

THE EFFECTS OF SKILLS AND EMPLOYEES PERFORMANCE IN INFRASTRUCTURE COMPANIES IN INDIA

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ABSTRACT: *This particular research titled with "The Effects of Skills and Employees Performance in Infrastructure Companies in India" is aimed at identifying and clarifying job skills and performance expectations in Infrastructure industry in India in order to ensure a sustainable advantage in infrastructure companies. This involves Understanding the importance of skills of the workforce in infrastructure organizations and how this skill is contributing to increasing the organizations efficiency. The study has been conducted in 8 selective infrastructure construction companies in India and for their employees. An appropriate sample size 1000 respondents has been chosen for this study.*

Key Words: *-Skills, Employees Performance, Infrastructure Companies, Organizational Arrangements, Administrations Fundamental etc.*

INTRODUCTION OF INFRASTRUCTURE

Infrastructure is the fundamental facilities and system serving a nation, city, or other territory, including the services and facilities essential for its economy to function (O'Sullivan, Sheffrin, Steven 2003). It can be defined as the elementary physical and organizational arrangements and amenities that are essentially needed for the process of a society or enterprise. It typically describes specialized structures, for example, roads, bridges, burrows, water supply, sewers, electrical frameworks, media communications (counting Internet availability and broadband velocities), etc. and can also be characterized as "the physical components of interrelated system giving items and administrations fundamental to empower, manage, or improve societal living conditions" (Fulmer, Jeffrey 2009).

Infrastructure Industry in India has witnessed incredible development in the recent few years. Growth and Development of infrastructure is indispensable for India's economic and social development as the opportunities for future growth are tremendous in the nation. Infrastructural development of a country plays a pivotal role in contributing largely to its overall global development.

Infrastructure provides supporting services in all the fundamental regions of mechanical and horticultural production, local and remote exchange and business. All these regions of production are incomplete without infrastructure facilities and services and their development can only be achieved through developing basic infrastructure services. These services incorporate roads, railways, ports, airplane terminals, dams, power stations, oil and gas pipelines, media transmission offices, the nation's educational system including schools and universities, health system including hospitals, sanitary system including clean drinking water facilities and the monetary system including banks, insurance, and other financial organizations and institutions. Some of these facilities precisely affect production of goods and services while others successfully assist in indirect help by building the social area of the economy. Thus it impacts the economy in both direct and indirect manner.

Speedy and large-scale transport of seeds, pesticides, manures and the produce utilize modern roadways, railways' and shipping facilities optimally for their enhanced production. Lately, agriculture likewise relies upon insurance and managing an account office due to its need to work on a substantial scale and hence comes the indispensable role of infrastructure into it.

The infrastructure sector is a key driver for the Indian economy. The sector is profoundly in charge of propelling India's overall development and appreciates the serious concentrate on Government for initiating approaches that would guarantee the time-bound production of world-class infrastructure in the nation. Infrastructure sector incorporates power, bridges, dams, streets and urban infrastructure development. In 2016, India hopped 19 places in World Bank's Logistics Performance Index (LPI) 2016, to rank 35th among 160 nations.

REVIEW OF LITERATURE

Skills are a basic and important asset for people, organizations, and societies. The significance of skills is significantly more articulated in a dynamic, globalized world. Building fundamental skills from the get-go, by widening and enhancing the nature of early childhood, is basic. In any case, it is likewise pivotal to ensure that skills taught at school are significant for the working scene; that they are kept up and additionally enhanced amid working life; and that they are perceived and utilized by managers once individuals are in the labor market (Davos-Klosters, 2014).

Skills development is integral to enhancing profitability. Thus, efficiency is a vital wellspring of enhanced expectations for living standards and growth. Other basic components incorporate macroeconomic policies to amplify opportunities for pro-poor employment growth, an empowering situation for sustainable enterprise development, social discourse and key interests in essential training, well-being, and physical infrastructure (Bangasser, 2000).

