the CSRs' work experience

that would contribute to the rehabilitation of the CSR's subjectivity, and help develop the CSRs' will to remain in this kind of job.

METHODOLOGICAL ASPECTS OF THE STUDY

The Exploratory Case Study and the Data Collection Instruments

The data for this study were collected in a Canadian call center, specialized in communication, and located in Montreal⁴. Given the research objectives listed above, the methodological strategy consisted of entering the world of the CSRs, through an explorative case study. Indeed, an in-depth study was necessary for understanding the process by which the CSRs can deal with the emotional pressure, give a sense to their work, and play an active role in the customer relationship. In fact, while attempting to identify the CSRs' social representations⁵ of their work experience, this research sought to understand the basic elements that helped them build a meaningful action system in the informal dimension of the organization. As a result, this study used a constructivist approach, and used a qualitative and inductive case study strategy to reach an understanding of the CSRs' action system.

⁴ The fictive name CanCom was used to protect the confidentiality of the company.

⁵ According to Abric (1996: 11), social representations are an « organized and hierarchical set of judgments, attitudes and informations that a particular social group develops around an object ». Social representation corresponds to interpretative framework in which a social actor will use to interpret the world in which it operates. This interpretation is socially constructed as it is based on the interests, values, norms and beliefs espoused by the social actor who is inserted in a particular social group.

According to Yin (2003:13), “a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”. The case study seeks to understand a particular phenomenon by placing it in its context. It seeks to understand the process to better explain a phenomenon. It then focuses on the phenomena or situational details and its theory extends rather than testing theoretical hypothesis (Burawoy, 1998). In this study, two main instruments of research were used: semi-directed and recorded interviews, and non-participative direct observation sessions.

Semi-Structured Interviews

Semi-directed interviews were chosen for their flexibility in allowing a direct access to the CSRs’ work experience and their system of social representations. This approach involved the development of a flexible structure of interviews based on relevant themes and opened questions. The objective was to highlight the foundations of the CSRs’ attitudes and behaviours, and the pressures they experienced.

Two series of 64 semi-directed and recorded interviews were conducted in the call center, for durations ranging from 45 to 50 minutes each. The first series of interviews took place with the vice-president, 3 directors, 3 trainers, 11 team managers and 46 CSRs. The managers’ interviews were based on the concept of call center performance, while the interviews with the CSRs reviewed the concept of performance but also the various elements of their work such as coaching, teamwork, skills and technology. Globally, these interviews were designed to extract the perspective of the CSRs on specific concepts and to compare their perspectives to that of the managers.

Table 1. Population in the Call Center and Research Participants

	Population in the call center	Phase 1 (interviews)	Phase 2 (interviews)
Number of agents	438	46	48
Men (%)	43,2	37,0	43,7
Women (%)	56,8	63,0	56,3
Under 25 years old (%)	32,6	21,7	29,2
25 to 34 years old (%)	48,4	45,7	52,1
35 to 44 years old (%)	15,3	23,9	18,7
45 years old and more (%)	3,7	8,7	0
Seniority (months)	29,5	32,4	32,7
New agents (%)	31,6	n.a.	12,5
Fully qualified agents (%)	42,5	n.a.	62,5
Advanced agents (%)	25,9	n.a.	25,0

The second series of interviews was conducted with 1 director, 15 team managers, and 48 CSRs. The discussions sought to extract the stakes surrounding a problem that was identified in the first phase, and then relating them to employees' commitment, and the emotional pressure experienced by the CSRs. In this regard, the interviews were structured and based on various themes such as the organizational commitment of the CSRs, the emotional aspects of their work, the constraints and the interesting aspects of their job, the social relations between the organizational actors, the changing nature of their employment relationship, etc. Overall, these interviews identified the

principles underlying the CSRs' logic of action, and hence, helped to discover the meaning they assigned to their work even if many constraints pressed upon them.

Non-Participative Direct Observations Sessions

The second research instrument consisted of non-participative direct observation sessions at the call center. Ten observation sessions were carried out over a period of approximately 30 hours during the second series of data collection. The objective of this approach was primarily to anchor our understanding of the CSRs' work experience and to visually identify the constraints and interesting aspects of their work. Such sessions allowed us to observe how the CSRs used their computer to shape the service relationship, how they interacted with the customers, and how they dealt with the electronic surveillance. In short, this approach allowed us to "feel" the atmosphere of the call center, to view issues of the everyday CSRs' work experience, and to literally « touch » their world.

The Sampling and Data Analysis

The data collection proceeded from two phases of sampling. The first phase aimed for a better understanding of the call center operations. We opted for an ethnographic sampling (Laperrière, 1997) that gathered as much information as possible on the subject and that allowed for a better understanding of the CSRs' role in this context. After each day of data collection, preliminary analyses were completed, as suggested by the grounded theory approach. As a result, data were codified on the basis of the thematic concepts inserted into the canvas of interviews. Data were also codified on the basis of these themes' categorization once they were grouped in larger sets. Some relationships of convergence and divergence were established between the

categories, which helped formulating hypothetical proposals or sub-issues that were used on the following day for interviews. In short, all of the interviews and daily preliminary analysis helped identifying some problems relating to the employees' commitment and to the emotional pressure they experienced. Then, we conducted a second phase of research to identify the ins and outs of the issue.

During the second phase, the sampling for the interviews was based on the grounded theory principles for we sought a theoretical understanding of the problem rather than a statistical representativeness of the population (Hlady Rispal, 2002). Therefore, the information was collected from selected topics that had the potential to build or improve a theory (Guillemette and Luckerhoff, 2009). This form of sampling took place inside the research process and involved a continuous interaction between data collection and analysis (Guillemette, 2006; Paillé, 1994). As the interviews progressed, the choice of interviewees gradually focused on new agents and qualified ones since their daily work appeared particularly affected by the work pressure and thus, emotional labor. Once again, data analyses were completed every day to refine the theoretical sampling. Moreover, such analyses contributed to the making of new questions that were asked in the following interviews. In order to guide these daily analyses along the theoretical sensitivity principles (Glaser and Strauss, 1967), and in order to give a sense to the collected data, the latter were coded using the three steps recommended in the grounded theory approach.

First, an open coding step shaped the major themes related to the interviews content. These concepts were then grouped into categories. This allowed to compare some incidents or issues among themselves, and to provide the categories with properties or relevant dimensions. For example, "the possibility to negotiate

with the client" or "the possibility to overturn a tense situation into a more favourable one" were grouped in the conceptual category called "rewarding aspects of the work of the CSRs". In addition, themes and conceptual categories were given properties and dimensions which level of intensity referred the CSRs' work experience. For example, "the greater or lesser willingness to negotiate with the client" could be crossed with socio-demographic characteristics of the CSRs such as the age, seniority, skills level, etc. It then became possible to make preliminary comparisons between the views of these CSRs about selected themes and the conceptual categories mentioned above.

Second, an axial coding step used these data comparisons to determine some relations between the categories. Such relations were based on the conditions of occurrence of the observed phenomenon, on the variation modalities of the phenomenon, and on the consequences of the phenomenon. For example, the analysis of the category called "to feel reward from my work" revealed that its conditions of occurrence were closely associated with the customer behaviour during the calls: calm customers, customers showing good faith, or conciliating ones. Moreover, the variations of this category were modulated by the CSRs' skills in building a zone of compromise between the organizational requirements and the customer expectations. This situation brought major consequences on the CSRs' willingness to become active social actors, actors who were able to positively transform the life of the customers.

The same approach was applied to the analysis of other concepts such as the "emotional pressure", the "dignity", the "organizational commitment", and the "disenchantment of CSRs". This process allowed for the emergence of two central categories named the "role distance" and "the social skills". This third step of selective coding refers to the integration of all the data (concepts

and categories) into a central category taking the form of a theoretical model. Such a model explains how the concepts are globally structured in the observed phenomenon, which will be further explained in the following section on the study results.

