



Production Function Modified through Emotional Intelligence

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Abstract

This paper reports the findings of a study to examine any possible impact of emotional intelligence of decision-makers on output value, alongside the conventional capital and labour inputs, in the Cobb-Douglas (C-D) Product Function. Impact of Leadership on Organisational Performance and strong linkage between Emotional Intelligence and Leadership motivated the present study. The Trait Emotional Intelligence Instrument TEIQue short form, developed by K.V. Petrides, has been used to assess the emotional intelligence of decision makers. Analysis of data collected from 21 organisations has been carried out using relevant statistical tools. Value Addition and Sales Turnover have been considered as the dependent (output) variable in two different formulations with two traditional inputs namely Net Block and Employee Cost in the conventional Cobb-Douglas Production Function. Factors of emotional intelligence have been added as independent variables in the C-D Function and it is found that the multiple correlation increases both for Sales Turnover as also for Value Addition after inclusion of EI factors.

Keywords: Cobb-Douglas Production Function, Emotional Intelligence, Organizational Output, Financial Measures

JEL Classification:

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Introduction

A production function approach has been quite often adopted to relate the total amount of output with amounts of the important factors or inputs, mostly Capital and Labour. One commonly used form of this function to analyse total factor productivity as also different elasticity coefficients was suggested by Cobb and Douglas (Douglas, 1967), also (Durand, 1937) and has the simple form

$$P = A C^m L^n \dots\dots\dots(1.1)$$

Where,

- P = total production (the monetary value of all goods produced in a year)
- L = labour input (the total number of person-hours worked in a reference period)
- C = capital input (the monetary worth of all machinery, equipment, and buildings)
- A = total factor productivity
- m and n are the output elasticities of labour and capital, respectively. These values are constants determined by available technology.

As one limitation of the C-D equation which has not been generally pointed out, we may note that the input-output relation here is management-invariant. On the other hand, the role of management and, hence, of decision-making in influencing the efficiency of the conversion operation is being strongly emphasized currently. Going a step further, one can add that 'labour'—encompassing all levels of employees from front-line workers through administrative and technical support staff to executives—should be qualified in terms of their competence and commitment to develop the notion of 'intelligent labour' as the second input. The current focus on Leadership as well as on Policy and Strategy in affecting the input-output relation may be considered relevant in this connection.

Recent researches reveal strong relations between leadership capabilities with emotional intelligence. Restricting ourselves for the time being to leadership capabilities of executives who take various pertinent decisions likely to affect resource (input) utilization, one can attempt a relation between output value as the dependent variable and cost of capital and cost of employees suitably adjusted for emotional intelligence of decision-makers as the explanatory variables.

The present article examines possible impact of emotional intelligence of the leaders and decision-makers on output value, alongside the conventional capital and labour inputs, in an exploratory study covering 21 medium and large manufacturing industries with 268 respondents. The trait emotional intelligence questionnaire—short form (Petrides, 2009) has been used to measure the emotional intelligence of the decision makers. It is hoped that findings of this study on being made more comprehensive in content and coverage through future investigations will lead to a formulation of the production function that recognizes explicitly the role of 'man' or human resource in production economics.

Another alternative to be attempted is to introduce the concept of 'intellectual capital' by incorporating emotional intelligence into the 'capital' input.

Cobb-Douglas Production Function

A production function relates the value of output to the quantities (or their monetized equivalents) of productive factors, usually labour and capital. From the marginal productivity coefficients for labour and for capital, one can find out the change in one of the factors, keeping the other constant. The production function can also provide a method to determine the cheapest combination of factors required to produce a desired value of the output.

Operational definitions of Capital and Labour used in this equation vary slightly from one situation to another. For example, if time series data are used to analyse productivity for a single industrial production unit or even for a single industry type (characterized by common product types and input-to-output conversion processes), we can possibly talk of 'amounts' of capital and of labour as also of output. Even in such a context, the composition of labour and expenditure on labour (by way of salaries and wages as well of other perquisites and welfare measures etc.) can vary from time to time for the same unit and across units within the same type.

