International Review of Business Research Papers
Vol. 3 No.5 November 2007 Pp.226-240

Measuring the Managerial Efficiency of Dhaka Stock Exchange through the Development of a Perception Based Index

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An Index to measure the degree of Human Performance Efficiency, of the policy making body (Council) of Dhaka Stock Exchange (DSE) during the time of stock market boom and its subsequent crash in 1996, is empirically developed, based on perception of the respondents–council members. The paper makes contributions in two ways, firstly the development of the perception based Index itself, and secondly the empirical measurement of Management Efficiency of DSE utilizing the Index, in a state when the management and the policy making body in an agglomerated form. In constructing the Index, the main components, considered, were Ability, Teamwork, and Inter-personal conflict, as perceived by the respondents. Again these dimensions are decomposed to a number of sub components, where, Ability is the composed form of qualification, experience and staffing. Total teamwork is the composed form of the organization structure, responsibility, market supervision and control, and the decision making process of the council. Finally the decomposed form of the level of Intra–personal conflict consisted of the lack of proper communication, personal clash, and behavioral problem. In applying the Index to measure the management efficiency of DSE, the perceived overall index score of 0.381 on a scale of one reveals poor performance management efficiency. This indicates that management of DSE during the market crash was very weak in order to take any policy decision or action to wither out the abnormal volatility of stock prices, or take appropriate measures to slow down its subsequent fall in 1996.

Field of Research: Management and Securities Market

1. Introduction

Although previous studies have been carried out to figure out the technical efficiency of an organization through constructing the index to present the results in a numerical score, we have tried to determine the human efficiency, by screening the perception of the top management, which is also policy making body. Prior to June 1997, the policy making body of Dhaka Stock Exchange (DSE), and the management team, remained as a single body. This entwinement of the two bodies, as one, in fact distorted managerial decisions and remained as one of the major weaknesses in efficient management of DSE. Managerial decisions could not be properly implemented mainly because of the intervention of the council members.

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In such an agglomerated management structure, the perception of the supreme policy making body has an embedded importance in order to determine the efficiency of the whole management. In this paper, by developing perception based index, we measure the degree of human efficiency of the management structure.

The objectives of this paper are, firstly to theoretically develop an index based on respondents' perception in order to assess the degree of human efficiency of management of Dhaka Stock Exchange and to empirically measure human performance of DSE management, using this index. Secondly, this paper seeks to contribute in index literature, the theoretical development, and measurement of apperception based index, that can further be utilized in measuring the human efficiency of non profit institutions, where the policy making body and the management is agglomerated.

We construct a perception based index in order to determine the degree of managerial efficiency in DSE, at a time when the policy making body (The council) and the management was inseparable. Since behavior (perception), a concept that cannot be directly quantified, and management efficiency to a large extent depends on behavioral patterns in a agglomerated form of management, we have thus considered the finer aspects of efficiency, and have considered *Ability, Teamwork, and Inter personal conflict,* as three components in measuring efficiency, i.e. $ME = \int (\text{Ability} + \text{Teamwork} + \text{Inter personal conflict})$ with 60% weight given to Teamwork, 30% to Ability, and 10% to interpersonal conflict as perceived by the respondents.

The index has been calculated in a weighted average continuum scale in which the degree of efficiency is determined on a scale, which is calculated between 0 to1. 1 indicates absolute efficiency and 0 to have no efficiency at all. The weight assigned in each of the three components is determined in a way as perceived by the DSE members. There is no significant change in calculation if the weight is shifted among the components.

Findings of the paper suggest that methodology developed to empirically measure the human efficiency of the management has been successful in capturing the perception of the respondents, i.e. the members of the Dhaka Stock Exchange. Results of the decomposed scores of Ability (40.5), Teamwork (33.7) and Interpersonal conflict (65.9) as well as the overall index of 0.381 signifies that the level of human performance of DSE Management was *less than average i.e. poor*, and became one of the contributing factors to the Market Boom and its subsequent Crash in 1996 in DSE.