It is also important to note that the data from the interviews were completed with information obtained during the sessions of direct observation. In fact, such information was integrated in the concepts and categories previously described once they were validated by the team managers and the CSRs during subsequent interviews. For example, some incidents or issues being observed during relationships (calls) with the customers could then lead to questions to the team managers and the CSRs. As a whole, this approach allowed for literally touching the world in which the CSRs operate every day. Therefore, it permitted the refinement of the emerging theoretical model that aimed to understand and explain the CSRs' work experience. The next sections present and discuss the main results of the study.

THE EMOTIONAL MANAGEMENT OF THE CSRs

The Context of the CSRs' Work

CanCom, a Canadian company specialized in the field of communications, was established in 1967. The firm has grown everywhere in the country, especially since the appearance and expansion of call centers. Its Montreal-based call center offers wireless phone services and handles nearly 10,000 calls daily, mostly incoming.

CSRs are grouped into teams of 15 to 18 members. There are about thirty teams in the Montreal-based call center. When considering the three types of incoming calls at CanCom, the management considered that there were three qualification levels for the CSRs: 1- the first-level agents (the lowest ranked) were

assigned to activations, 2- the fully qualified agents who dealt with information requests and various customer issues, and 3- the advanced agents who were assigned to client retention. It is important to note that the work of first level and fully qualified agents is rather highly routinized and that the autonomy of these workers is very low. However, in the case of the advanced agents, their autonomy is larger and the management relies on their discretionary judgement to enhance the service level⁶.

The CSRs are continuously on the phone with customers. The pace of their work is regulated by an automated system of call distribution that immediately directs calls on hold to the agent that completed a phone conversation. The CSRs talk into a headset and they use a computer that helps them navigate through client files and that gives them access to the software. A console is integrated into their phone that indicates the call duration, the number of agents available in the call center, the level of service being provided, and the number of calls on hold.

In general, the work of the CSRs is very restrictive. They must respect the average call handling times, the levels of adherence, and the conformity and quality of calls. However, they have the ability to develop some strategies of action in order to manage the work pressure and their emotions at work.

CSRs' Exposed to a Double Pressure

The first-level and the fully qualified agents CSRs seem to be subject to a continuous double pressure in their work. On one side, they have to respect the organizational standards for an efficient

⁶ The level of service is the percentage of calls answered in 20 seconds. For most of the call centers, the objective standard is to answer 80% of calls in 20 seconds. To reach this point, managers aim an average of about 500 seconds per call, which forces agents to act quickly to resolve clients' problems.

production process. On the other side, they have to satisfy the customer expectations relating to a personalized service. Moreover, this pressure is enhanced by the evaluation system of call quality, which records the verbal interactions between the client and the CSR, and the technical interaction between the agent and his computer. It is the quality team who has the ability to judge whether or not the CSR chose the right approach to meet the client's request according to the right problem-solving scenario. The CSRs' space of autonomy is then particularly compressed:

What's constant are the customer expectations, demands, and the customer needs. (...) On the other hand, you have the organization that's there to make money, to work and ensure profitability. (...) So, I would say that we're stuck between the two sides (...). (Interview with a fully qualified CSR, Phase 1, E55)

Such conditions can become exhausting for the CSRs since the limited space for creativity makes them rely on strict organizational standards. This may increase client aggressiveness so that the CSRs have to find ways to protect themselves:

You need to separate yourself from the customer's call while sounding like you take it at heart. It's not that you don't care, but if you give too much of yourself on every call, it gets [hard]. We need to be able to dissociate ourselves from the call while sounding interested. (Interview with a fully qualified CSR, Phase 2, E39)

Thus, the CSRs have to distance themselves from difficult customers. But this distance does not necessarily mean that the

CSRs endorse organizational requirements. They tend to display their ability to use their discretionary judgment in order to interpret the situation and to find a compromise area between the customer expectations and the organizational requirements. In the end, this ability contributes to the protection of their dignity and to their active role as CSRs.

The CSRs' Strategies of Action

With the use of Bolton's typology on emotional management, it is possible to better know how the CSRs may be creative in their work even if their degree of autonomy is particularly low. In fact, the CSRs are skilled agents and they can develop different strategies of action according to the situation they experience in the customer relationships.

The first strategy corresponds to the *prescriptive* type of emotional management. It implies that the CSRs respect the performance norms and the organizationally prescribed feeling rules. Although they may act this way because they endorse these requirements, they more specifically adopt these behaviours to protect themselves when confronted to manipulative or aggressive customers. In other words, they keep a distance from this kind of customers and find refuge in the organization's procedures:

When a client is aggressive due to a problem and you know that according to the policies of the company 'it's too bad, I can make nothing for him, I cannot help him', it's hard for me. It's hard because I must keep a distance with him, I must think that it's not my problem. (Interview with a fully qualified CSR, phase 2, E39)

Like this morning, I had a client and I couldn't send him a kind of phone in his area because there are no antennas. I have to send him another kind of phone. But I can't send him this phone because another woman three months ago (...) sent him the wrong one, which led it to being blocked for a year. Therefore I can't send it to him because he doesn't have the right to get it now, so I can't help him. He was yelling at me, and he had the right to do so, but there is nothing to say. I am trying to be logical with him but in the end, finally, I'm trying to trick him. I'm trying to lose him with numbers and amounts to get him to leave me (...). (Interview with a first level CSR, phase 2, E16)

It has to be noted that the distance game towards the customers seems to be applied by these CSRs within a utilitarian perspective. However, keeping distance from the clients can also be seen as a sincere attitude since the procedures of the company protect the identity of the CSRs:

In the clients' view, I am CanCom, not Geneviève. (...) In the retention department, we are at the bottom of the ladder. We correct broken cases. Often, we are the clients' last resort. (...) Obviously there are some clients that you just cannot help. You have to hang up and cancel their phone line; you don't have a choice. But, you have to detach yourself emotionally to endorse CanCom (...). It's a company that is there to guide you, has resources and is there to motivate its employees. (Interview with an advanced CSR, phase 2, E26)

In sum, most of CSRs take refuge in the organizational rules to protect their subjectivity from an emotional shock that could destabilize their psychological health. The fully qualified CSRs seem to use this strategy in a utilitarian perspective because the procedures of the company can serve their objective. They play with the rules to counterbalance their rather low degree of autonomy. On the other side, the advanced CSRs use this strategy in a sincere way: they do not feel that the organizational rules are in opposition with their interests since the management gives them more autonomy.

The second strategy corresponds to the *pecuniary* type of emotional management. It implies that the CSRs respect the organizational rules in order to keep their job and their salary. Again, this strategy is used when the customers are manipulative or aggressive but some of the CSRs used it because they have an instrumental vision of their job:

(...) I don't always agree with what my employer tells me to do. But, it doesn't change my job and I do it. If I'm payed to work, I'll take care of clients even if I don't want to see the big boss because of something that happened (...). Now, here is my philosophy (...). I do what I'm told, I try to fill all of my requirements, and after that, I get out of here, my day is over and I go home without thinking about it (...). (Interview with a fully qualified CSR, phase 2, E20)

I work for the client to solve his problem. But I work for the company too. I must stick to the procedures because the company must make money. Otherwise, the company will disappear. (Interview with a fully qualified CSR, phase 2, E51)

The CSRs seem to use the pecuniary strategy when they believe that they must respect the procedures in order to save the company or their job, especially when the customers' requests are in radical opposition with the organizational policies. However, the CSRs seem to use the pecuniary strategy also when they feel that some type of customers can abuse them or drain all their energy:

Yes, because if you take it down to the words, people will abuse you and the system. They will know how to search for the little things, you are launched into a conversation that you are unable to settle, and then he hangs up saying eh, eh, eh! I got you! (Interview with a fully qualified CSR, phase 2, E17).