If we look upon the Cobb-Douglas production function equation as a means to explain variations in output across industries, (and not really to study factor productivity or marginal elasticity) which are comparable in terms of certain features like turn-over or size of employment or type of management etc. but vary in terms of their outputs, we need to consider the same dimension of output as also the two inputs. Thus we can try to relate variations in value of output to variations in expenses on capital and labour. A logarithmic transformation linearises the C-D equation and we should add a disturbance term (a random variable) to set up a multiple linear regression of output value on the two input costs.

Emotional Intelligence (EI)

Defining EI

“Emotional intelligence” (EI) has become a major topic of interest since the publication of the book on Emotional Intelligence authored by Daniel Goleman (Goleman, 1995). There is increasing evidence that EI can be considered as an organization phenomenon, predicting performance outcomes of individuals and groups.

Emotional Intelligence Models

Over the years theorists have generated several distinctive EI models. (Salovey & Mayer, 1990) (Mayer, Salovey, & Caruso, 2000) framed EI within a model of intelligence. They proposed four constituent of EI:

- (a) Perception, appraisal and expression of emotion
- (b) Emotional facilitation of thinking
- (c) Understanding and analyzing emotions. Employing emotional knowledge.
- (d) Reflecting regulation of emotions to promote emotional and intellectual growth.

Goleman formulates EI in terms of theory of performance (Goleman, 1998b). His framework of emotional intelligence (EI) is how an individual’s potential for mastering the skills of Self-Awareness, Self-Management, Social Awareness, and Relationship Management translates into on-the-job success (Goleman & Cherniss, 2001). Robert k. Cooper and Ayman Sawaf (Cooper & Sawaf, 1997) coined the term, Executive EQ with four cornerstones of emotional intelligence – Emotional Literacy, Emotional Fitness, Emotional Depth and Emotional Alchemy.

Petrides and Furnham (Petrides & Furnham, 2001) suggested a model of Trait EI or trait emotional self-efficacy. Trait emotional intelligence is defined as a constellation of emotion-related self-perceptions located at the lower levels of personality hierarchies (Petrides, Pita, & Kokkinaki, 2007). There are four interrelated factors in the model: Well-Being (pertaining to dispositional mood), Self-Control (pertaining to the regulation of emotions and pulses), Emotionality (pertaining to the perception and expression of emotions) and Sociability (pertaining to the interpersonal utilization and management of emotions; (Petrides, Pita, & Kokkinaki, 2007), also (Mikolajczak, Luminet, Leroy, & Roy, 2007).

Organisational Performance and EI of Leaders

An organization needs to be both effective and efficient in terms of its performance achievement. Effectiveness is judged by the degree or extent to which purpose or goals are achieved and efficiency refers to how the resources are economically employed. Leaders and decision makers in organisation play the pivotal role to make this happen. One common issue

faced by organisations is the sub-optimal level of performance despite having an efficient infrastructure and management systems. This could be attributed to the lack of shared aspiration and passion of the people. Successful leaders connect to, inspire and motivate the organisational members to high performance. They should have both cognitive ability and emotional intelligence (EI). The former would facilitate the process to establish the vision, goals, strategy, systems whereas EI strengthens relationship, sense of self-worth and self-esteem, courage and confidence to perform. Individual's behaviour – whether he is analysing, rationalising, deciding or communicating with others, is always influenced by the emotional factors. The cognitive and emotional facets of human being are two sides of a single coin and cannot be separated. Simply put, the thought and behaviour of leaders create the organisational environment which enhances employee engagement and mobilises their energy in productive ways towards organisational performance and output.

Behaviour is the demonstrated outcome of the belief, perception and attitude that are hidden below the surface. The deeper values and motivations influence the way people respond to different situations. When important thoughts and feelings are suppressed and kept within, problems start to pile up. Emotionally intelligent persons are aware of their internal dynamics and are able to control and express their thoughts and feelings appropriately.

A close look at Stephen Covey's work (Covey, 1989) on Seven Habits of Effective People reveals a direct reflection of the various facets of Emotional Intelligence. The three habits of Covey which lead to private victory are

Habit 1 Be pro-active. (You are the Creator.)