According to **International labour conference 2008:-** Effective skills improvement framework – which interfaces education to specific training, technical training to work advertise entry and work showcase area to the workplace and long-lasting learning – can empower countries to keep up productivity improvement and development and make an elucidation of that development into continuously and better business. This report examines the challenges looked by countries at changed levels of development and their approach alternatives. In this way, it searches for lessons that are critical for least development, making and more industrialized countries in associating skills change systems not solely to the present

needs of work showcase yet notwithstanding future needs as advances, advertises, the earth, and development techniques change (**International Labour Conference, 97th Session, 2008**).

Recognize that skills improvement and different interests in human capital involve just a single arrangement of elements necessary for productivity growth. Skills improvement alone can't raise enterprise and national efficiency. Different components and strategies are in like manner lacking on the off chance that they are executed in isolation of skills development. One of the messages of this report is that skills advancement must be an essential piece of more extensive development methodologies on the off chance that it is to convey on its generous potential to add to general efficiency and employment growth (**International Labour Conference, 97th Session, 2008**).

Skills are important in the structural adjustment of economies. As economies move from relative reliance on agricultural production to assembling and administration businesses, laborers and endeavors must have the capacity to learn new specialized, entrepreneurial, and social skills. Inability to learn new skills due to insufficient fundamental training or absence of opportunity moderates the exchange of all components of generation from lower to the higher value-added activities (**International Labour Conference, 97th Session, 2008**).

The procedure of skills development for efficiency, employment, and advancement is intricate and is impacted by policies and institutions. **The Human Resources Development Convention, 1975, and the Human Resources Development Recommendation, 2004**, underline the roles of governments, employer and worker and the significance of social exchange in outlining and executing preparing strategies and projects that are proper for nation circumstances.

RELIABILITY FOR DATA COLLECTED

Reliability coefficient tested by using Cronbach's alpha (α) analysis. To measure the reliability for a set of two or more constructs, Cronbach's alpha is a commonly used method where alpha coefficient values range between 0 and 1 with higher values indicating higher reliability among the indicators (**Hair et al., 1992**).

Table 1.1: Case Processing Summary

Case Processing Summary		N	%
Cases	Valid	247	100.0
	Excluded ^a	0	.0
	Total	247	100.0
a. Listwise deletion based on all variables in the procedure.			

Source: Author's Compilation

From the above **Table 1.1**, it could be interpreted that total case followed under examinations which were found valid were 247. Total numbers of cases were 247. None were found missing or excluded case. All the responses collected through respondents and governed by the questionnaire were systematically filled, and specific attention was given to all the respondents if required so that proper and confirmed responses about the issues could be collected.

Table 1.2: Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.771	46

Source: Author's Compilation

From above **Table 1.2**, it could be easily recognized that Cronbach value for the responses of the 247 respondents of the study was found as 0.771 which is an excellent representation of the quality of data and confirms approx 77.1% reliability of the collected data. Cronbach's alpha (α) is an important psychometric instrument to measure the reliability of data. The reliability coefficient indicates that the scale for measuring trust and commitment is reliable. So, various statistical tools can be applied and tested.

ANALYSIS

One of the factors that influence the implementation of any technological model is awareness or literacy about the particular topic or method or technology, but other several factors are also there. Questionnaire was administered with multiple parameters which directly or indirectly affects the working of the employee's for their better performance in the infrastructure industries. There are 17 parameters that are covered in the question, for them respondents have to give their opinion under Liker Scale parameter where 5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree and 1= Strongly Disagree. This particular question help to understand those factors which majorly affect the working of the employee's for their better performance in the infrastructure industries.

KMO measure of sampling adequacy is used to compare the magnitudes of observed correlation coefficients about the magnitudes of partial correlation coefficients. If KMO value is below than 0.5, then researcher should not do a factor analysis. Bartlett's Test of Sphericity is used to test the hypothesis that the correlation matrix is an identity matrix (all the diagonal terms are one and off-diagonal terms would be zero). The significant value less than .05 shows significant variable relations. All the items are perfectly correlated with themselves and have some level of correlation with other items. If they are not correlated with other items, then they cannot be the part of the same factor. The related table is presented below:

Table 1.3: KMO and Bartlett’s Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.678
Bartlett’s Test of Sphericity	Approx. Chi-Square	643.213
	Df	246
	Sig.	.000

Source: Author’s Compilation

From above **Table 1.3** it could interpret that Kaiser-Meyer-Olkin measure value is greater than 0.5 so factor analysis could be applied to the sample. Bartlett’s Test of Sphericity value of significance is less than .05 shows which show the significance of the parameters statements means all the factors are very significant and must be under observation.