So, if the CSRs consider that they cannot control the call or the behaviour of the customer, they tend to take refuge in the organizational procedures. On one hand, they use their discretionary judgment to save their job or the company. On the other hand, they use their discretionary judgment to protect their dignity and to display that they are not passive agents at the front of the irate customers.

The other strategies correspond to the *philanthropic* and the *presentational* types of emotional management. According to Bolton and Boyd (2003: 303), these strategies emerge from the "unmanaged spaces where 'moments of truth' may occur". These strategies indicate that organizational actors can find autonomy to give meaning to their work even if they are subject to restrictive rules. In fact, if the client is honest and seems to really need help, the CSRs keep a distance from the organization and then let the customer penetrate symbolically into the production process of the

call center. The CSRs use the *philanthropic* strategy in taking the time to serve the clients, sometimes defying organizational efficiency norms, because they receive great satisfaction in giving the customer extra care:

(...) [F]or me, it's the feeling that I helped. (...) [I] love it when suddenly it's over, and they tell me "oh, this is the third time I called and I wasn't getting an answer, now I have an answer". (...) [It's] like my job is done (...) it's very rewarding. (Interview with a fully qualified CSR, Phase 2, E64)

It's about being able, when clients collaborate, to help them and assist them in a good way. (...) I like to help people, it is easy for me to lead people towards something. Most older people "flip out". Because I know what technology means for them, I take the time to explain it. That's what I like. (...) We're supposed to be stressed about time but I take the time that it takes. (Interview with an advanced CSR, phase 2, E28)

In cases where the client is aggressive, the CSRs try to verify if he is open minded so that they can change the tense situation into a more positive one. It is a crucial moment in the customer relationship because the CSRs have the opportunity to transform the dynamics with the client. They must detect the real motives of the client's emotion. If they can do it, they are sometimes able to negotiate with the client or to educate him, which represents the presentational type. These activities, which involve some distance from the organizational standard requirements, prove to be highly

satisfactory for the CSRs. They give the CSRs a sense of pride because they are able to effectively run the customer relationship:

I love negotiating: We need to be able to negotiate with someone who calls and who wants eight phones for 20 dollars. We have to deal. At that time, I have the impression that I can interact with the person. I have the impression that I can make a difference. (Interview with a first level CSR, phase 2, E16)

What I like the most about it is educating the client (...). Why does it scramble? Let me explain to you why it scrambles. It's done like that, and I go further. It usually takes care of the problem too. When you are able to educate the client, he understands (...) he used to call and be angry because it cut out all the time. But now, he understands why the call dropped (...). I like going further, educating and resolving problems. When I finish that type of call, I am super-happy. (Interview with a fully qualified CSR, phase 2, E57)

The *philanthropic* and the *presentational* strategies demonstrate that the CSRs are skilled agents. They can mobilize some of their resources in order to give meaning to their work and to affirm themselves socially, even if their customer relations are restrictive. As mentioned by Bolton and Boyd (2003), organizational actors can be seen as “jugglers and synthesizers” because they can use the constraints to build up some strategies of action which could rehabilitate some pride in their work. The Bolton's typology of emotional labor contributes to extend the Hochschild's vision on the management of emotion. It shows that emotions at work can bear positive aspects in the work experience.

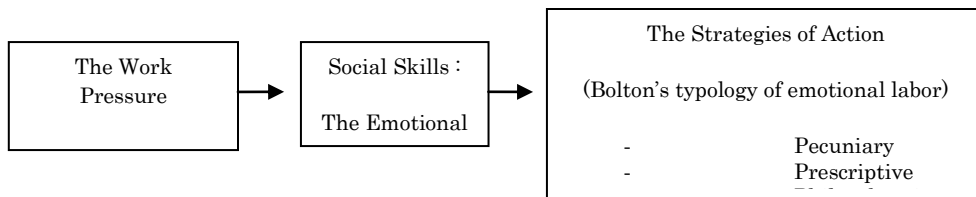
ANALYSIS AND DISCUSSION

Empirical results show that the CSRs may feel trapped in their every day job, especially when considering the situation of the call quality system. The CSRs feel that this performance evaluation method contributes to reduce their creativity and to diminish some satisfying aspects of their work, such as helping, serving, negotiating, educating or demonstrating empathy. In order to rehabilitate their subjectivity and to give meaning to their work, the CSRs try to be emotionally detached from the stressful situation they experience in the customer relations. They tend to preserve their subjective space from an eventual intense emotional shock that could destabilize their psychological health. Also, they try to seize the behaviour fundamentals of the client in order to choose the strategy they will use in the problem solving process. In doing so, the CSRs demonstrate their emotional intelligence because they appraise the clients' emotions: neutral in the case of calm clients, and aggressive in the case of irate clients. CSRs can then improve their decision-making process and manage their own emotions adequately (George, 2000). In sum, they use the emotions to improve the interpretation of the situation they experience so that they can regulate the emotions in the customer relationship.

As illustrated in Figure 1, this study has shown that the CSRs are able to use some social skills and their emotional intelligence to respond adequately to the work pressure. Furthermore, this demonstration has highlighted how the CSRs are engaged in the emotional labor process according to the Bolton's fourfold typology (pecuniary, prescriptive, philanthropic or presentational perspectives). Finally, this paper has contributed in better understanding how some social skills can

help CSRs to not only survive in this kind of job but also socially affirm themselves and give meaning to their work.

Figure 1. Conceptual Model



To understand the CSRs' strategy of action, it is useful to adopt the fourfold typology of workplace emotion defined by Bolton (2005). On one side, CSRs apply the prescriptive or the pecuniary strategies, especially when the clients are manipulative or uncompromising. In such situations, the CSRs tend to keep a distance from the clients and to find refuge in organizational procedures. This protects their dignity and helps them find an active role in the customer relationship. It is important to note that the first-level and the fully qualified CSRs seem to use the organizational requirements in a utilitarian way more often than the advanced agents do. This suggests that they apply a normative framework in which they do not really subscribe yet. They apply the organizational requirements in order to guarantee the survival of the company and, in turn, to save the pecuniary aspect of their job. However, in the case of the advanced CSRs, results suggest that they take refuge within organizational norms in order to save their employment relationship while adhering to these requirements. Thus, they grow closer to the organization in a subjective manner to a point where they sometimes substitute

their identity with the organization. Again, this nuance would impose a widening of Bolton's pecuniary and prescriptive types since a greater proportion of advanced agents experienced emotional labor in its deep acting dimension, while most first-level and fully qualified employees solicited its surface acting dimension.

Table 2. The Fourfold Typology of Emotional Labor in Action

Emotional Labor Strategy	The Meaning of the Strategy
Prescriptive	The CSRs seek to neutralize the pressure from irate customers by finding refuge in the organizational procedures (in an utilitarian or a sincere way).
Pecuniary	The CSRs keep distance from the customers and they find refuge in the production procedures to save their job or the company, and to protect their dignity.
Philanthropic	The CSRs keep distance from organizational procedures and they let the client penetrates in the production process in order to give an extra care.
Presentational	The CSRs keep distance from the organizational procedures and they let the client penetrates in the production process (to negotiate with him, to educate him, etc.).