Habit 2 Begin with the End in Mind. (First Creation)

Habit 3 Do first things first. (Second creation)

And these three correspond to the three components of EI viz. Self-Awareness, Self-Regulation and Motivation.

Materials and Methods

The starting point for such an investigation concerns the operational definitions of output (value) and of capital and labour (costs) on the one hand and the quantification of emotional intelligence on the other. The operational definitions of capital, labour and output must be consonant with items of information available in authenticated statements of income and expenditure and the balance sheets of the organizations. Similarly, the measure of emotional intelligence should be based on a well-tested approach using a simple and relatively brief questionnaire that can be conveniently canvassed among the executives.

Organizational Measures

The measures with respect to output, capital and labour have been taken in monetary terms which are reported in Company's Annual Report and in public domain. These financial results are the only measures which are computed as per accounting standards and under statutory audit. Therefore for the purpose of our analysis, only financial results are considered. The dependent variable i.e. output has been considered in two different measures – Sales Turnover and Value Addition. Sales Turnover is a straightforward measure reported in the Profit & Loss statements.

Value Addition

It is another important measure and represents the additional wealth created by the Company's own efforts through its employees and application of other resources such as plant, machinery and equipment. It has been computed from the profit and loss statement as,

Value Addition = Total Income – Cost of (Raw Materials + Power & Fuel + Bought out Items/ Services)

The independent explanatory variables viz. Capital and Labour have been taken as Net Block and Employee Cost respectively which are again taken from the financial reports of the organisations. While Employee Cost is reported in the Profit & Loss Statement, Net Block is computed as Gross Block less Accumulated Depreciation.

EI Instrument

Two concepts of EI currently coexist: ability EI and trait EI. The ability perspective conceives EI as a form of intelligence best assessed via performance tests (Salovey & Mayer, 1990). The trait perspective envisages it as a set of emotion-related dispositions best assessed through self-reports (Petrides & Furnham, 2000). Whereas performance-based measures capture maximal performance; self-report measures capture typical performance (Cronbach, 1949).

The Trait Emotional Intelligence Questionnaire TEIQue (Short Form), a self-report instrument developed by Petrides was used to measure emotional intelligence of the executives. It consists of 30 items, rated on a seven-point scale and 13 facets organized under four factors: Well Being, Self-Control, Emotionality and Sociability. Two additional facets namely Adaptability and Self-Motivation contribute directly to the Global trait EI. The four trait EI factors have internal consistencies of around 0.88.

The factors and facets are,

Factors	Facets
Well Being -	Optimism, Happiness, Self-Esteem
Self-Control-	Emotional Regulation, Impulsiveness, Stress Management
Emotionality-	Empathy, Emotional Perception, Emotional Expression, Relationships
Sociability -	Emotional Management, Assertiveness, Social Awareness
Auxiliary -	Self- Motivation, Adaptability
Global Trait EI – All 15 Facets	

The four factors and the related statements in the Questionnaire are shown in Appendix -1.

Participants & Procedures

The organisational sample consisted of 21 medium and large scale manufacturing industries covering engineering, chemical, energy, and pharmaceuticals. 35 organisations, randomly chosen from the Confederation of Indian Industry (CII) list of manufacturing industries, were approached out of which 21 responded favourably. The target respondents were senior executives from those responding organisations involved in decision making at strategic and operational levels. The questionnaire was personally given to them and they were requested to avoid consultation with

others and to put in their personal views. The filled in questionnaire were collected later. The target number of respondents in an organisation varied from 12 to 20 depending upon its size and the responses were received from 9 to 18 executives. There were 268 respondents and the study was conducted during the period 2012-13.

Analysis of Data

The four factors and Global trait EI of each executive in a particular organization are worked out and the average of all those respondents in that organization was computed. Therefore for each organization, there are four EI factors and one Global trait EI considered as collective trait EI of that organization with respect to the four factors and global trait EI. These executives are meant to lead the organization in achieving its goals through formulation, deployment and implementation of relevant policies and strategies. In fact, the measure of EI considered was taken to reflect 'leadership' abilities of the executives.