This paper is organized in four sections. The first section is a review of the available literature on efficiency measurement, and index construction parameters, which were considered in determining the managerial efficiency of Dhaka Stock Exchange. The second section deals with the theoretical development of the perception index along with methodology. The third section deals with the application and interpretation of perceived DSE Management efficiency and its expression from the calculated Index. Lastly in the final section we draw our conclusion and provide some policy implications.

2. Literature Review

Fundamentally, Management Efficiency has been defined by Koontz & Weihrich (1993), as “The achievement of the ends with the best amount of resources”. Griffin (1998) says, “By efficient, we mean using resources wisely and in a cost- effective way”. These definitions focus on financial and technical efficiency in terms of output-input relationship. However, we have looked at the human efficiency mostly in ability, teamwork and decision-making. Singularly others have not addressed this.

Brown and Mithchell (1986) studied the influence of task interdependence and a number of poor performers on diagnoses of causes of poor performance. In this study set within a behavioral paradigm, the causes of poor performance were investigated. The study found, that interdependence within the management group had a significant impact on poor performance, in which human efficiency can be improved through corrective actions. Singh (1986) studied the relationship in decision making process, from the point of performance, and risk taking. He proposed a model, by which he showed that poor efficiency is related to high risk taking. Good performance is also related to increased risk taking, as predicted, but unabsorbed slack does not have a relationship with risk taking. Miles and Snow (1992) searched for possible causes of failure in network organizations. They investigated in (A) functional form of organization, (B) divisional form, (C) the matrix form, and finally the network form. The research showed the Input- output formula on the basis of (A) stable, (B) internal, and (C) dynamic network. They also addressed the causes of failure in network organizations. Finally they illustrated how the network form should help make the manager’s task of successful adaptation easier, through constant state of adjustment to market, technological, and other forms of environment. Filley (1978) in his empirical paper, addressed the possible causes of management conflict, and discussed how to solve them. His thought about knowledge vs. perception is depicted in the elements he has pointed out. His solution to these conflicts are the various behavioral pattern, as elements viz. perceptual, attitudinal, affective, situational, are in fact clear trigger points to deal with the perspective. Derr (1978) also, in his empirical paper, addressed three elements of conflict resulting from the division of power. The division of power emanates from the three sources, namely, (1) authority (2) informed influence, and (3) autonomy. He had taken three different approaches, viz., (A) Collaboration (B) Bargaining and (C) Power play to solve this power conflict.

Perception based Index is widely used in various non parametric measurement, viz., social attitudes. *The Human Development Index*, (1991, 1994) is a valuable contribution in assessing the economic and living conditions of the world. Originally developed under auspices of UNDP in 1989, it was put into use in 1990 and the first report came out in 1991. Three key components are considered in HDI, (1) Longevity (2) Knowledge and (3) Income. Longevity is measured by life expectancy at birth as the sole un-adjusted indicator. Knowledge is measured by two education variables: adult literacy and mean years of schooling, with a weight to two-thirds to literacy and mean years of schooling. The income is considered to be a proxy for a bundle of goods and services needed for the best use of human capabilities. The index mainly not only capture elements of national priorities, its potential growth, and disparities between people but also seize the changes over time, and therefore works as an early warning system to economic

disasters. *The Political Freedom Index* (1994) is calculated is yet another perception based Index, in which the components, are (1) Political participation (2) Rule of law (3) Freedom of expression (4) Non-discrimination. Equal weight is given in measuring these four clusters, since there is no logic to rate any one aspect of political freedom more highly than another. The result is analyzed as the highest, fairly high, fairly low, and the lowest. Since 1994 the methodology has been widely used in the calculation of political freedom by Amnesty International, Human rights watch, and the United Nations Commission on Human rights etc. *Peace Confidence Index* (2002), is another such perception based Index, which have been developed by Social Indicator, Center for policy Alternatives, in Sri Lanka. This respondent based Index, mainly focuses on the peoples perception about peace, between the LTTE and the Government at different times. Except the troubled war torn northern region of the country, data is collected in six waves from 2001 to 2002.The results does not form a composite index, but of separate variables. Two of the major findings of this Index indicated, that the perception of peace as 'feeling safe' showed a decline from 18.3 percent in January 2002 to 9.8 percent in March 2002, and that about 67.8 percent Tamils believed that peace will soon come in Sri Lanka. Yoshida and Mataki (2002) developed a *Medical Index* based on patients' perception, to investigate the patients' attitude, towards the importance and understanding, about the dental care within an education system. Their findings from the Index suggested that patient satisfaction is a very important element in consideration of understanding clinical clerkships. Again acceptable conditions for patients during clinical practice strongly affect patients understanding of clinical education. Researchers also conducted further statistical tests over their Index findings.