On the other side, the CSRs apply the philanthropic or the presentational strategy when the clients are felt to be honest or accommodating. The CSRs let them penetrate symbolically into the firm's production process, and tend to challenge the organizational requirements because the satisfaction of helping or educating is greater than the eventual risks related to their performance appraisal. As shown in Table 2, the CSRs adopt the philanthropic strategy when take more time to serve the client, for

example with the elderly (Bolton, 2005). When the CSRs seek to transform a tense situation into a better one through a negotiation phase or by educating the client, their actions go beyond the simple scope of the philanthropic dimension into the presentational one. In fact, the CSRs then deploy all of their skills to both show the customer their full qualification as agents, and all the while be able to defuse a potentially explosive situation. As a result, this kind of behaviour fits rather poorly within the Bolton's presentational type for it refers to ways of dealing with pressure by using action strategies inside of the production process instead of outside, like Bolton specifies. From a theoretical standpoint, it would be relevant to enlarge the presentational type in order to integrate the strategies based on the creativity and the social skills of the CSRs within the production process.

Not surprisingly, the results show that emotional labor can be negative and stressful for representatives. This has also been demonstrated by many studies since Hochschild's (1983) work. However, emotional labor can also bring positive consequences for employees when they can use emotional labor as a tool to develop an action system fitting into the Bolton's (2005) philanthropic and presentational typologies. In fact, emotional labor appears in some situations as something positive when CSRs are skilled agents (Hatchuel, 1995). They are able to adequately analyse the situations they experience and then apply role distance principles. These abilities correspond to the social skills developed throughout their work experience. Such social skills refer to their competences to acutely interpret client behaviour and to deliver an appropriate performance (Ferris, Witt and Hochwarter, 2001).

This interpretative approach highlights the CSRs' ability to establish the parameters of an area with compromise, on the edge of a zone where pressure is contradictory (Ashforth and Humphrey, 1993). The CSRs must develop and use critical skills

that help them survive in this extreme environment (D'Cruz and Noroha, 2008). Under such conditions, the role distance game allows CSRs to keep dignity at work (Hodson, 2001). Indeed, role distance protects their subjectivity, but mainly, this strategy gives them the possibility of being recognized as skilled agents (Sayer, 2007). Their ability to adequately use their discretionary judgment in stressful and emotional situations demonstrates that they possess emotional intelligence. They can regulate their action in order to control the customer relationship, to protect their dignity and to play an active role on the frontline of the organization and the market. Pride in their work can then emerge (Jeantet, 2003). The management of emotions at work exceeds a simple question of coping or resisting since the CSRs use the organizations' normative and contradictory system to make it functional, even if this is done in unauthorized ways (Russel, 2007).

CONCLUSION

This research aimed to better understanding how the CSRs develop and apply social skills and emotional labor tools in order to cope with pressure but also give meaning to their work. In reaching this objective, this study mainly contributed to understand the process by which the CSRs are able to manage adequately the emotions in their work, beyond deep or surface acting. Based on the Bolton's fourfold typology of emotional management, this study has shown that emotional labor can bring positive consequences in the work experience of CSRs.

Results suggest that CSRs' social skills help them reappropriate their work. According to the fourfold typology of emotional labor, they are able to mobilize some resources in order to manage emotions at work, either it being in the prescriptive,

the pecuniary, the philanthropic or the presentational perspectives. Thereof, their behaviour is not a simple question of resistance. Indeed, the CSRs demonstrate they are skilled agents in their work, using the constraints pressed upon them in order to play an active role in the service relationship.

This case study is limited in terms of the generalization of empirical results because it highlights the work experience in only one workplace. However, this study has helped to expand knowledge analytically since the data collection on a call center and its subsequent analysis have brought a careful and rich observation of the ways CSRs shape their field of action. Based on the pecuniary, prescriptive, philanthropic and presentational typology, the results show that CSRs can play an active role in the customer relationship, even when they are placed under pressure, or facing contradicting requests from the organization and the customer. The emotional intelligence of the CSRs appears to be an important tool that helps them give a sense to their work. Indeed, they are able to adequately interpret the situation they experience and to build a strategy of action that regulates the emotions during the interaction with the customer. These findings highlight the ingenuity of the CSRs, which suggests that call centers managers should take into account the creativity of their employees and their will of social affirmation to manage emotional labor. The CSRs can create their own space of autonomy in between the expectations of the organization and those of the customers, in ways that could contribute to the overall performance of the organization.

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The Efficacy of Applying the Quality Measure of Health Service on the External Patient Satisfaction

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ABSTRACT

The research aims at finding the relationship between the variables of the quality of service measure on external client (the patient) satisfaction which are quality of health service, the quality of health care, the quality of the services and measuring the variables of the quality of service which are:reliable, quick response, safety and empathy and facilitations and satisfaction supportive an external client (the patient). And also aims at determining the differences between different curative sections regarding the external client (the patient) satisfaction. The researcher conducted a pilot study with 50 individuals of service recipients which showed shortage in the quality of service provided in health insurance hospitals and a gap between the expectations of external client (the patient) and the received service. The research community is the service recipients, (patients), of the different curative sections, in the hospitals . The sample size is(400).The results of the research show that there is an effect of the quality service dimensions on external client (the patient) satisfaction, and there are significant relationships

between the quality of services dimensions and the variables of external client (the patient) satisfaction, the study recommends giving proper attention to the efficiency of health service in the hospitals under this study.

Keywords: quality of service, Health Service quality Measure, external client (the patient) satisfaction.

INTRODUCTION

That health and education form the basis of the Renaissance and the civilization of any nation, Thus interest in satisfaction of patients for services hospitals health insurance in Egypt try to focus on the negative aspects of health insurance, there is nobody that have satisfaction of health insurance services, and though it is the first one who took into consideration the quality of performance of hospital services, and it made in the eighties preparation of evidence in the fields in order to improve the performance of doctors and to improve the information system for the purposes of educational and economic purposes but it did not apply the integrated program in this field.

And in 1993 the Ministry of health did a project to improve the services in hospitals through the preparation of evidence of work and standard procedures in the fields of hospital health insurance. And there are many challenges facing quality improvement programs in hospitals health insurance in Egypt in the light of cultures administrative inherited across generations. In year 2008/2009 the health insurance organization did monitor and provide health care in schools to reduce diseases spread and create a variable impression to parents of students in schools. The organization has developed over the past three years its services

and if development still does not meet the expectations of patients then it requires the researcher doing research.

The current study focuses on the effectiveness of the application of a measure of the quality of service to external customer satisfaction (patients), by studying variables measure the quality of service on customer satisfaction (Patients) for the quality of the health service with the medical team, and the quality of health care with the nursing staff, and the quality of services and facilities (Parasurnan,1988): Reliability, speed of response, safety, empathy with customers, supporting facilities.

THE ORETICAL FRAME AND HYPOTHESES: QUALITY SERVICE CONCEPT

The concept of the service quality factors was presented as follows' (Johnson et .al, (2005): organizing the idea of service, which is the way implemented through work suggestions. The service experience: the way by which a client receives the offered services and interacts with it and facilitations associated with it. The service outcome: the result that the client (patient) benefits of the service offered. The service operation: The way and the style by which the service is presented. Value of service: the benefit achieved from the clients realization of the importance of the against the cost of service. Berry, L.et. al, (1991) defined the concept of service quality from the client's point of view not that of the management offering the service. The quality of health service means the level of adherence to a certain standards acknowledged for best practices and the anticipated outcomes for specific services. Another definition of the quality of health service is meeting the requirements and the desires of the patients, and committing to their affairs through continuous use

search and choosing the best means to meet their needs the concept of health service quality is to produce a good product right from the start and the commitment from the management .

Measures of the Quality of Service

It is the measures used by clients who receive the service to determine its quality as mentioned by (Parasuroman, et al, 1985).

Reliability: The ability of the service provider to provide it in a reliable way and highly accurate, and the availability of the service which is determined by the ability of the service provider to answer the following questions: Is the service available at the time it is required? Is the service available where the client requires it? How long will the client wait to receive the service? Is it easy to reach the place where the service is provided?

Safety: this term is used as an indicator to express the degree of trust and sense of safety towards the service provided.