The Sales Turnover, Value Addition, Net Block and Employee Cost have been taken from the Profit& loss Statements and Balance Sheets of respective organization for the financial year under reference. Table 1 represents correlations among the four factors of EI as also auxiliary and Global trait EI. Linear correlations between Sales Turnover and Value Addition (VA) on the one hand and the four EI factors individually as well some factors taken together are presented in Table 2. The weighted correlations considering the number of employees within an organization as weight are shown in Table 3.

Table- 1. Correlation Coefficients Among Ei Factors

Sl. No	Trait EI Factors	Well Being	Self-Control	Emotionality	Sociability	Auxiliary	Global EI
1	Well Being	1	0.62	0.80	0.70	0.62	0.87
2	Self-Control	0.62	1	0.67	0.71	0.59	0.84
3	Emotionality	0.80	0.67	1	0.79	0.60	0.92
4	Sociability	0.70	0.71	0.79	1	0.55	0.90
5	Auxiliary	0.62	0.59	0.60	0.55	1	0.79
6	Global EI	0.87	0.84	0.92	0.90	0.79	1

As expected, scores on the different dimensions of EI are highly and positively correlated among themselves. In particular, correlations between well-being and emotionality and sociability and emotionality are near perfect. Of course, Global EI in terms of its composition has to be highly correlated with each of the individual dimension. The fifth factor viz. auxiliary has a correlation of about 0.6 with each of the four principal factors of EI. All these correlation turned out to be

significant on the basis of the t-test using the statistic $t = r \sqrt{\frac{n-2}{1-r^2}}$ with (n-2) degrees of freedom, where n is the number of observations.

**Table-2. Linear Multiple Correlation Between Dependent
And Independent Variables**

Sl. No	Dependent Variable	Independent Variable(s)						R ²
1	Sales Turnover (S T)	Net Block (N B)	Employee Cost (E C)	-	-	-	-	0.74
2	Sales Turnover	Net Block	Employee Cost	Well-Being (W B)	Self-Control (S C)	Emotionality (Emo)	Sociability (Soc)	0.79
3	Sales Turnover	Net Block	Average of EI Factors / 7 x E C	-	-	-	-	0.76
4	Sales Turnover	Net Block	Multiplication of EI Factors / 2401	-	-	-	-	0.74
5	Value Addition	Net Block	Employee Cost	-	-	-	-	0.85
6	Value Addition	Net Block	Employee Cost	Well-Being	Self-Control	Emotionality	Sociability	0.88
7	Value Addition	Net Block	Average of EI Factors / 7 x E C	-	-	-	-	0.87
8	Value Addition	Net Block	Multiplication of EI Factors / 2401	-	-	-	-	0.81

Table-3. Weighted Correlations

Sl No	Dependent Variable	Independent Variable						R ²
1	Sales Turnover	Net Block	Employee Cost	Well-Being	Self-Control	Emotionality	Sociability	0.85
2	Value Addition	Net Block	Employee Cost	Well-Being	Self-Control	Emotionality	Sociability	0.93

The analysis (Table 2.) has been extended further to include some measures of labour and of capital inputs along with the EI factors as independent explanatory variables. In fact we have attempted a generalization of the traditional Cobb-Douglas Production Function Equation to incorporate the concept of human capital (as one aspect of intellectual capital) in terms of emotional intelligence.

Several variations of dependent relations have been tried out given that labour and capital supplies can provide quite a reasonable explanation of variations in the dependent variables (either value addition and sales output). It is but natural that the additional explanation (Percentage of variation in the dependent variable explained) by including EI factors will be somewhat low.

Examining the linear correlation of Value Addition as well as of Sales Turnover taken as dependent (output) variables with two traditional input (explanatory variables) namely Net Block and Employee Cost along with the four components of emotional intelligence, introduced in this study, it is found that both for Sales Turnover as also Value Addition inclusion of EI components increases the multiple correlation.