From the focus of the review of these literatures, we can conclude, that elemental basis for capturing the perception is embedded in the behavioral elements in a particular dimension within its organizational, and management framework.

3. Development of the Index

Our Index is a perception-based index, which reflects, what the members of the council perceived concerning managerial efficiency during the period of The Stock Market Boom, and its subsequent crash (April 1996 to June 1997). In order to determine the degree of efficiency of the council-management of DSE during the period under discussion we measure the perception of the council members and non-council members.

The policy making council and the management of DSE, was in an agglomerated form, and from the ranking of the survey results, the respondents perceived that the first parameter of *management efficiency* is deliberated as *management competence*, which is the combined form of *Ability* and *Team-work*. *Ability* is a combination of *Qualification, Experience* and *Staffing*. *Teamwork* consists of the *Organization structure, Responsibility, Market supervision and control*, and the *Decision making process*. Levels of Inter–personal conflict are considered to be *Lack of proper communication, Personal clash, Behavioral problem,* and *Integrity failure.* The decomposition of management efficiency index is shown in a tree.

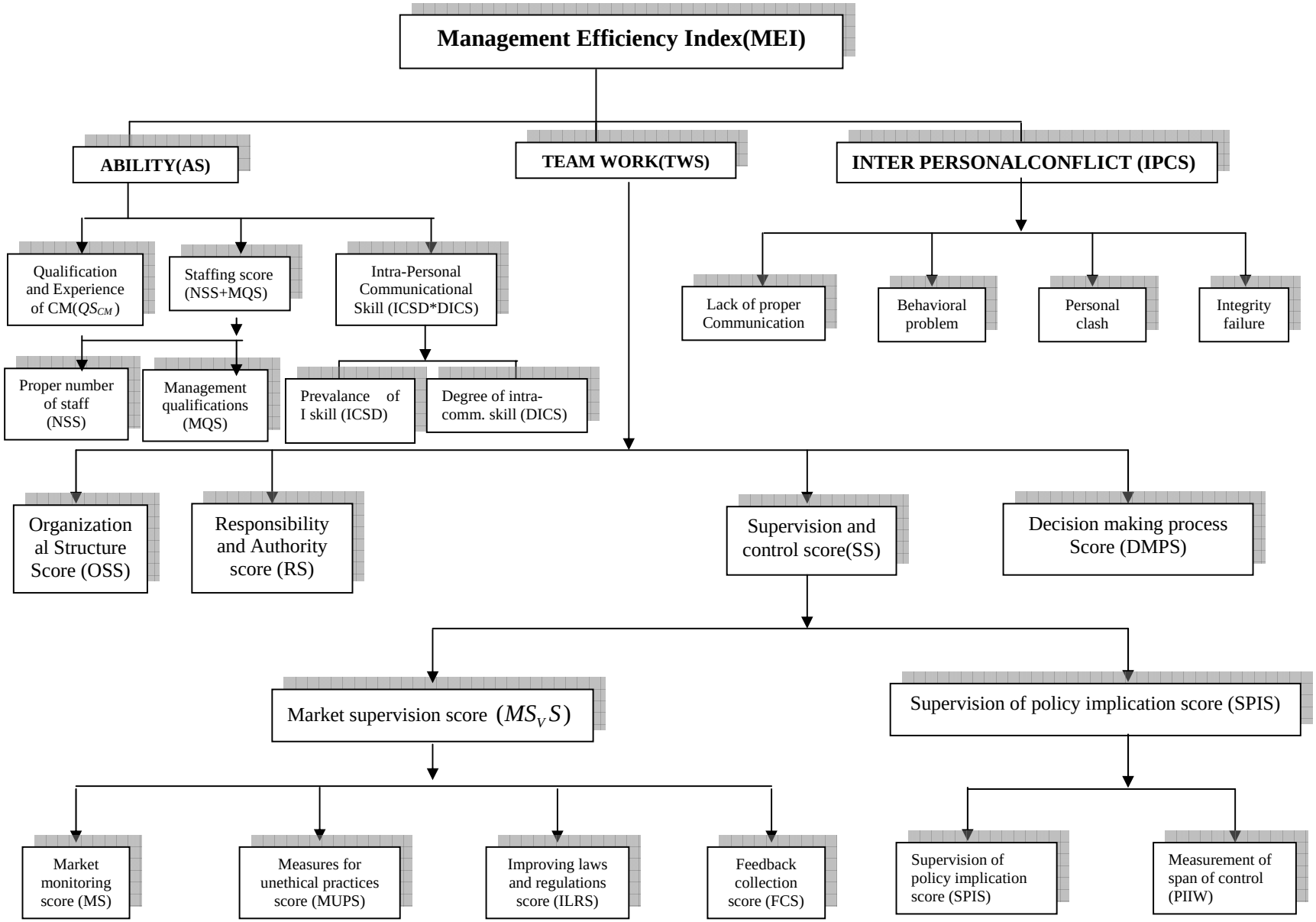
Since the scale is a weighted average continuum scale, its value lies between zeros to one. Thus it is perceived that 0 and 1 are absolute values. If the score is near 1(e.g. 0.99) then it is to be perceived that management is strongly efficient, or in other words, managerial efficiency is very high. If the score lies in the middle (e.g 0.50) then it is to be perceived that management is moderately efficient, and finally, if the score is near to 0 (e.g.0.09) it is to be perceived that management is very weak, or in other words inefficient. The classification of different categories can be made according to quartile deviation of actual perceived scores.