Credibility: The extent to which the service provider is trusted.

Empathy: The degree to which the service provider understands the client's needs and shows empathy towards him.

Responsiveness: measures the ability, the desire .And the willingness of the service provider to be always in the service of clients.

Philip Kotler says that there are five dimensions that patients adopt to evaluate health service They are: Reliability which means trust in the safety of the practice. Responsiveness which mean quickness in providing the health service as

requested. Assurance which means what the staff acquire of knowledge and ability to provide the health service. Empathy which means the care and attention appropriate to the patient. Tangibles which mean service and assistance provided to the patient. Robbins, et.al, (2009) presented the dimensions of service quality as follows: fixed time to provide the service at a specific time. Service should be provided in the best and proper way. service should be provided always in the best and proper way by the best qualified staff. Service should be provided in a way to convince the patient and meet his wishes. service should be integrated to meet the patient's desire.

Hence the concept of service may be defined as follows

Intangible activities and relatively lapsing quickly resulting from an interaction process to meet clients expectations and satisfaction. All definitions emphasize that the quality of service is determined by the client's realization of the service quality and its consistency with his expectations and the ideal usage of the sources of the organizations providing the service. Service may appear clearer when dealing with its characteristics as follows: intangible which means that the service cannot be evaluated before its usage or explanation. health service does not exist without the prior existence of the patient and cannot be separated from the service provider. ownership which means that the ownership of the service is not transferred when bought where the beneficiary use it and does not own it. There is no standard form producing the service.

From the above mentioned we find that the health service is characterized by the following: Easiness and availability of the service. High quality of health service. Service must be continuous. Hospitals must facilitate their service and keep it continuous and keep the relationship between the patient and the

service provider. The health service is linked to man's health , thus hospital's management can not adapt to the standards applicable to other services, since this contradicts with the humanity of the mission of hospitals. The fluctuations of demand for health service requires all potentials towards producing and providing this service to the patients, directly and without delay.

Quality Models

Previous studies presented the bases of the quality of service measurement during the last 20 years from 1988 to 2008. This measure has been widely adopted and applied by other researchers, (Riyadhladhavoi, 2009; Persimmon, 1985,1988).

SERVQMAIL is the service quality measure which consists of 5 dimensions used in this research , which are , tangible, responsiveness , empathy , reliability and safety. If the beneficiary is not satisfied with the quality of service provided by hospitals, this means the unefficiency of the organization and the authorities do not comply with their responsibilities , and that departments do not coordinate with each other. It also means that quality control is not effective.

The measure consists of 22 items representing 5 dimensions it is applied to different services such as banking service , credit card service , electrical equipment repair and maintenance long distance communications and brokerage. The study concluded that the client evaluates the service by comparing it with his expectations. The result of the process is the realized quality of the service. Quality service can not be imagined while there is a gap between the actual service and their expectations according to what is mentioned by Parasuraman , (1985-1988) client. Expectations of the service quality is affected by five gaps:

- Gap 1: the difference between the client's expectations and the conceptual expectations of management.
- Gap 2: the difference between the management's expectations and the actual quality of service.
- Gap 3: the difference between the actual service provided on a daily basis and specifications and standards put by management.
- Gap 4: the difference between the service provided and what was agreed on.
- Gap 5: this gap is affected by first gap , and fourth gap , where all are controlled by the organization therefore it must be analyzed to determine the changes that must be done to reduce or eliminate the 5th gap.

Parasuraman, 1985) said that this analysis has an important role in determining the variance between the expectations of service quality dimensions and that of the clients. The analysis Of the 5th gap focuses on the probable reason for each gap and developing strategies to eliminate all of them. SERQUAUL measure is based on the 5th gap and on the data and the interviews with the client's and evaluation of the quality of service through comparing the different expectations regarding the following ten dimensions; tangible, reliability, responsiveness, communication, credibility, safety competence, tactfulness, understanding the clients, service delivery. These ten dimensions were reduced to fivedimensions for service quality which are: tangibles (utilities and equipments and individuals), credibility (the ability to perform the promised service properly), responsiveness (readiness to help the client and to offer quick service), guarantee (knowledge and complements from employees regarding clients), empathy (care and interest in serving clients,

in addition to general expectations from clients towards the expected service and the service actually delivered).

Satisfaction of the External Clients (patients)

The quality of service could be measured according to the client's point of view ways: number of complaints received during a certain period of time. Satisfaction measure which means the client's attitude towards the service provided by asking questions that reveal the client's feelings towards the service, its strength and weakness. SERVQUAL measure: the difference between the client's expectations by the level of service and the realization of these expectations of the management. Satisfaction from the service is achieved when the client's expectation of the level of the service equals the actual level of service delivered." SERVPERF measure: focuses on the actual performance of the provided service. This is judged by studying the attitudes of clients, (quality of service = actual performance). Value measure: the value the organization provides to the clients is based on the benefits of the service and the cost of the service. The relation between the benefit and the price determines the value. Thus the higher the benefit, the higher the value and vice versa. The organization should concentrate its efforts on providing excellent service at lesser cost and highest benefit.

Studies Related to The Quality Service

Lately health service sector forced challenges due to the changing behavior of the service clients who regard quality as a basic measure for choosing the service regardless of the provider. Hence it is a must that the organization raises its performance efficiency and improve the quality of its service. Nowadays the service organizations adopt the slogan or motto :“ Improve it or lose it “ The quality of health service is important in the sense

that the health service is different from other services where it is not accepted at a lesser level of the quality especially in the clinical field where any medical error may lead to tragic on sequence, such as disability , handicap , or death. Errors in other services may not lead to similar consequences of such gravity. Process quality describes the total quality that the client realizes from the service the study emphasized that there is no conformity in the services. There is a necessity to apply a modified model for quality as suggested by the study, (which includes the quality of output in addition to process quality) in different organizations in the service sector. AnteDrach–Zahavy(2010) presented a model that contains the climate of the health service which indicates that the employees are affected by the climate around them . The study tried to apply this model to reach the quality of health service and to know the pressures that the workers face when dealing with patients .The field study was applied on 328 nurses and forund that it is necessary to train nurses on how to deal with patients and to show empathy towards them so that they may feel safe and content.

Studies Related to The External Client (Patients)

The study of (Syedsaidandaleep, (2001)) developed patients conceptions on health services which are often ignored in developing countries by service providers, where many patients are in need of preventive care and care detection of disease. The study focuses on patients conception for health service via communication, commitment, services grantee, disciplines and tips as determinant factors associated with the service as a view of patients. The study conducted that the application of quality in health service organizations leads to cost reduction and improvement in the work environment as for those who as receive the service they get better service at an acceptable cost and the

feeling of satisfaction. The researcher recommends the application of quality in the service provided to the patient and giving proper attention to the training of doctors and nurses. The gap between the service provided and its results as informed by patients, should be determined. A periodical measurement of patient satisfaction should be performed regarding the service provided and the shortage that hinder the continuous improvement of service. Employees should stick to professional morals in providing the health service.

(Steven, H. Applebaum, et al, (2010)) presented a study aiming at determining the points of weakness of the patient's organization culture. The study conducted a full survey to determine the satisfaction of clients and workers in the administrative sections in the Montreal medical company. The study concluded that there are no official channels for clients' complaints and there is weakness in supervision. The study recommended focusing on clients on the short run considering clients as a main tool for management and workers of health organization on the long run.

Research hypotheses

Health service dimensions have no effect on external client's satisfaction.

Health service dimensions as requested by the external clients are not available.

Here are no significant statistical differences between different curative sections regarding the external clients (patients) satisfaction.

Methodology

The research community consists of patients who receive the service across the different curative sections. This type of community has unframed statistics.

