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# AN EMPIRICAL INVESTIGATION INTO THE CONSTRUCT OF HIGHER EDUCATION SERVICE QUALITY: AN APPLICATION AND DIAGNOSTICS USING MODIFIED SERVPERF

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## Structured Abstract

**Purpose:** The purpose of this paper is to measure undergraduate and post-graduate students' perception of service quality performance at Govt. Degree College (GDC), Udhampur in J&K State.

**Methodology:** The modified SERVPERF model including 5 dimensions entitled as tangibles, reliability, empathy, professor and career guidance and 16 items was tested on 280 students (respondents) from 28 disciplines at GDC, Udhampur using Convenience Sampling Technique. The collected data was analysed using factor analysis, step-wise regression and one-way ANOVA test.

**Findings:** The research findings suggest that in all 5 dimensions, 12 items were obtained during scale purification through factor analyses yielding 47.71% of the variance. Reliability of the scale items have been assessed through Cronbach Alpha method ranging from 0.63 to 0.82 and construct and predictive validity through KMO (0.901) and step-wise regression analysis respectively, explaining 6 suitable predictors. 'Knowledge base' has emerged as the weakest predictor whereas 'Teacher's preparation' was found to be the strongest predictor 'as confirmed by their relative't'-values. The subject-wise impact across 28 subject groups and16 service quality performance variables indicate significant variances. Subjects like Computer Applications, PG Hindi, Music, History, BCA and PG English obtained above average response for service quality and lowest was found in Commerce, Botany and Urdu.

**Limitations:** The statement such as 'communication skill of the teachers' and 'fairness in the internal assessment' were termed insignificant and ranked 'below average' by the students merely because understanding of the subject-matter could not be reached among the students and some variations might have been found in evaluation practices or may be that students were overconfident of their performance. The SERVPERF scale was found to explain a great deal of the variation in service quality and doesn't cater to the needs of faculty in assessing some of the non-academic aspects, reputation, access, programme issues and understanding.

**Contribution to the extant Literature:** This paper contributes by exploring students feedback regarding strengths of the college in the form of teacher's preparation, teacher's advice, extent of coverage, extent of interaction, syllabus and knowledge base of teachers and also emphasizes improvements in the communication skill and evaluation techniques being followed in teaching in higher educational institutions. Such findings can be further

compared and assessed in future research to be undertaken in graduate and post-graduate institutions of similar nature.

**Keywords:** Service quality performance, SERVPERF, Exploratory Factor Analysis (EFA), undergraduate and post-graduate students, Govt. Degree College (GDC), Udhampur

## 1. Introduction

Sustainable investment in human capital is must for achieving sustainable development. In a competitive market conditions, satisfaction with educational services may make the difference (Cook and Thompson, 2000; Parasuraman, Zeithaml, & Berry 1996). Satisfaction may influence student's desire to attend or defect various higher educational institutions. Therefore, in order to measure service quality performance, colleges should include service quality assessment in their efforts to be accountable for the effectiveness of their services (Kerlin and Dunlop, 1993). Thus, searching for new and creative ways to attract, encourage and maintain stronger relationships with students is vital for each higher education institution to have a competitive edge in the future.

Increased competition in the educational environment has contributed to the growing importance of service quality measurement in the institutions of higher learning. Students of different educational institutions who are considered as clients of colleges have specific expectations such as practical and professional educations in order to be prepared for their careers, social movement, learning research skills and so forth. The literature suggests that there is mounting pressure from stakeholders, students, parents and employers to close the increasing gap between institutional quality and their expectations. Therefore, it is vital for higher education institutions to actively monitor the quality of services and safeguard the interests of stakeholders through the fulfilment of their real needs and wants (Awan and Bhukhari, 2010). Therefore, this study attempts to assess the service quality performance in higher education using five dimensions of SERVPERF and administer such dimensions among undergraduate and postgraduate students of Govt. Degree College, Udhampur.