Management Efficiency Index is considered to be calculated as a whole of (1) Ability, (2) Team work and (3) Inter-personal conflict. From the respondents' ranking of the parameters of perception index, the weights have been designed. Accordingly, the weight of Ability Score (AS) is allocated to be 30% followed by the weights of Teamwork Score (TWS) and Intra personal Conflict (IPS) to be 60% and 10% respectively. That is, Teamwork was significantly important, than managerial ability, and Inter- personal conflict (though existent) the presence of which was of lesser importance. The index is the reflection of the perception of the DSE members. Decomposition of the index components are detailed below.

Ability is considered to be the function of qualification and experience of the council members, staffing, and intra communication skills. Equal weights on all three elements are provided when considering ability. Qualification and experience of the council members (Q_{CM}+ E_{CM}=QS_{CM}) is considered as the weighted score of a 5-point Likert scale. Staffing is considered with equal weight of two parameters (1) proper number of staffs (NSS) and (2) management qualifications (MQS) of existing staffs measured in terms of a 5 point Likert scale. Intra communicational skill is considered a product of (1) Prevalence of Intra Communicational Skill in terms of dummy variable(ICSD) and (2)Degree of Intra Communicational Skill in terms of 5 point Likert scale (DICS). i.e: ($ICSD * DICS$). Thus

Ability = $\int (Qualification\ and\ \exp erience, Staffing, Intra\ communicational\ skill)$

and Ability Score(AS) = $\frac{1}{3}\left\{QS_{CM} + \frac{1}{2}(NSS + MQS) + ICSD * DICS\right\}$


Management Efficiency Index(MEI)
ABILITY(AS)
TEAM WORK(TWS)
INTER PERSONALCONFLICT (IPCS)
Qualification and Experience of CM(QS_{CM})
Staffing score (NSS+MQS)
Intra-Personal Communicational Skill (ICSD*DICS)
Lack of proper Communication
Behavioral problem
Personal clash
Integrity failure
Proper number of staff (NSS)
Management qualifications (MQS)
Prevalance of I skill (ICSD)
Degree of intra-comm. skill (DICS)
Organizational Structure Score (OSS)
Responsibility and Authority score (RS)
Supervision and control score(SS)
Decision making process Score (DMPS)
Market supervision score (MS_VS)
Supervision of policy implication score (SPIS)
Market monitoring score (MS)
Measures for unethical practices score (MUPS)
Improving laws and regulations score (ILRS)
Feedback collection score (FCS)
Supervision of policy implication score (SPIS)
Measurement of span of control (PIIW)