Sample

The researcher relied on random tables to determine the sample considering that the number of patients who frequented health insurance hospitals in Cairo government in 2009 amounts to (4516689) patients. According to the budget report of health insurance authorities in 2008/2009. Therefore the ideal sample size of this community is 400. Allocation and distribution of the sample individuals is that the researcher used proportional allocation method depending on the number of the patients who frequent hospitals and distributed the (400) individuals on the different curative sections. SERVQMAL is used for a measure of service quality. The measure consists of 5 dimensions and was applied on the patients. The dimension are reliability, responsiveness, safety, empathy, facilitations. The researcher conducted a pilot study on 50 patients.

QUESTIONNAIRE DESIGN

Questionnaire includes the following: SERVQMAL ; measuring the quality of services provided to patients this measure consists of 5 variables as previously mentioned. Quality of health services: this is done by data from curative sections and patients in different health insurance hospitals under this study. Patient satisfaction with the quality of service. The type of health service in the hospitals consists of three types of quality provided to patients : quality of health service with the medical team in charge quality if health service by the nursing staff. Quality of health service and satisfactions in hospitals. It was realized that all factors have achieved a high level of credibility Correlation Coefficient was significant at (0.01). Stability coefficient of alpha cornpakh assured that the dimensions of this measure have a high degree of stability ranged from 0.79 to 0.90. Besides that the

alpha CORNPAKH COEFFICIENT for the whole measure was 0.957 approximately.

Research Variables

Independent variables are that dimensions of service quality measure which are: reliability, responsiveness, safety, empathy, and facilitations.

Dependent variables is the external client satisfaction with the types of quality provided to him which are: quality of health service with the medical team, quality of health service with nursing staff and facilitations in hospitals.

Satisfactional Analysis Method

Pearson correlation: was used to study the correlation between the quality service dimensions: reliability, responsiveness, safety, empathy, facilitations as well as the correlation between the service quality dimensions with the variables of patient satisfaction of the health service. Regression Analysis: was used to study the effect of health quality variables on the degree of satisfaction of the external client (patient). Regression Analysis Using linear Figure: to estimate the traces of the three models and testing them in addition to using the methods of ordinary least squares(OLS) cluster analysis : was used in the form of the dendrogram to know the extent of approach of curative sections to each other regarding the degree of the service quality adopted in providing the service Using linear Figure. Man-weatny test : was used to compare the groups which resulted from cluster analysis regarding the external client satisfaction.

Testing the validity and Hypothesis one

There is no effect to Dimensions the quality of health service to the External client satisfaction (patients). Studying correlation among the service quality dimensions ∴ The results indicate strong correlations among the dimensions of health service quality where they were all significant at the level (0.01) .

The study of correlation among the dimensions of health service quality with variety of the external client's satisfaction. Table 2 exhibits the results of correlation matrix between the dimensions of service quality with the variables with the external client's satisfaction.

Table 1. Exhibits the results of the correlation matrix among health service quality

Service Dimensions	Reliability	Responsiveness	Safty	Empathy	Facilation
Reliability	1	0. 744**	0. 681**	0. 688**	0. 644**
Responsiveness		1	0. 722**	0. 670**	0. 594**
Safty			1	0. 796**	0. 691**
Empathy				1	0. 784**
Facilation					1

**indicates the signigance of a correlation coefficient at level (0.01).

Table2. Results of correlation between service quality and external client satisfaction

Viriabes Dimensions	Health service Quality	Health care Quality	Service quality and facilitations
Reliability	0.432	0. 503**	0. 448**
Responsiveness	0.359**	0. 492**	0. 418**
Safety	0. 410**	0. 509**	0. 501**
Empathy	0. 288**	0. 697**	0. 590**
Facilitations	0. 328**	0, 618**	0. 683**

**indicates the significance of a correlation coefficient at level (0.01).

The <Table 2> results indicate that there are significant relationships at the level (0.01) between the dimensions of service quality and the external client satisfaction variables. All those relationships were strong ,which reflects the positive effect on the external client (patients) satisfaction. This is consistent with the nature of this study. Most of these dimensions are expected to appear when studying the effect on the satisfaction variables of the external clients. studying the effects of the dimensions of health service quality on the satisfaction variables of the external client patient. The effect of health service quality on the variable of satisfaction of the external client was studied by using Regression Analysis as follows:

MODEL STRUCTURE

The researcher made the structure of the model as shown in <Table 3>.

Table 3. Structure of The Model

No.	Dimensions and Variables	Nature of Variables	Symbols
1	Dimensions Service quality:	Explained Independent Variables	
	1-Reliability		X1 f1
	2-Responsiveness		X1 f2
	3-Safety		X1 f3
	4-Empathy		X1 f4
	5-Facilitation	X1 f5	
2	External client Satisfaction:	Dependent Variables	
	1-health Service quality		Z1
	2-Health care quality		Z2
	3- Service quality and facilitations	Z3	

The Mathematical Frame of the Model

The results of correlation matrix revealed very large PERSON Correlation Relationships among the dimensions of health service quality variance reliability, responsiveness, safety, empathy, facilitations. Some of these are independent and must be taken into consideration when studying the effect of these dimensions on satisfaction variables of the external client. Hence the researcher used Regression Analysis.

Evaluation and Tests of the Traces of the Three Models:

The researcher used the ordinary least square method(O.L.S) in the evaluation . The following are the results: <Table 4> indicated that the dimensions of health service quality reliability, responsiveness, safety, empathy, facilitations have an effect on the satisfaction variables of the external clients: health Service quality. Health care quality. Service quality and facilitations. As indicated in (F-Test) value which are all significant at all the level (0.01). The results indicate that empathy towards the clients is one of the most important variables of higher effect on the client satisfaction in its three forms: health Service quality. Health care quality. Service quality and facilitations. Followed by responsiveness and facilitations and reliability. The results show some degrees of variance as to the effect of quality dimension on the satisfaction variables of the clients. It reached its lowest degree when explaining the changes that occurring in the quality of health services and highest in the quality of care service and facilitations as shown in <Table 4>. Values of standard error appeared small which reflects that the true values are close to those predicted and shown in the <Table 4>. The previous presentations indicated that there's an effect of health service quality on the external client's satisfaction and this contradicts the content of hypothesis on which states that: Health service dimension has no effect on external client satisfaction. Hence, the first hypothesis is absolutely not valid. Which means rejecting the validity of the first hypothesis definitively, where there is no impact to keep the quality of health services to the External client satisfaction (patients).

Table 4. The Effect of service quality on the external client's Satisfaction

Dependent Variables	Tests	Results of evaluated model			Test of model		
					F (D.E)	R 2%	S.E
Health Service Quality	Non standerd dealing	Z1=1.762+0.388×1F1+0.399×1F3+0.201×1F4			38,852** (396,3)	22.7	.667
	standerd dealing	0.349	0.333	+ 0.207			
	T test value	(7.270)**	(5.409)**	(4.551)**- (-2.811)* *			
Health care Quality	Non standerd dealing	Z2=0.146+0.805×1f4+0.290×1F5+0.180×1f3			134,142** (396,3)	50.4	.718
	standerd dealing	0.618	0.210	+0.112			
	T test value	(0.569)(9.337)**	(3.598)**	(+1.967)**			
Service Quality and Facilations	Non standerd dealing	Z3=- 0.382+0.791×1F5+0.183×1F4			179,248** (397,2)	47.5	.739
	standerd dealing	0.573	0.140				
	T test value	(-1.711)	(9.774)**	(2.391)*			

**indicates the significance of F&T tests at level (0.01).

Testing the validity of hypothesis two

The second hypothesis states that health service dimensions reliability, responsiveness, safety, empathy, facilitations. As requested by the external client are not available. <Table 5>

results indicate that there is no significant statistical difference between the responses of the researches. Sample of the frequenting patient and the value assumed by the researcher which achieves the minimum approval according Likert Measure (4 or more), on all levels of health service quality dimension where T-test value for one sample calculated was: value (8.407, 3.219, 9.411, 4.395, 6.710).

