

## Impact of Organizational Culture on the Occurrence of Rework in Building Project

<sup>1</sup>Luqman Oyekunle Oyewobi; <sup>2</sup>Ahmed Doko Ibrahim; <sup>1</sup>Bashir Olanrewaju Ganiyu and <sup>1</sup>Inalegwu George Okwori

<sup>1</sup>Department of Quantity surveying,  
Federal University of Technology, Minna, Niger State, Nigeria

<sup>2</sup>Department of Quantity surveying,  
Ahmadu Bello University, Zaria

**Corresponding Author: Luqman Oyekunle Oyewobi**

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### Abstract

*Mismatch of organisational culture type can impact negatively on the productivity and performance of an organisation influencing the occurrence of rework in building projects. The research paper focuses on evaluating the impact of organizational culture on the occurrence of rework in building projects with a view to reducing poor project delivery methods. A survey questionnaire was designed and self-administered to professionals that were involved in building projects (40 companies were sampled) to assess the level of importance attached to organisational culture and to investigate the influence of organisational culture on the occurrence of rework. The level of importance attached to organisational culture was analyzed using the relative importance index, factor analysis was used to identify the significant factors responsible for rework and multiple regression analysis was used to determine the relationship and influence of organisational culture on rework. The findings revealed that organisational culture had a direct impact on the occurrence of rework in terms of communication and working pressures with an  $\beta$  value of 0.498. Clearly, reductions in rework require construction firms to re-examine the way they conduct their operations and become prevention focused by addressing these factors and taking them seriously to strive for better organisational management*

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**Keywords:** organisational culture; performance; rework; Nigeria; construction industry

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### INTRODUCTION

Researches into the performance of the industry are largely focused on building projects rather than on organisations responsible for the projects. Many have therefore called for a critical consideration of the culture within the construction organization handling construction projects to enhance efficient project delivery in construction (Ankrah, Proverbs and Debrah, 2009). Performance was measured largely in terms of time, quality and cost (performance indices) rather than in terms of other variables that affect performance. The few researches conducted at the organisational level were centred on financial performance. Yet performance of the industry is not improving and it continues to be a source of concern. Organisational culture seems to offer solution to improving organisational performances and hence research into the culture of organisations has attracted so much attention due to its potential as a powerful management tool to improve company's performance and also reducing rework occurrence in building projects.

Organisational culture is a pattern of basic assumptions which is invented, discovered or developed by a group or organisation since it learns

to cope with its problems of external adaptation and taught to new members as the correct way to think in relation to those problems. In other words, organisational culture is valued as the dominant leadership style, language and symbols, the procedures and routines, and definition of success that characterizes the organisation. Since it appears that culture has crucial roles to play in organisation as a facilitator or predictor of commitment to performance enhancement, it could be an answer to solving some of the problems affecting project delivery such as poor performance and occurrence of rework in building projects. This research becomes imperative despite the huge research being conducted in Nigeria to investigate and proffer solution to the causes and effect of defects in building project and these continue unabated due to poor culture within many organizations within construction industry. Campbell, Stonehouse and Houston (1999) submitted that culture can also have influence on: employee motivation; employee morale and 'good will'; productivity and efficiency; the quality of work; innovation and creativity and the attitude of employees in the workplace. This research therefore seeks to assess impact of organisational culture on the occurrence of rework in building projects with the

aim of developing a framework that will predispose the construction industry to better performance and most essentially, reducing the occurrence of rework in building projects.

**PREVIOUS STUDIES**

**Organisational Culture and Its Role in Organisations**

The role that organisational culture plays in an organisation can be divided into the functions of organisational culture and the influence that organisation culture has on the different processes in the organisation. The functions of organisational culture can be summarized as internal integration and coordination (Furnham & Gunter, 1993).