Teamwork is dependent on organization structure, responsibility and authority, supervision and control, and decision making process. Thus Teamwork =

$$\int (Org.structure + responsibility and authority + supervision and Control + Decision Making Process)$$

Organization structure score (OSS) is calculated as the existence of ambiguity, job description, authority and accountability of DSE organization on a 5 point Likert scale. Responsibility score (RS) is calculated as to how well versed the DSE Council was, about their responsibility and authority in terms of a 3 point scale, with the weight being given for a response about its impact (awareness). Finally, responsibility score is the compound of authority responsibility score (ARS) and awareness impact weightage in % (AIW%), i.e. $ARS * AIW\%$. Market supervision score $(MS_V S)$ is considered to be equally weighted 4 dimensions of market supervision, i.e.(1) monitoring score (MS) (2) measure for unethical practices score (MUPS) (3) improving laws and regulations score (ILRS) and (4) feedback collection score (FCS). Thus, market supervision weighted score is

$MS_V S = \frac{1}{4}(MS + MUPS + ILRS + FCS)$. Supervision of policy implication (SPIS) by the DSE Council is calculated in terms of 5 point Likert scale with weight, for its impact on measurement of the span of control (PIIW). Thus, supervision of policy implication weighted score (SPIWS) would be the product of $SPIS * PIIW\%$. Supervision score (SS) is the weighted average of market supervision score $(MS_V S)$ with a weight of 75 percent and supervision of policy implication score (SPIWS) with a weight of 25 percent. Finally, degree of quality of the decision making process (DMPS) of DSE council is calculated in terms of 5 point Likert scale. Thus total teamwork score (TWS) is calculated as:

$$TWS = 0.2 * OSS + 0.2 * RS + 0.4 * SS + 0.2 * DMPS$$

Whereas,

OSS = Organization Structure Score
RS = Responsibility Score
SS = Supervision Score
DMPS = Decision Making Process Score

Inter-Personal Conflict is considered to be a function of (1) Lack of proper communication (2) Behavioral problem (3) Personal clash and (4) Integrity failure. Thus inter-personal conflict =

$$\int (Lack\ of\ proper\ communication, behavioral\ problem, personal\ clash\ and\ \ igrity\ failure)$$

Inter personal conflict score (IPCS) is calculated from a dummy variable(IPCD), where for a 'No' answer, the score is 100 (No Conflict), if the answer is 'Yes', then the degree

of intra personal conflict(DICS) is measured on a 5 point Likert Scale. This inter Personal Conflict Score (IPCS) is 100 (No Conflict) if inter personal conflict dummy (IPCD) is No, otherwise it will be the product of $IPCD * DICS$.

From the above theoretical derivation of Management Efficiency Index as the weighted average of ability score (AS), teamwork score (TWS) and inter personal conflict score (IPS) on a scaled score of zero to one. That is,

$$ME - INDEX = \left[\begin{array}{l} .3 * \frac{1}{3}\left\{ QS_{CM} + \frac{1}{2}\left(NSS + MQS\right) + ICSD * DICS \right\} \\ + .6 * \left[\begin{array}{l} .2OSS + .2\left(ARS * AIW\%\right) \\ + .4\left\{ \begin{array}{l} .75 * \frac{1}{4}\left(MS + MUPS + ILRS + FCS\right) \\ + .25\left(SPIS * PIIW\%\right) \end{array} \right\} \\ + \ .2DMPS \end{array} \right] \\ + .1\left(IPCD * DICS\right) \end{array} \right] / 100$$

or *FINAL* theoretical derivation to be:

$$= \left[\begin{array}{l} .1QSCM + .05NSS + .05MQS + .1\left(ICSD * DICS\right) + \\ \left\{ \begin{array}{l} .12OSS + .12\left(ARS * AIW\%\right) + .045MS + .045MUPS \\ + .045ILRS + .045FCS + .06\left(SPIS * PIIW\%\right) + .12DMPS \end{array} \right\} \\ + .1\left(IPCD * DICS\right) \end{array} \right] /100$$

Hence, in a simple algebraic term, management efficiency index can be expressed as:

$$MEI = \left(.3 * AS + .6 * TWS * .1 * IPCS\right)/100,$$

Whereas,

AS= Ability score, *TWS*=Teamwork score, and *IPCS*= Inter personal conflict score.