On the level of the following dimensions: reliability-responsiveness – safety – empathy – facilitations.

This was emphasized by the values of each dimension.

Table 5. T-test for one sample the values of each dimension health service quality

Dimensions:	Descriptive Measures		Gap results			T test results			COM
	S.E	Mean	Gap Value	Period of gap		T tests			
				L	H	Value	D.e	Signe	
Reliability	4.228	.034	.228	.161	.295	6.710	399	.998 U,S	4≤1
Responsiveness	4.174	.038	.172	.099	.248	4.395	399	.997 U.S	4≤1
Safety	4.296	.032	.269	.234	.358	9.411	399	.999 U.S	4≤1
Empathy	4.126	.039	.126	.049	.202	3.219	399	.996 U.S	4≤1
Facilitations	4.310	.037	.310	.238	.383	8.407	399	.999 U.S	4≤1

<Table 5> confirmed that the special values for alone confidence level of results for each dimension on alone.

<Table 6> results indicate that there are significant statistical differences among the results of the sample responses

towards the variable of service quality and facilitation .This appears from (T-test values) of one sample which amounts: (T-correlation = - 4.327). This is statistically significant at the level (0.01) and at (0.399 degree). This reflects a negative gap between the patient responses of that variable and the ideal responses assumed by the researcher according to Lekart Scaled Measures (4 or more) and amounted to (0.22). This is also apparent from the two limits of this gap shown on the pervious table. As for the values related to the health service quality and health care quality, the results showed that no significant difference between the responses of the research sample and the ideal value (4 or more) , as pointed out in (T-test) value. Shown in table 6. and the two limits of trust.

Table 6. T-test results from one sample regarding client's satisfaction

Dimensions	Descriptive Measures		GAP RESULTS			T TESTE RESULTS			COM
	AVG	S.E	GAP Value	PERIOD OF GAP		T TESTE			
				L	H	value	D.E	SIG	
Health Service Quality	4.29	.038	.287	.21	.36	7.608	399	.998 U,S	4<1
Healthcare Quality	3.94	.051	.058	-.16	.04	1.132	399	.642 U,S	4<1
Service Qualityand Facilations	3.78	.05	.220	-.32	-.12	-4.327	399	.00 0,01	4<1

The pervious presentation supports the validity of hypothesis two regarding health service dimensions and the external client's

satisfaction as for facilitations quality the hypothesis is not supported. Therefore the second hypothesis is partially not valid. The researcher is of the opinion to reject it completely. (health service dimensions reliability, responsiveness, safety, empathy, facilitations as requested by the external client are not available.

Testing the validity the third hypothesis : The third hypothesis states that “there are no significant difference between different.

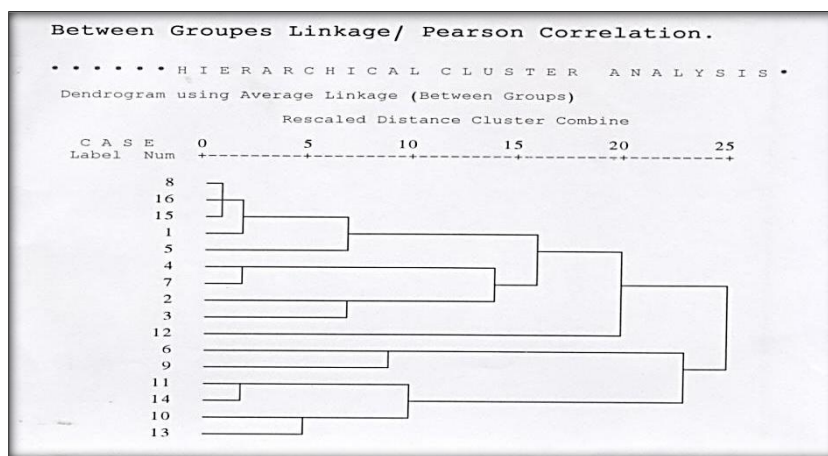


Figure 1. Curative sections regarding the external client (patient) satisfaction

The following is the results of the validity test of the third hypothesis where the researcher used cluster analysis: reliability- responsiveness – safety – empathy – facilitations.

The results of figure (1) showed the different curative sections are categorized into two groups:

The first group includes: Emergency – Surgery – Quarantine – Radiology – Internal medicine – E.N.T – Cosmetics – Orthopedics – Neurology – Insensitive Care.

The second group includes: Ophthalmology –Dentistry-
gynecology – vascular – kidney Transplantation – Urology.

Table 7. statistical description of the characteristics of two research groups

Dimentation Service quality	First group		Seconed grouo	
	Mean	Standerd Error	Mean	Standerd Error
Reliability	4,218	0,038	4,255	0,073
Responsiveness	4,210	0,042	4,071	0,084
Safety	4,347	0,034	4,159	0,071
Empathy	4,203	0,039	3,907	0,096
Facilitations	4,459	0,037	3,891	0,083

<Table 7>presents the characteristics of service quality dimensions for both groups that were derived from the different curative sections. The first group has the highest level of service quality as pointed out by the statistical description of the results.

The second group has the lowest level of service quality, The First group relies on different specialists that needs quick responsiveness in delivering the service as well as the ability and skills to deal with serious situations and emergencies. The second group relies on modern instruments and technology therefore its service is less serious and less risky. The result of Man-weatiny test is presented in table (8) . The results represented the difference between the two gaps regarding the satisfaction of the external client.

Table 8. The difference between the two groups regarding external client's satisfaction

Satisfaction variables	Grades mean		Value of MAN.WATINY (z)	significant
	First group	Second group		
Health Service quality	199.77	202.55	.231	0.817 (u.s)
Healthcare quality	209.30	175.77	2.705	0.007 (s,at,01)
Service quality and facilations	213.94	162.73	4.059	0.00 (s,at0,01)

Table 9. The descriptive statistics of the variables of external client's satisfaction

Dimension Service quality	First group		Second group	
	Mean	Standard Error	Mean	Standard Error
Health Service quality	4.872	45.0	4.314	69.00
Healthcare quality	4.860	49.0	3.195	130.00
Service quality and facilitations	3.519	55.0	3.004	110.00

The results of <Table 8> and <Table 9> pointed out the presence of significant statistical differences between the two groups of the study regarding: Health service quality of where the value of Man-Weatny Test was: (Z=2. 705) which is statistically significant at (0.01).

The results showed that those differences are in favor of the first group, (table 8 and table 9). Service quality and facilitations Man-Weatny test value reached (4.059) which is statistically significant at (0.01) those differences are in favor of the first group as Shown in table (8) and table (9).As for the results related to the quality of health service, the result showed no significant difference between the two groups of the study according to Man-Weatny test value at a level (0.05).

According to the above mentioned we can accept the partial validity of the third hypothesis regarding the quality of health service dimension only, and rejecting its validity regarding the quality of health care and facilitations. The researcher is of the opinion to reject the validity of the third hypothesis.

RESULTS

The results showed that empathy with patients is one of the most important variables that affect the satisfaction of patient on its three forms: Quality of health service, Quality of health care, Service Quality and facilitations followed by responsiveness, facilitations and reliability.

There is a variance as to the explanatory degree of the effect on the effect of quality dimension on the satisfaction variables of the client, reaching its lowest when explaining the changes that occur in the quality of health service and its highest on the quality of health care and facilitation. Those were clear by the values of determining factors Shown in Table (4).

Standard error values were small, thus reflects the consistency between the true values and the values predicted by the researcher. The results of the validity test of the Hypothesis one point out that there is an effect of the dimensional quality of health serious on the satisfaction variables of the external client.