Internal integration can be described as the socializing of new members in the organisation, creating the boundaries of the organisation, the feeling of identity among personnel and commitment to the organisation while the coordinating function refers to creating a competitive edge, making sense of the environment in terms of acceptable behaviour and social system stability which is the social glue that binds the organisation together (Martins, 2000). Brown (1998) lists some of the roles that have been identified with organisational culture as:

- **Coordination and control:** Embedded in the stories and myths which culture provides are the previously agreed norms of behaviours and rules within which individuals in the organisation can reach agreement on how to generally organize and reach decisions. Therefore, the means of control within the organisation are contained in the basic assumptions, beliefs, values and attitudes.
- **Motivation:** Organisational culture affords management an important channel for improving organisational efficiency and effectiveness through employee motivation and hence improved performance.
- **Competitive advantage:** Competitive advantages can be engendered through a strong organisational culture. This is attributed to the fact that a strong culture promotes consistency, coordination, control, reduces uncertainty and enhances motivation. It equally influences organisational effectiveness and efficiency. In this sense a strong organisational culture can enhance organisational success in its spheres of market and in turn improve performance.
- **Reduction of uncertainty and conflict:** Most researchers believe that culture is the social glue that binds an organisation together by providing appropriate standard of the way things are done as to guide employees in what to say, do and act. As a result the culture of an organisation reduces employee’s uncertainty and anxiety about expected behaviour and thereby reducing conflict.

**Levels of Culture**

Like the computer that has the hard aspect and the soft aspect so also is culture. Culture has its hard aspect which can be seen and felt. Bath Consultancy Group (2006) calls this aspect high profile symbols which include logos, slogans, mission statements, publication and the like while the soft aspect is regarded as the low profile which resides in the acts of individuals and department. These two aspects of culture are viewed by Alo (1987) as the material and non-material aspects. The materials aspect refers to the concrete and tangible products of man’s creativity while the non-material aspect consists of such intangible parts of man’s social equipment as language, norms, values, ideas, beliefs, knowledge etc and is encapsulated in the totality of the social heritage of a people which covers every aspect of their life (Alo, 1987).

Bath Consultancy Group (2006) considers these two aspects of culture as tending to operate on one of five levels while on the other hand Schein (1985) views culture as comprising three levels which include behaviour and artifacts, values and basic assumptions. The following model was developed to explain these levels of culture.

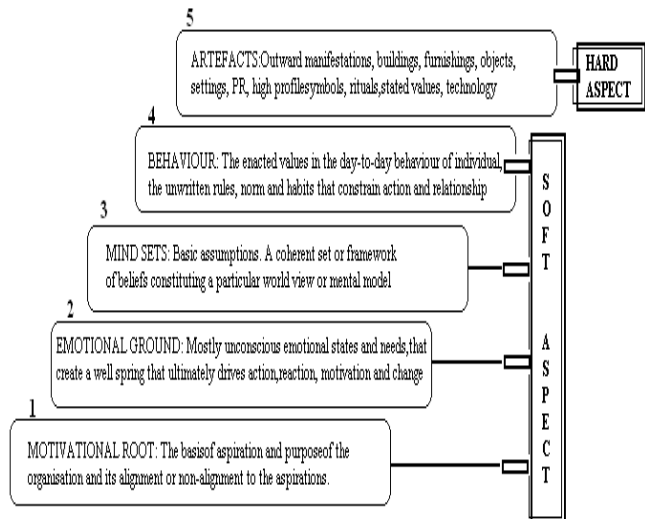


Figure 1: Aspects and Levels of Culture  
 Source: Bath Consultancy Group (2006)

This model is used to assess culture and most cultural change processes start by changing the artifacts which is quickly followed by changing the daily behaviour through a set of written document.

**Rework Occurrence in Building Projects**

Rework represents a relatively new terminology in the modern construction management lexicon and can be defined as ‘the unnecessary effort of redoing a process or activity that was incorrectly implemented the first time, (Love, 2002a). Within the Australian construction industry, rework has been identified as a

significant factor that contributes to cost increases and project completion delays (Love, 2002a). Such a negative impact inevitably reduces the overall competitiveness of practitioners working within the construction industry and directly leads to client dissatisfaction, reduced profitability and, in extreme circumstances, litigation (Love, 2002b). Design-related problems, stemming from inadequate, incorrect or incomplete contract documentation, are considered to be the major source of rework in projects (Love et al., 1999). Tilley and McFallen (2000) reported that the quality of contract documentation produced by design consultants appears to have significantly diminished since the abolition of established fee scales and the introduction of competitive tendering for consultancy services. Tilley and McFallen (2000) have also indicated that increased fees are positively correlated with the quality of contract documentation produced by consultants. In turn, improvements gained will significantly ameliorate project performance.