4. Methodology

A close-ended questionnaire is used and the questions are set using the parameters discussed above in a structured form. On the questions related to *Experience* and *Decision making process* we ask our respondents to rank their answers, so that they can be weighted accurately.

The questionnaire is set on a Likert scale, which is regarded as the most useful in a situation wherein it is possible to compare the respondents' score with a distribution of scores from a well-defined group. It is the most frequently applied summated scale used to study social attitudes viz. perception. We use this scale with 5 points to determine the

degree of perception of the respondents towards DSE management efficiency. Each response of respondents is given a numerical score from the Likert scale, and weight is determined from their ranking. The total score is the summation of the numerical value assigned to an individual's total response to a set of questions relating to parameters of management efficiency. Perceived scores then are scaled down between 0 to 1 level by dividing individual total weighted perceived scores by 100, the highest score of managerial efficiency.

5. Interpretation of Results

The first group of respondents was council members who were present during the Stock Market Boom, and its subsequent crash (April 1996 to June 1997), and the second group was those who had become members after the stock market crash. We now interpret the results of Management Efficiency Index (MEI).

The first component of *Ability* is the combined score of qualification and experience score (*QSCM*), Staffing score, which is the combination of proper number of staffs (NSS) and management qualifications of existing staffs (MQS), and finally Intra communicational skill Score which is the product form of, prevalence of intra communicational skill(*ICSD*) and the degree of intra communicational skill.. Thus ability score has been calculated as total of qualification score of the council management, staffing score, and intra communicational skill score. These components of ability were given equal weight. Thus, Ability Score $= \frac{1}{3}\left\{ QSCM + \frac{1}{2}\left(NSS + MQS\right) + ICSD * DICS \right\}$. The results are given in Table – 1.

Table –1
Results of Total Ability Score

Results	Qualification and Experience Score. (*QSCM*)	Staffing Score $\left(NSS + MQS\right)$	Intra Comm. Skill Score $\left(ICSD * DICS \right)$	**Total ability Score**
Average	61.8	33.3	26.3	**40.5**
STD	20.8	17.4	22.4	**11.6**
t-stat	21.18	13.65	8.36	**24.82**
Prob-stat	*.0000*	*.0000*	*.0000*	***.0000***

The *QSCM* score of 61.8 out of 100 indicates that the qualification and experience of the council as a whole was more than average (strong). The staffing score, (33.3) indicates to be less than average, interpreting that, DSE was inadequately staffed and not properly qualified as well to handle the situation prevalent during the market boom, and crash of 1996. Intra communicational skill score of 26.3 out of 100 interprets, that the, intra communicational skill of the DSE management team was poor on an average, in fact very low. Finally the average of total count of *ability score* (AS) is 40.5, out of 100, which indicates that the overall ability of the council as perceived by the respondents is *less than average.* This implies substantial inability of the DSE council to

handle the situation, prevalent during the 1996 stock market boom and its subsequent crash. The ability score was statistically significant at one percent level.

The second component *Teamwork* is combined score of, org. structure score. (OSS) This has been calculated as existence of ambiguity, job description, authority and accountability of DSE organization structure that was prevalent during the market boom and crash of 1996-97. The responsibility score (RS) is calculated as a product of the, awareness of DSE council, about their responsibility, and the weight given for a response about its impact (awareness) on function of DSE council ($ARS * AIW\%$). The supervision score $(MS_V S)$ is combination of four dimensions of market supervision i.e. $(MS + MUPS + ILRS + FCS)$ added with supervision of policy implication score, considered as product of measurement of span of control, with weight being given on its impact ($SPIS * PIIW\%$). Supervision score (SS) is the weighted average of market supervision score $(MS_V S)$ with a weight of 75 percent and supervision of policy implication score (SPIWS) with a weight of 25 percent. Finally the degree of quality of the decision making process (*DMPS*) of DSE council is calculated. Thus the total Team Work score (TWS) is calculated as: $0.2 * (OSS) + 0.2(RS) + 0.4 * (SS) + 0.2 * DMPS$ .The numerical results are presented in Table –2