This contradicts with the content of the hypothesis, therefore the hypothesis is absolutely not valid. (Health service dimension has no effect on external client satisfaction). Hence, the first hypothesis is absolutely not valid. There are very large Pearson Correlations among the dimensions of health service quality as independent variables. This should be considered when studying the effect of dimensions on the satisfaction variables of the external clients, as dependent variables.

The results showed significant relationships at the level (0.01) between the dimensions of health quality and satisfaction variables of the external clients. All these relations were strong which reflects the positive effect on the satisfaction of the external client. Most of the dimensions are expected to appear when studying their effect on the satisfaction variable of the client. The results of the second hypothesis pointed out that the dimensions of health service quality are not available as required. There are no significant statistical differences between the responses of the sample of patients with the value assumed by the researcher according to LEKART FIVE SCALED MEASURES (4 or more). The results of the second hypothesis point out that it is valid with regard to the dimensions of the health service as well as the results of the external client satisfaction except for the results of facilitations quality.

The second hypothesis is not valid regarding the quality of facilitations. Therefore the hypothesis is partially not valid. The researcher is of the opinion to reject it completely. As for the results regarding the two variables of the quality of health service and the quality of health care the results pointed out that there is no significant difference between the responses of the research sample and the ideal value as presented by T-test and table (6) and trust limits.

The third hypothesis states that there is no significant statistical difference between the different curative sections regarding the external client, (patients) satisfaction. The results point out that curative sections fall under two groups. The first group includes: emergency – creative – radiology – internal medicine – surgery – E.N.T – cosmetics – orthopedics – neurology – intensive care. The second group includes: ophthalmology- dentistry- gynecology – vascular – kidney –transplantation- urology. The first group has the highest quality of service according to the statistical description of the results of the five dimensions of service: reliability- responsiveness – safety – empathy – facilitations. The second group has the lower quality of service when compared to the first group. We may reject the quality of health care and health service and facilitations. We may accept partially the validity of hypothesis three but the researcher is of the opening to reject it completely.

RECOMMENDATIONS

Establishing an independent Egyptian Authorities for quality standards and performance monitoring health organizations and lay down national standards and examine and update them periodically.

It also accredits the authorities and determine their specifications and missions. Accreditation should be consistent with the agreed the Egyptian standards. Also establishing a general frame for an Arabic unified model for accrediting insurance health hospitals containing the medical international standards. The lay down of special standards for insurance hospitals will lead to quality increase and good performance and thus will make international insurance companies enter into contracts with those hospitals.

Fund increase for health services leads to higher efficiency. These calls for good allocation for sources and medicines and more attention to the needs of patients. Proper attention to the culture of treatment

according to the study of Appelbaum, S. H. et al.(2010). Proper care should be taken to the complaints of patients as those play an important role in the quality of health services. The unfamiliarity of the patient renders him prey for insurance companies and the providers of a certain service.

These should be a close coordination between faculties of medicine and health ministry and national programs in training medicine scholars for using the standards of health services with patients and the skill of solving problems and improving their services. This should be included in their practical training as well as the syllabus of the Egyptian medical fellowship. Proper attention should be paid for the humanistic side of health care so that the individual may participate in the efforts of the society and welfare of his society.

CONCLUSION

This research discusses the important role at finding the relationship between the variables of the quality of service measure on external client (the patient) satisfaction which are quality of health service, the quality of health care, the quality of the services and measuring the variables of the quality of service which are: reliable, quick response, safety and empathy and facilitations and satisfaction supportive an external client (the patient). And also aims at determining the differences between different curative sections regarding the external client (the patient) satisfaction . Future research may consider as follows: The effect of the quality of health service on the organizational performance. The effect of the quality of health service on job satisfaction. The application of the quality measure of health service and its effect on the organizing climate.

Table 10. The problems and suggestions from patients recipient of the service to improve the quality of service

Suggestions to improve the quality of service provided	Problems facing the external customer
<p>The provision of services and facilities for patients, such as elevators and cafeteria, and attention to routine maintenance, plumbing, electricity and water at the hospital.</p> <p>Provide appropriate rooms for patients, such as the telephone, television and air conditioners to relieve them, and provide a safe and healthy atmosphere.</p> <p>Attention to the provision of specialists, but doctors for fast delivery in performance.</p> <p>Increase the number of nurses and doctors qualitative and quantitative to deal with the number of patients in the hospital and the great need to put the right person in the right place.</p> <p>The essential need for provision of skills and abilities of nurses and doctors with qualifications for patients treated with their different cases to reduce their pain.</p> <p>The obligation of doctors working hours and taking into account the patients' conditions.</p> <p>Training programs for nursing to follow their behavior and follow-up the level of service provided.</p> <p>Pricing of service health insurance for improvement and development in order to provide better service for patients.</p>	<p>The lack of services and facilities such as elevators hospital or the cafeterias.</p> <p>Non-availability of services and equipment required, such as scan and magnetic resonance waves on the heart which requires the transfer of patients to private centers.</p> <p>Lack of attention to cleanliness of the place, such as the family and the reception rooms and Bathrooms.</p> <p>The inability to nurse call quickly when you need them.</p> <p>patients waiting at the analysis and follow-up work and slow procedures with patients.</p> <p>Giving money to workers and nurses to make any service to perform the job quickly and attention hygiene and linens for the family at the hospital.</p> <p>The large number of patients compared to the number of doctors and nurses in the departments at the hospital.</p> <p>Many routine procedures and paperwork to enter the hospital.</p>

Source: the patient's answers in questionnaire.

Researcher depended on two methods internal consistency and Cronbach's alpha coefficient to study both the validity of the (honesty) and reliability (consistency) of each dimension of the study to measure the quality of service, and the results of the validity and reliability appeared to be as follows:

Table 11. Results of the validity and reliability of the components dimensions measure the quality of service.

Reliability coefficient Cronbach's alpha	Correlation coefficient	Dimensions measure the quality of service
0.869	0.833**	First: Reliability:
	0.823**	1- There is interest in any speed problem facing.
	0.879**	2- The the performance of the health service correctly from the first time
	0.786**	3- Obligation exists to achieve the service as expected.
	0.755**	4- There are no errors in the records and files that we are dealing with.
0.818		5-The performance of the health service on time.
		Second: the speed of response
	0.717**	1-Response is to our requests from the service providers.
	0.838**	2-Patients feel the permanant ready from service provider..
0.790	0.863**	3 -Instant services being provided to patients.
	0.794**	4-Information is provided accurately.
		Third: Security
	0.722**	1-Information available to respond to questions.
0.901	0.785**	2-Behavior is characterized by the taste of public.
	0.881**	Feel safe with treatment providers..3-
	0.777**	4-Behavior of service provider gives the patients self-confidence.
		Fourth: empathy with customers
0.888	0.903**	1-Understand the patients needs perfectly.
	0.808**	2-Show empathy with patients.
	0.852**	3-Make every individual feels self-interest.
	0.792**	4-Appropriate working hours with everyone.
	0.899**	5- Providing the best health care to patients.
0.9570		Fifth: supporting facilities:
	0.780**	1-The hospital owns the latest equipment and facilities.
	0.778**	2-The providing facilities such as elevators and air-conditioning and the cafeteria.
	0.846**	3-Show the service providers at the hospital clean and of decent appearance.
	0.909**	4-Health service is available when requested.
	0.858**	5-There are rooms and beds in beautiful and clean situation.
		The total

** Indicates significant correlation coefficient at 0.01

From the previous table shows that all the elements have achieved a high degree of credibility, and the evaluate of the

correlation coefficient came significant at the level of 0.01, while the values of reliability coefficients Cronbach's alpha has confirmed that the dimensions of this scale on a high degree of consistency.

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