To analyze these statements or parameters principal component analysis method is applied; the results are presented in following **Table 1.4**.

Table 1.4: Total Variance effect of skills on the working of the employees for their better performance

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.145	46.946	46.946	13.145	46.946	46.946
2	3.734	13.337	60.283	3.734	13.337	60.283
3	1.689	6.033	66.316	1.689	6.033	66.316
4	1.469	5.248	71.564	1.469	5.248	71.564
5	1.108	3.956	75.520			
6	1.060	3.785	79.305			
7	.930	3.323	82.628			
8	.660	2.359	84.986			
9	.651	2.326	87.313			
10	.629	2.245	89.557			
11	.501	1.791	91.348			
12	.447	1.597	92.946			
13	.406	1.448	94.394			
14	.383	1.369	95.763			
15	.318	1.136	96.899			
16	.213	.762	97.661			
17	.202	.721	98.382			
18	.172	.614	98.995			
19	.142	.509	99.504			
20	.109	.391	99.895			
21	.030	.105	100.000			
22	1.863E-017	6.655E-017	100.000			
23	2.476E-018	8.842E-018	100.000			
24	-2.438E-017	-8.706E-017	100.000			
25	-3.351E-017	-1.197E-016	100.000			
26	-6.830E-017	-2.439E-016	100.000			
27	-1.351E-016	-4.825E-016	100.000			
28	-5.483E-016	-1.958E-015	100.000			

Extraction Method: Principal Component Analysis.

Table 1.4 Concluded till four components, means from the factor analysis for the factors from the responses of the respondents it could observe that their opinion could better be clubbed under found four different groups.

Total four components were extracted from the analysis of variance presented in the above Table 1.4.

Table 1.5: Factor Analysis of effect of skills on the working of the employees for their better performance

Component Matrix				
	Component			
	1	2	3	4
D1	.964	-.072	-.136	-.069
D2	.689	-.084	-.121	-.203
D3	.584	-.105	-.253	-.092
D4	.657	-.067	-.251	-.083

D5	.757	-.112	-.126	.056
D6	.550	.041	-.309	.163
D7	.645	-.023	-.314	-.100
D8	.782	-.025	-.074	-.009
D9	.964	-.072	-.136	-.069
D10	.897	-.040	-.106	-.110
D11	.964	-.072	-.136	-.069
D12	.964	-.072	-.136	-.069
D13	.577	.079	-.173	.608
D14	.618	-.031	.213	-.395
D15	.923	-.110	-.060	-.082
D16	.732	-.086	.027	.062
D17	.674	-.029	-.070	-.174
DII1	.807	-.134	.405	.136
DII2	.807	-.134	.405	.136
DII3	.456	-.008	.051	.746
DII4	.431	.020	.582	-.327
DII5	.753	-.172	.475	.106
DII6	.536	-.092	.455	.221
DII7	.311	.881	.113	-.052
DII8	.311	.881	.113	-.052
DII9	.311	.881	.113	-.052
DII10	.191	.788	-.108	.061
DII11	.191	.788	-.108	.061
Extraction Method: Principal Component Analysis.				
a. 4 components extracted.				

Source: Primary Data [Analysis made by IBM SPSS 19.0]

Extraction Method: Principal Component Analysis [4 Components extracted]

From the analysis of above Table 1.5, four factors are extracted which are associated with the respondent's opinion about the factor which affects the working of the employees for their better performance. By analyzing the 17 different parameters the IBM SPSS, 19.0 extracted four factors which are as follows:

Factor 1: These parameters are associated with the behaviour of organization's executives, middle managers, Organization-wide performance measures & organization's Strategy, The behaviour of organization's employees and Employees strategies to determine customers' expectations. In overall words, it could be summed up as that this particular factor is covering all the dimensions associated with **Strategic Plan**.