**Organisational Culture and Rework**

The modulus operandi of construction organisations (designers and contractors alike) is typically detection focused and, therefore, emphasis is placed on the product, procedures and/or service deliverables and the downstream producing and delivery processes. Dale (1999) stated that in such an environment, considerable effort is expended on, after the event of inspecting, trouble shooting, checking, and testing of the product and/or service and providing reactive “quick fixes” in a bid to ensure that only conforming products and services are delivered to the customer’. This narrow quality control approach has a proclivity to stifle creative and systematic work activities, while planning and improvements are neglected and defects (e.g. errors, which may subsequently lead to rework) remain undiscovered until late into the procurement process.

Documentation quality may suffer when a firm submits a low design fee for a project, especially when design tasks are subjected to ‘time boxing’, which is when a fixed time period may be allocated to complete each task, irrespective of whether the documentation or each individual task is complete or not. Poor workload planning within design organisations can also contribute to ‘time boxing’ and lead to inadequate time being allocated to prepare complete design documents (Coles, 1990; Stasiowski & Burstein, 1994; Rounce, 1998; Love., 2000). Mismanagement and poor quality service provided by design consultants has resulted in rework becoming an accepted norm and profits being eroded within architectural firms (Gardiner, 1994). Specific rework activities that contribute to reducing profit levels in architectural firms include (Rounce, 1998):

- i. Redesign due to an inadequate brief
- ii. Changes arising from unchecked drawing issue

- iii. Redesign due to inappropriate drawing scale; and
- iv. Attending to design changes requested by the client.

**RESEARCH METHODOLOGY**

A survey-based approach was employed as the methodology of this research. Well-structured questionnaires were developed to specifically identify factors capable of causing rework and to assess the level of importance attached to organisational culture. The research was confined to building construction companies in Kaduna state, Nigeria. Questionnaires were administered to professionals who included Architects, Quantity surveyors and Builders. The rating was based on a Likert scale of 1-5, where 1= Not important/ Strongly Disagree, 2= Less important/ disagree, 3= Somewhat important/ Somehow agree, 4= Important/ Agree, 5= Very important/ Strongly agree.

**ANALYSIS AND RESULTS**

The background information of the respondents was analyzed using simple percentile while the rating factors on likert scale which were ordinals could not be meaningful if parametric statistics was adopted, therefore, relative importance index and factor analysis was used. Multiple regression analysis was used to determine the influence of organisational culture on the occurrence of rework. The level of importance of organisational culture and commitment was analyzed by using importance index. The scale of measurement was ordinal. A rating value from 1 to 5 was attached to the level of importance. The opinions of the respondents on the level of importance attached to organisational culture in their organisations and in the Nigerian construction industry were expressed on a scale ranging from “not important” to “very important”.

Table 1 shows the analysis of their responses using the importance index. The top three dimensions, organisational leadership, success criteria and management of employees were rated most as the most important dimensions that determine the outcome of performance in most organisations. It is not surprising that organisational leadership is way ahead on the list of organisational dimensions because it is an established fact that leadership styles influences both staff commitment or motivation and performance (Chan, 1998).

Table 1: Relative importance index

S/n	Org. Culture Dimension	RII	Rank
1	Organisational leadership	84	1
2	Success Criteria	82	2
3	Management of Employees	78	3
4	Organisational Glue	76	4
5	Strategic Emphasis	74	5
6	Dominant Characteristics	73	6

Table 2 and 3 (See appendix) contains the extraction statistics for each factor. The total variance explained by each factor is listed in the column labeled "Eigen value". The succeeding column contains the percentage of the total variance attributable to each factor.