The coefficient of determination (R^2) for Sales Turnover in case of Net Block and Employee Cost, as the dependent variables comes out as 0.74, while the same increases to 0.79 when the four EI components are added. Similarly, in the case of Value Addition, this coefficient increases from 0.85 to 0.88.

As shown in Table 3. when the number of employees within an organisation was taken as a weight for the variable values, the value of R^2 for Sales Turnover with all the six explanatory variables came out as 0.85 as against 0.79, when these weights were not taken into account. Similarly the R^2 value increased from 0.88 to 0.93 in the case of Value Addition when weights were introduced in the computations.

To make use of emotional intelligence of decision makers as an input component determining organisational performance, we thought of several ways of modifying Cobb-Douglas Production Function.

In fact we wanted to change the classical labour input by a modified intellectual input with a human capital which takes care of emotional intelligence attributes of leaders/decision makers. Here again, we can use as a multiplying factor by which to adjust the employee cost figure as,

- Either average score of the four EI factor scores (averaged over the individuals within an organization) divided by 7 (the maximum possible score)
- Or, the consecutive product of the four EI factor scores divided by 7^4 equal to 2401.

Thus, the second independent input variable in the modified production function equation can be taken as,

$$\frac{\text{Average EI scores}}{7} \times \text{Employee Cost} \quad \text{or} \quad \frac{\text{Product of EI scores}}{7^4 (2401)} \times \text{Employee Cost}$$

Taking Sales Turnover as the dependent output variable R comes out to 0.76 with the first choice and 0.74 with the second choice. However, considering Value Addition as the dependent output variable, R comes out to 0.87 with the first choice and 0.81 with the second choice. The case with Sales Turnover and Value Addition for the first choice are explained in Table-4 & Table-6 and the same for the second choice appear in Table-5 & Table-7.

Table 4: Linear Multiple Correlation- Sales Turnover, NB and Average of Ei Factors/7 × EC

Log Sales	Log N B	Log 4EI/7×EC
x 2.718	x Log e	x Log e
8.9617183	8.260588	5.523388
7.8413969	5.217902	4.862176
11.002497	10.16716	7.372337
7.8948698	8.242406	3.973462
9.5742196	7.44491	5.420815
11.690037	8.850732	7.227881
9.2832406	8.88961	5.933143
10.133615	8.63492	6.240501
10.543549	7.822103	6.788151
9.9758644	10.56579	7.000715
10.743914	8.979378	6.891048
10.956739	11.57515	5.732924
10.208037	7.438954	5.539484

10.795705	8.078573	8.016022
9.6905943	8.630332	7.067133
10.638094	9.604893	7.701553
7.6772652	3.414451	4.361418
10.591791	10.49689	6.597973
10.471457	9.073632	7.354699
9.5713561	9.075532	5.832947
9.1294062	7.972682	4.522399

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.870110
R Square	0.757091
Adjusted R Square	0.730102
Standard Error	0.572279
Observations	21

ANOVA					
	df	SS	MS	F	Significance F
Regression	2	18.373554	9.186777	28.050975	2.944E-06
Residual	18	5.8950531	0.327503		
Total	20	24.268607			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	4.278108	0.758637	5.639201	2.38E-05	2.684270	5.871946	2.684271	5.871946
X Variable 1	0.220375	0.084920	2.59509	0.018287	0.041964	0.398785	0.041965	0.398785
X Variable 2	0.601816	0.130610	4.607726	0.000219	0.327414	0.876218	0.327414	0.876218

Table 5: Linear Multiple Correlation = Sales, Nb and Multiplication of Ei Factors /2401 × EC

Log Sales	Log N B	Log All x Ei/ 2401xEC
x 2.718	x Log e	X log e
8.961718	8.260588	4.652906639
7.841397	5.217902	4.006651791
11.0025	10.16716	6.483509969
7.89487	8.242406	2.516831621
9.57422	7.44491	4.17030774
11.69004	8.850732	6.014929796
9.283241	8.88961	4.621531022
10.13361	8.63492	5.130528569
10.54355	7.822103	5.819148411
9.975864	10.56579	6.197910019