Factor 2: These parameters are discussing the behaviour of organization's employees, Organization's philosophy, the safety of Employees, Organization develops special processes for best customers, Employees internal processes are designed to meet the needs of the customer and Organization flexible procedures and policies that act as guidelines in meeting customer needs. In overall words, it could be summed up as that this particular factor is covering all the dimensions associated with Skill set.

Factor 3: This factor covers the factors related to effects of employee training development, Employees can assess and determine customers' future needs, their belief that the business exists primarily to serve customers, Employees strive to be the best in the world in providing value for best customers, Employees can exceed customers' Expectations, Employees accurately target customers' long-term needs, Employees use customer research information to shape new products and services., Employees use customer information as the most important factor for developing New products and services etc.

Factor 4: This factor presents the opinion of respondents for the factors discussing the organization's performance measures, Employees receive the training and instruction necessary to do the job properly, supervisor communication, proper information dissemination, customer feedback on the job, employees have easy access to any information within the organization that they need to improve doing their job, When employees change jobs within the organization, they know what they must do to perform well in the new job, My peers and others within my organization

have the information and knowledge to do my job, functional area or team, satisfaction of internal customer, satisfaction of external customers, clearly defined and well-followed process to resolve disagreements. Overall this factor is mainly focusing on the Organization's Performance. To analyze the respondent's opinion for the impact of above-mentioned factors on working of employees and effects of skills on their performance, statements were clubbed into a related variable and then constructs.

Table 1.6: List of Variables and Measured effect of skills on the working of the employees for their better performance

Construct	Variable	Measured Used	Statement Nos.
Strategic Plan	Variable 1	The behavior of organization's executives is consistent with the behaviors needed to execute the strategic plan successfully.	1
	Variable 2	The behavior of organization's middle managers is consistent with the behaviors needed to execute the Strategic plan successfully.	2
	Variable 3	Organization-wide performance measures & match the organization's Strategy.	3
	Variable 4	The behaviour of organization's employees is consistent with the behaviors needed to execute the strategic plan successfully.	5
	Variable 5	Employees use highly developed customer listening strategies to determine customers' expectations.	12
Skills	Variable 6	The behaviour of organization's employees is consistent with the Organization's philosophy.	4
	Variable 7	Employees may feel safe with the way in which transactions are handled.	11
	Variable 8	Organization develops special processes for best customers	15
	Variable 9	Employees internal processes are designed to meet the needs of the customer.	16
	Variable 10	Organization has flexible procedures and policies that act as guidelines for meeting customer needs	17
Effect of Training	Variable 11	Employees can assess and determine customers' future needs	6
	Variable 12	Employees believe that the business exists primarily to serve customers	7
	Variable 13	Employees strive to be the best in the world in providing value for best customers	8
	Variable 14	Employees can exceed customers' Expectations	9
	Variable 15	Employees accurately target customers' long-term needs	10
	Variable 16	Employees use customer research information to shape new products and services.	13
	Variable 17	Employees use customer information as the most important factor for developing New products and services.	14
Organization's Performance	Variable 18	My organization's performance measures are clearly defined	DII (1)
	Variable 19	Employees receive the training and instruction necessary to do the job properly	DII (2)
	Variable 20	My supervisor always giving the information and knowledge which requires doing my job	DII (3)
	Variable 21	I receive the proper information to do my job from my supervisor	DII (4)

Variable 22	I receive the information to do my job for my external customers	DII (5)
Variable 23	In my organization, employees have easy access to any information within the organization that they need to improve doing their job.	DII (6)
Variable 24	When employees change jobs within the organization, they know what they must do to perform well in the new job	DII (7)
Variable 25	My peers and others within my organization have the information and knowledge to do my job	DII (8)
Variable 26	In my job, functional area, or team, we are always aware of how satisfied our internal customers.	DII (9)
Variable 27	In my organization, we are always aware of how satisfied our external customers.	DII (10)
Variable 28	My organization has a defined and well-followed process to resolve disagreements.	DII (11)

Source: Questionnaire, Primary Data

For examining the relationship between the variables or constructs of factor Pearson’s Correlation Coefficient was applied. Pearson’s Coefficient required parametric data because it is based on average deviation from mean. The data of respondents about the factors impact and effect on working of the employees for better performance are parametric so Pearson’s Correlation could be applied. One-tailed tests should be used when there is a specific direction to the hypothesis being tested, and two-tailed tests should be used when a relationship is expected, but the direction of the relationship is not predicted. It ranges from negative (-1) to positive (+1) coefficient values. A negative correlation indicates that high values on one variable are associated with low values on the next. A positive correlation indicates that high values on the one variable are associated with high values of the next.