For example, the linear combination formed by the fifth factor, "Traditions and loyalty is highly esteemed in my company" (TLEC) in table 2 has an Eigen value of 1.843, which is 76.77% of the total variance of 24. The last column titled cumulative percentage indicates the percentage of variance attributable to that factor and those that precede it in the table. The first two columns provide information about the individual variables, while the last four describes the factors. Same approach applies to table 4.

In table 4 and 5 (See appendix), twenty four (24) variables relating organisational culture were reduced to eight (8) underlying factors and fifty (50) variables relating to rework occurrences were also reduced to 15 underlying factors prior to multiple regression analysis. Using the factor analysis function in the statistical package for the social sciences, table 5 shows that eight (8) components were extracted from twenty four (24) variables prior to multiple regression analysis. The cumulative percentage explained by the eight (8) components is approximately 76%.

The underlying factors are each computed with a factor score, which are then fed into the multiple regression models as the dependent variables. The multiple regression models in return, identify the most important factors capable of causing rework.

Regression analysis was used to identify the relationships between organisational cultures and rework occurrence in building project. A regression model is a mathematical model that can relate a number of independent variables to a dependent variable. Hence, this technique is chosen as the principal tool in this study to identify the influence of organisational culture on the occurrence of rework in building project.

Organisational culture variables were computed as the dependent variables while rework occurrence factors were computed as the independent variables to drive out results. A total of two factors were measured for fifty (50) cases and a step wise multiple regression analysis was applied to determine the underlying factors with organisational culture.

The two factors measured were poor communication and working pressures

## DISCUSSION OF RESULTS

The relative importance index identified leadership style as the organisational culture dimension with the highest rank and the highest level of importance

attached to. The leadership style practiced in any organisation dictates the outcome of commitment, performance and delivery. This is in line with Kotter and Heskett (1992) who found that evidence has confirmed that organisations which put emphasis in key managerial components such as leadership outperform those that do not have these cultural characteristics and that also the effectiveness of a motivating leadership style has the most significant impact on project success. Factor analysis was able to identify some major organisational culture factors capable of causing rework which included; Formalized and structured competitive strategies and staff's welfare; Stability emphasis; Success criteria; Goal accomplishment; Employment security; Communication; Dynamism; and Leadership style. This finding is similar to that of Poras and Hoffer (1986) who highlighted several factors which were critical in determining any projects' success and also capable of causing delays and rework, the factors highlighted includes: Open communication; Responsibility; Leadership and shared vision; Effective problem solving; Support and participation; and Strategic management. The workers become more satisfied when they are involved in planning and considered in goal setting for the organizations (Alinaitwe, Mwakali and Hansson, 2009).

The multiple regression analysis identified that two out of the fifteen postulated factors were significantly associated with organisational culture. The two factors associated with organisational culture were poor communication and working pressures. This implies that, a significant relationship between organisational culture and rework exist and was established from the regression results. The regression result is in line with the findings of CII (1990) which identified rework as a significant factor affecting performance as an outcome of poor organisational culture or mismanagement in the construction industry. Findings

With regards to the analysis previously carried out, the research findings are summarized and highlighted below:

- i. The Leadership style in any organisation is a key determinant of the outcome of performance and productivity in any organisation because it plays an important role in the motivation of employees.
- ii. Organisational culture is an important management instrument that determines the success and failure of any project.
- iii. Organisational culture has a direct impact on the occurrence of rework which is responsible for cost and time overrun.
- iv. Finally, Organisational culture is a powerful management instrument which can control the rate of rework occurrence in building project.

## RECOMMENDATIONS

Based on the findings and factors identified, the following recommendations were proffered:

- i. Attention should be paid to the management style of organisations which aids in improving the motivation of employees towards optimum organisation effectiveness.
- ii. Activities being done capable of causing rework should be reduced to the barest minimum.
- iii. Organisational culture should be implemented by construction organisations in order to identify their operating cultural traits and status in addition to helping such organisations develop support systems to reinforce them for higher levels of performance and employees commitment.
- iv. Construction organisations should re-examine the way they conduct their operations and become prevention focused by addressing factors responsible for the occurrence of rework and taking them seriously to strive for better organisational management.