10.74391	8.979378	6.299052855
10.95674	11.57515	4.663257638
10.20804	7.438954	4.532066433
10.7957	8.078573	7.468239893
9.690594	8.630332	6.098007985
10.63809	9.604893	6.450027485
7.677265	3.414451	2.030028567
10.59179	10.49689	5.555155319
10.47146	9.073632	6.139549008
9.571356	9.075532	4.520952316
9.129406	7.972682	3.681982943

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.858571
R Square	0.737143
Adjusted R Square	0.707937
Standard Error	0.595313
Observations	21

ANOVA					
	df	SS	MS	F	Significance F
Regression	2	17.88944	8.944722	25.23919731	5.99E-06
Residual	18	6.379164	0.354398		
Total	20	24.26861			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	5.554843	0.671417	8.273318	1.51E-07	4.144249	6.965437	4.144249	6.965437
X Variable 1	0.203156	0.091489	2.220544	0.039456	0.010944	0.395368	0.010944	0.395368
X Variable 2	0.508845	0.119099	4.27246	0.000458	0.258627	0.759062	0.258628	0.759063

Table -6: Linear Multiple Correlations- VA, NB and Average of EI Factors/7 × EC

Log Sales	Log N B	Log All x EI/ 2401xEC
x Log e	x Log e	X Log e
7.720789	8.260588	5.523388
6.302877	5.217902	4.862176
10.29178	10.16716	7.372337
6.715055	8.242406	3.973462
8.536447	7.44491	5.420815

10.08043	8.850732	7.227881
8.40488	8.88961	5.933143
8.802448	8.63492	6.240501
8.988331	7.822103	6.788151
9.29566	10.56579	7.000715
9.635825	8.979378	6.891048
9.699288	11.57515	5.732924
9.033059	7.438954	5.539484
9.923251	8.078573	8.016022
9.090859	8.630332	7.067133
9.94276	9.604893	7.701553
6.482911	3.414451	4.361418
10.11277	10.49689	6.597973
9.759996	9.073632	7.354699
8.186712	9.075532	5.832947
6.8265	7.972682	4.522399

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.932021
R Square	0.868664
Adjusted R Square	0.854071
Standard Error	0.487511
Observations	21

ANOVA					
	df	SS	MS	F	Significance F
Regression	2	28.29491	14.14745	59.52639	1.16E-08
Residual	18	4.278004	0.237667		
Total	20	32.57291			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1.82503	0.646265	2.823964	0.011244	0.467277	3.1827837	0.467277	3.182783
X Variable 1	0.248025	0.072341	3.428543	0.002996	0.096041	0.4000088	0.096041	0.400008
X Variable 2	0.779086	0.111263	7.002153	1.55E-06	0.545329	1.012843	0.545329	1.012842

Table – 7 : Linear Multiple Correlations- VA, NB and Multiplication of EI Factors /2401 × EC

Log Sales	Log N B	Log All x EI/ 2401xEC
x Log e	x Log e	x log e
7.720789	8.260588	4.65290664

6.302877	5.217902	4.00665179
10.29178	10.16716	6.48350997
6.715055	8.242406	2.51683162
8.536447	7.44491	4.17030774
10.08043	8.850732	6.0149298
8.40488	8.88961	4.62153102
8.802448	8.63492	5.13052857
8.988331	7.822103	5.81914841
9.29566	10.56579	6.19791002
9.635825	8.979378	6.29905286
9.699288	11.57515	4.66325764
9.033059	7.438954	4.53206643
9.923251	8.078573	7.46823989
9.090859	8.630332	6.09800798
9.94276	9.604893	6.45002749
6.482911	3.414451	2.03002857
10.11277	10.49689	5.55515532
9.759996	9.073632	6.13954901
8.186712	9.075532	4.52095232
6.8265	7.972682	3.68198294

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.899861
R Square	0.80975
Adjusted R Square	0.788611
Standard Error	0.586752
Observations	21