ANALYSIS OF RELATIONSHIP BETWEEN DEMOGRAPHIC VARIABLES AND ON EFFECT OF SKILLS ON THE WORKING OF THE EMPLOYEES FOR THEIR BETTER PERFORMANCE

Analysis of relationships between demographic variables of respondents and on effect of skills on the working of the employees for their better performance by the respondents will be presented in this section of the chapter.

Relationship between age and effect of skills on employee’s performance

To investigate the relationship between demographic variables like age & income with the effect of skills on the working of the employees for their better performance by the respondents following hypotheses were formulated.

- H₀₁:** There is no significant relationship between the age and the effect of strategic plan on the performance of the employees
- H₁₁:** There is a significant relationship between the age and the effect of strategic plan on the performance of the employees
- H₀₂:** There is no significant relationship between the age and the effect of skills on the performance of the employees
- H₁₂:** There is a significant relationship between the age and the effect of skills on the performance of the employees
- H₀₃:** There is no significant relationship between the age and the effect of training on the performance of the employees
- H₁₃:** There is a significant relationship between the age and the effect of training on the performance of the employees
- H₀₄:** There is no significant relationship between the age and the effect of organizational performance on the employees
- H₁₄:** There is a significant relationship between the age and the effect of organizational performance on the employees

Table 1.6:- ANOVA table between age and the effect of skills on employees performance

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Strategic Plan (SP)	Between Groups	.101	5	.020	.107	.991
	Within Groups	45.640	241	.189		
	Total	45.741	246			
Skills (SK)	Between Groups	.334	5	.067	.309	.029
	Within Groups	52.176	241	.216		
	Total	52.510	246			
Effect of Training (ET)	Between Groups	.177	5	.035	.187	.042
	Within Groups	45.564	241	.189		
	Total	45.741	246			
Organizational Performance (OP)	Between Groups	.489	5	.098	.525	.757
	Within Groups	44.928	241	.186		
	Total	45.417	246			

According to **Table 1.6**, the significant value of **Strategic plan (0.991)** is greater than 0.05, so we accept the null hypothesis that **there** is no significant relationship between the age and the effect of the strategic plan on the performance of the employees. This decode that all the age groups of employees givesame opinion about the effect of the strategic plan on the performance of employees.

The significant value of **Skills (0.029)** is less than 0.05, so we reject the null hypothesis and accept the alternative hypothesis that **there** is a significant relationship between the age and the effect of skills on the performance of the employees. This interprets that all the age groups under consideration here opined differently about the effects of skills on the performance of employees.

The significant value of **Effects of Training (0.042)** is less than 0.05, so we reject the null hypothesis and accept the alternative hypothesis that there is a significant relationship between the age and the effect of training on the performance of the employees. This implies that all the age groups like think different about the effect of training on the performance of employees.

The significant value of **Organizational performance (0.757)** is greater than 0.05 so accepting the null hypothesis that no significant relationship between the age and the effect of organizational performance on the employees. This implies that various age group employees possess the same perception about the effect of organizational performance on the employees.