## CONCLUSION

As this research paper has amply demonstrated, organisational culture is a powerful management instrument that can be employed to minimize rework by enhancing project performance indices (time, cost and quality). Extensive research work has been accomplished to show that organisational culture which is a management model will be the one that utilizes quality assurance, quality control and manages risk by forcing the organisation to minimize deviation of time, cost and quality. Clearly, reductions in rework require construction firms to re-examine the way they conduct their operations and become prevention focused by addressing these factors and taking them seriously to strive for better organisational management.

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**APPENDIX**

Table 2: Organisational Culture (Extraction)

Variables	Extractions (%)	Factors	Eigen Value	% Variance	Cumulative %
Most employees consider the company a personal place to work in	72.5	1	4.975	20.73	20.731
My company is dynamic and entrepreneurial in nature	80.8	2	2.922	12.17	32.905
My company is a place where employees are always asked to produce results	89.5	3	2.361	9.837	42.742
The company where I work is strongly formalized and structured	84.1	4	2.13	8.876	51.618
Traditions and loyalty is highly esteemed in my company	63.5	5	1.843	7.677	59.295
In my company, innovative ideas and collaborations are encouraged	73.4	6	1.546	6.441	65.736
My company is where productivity and goal accomplishment is central	85.8	7	1.326	5.526	71.262
My company is a place where emphasis is on role and status	85.7	8	1.193	4.969	76.230.
The leadership in my company can be described as a mentor	79.9	9	0.933	3.887	80.117
The leadership in my company can be described as an innovator	59.2	10	0.849	3.538	83.656
The leadership in this company drives the employees hard in order to produce results	79.2	11	0.637	2.652	86.308
The leadership in this company can be viewed as a good organizer	72.4	12	0.57	2.374	88.683
In this company employees prefer to work as part of a team as opposed to working alone	75.7	13	0.533	2.222	90.805.
In this company employees are given the freedom to innovate and bring in new ideas	81	14	0.443	1.845	92.950.
In this company targets are set for employees to achieve within specific time frame and results are demanded	81.2	15	0.389	1.62	94.371
What happens in this company is quite predictable and there is security of employment	89.4	16	0.364	1.515	95.886
In this company most employees are involved in their work	69.1	17	0.323	1.345	97.231
In this company we have long term purpose and direction with clear dynamic strategy for the future	70.1	18	0.225	0.939	98.171
Our strategies in this company lead other organisations to change the way they compete	68.9	19	0.195	0.811	98.982
In this company job permanence and stability is emphasized	69.9	20	0.101	0.421	99.404
This company has a lot of concern for employees and is highly sensitive to customers issues	79	21	0.058	0.24	99.643
My company can be described as an innovative company and a market leader in the industry	67.6	22	0.045	0.187	99.830.
My company has presence in virtually all the states of the federation	73.1	23	0.027	0.112	99.942
Programmes and schedules are strictly followed and project delivery to time and quality dependable	78.6	24	0.014	0.058	100.00.