Table- 2
Total Teamwork Score

Results	Organization Structure Score (*OSS*)	Responsibility Score(RS) ($ARS * AIW\%$)	Market Supervision score (SS) = $^3/_4$ (*MS*+ *MUPS*+ *ILRS* + *FCS*)+$^1/_4$ (*SPIS*PIIW%*)	Decision Making Process score (*DMPS*)	**Total Teamwork Score (TWS)**
Average	39.6	52.6	22.5	38.2	**33.7**
STD	22.4	23.6	9.3	25.2	**9.6**
t-stat	12.60	15.89	17.24	10.83	**24.99**
Prob-stat	*.0000*	*.0000*	*.0000*	*.0000*	***.0000***

The OSS score of 39.6 out of 100 indicates that in consideration of the prevalent organization structure of DSE, in devoid of job description, authority and accountability, was poor at the time of market crash in 1996. The average of responsibility and its awareness impact (RS) score of 52.6 out of 100 is better than average, interpreting that the DSE council members were well aware of their responsibility and authority. From the result of supervision score (SS)of 22.5 out of 100, it can be said, that taking into account of the four dimensions of market supervision, along with its span, and the impact of policy implication, the efficiency benchmark was poor. The decision making process (*DMPS*) score of 38.2 indicates, that quality of the decision making process prevalent in DSE during the time of market boom and crash in 1996, was very weak. Finally the Total *Teamwork* Score (TWS) calculated from the scores of its sub components is 33.7 out of 100, which implies that although the members' perceived weight (importance) was the highest (60%) when ranking teamwork, the efficiency of

overall teamwork, was in fact poor. This indicates that their combined efficiency was *Moderately Low* due to the contribution of low score of teamwork at the time of market boom and crash in 1996.

The third component Inter Personal Conflict (IPS) is a product of existence of inter personal conflict (IPCD) and the degree of Inter personal conflict. When the answer for the existence of inter personal conflict (IPCD) is 'No', a full score of 100 (Meaning that it was fully efficient) is assigned, otherwise it would be the product of $IPCD * DICS$ .The results are given in Table-3

Table- 3
Inter Personal Conflict Score

Inter Personal Conflict Dummy (IPCD)	Results	Degree of intra Personal Conflict Score (*DICS*)	**Inter Personal Conflict Score (IPCS)**
No = 15	Average	20.3	**65.9**
Yes = 22	STD	19.7	**32.5**
Total =38	t-stat	6.27	**12.33**
	Prob-stat	*.0000*	***.0000***

Number of respondents answering 'No' (0) is 15, and number of respondents who answered 'Yes' (1) is 22 out of 51 respondents, 14 respondents didn't address this question. It can be said that majority of the respondents believed that inter personal conflicts existed among the members of the management team of DSE, although respondents believed the degree of inter personal conflict score turned out to be low (20.3) indicating insignificant impact. On an average, *Inter- Personal conflict* Score (IPCS) of 65.9 clearly indicates that a *moderately low* degree inter personal conflict existed in the DSE management team prevalent in 1996.

Finally the management efficiency index is calculated as weighted average of ability score (AS), teamwork score (TWS) and inter personal conflict score (ICPS), with 30%, 60% and 10% weight on Ability, Teamwork, Inter personal conflict respectively. That is, MEI = $(.3 * AS + .6 * TWS + .1 * IPS)$/100 The overall result is shown in Table – 4

Table –4
Calculation of the Management Efficiency Index

Results	Respondent group-1 ME Index	Respondent group-2 ME Index	**Overall ME Index**
Average	0.403	0.364	**0.381**
STD	0.106	0.071	**0.090**
Prob	*0.0000*	*0.0000*	***0.0000***

From the results we can say that the overall Index of management efficiency of DSE management prevalent during the stock market boom and its subsequent crash is 0.381, indicating that the management efficiency (ME) was less than average, i.e. Poor. The score is statistically significant at 1% level of confidence. The essence of findings

remains unchanged even if the different weight score had been used. There is a difference of 0.037 perceived score of management efficiency between 1st member group (Those who were members during the crash of 1996 (0.403), and those who had become members after 1996 (0.364). However, the means of difference test reveal that the perceived difference score of 0.037 is statistically insignificant.