ANOVA					
	df	SS	MS	F	Significance F
Regression	2	26.37591	13.18795	38.30612187	3.27E-07
Residual	18	6.197003	0.344278		
Total	20	32.57291			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3.525203	0.661761	5.327005	4.60E-05	2.134895	4.915511	2.134895	4.915511
X Variable 1	0.240893	0.090174	2.671437	0.015566	0.051445	0.430341	0.051445	0.430341
X Variable 2	0.624172	0.117386	5.317256	4.696E-05	0.377553	0.870791	0.377553	0.870791

It comes out that the first formulation namely average EI Score divided by 7 and multiplied by Employee Cost performs better compared to the second formulation to explain variation in organizational performance, expressed in terms of Sales Turnover as well as in terms of Value Addition

Thus the modification in the traditional CDPF, suggested by the findings of the study is that, we replace the factor 'Labour' by {Average EI Score divided by 7 and multiplied by Employee Cost} as the second independent(explanatory) variable. The linear multiple regression equation for explaining variations in sales turnover and value addition are provided below.

$$\text{Log Sales} = 4.278108 + 0.220375 \log \text{NB} + 0.601816 \log (4\text{EI} / 7 \times \text{EC})$$

It comes out that the value of t statistic for the second independent variable is highly significant with a p value 0.000219.

$$\text{Log VA} = 1.82503 + 0.248025 \log \text{NB} + 0.779086 \log (4\text{EI} / 7 \times \text{EC})$$

It comes out that the value of t statistic for the second independent variable is highly significant with a p value 1.55E-06

It should be noted that the traditional explanatory variables are already established as providing a reasonably high explanation of variations in output. The increase in R² with the introduction of EI components may appear to be small, but should not be regarded as trivial.

Conclusion

In today's competitive age, relationship matters the most, both within and outside the organisation. And emotion is central to any relationship which helps to build people synergy and positive brand image. We can copy product and price, but it is impossible to replicate people and brand. Organisations are, therefore, investing relatively more on their intangible assets including human capital rather than on plant, equipment and capital tools.

Effective leadership in organisations emerge out of emotional competencies like self-confidence, optimism, self-reliance, empathy towards creating strong relationship between organisations and their customers and employees.

The study examined the possible relationship of emotional intelligence of leaders, along with labour and capital with organizational performance outcome such as sales turnover and value addition in the C-D production function. It showed a better explanation than the classical C-D function framework.

The scope of the study could be further enlarged to different demographic areas and to include the different components of intellectual capital.

Appendix-I

TEIQue-SF

Statements Relating to The Factors of EI

SI No	Factor	Statement
1.	Well-Being	I generally don't find life enjoyable
		On the whole, I'm pleased with my life

		I feel that I have a number of good qualities
		I believe I'm full of personal strengths.
		On the whole, I have a gloomy perspective on most things
		I generally believe that things will work out fine in my life
2.	Self-Control	I usually find it difficult to regulate my emotions
		I'm usually able to find ways to control my emotions when I want to.
		I tend to change my mind frequently
		I tend to get involved in things I later wish I could get out of.
		On the whole, I'm able to deal with stress.
		Others admire me for being relaxed
3.	Emotionality	Expressing my emotions with words is not a problem for me.
		I often find it difficult to show my affection to those close to me.
		I often find it difficult to see things from another person's viewpoint
		I'm normally able to "get into someone's shoes" and experience their emotions
		Many times, I can't figure out what emotion I'm feeling.
		I often pause and think about my feelings
		Those close to me often complain that I don't treat them right.
		I find it difficult to bond well even with those close to me.
4.	Sociability	I can deal effectively with people.
		I would describe myself as a good negotiator
		I often find it difficult to stand up for my rights.
		I tend to "back down" even if I know I'm right.
		I'm usually able to influence the way other people feel.
		I don't seem to have any power at all over other people's feelings
5.	Auxiliary	On the whole, I'm a highly motivated person
		I normally find it difficult to keep myself motivated.
		I often find it difficult to adjust my life according to the circumstances.
		Generally, I'm able to adapt to new environments.

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