Table 3: Rework occurrence

Variables	Extractions(%)	Factors	Eigen Value	% Variance	Cumulative %
Omission during design	84.1	1	8.214	16.763	16.763
Errors during construction	87.6	2	5.588	11.403	28.168
Omissions during construction	83.7	3	4.559	9.304	37.472
Quality failure	90.8	4	3.662	7.474	44.946
Quality deviation”	80.6	5	3.388	6.914	51.859
Design changes	89.4	6	3.206	6.542	58.401
Poor quality contract documentation	87.1	7	2.691	5.493	63.894
Defective materials	87.5	8	2.239	4.569	68.462
Overlooked site condition	87.1	9	1.974	4.029	72.492
Lack of proper evaluation	82.2	10	1.777	3.626	76.118
Conflicting information	85.9	11	1.454	2.967	79.085
Unrealistic programme	97.7	12	1.348	2.751	81.836
Inadequate work separation	91.2	13	1.209	2.468	84.304
Change in plan and scope by client	94	14	1.071	2.186	86.49
Change in specification by client	94	15	1.022	2.087	88.577
Contractor initiated changes	91.3	16	0.78	1.592	90.168
Lack of attention to quality	93.8	17	0.71	1.449	91.618
Non-compliance to standards/ specification	88.1	18	0.594	1.213	92.831
Correct interpretation of customer requirements	92.3	19	0.562	1.148	93.976
Lack of understanding	93.5	20	0.52	1.061	95.039
Safety considerations	89.8	21	0.448	0.914	95.954
Defect	87.6	22	0.385	0.786	96.739
Checking procedures	89.8	23	0.316	0.645	97.385
Poor management practices	82.7	24	0.258	0.527	97.912
Poor communication	92.8	25	0.23	0.469	98.381
Lack of quality focus	96.8	26	0.192	0.392	98.772
Poor team work/ joint problem solving	90.3	27	0.163	0.332	99.104
Ineffective coordination	89.3	28	0.154	0.315	99.419
Procurement method	88.8	29	0.126	0.258	99.677
Contractor selection method	84.9	30	0.06	0.123	99.8
Working under high time pressure	74.3	31	0.053	0.108	99.909
Cost pressure	88.1	32	0.045	0.091	100.00.
Untimely delivering	75.6	33	-2.17E-16	1.94E-15	100.00.
Inadequate construction planning	89.8	34	-3.87E-16	1.54E-15	100.00.
Staff turnover	94.7	35	-5.46E-16	9.94E-16	100.00.
Inadequate personnel planning and supervision	92.4	36	9.94E-16	8.22E-16	100.00.
Disturbance in personnel planning	92	37	8.22E-16	5.79E-16	100.00.
Lack of training	90.6	38	1.15E-16	4.49E-16	100.00.
Variables	Extractions(%)	Factors	Eigen Value	% Variance	Cumulative %
Lack of motivation and care	88.3	39	-1.24E-17	3.63E-16	100.00.
Inexperienced personnel	87.9	40	-7.02E-17	1.15E-16	100.00.
Insufficient skill level	88.6	41	-2.17E-16	-1.24E-17	100.00.
Ignorance and lack of knowledge	90.5	42	3.63E-16	-7.02E-17	100.00.
Delays	88.6	43	-6.88E-16	-2.17E-16	100.00.
Alteration	91.4	44	-9.58E-16	-3.87E-16	100.00.
Lack of skill development	75.6	45	-1.26E-15	-5.46E-16	100.00.
Carelessness	89.8	46	-2.06E-15	-6.88E-16	100.00.
Excessive overtime	94.7	47	1.94E-15	-9.58E-16	100.00.
Inadequate funding	91.4	48	1.54E-15	-1.26E-15	100.00.
Ambiguous instruction	86.9	49	-1.00E-15	-2.06E-15	100.00.

Table 4: Factor Structure of Varimax Rotation on Organisational culture Factor Items

Factors	Factor loading	Extractions (%)	Eigen Value	% Variance	Cumulative %
<b>Factor 1: Formalized and structured welfare and competitive strategies.</b>					
CFSR	0.551	84.1			
EFII	0.853	81			
PDDS	0.671	70.1			
SOCI	0.713	68.9			
CESC	0.682	79	4.975	20.731	20.731
<b>Factor 2: Stability emphasis</b>					
EWDS	0.673	69.1			
JPSE	0.74	69.9			
ICML	0.7	67.6			
PFSC	0.571	73.1			
PSPD	0.696	78.6	2.922	12.174	32.905
<b>Factor 3: Success Criteria</b>					
MCPR	-0.541	89.5			
IICE	0.768	73.4			
PGAC	0.719	85.8			
LIER	-0.688	59.2	2.361	9.837	42.742
<b>Factor 4: Goal Accomplishment</b>					
LDEH	0.877	79.2			
LGOC	0.817	79.4	2.13	8.876	51.618
<b>Factor 5: Security of Employment</b>					
MCFR	-0.598	89.5			
TERD	0.717	81.2			
CPSE	0.761	89.4	1.843	76.77	59.295
<b>Factor 6: Communication</b>					
ERML	0.894	85.7	1.546	6.441	65.736
<b>Factor 7: Dynamisms of organisation and its environment</b>					
MEPW	0.69	20.73			
MCDE	0.862	12.17	1.326	5.526	71.262
<b>Factor 8: Leadership style</b>					
LCMF	-0.767	79.9			
EPTE	0.834	75.7	1.193	4.969	76.23