6. Conclusion

We have developed a perception based index to measure the degree of human performance efficiency of the policy making body (Council) of Dhaka Stock Exchange during the time of stock market boom and its subsequent crash of 1996. In constructing the Index, the main components considered, were Ability, Teamwork, and Inter-personal conflict, as perceived by the respondents. Again these dimensions are decomposed to a number of sub-components, where, Ability is the composed form of qualification and experience, staffing and intra-personal communication skill. Total teamwork is the composed form of the organization structure, responsibility, market supervision and control, and the decision making process of the council. Finally, the level of inter–personal conflict has been decomposed into the lack of proper communication, personal clash, and, behavioral problem. The Management Efficiency Index is a composite index of ability, teamwork and inter-personal conflict. The index is a weighted average continuum scale, in which the degree of human efficiency is determined on a calculated scale of 0 to 1. Although the weights assigned in each of the three main components are as perceived by the respondents, we have found that the essence of the results remains unchanged even if the variation of weight among the components is taken into consideration.

The result in its decomposed form suggests that the qualification and experience of the council as a whole is strong. The score of staffing suggests that DSE was inadequately staffed and not properly qualified, to handle the situation prevalent during the market boom, and Crash of 1996. The very low score of Intra Communicational Skill implies that the skill of the DSE management team was in fact poor. With the sum of these components, the *Ability Score* suggests, that the overall ability of the council was below average or low, indicating substantial inability of the DSE council in handling the situation, prevalent during market Boom and its subsequent Crash in 1996. The decomposed result of *teamwork* although given the maximum weight by the respondents, again throws light on poor performance. In its decomposed form, the findings of a poor organization structure of DSE were in fact a reflection of the devoid of job description, authority and accountability. On the contrary, the responsibility score is better than average indicating that the DSE council members were well aware of their responsibility and authority at the time of Market crash in 1996. Results of market supervision, with its four dimensions along with its span and the impact of policy implication, the efficiency benchmark turned out to be very poor. The score of decision making process, the last component of *team work*, indicates that quality of the decision making process prevalent in DSE during the time of Market Boom and Crash in 1996, was also very weak. Composed outcome of the *Teamwork Score*, suggests that although the members perceived maximum weight when ranking teamwork, the

efficiency of overall teamwork of DSE management, was found to be poor, at the time of Market Boom and Crash in 1996. Again the result of *Inter Personal conflict Score*, suggests that a moderately low degree inter personal conflict prevailed in DSE management team in 1996.

The overall Index of management efficiency of DSE management prevalent during the Stock Market Boom and its subsequent Crash in 1996 came down to 0.381 on a scale of one. The observed low score of index was in deed a revelation of the poor performance of management efficiency. The index score of the 1st Member Group (Those who were members during the Crash of 1996) is a bit higher than that of 2nd Member Group (those who had become members after 1996). However, the difference of .037 in index score is statistically insignificant implying that there is no variation of perception regarding management efficiency between these two groups. Even if the weights are equally distributed or shifted, there is no significant change in our findings. This indicates that, management of DSE during the market crash was very weak in order to take any policy decision or action to wither out the abnormal volatility of Stock prices, or take appropriate measures to slow down its subsequent fall in 1996.

We can also conclude that poor management of DSE can be considered to be one of the contributory factors to the market boom and crash in 1996. The theoretical structure of the index can be further utilized in measurement of human efficiency of the management of a non-profit Institution, where the Policy making body and the management is agglomerated.

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Significance of the work is to be added here: This means, That the theoretical development of the Index can be utilized in measurement of the deficiencies of the agglomerated management of stock exchange at the time of boom and crash of the stock market.