Relationship between income and effect of skills on employee's performance

H₀₅: There is no significant relationship between the income and the effect of strategic plan on the performance of the employees

H₁₅: There is a significant relationship between the income and the effect of strategic plan on the performance of the employees

H₀₆: There is no significant relationship between the income and the effect of skills on the performance of the employees

H₁₆: There is a significant relationship between the income and the effect of skills on the performance of the employees

H₀₇: There is no significant relationship between the income and the effect of training on the performance of the employees

H₁₇: There is a significant relationship between the income and the effect of training on the performance of the employees

H₀₈: There is no significant relationship between the income and the effect of organizational performance on the employees

H₁₈: There is a significant relationship between the income and the effect of organizational performance on the employees

Table 1.7:- ANOVA table between income and the effect of skills on employees performance

ANOVA		Sum of Squares	Df	Mean Square	F	Sig.
Strategic Plan (SP)	Between Groups	.239	4	.060	.317	.866
	Within Groups	45.502	242	.188		
	Total	45.741	246			
Skills (SK)	Between Groups	.283	4	.071	.328	.859
	Within Groups	52.227	242	.216		
	Total	52.510	246			
Effect of Training) (ET)	Between Groups	.600	4	.150	.804	.045
	Within Groups	45.141	242	.187		
	Total	45.741	246			
Organizational Performance (OP)	Between Groups	.259	4	.065	.347	.846
	Within Groups	45.158	242	.187		
	Total	45.417	246			

According to **Table 1.7**, the significant value of **Strategic plan (0.866)** is greater than 0.05, so we accept the null hypothesis that **there** is no significant relationship between the income and the effect of the strategic plan on the performance of the employees. This decode that all the income groups of employees givesame opinion about the effect of the strategic plan on the performance of employees.

The significant value of **Skills (0.859)** is greater than 0.05, so we accept the null hypothesis that **there** is no significant relationship between the income and the effect of skills on the performance of the employees. This interprets that all the income groups under consideration here opined same about the effects of skills on the performance of employees.

The significant value of **Effects of Training (0.045)** is less than 0.05, so we reject the null hypothesis and accept the alternative hypothesis that there is a significant relationship between the income and the effect of training on the performance of the employees. This implies that all the income groups like think differently about the effect of training on the performance of employees.

The significant value of **Organizational performance (0.846)** is greater than 0.05 so accepting the null hypothesis that no significant relationship between the income and the effect of organizational performance on the employees. This implies that various income group employees possess the same perception about the effect of organizational performance on the employees.

CONCLUSION

The basic aim of organizing this research is to examine the issues related to the Effects of Skills and their Performance in Infrastructure Companies in India to Develop a Sustainable Advantage from the employee's point of view and understanding and identifying the effects. For this purpose, the data collection was done through three systematic and structured questionnaires. The questionnaire was administered for those respondents who were working in the eight big infrastructure companies of India viz. Learson & Turbo Limited, Nagarjuna Construction Company, IVCRL Infrastructure & Projects Limited, Simplex Infrastructure Limited, GMR Infrastructures, Gammon India, Hindustan

Construction Company, LancoInfratech Limited. The questionnaire was very well partitioned into various segments for the systematic collection of demographic, respondent's opinion for the skills and training and their effects on performance offered to them by their companies, their perception about the service offered and how they would rank them, their opinion about the identified benefits delivered by the application of skills in improving performance factors which directly or indirectly affects the adoption of skill and training and related services and how they are impacting the organizations performance.

Reliability of collected data was measured by Cronbach's alpha (α) analysis, which is a commonly used method where alpha coefficient values range between 0 and 1 with higher values indicating higher reliability among the indicators. According to this analysis, the captured data was up to mark and can be used for further analysis.

Total 1000 Questionnaires were distributed on convenience sampling method, and 247 were collected in return which further used for the analysis purpose. The researcher took care of respondents who systematically filled the questionnaire.

So we could better conclude that Skill enhancement of infrastructure company employees had improved quality of organizations overall services which significantly improving the organization's performance, productivity and strategic planning. It was also observed that employees and organizations both are deriving several benefits from the Training and development programme.

The research helped employees and organization in Understanding the importance of skills of the workforce in an organizations efficiency. After analyzing the effect training and development and other related activities on the upgrading of the workforce and hence an organizations performance, specifically as applied to infrastructure companies it was observed from the results that skills development is crucial for organizations success. A positive relationship is being established between specific skills and requirements from the labor and its impact on functioning and results of the infrastructure companies that ultimately assists in developing a course of action that an infrastructure company can work with to build an advantage in the industry and more importantly convert it into a sustainable advantage.

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