**Table 5: Factor Structure of Rotations on rework occurrence Factors**

<b>Factors</b>	<b>Factor loading</b>	<b>Extractions (%)</b>	<b>Eigen Value</b>	<b>% Variance</b>	<b>Cumulative %</b>
<b>Factor 1: Coordination and execution methods</b>					
CI	0.528	89.8			
PM	0.606	82.7			
SM	0.824	92.8			
QM	0.901	96.8			
TP	0.584	90.3	8.214	16.763	16.763
<b>Factor 2: Qualification, welfare and mode of operations</b>					
LT	0.574	89.8			
MC	0.775	94.7			
IP	0.725	92.4			
SL	0.833	92			
IK	0.779	90.6			
DY	0.508	88.3			
AN	0.608	87.9	5.588	11.403	28.168
<b>Factor 3: Work separation and site condition</b>					
DM	0.762	87.5			
CI	0.603	85.9			
UP	0.865	97.7			
WS	0.842	91.2	4.559	9.304	37.472
<b>Factor 4: Errors and omissions in design</b>					
OD	0.771	84.1			
EC	0.781	87.6			
DC	0.7	89.4			
TW	0.719	96.8	3.662	7.474	44.946
<b>Factor 5: Modifications and quality deviations</b>					
CC	0.661	91.3			
AQ	0.502	93.8			
IR	0.846	92.3			
SC	0.805	93.5	3.388	6.914	51.859
<b>Factor 6: Specifications, evaluations, monitoring and untimely delivery</b>					
ME	-0.731	82.2			
CS	0.72	94			
UD	0.51	75.6	3.206	6.542	58.401
<b>Factor 7: Alterations and quality focus</b>					
CC	0.908	91.3			
AQ	0.891	93.8	2.691	5.493	63.894
<b>Factors</b>	<b>Factor loading</b>	<b>Extractions(%)</b>	<b>Eigen Value</b>	<b>% Variance</b>	<b>Cumulative %</b>
<b>Factor 8: Carelessness and inadequate funding</b>					
SD	0.614	75.6			
CN	0.847	89.8			
IF	0.725	91.4	2.239	4.569	68.462
<b>Factor 9: Time and cost pressures</b>					
TP	0.515	74.3			
CP	0.732	88.1			
PS	0.854	92.4	1.974	4.029	72.492
<b>Factor 10: Construction omissions and quality failure</b>					
OC	0.841	83.7			
QF	0.877	90.8	1.777	3.626	76.118
<b>Factor 11: Management and safety considerations</b>					
SC	0.635	93.5			
MP	0.675	89.8			
QF	0.807	92.8	1.454	2.967	79.085
<b>Factor 12: Poor communication and working under high pressure</b>					
PC	0.877	82.7			
TP	0.564	74.3	1.348	2.751	81.836
<b>Factor 13: Alteration, deviations and client requirement</b>					
QD	-0.577	80.6			
SC	0.8	94			
IR	-0.521	92.3	1.209	2.468	84.304
<b>Factor 14: Poor contract documentations</b>					
CD	0.733	87.1			
IK	0.718	90.5	1.071	2.186	86.49
<b>Factor 15: Excessive overtime</b>					
EO	0.506	47	1.022	2.087	88.577

**Table 6: Estimate of regression parameters using Variables obtained from Principal component**

Variables	Coefficients	SE	t- statistics	Sign
Constant	3.938	0.054	72.327	0.000***
ROF2	0.115	0.055	-2.085	0.052**
ROF12	0.155	0.055	2.802	.012**
<b>R<sup>2</sup></b>				0.498
Adjusted SE of estimate				0.31
F-statistics				1.127(sig at 0.403)

Note: \*\* and \*\*\* denotes significance at 5 and 1% sig. level respectively

Two factors were found to have significant association with organisational culture at  $p > 0.01$  and  $r = 0.498$