## 2. Research Framework and Propositions

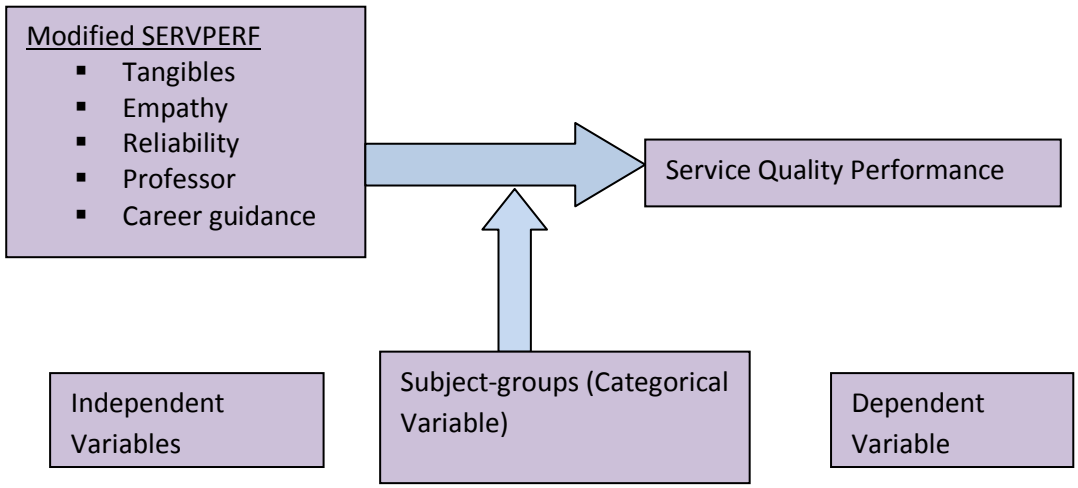
Previous literature suggested that there is positive relationship between quality of service offered and student satisfaction, therefore, management should pay a keen attention to the quality of service offered (Masoud and Olfati, 2011).

A study by Ali and Mohamed (2014) revealed significant variation across students with different academic performance with respect to their perception of the impact of quality

attributes on satisfaction. Significant variations were also found in overall satisfaction with educational experiences across different lines of specialisations.

According to the findings of the current research, the modified SERVPERF model including 5 dimensions for assessing service quality is presented. In our modified model, five original dimensions of SERVPERF scale were used in which responsiveness is deleted, assurance is replaced by professor and career guidance has been added as a new dimension.

**Figure 1: Research Framework of Service Quality Performance**




The broader objective of this paper is to identify and measure factors underlying service quality performance of GDC, Udhampur, mean variation across 28 subjects-groups with respect to 16 variables and testing of regression model fitness & identifying predictors of overall service quality for strategic-orientation of college teachers and also administering modified research framework and suggested HEDPERF scale for further service quality assessment. There are three specific objectives and hypotheses of this paper, each of them are expressed in the form of a research questions (RQ) and propositions (P).

1. ***RQ1:*** *Whether exploratory factor analysis (EFA) is contributing towards identifying and measuring factors underlying service quality performance.*

   ***RQ2:****.Whether KMO statistic and Bartlett's test of Sphericity provide for the suitability of data set for EFA.*

   ***P1:*** *Factor analysis yields significant factors underlying service quality performance that exhibit sufficient inter-correlations among items within each factor.*

2. ***RQ1:*** *Whether step-wise regression identifies suitable predictors and variability accounted by each predictor.*

***RQ2:*** *Whether such predictors are significant in establishing relationship with overall service quality performance and in strategic decision-making.*

***P2:*** *There exist significant relationship between the predictor and the outcome in the form of overall service quality performance to render regression model fit.*

3. ***RQ1:*** *Whether subject-wise variation exists across 16 dimensions of service quality performance.*

***RQ2:*** *Whether significance value of levene's* statistic and homogeneity of variances and F (robust test of equality of means) indicates significant variances across subject groups.

***P3:*** *There are significant mean differences across 28 subject-groups towards 16 service quality performance dependents.*

## 3. Research Methodology

Survey research was used to achieve the objectives of the research study. Ten students each from 28 different subjects were selected as sample from GDC, Udhampur on convenience basis. A modified questionnaire was adopted with five dimensions of service quality (Tangibility, Reliability, Professor, Empathy and career guidance) recommended in SERVPERF model containing 16 statements. The responses of 280 graduates and post-graduates were obtained on five-point Likert rating scale ranging from 5 (Excellent) to 1(below average). The questionnaire consisted of 16 items in five dimensions:

1) Tangibility (5 items)
2) Reliability (01 items)
3) Professor (5 items)
4) Career guidance (01 item)
5) Empathy (3 items)

The collected data was analysed using factor analysis, step-wise regression and one-way ANOVA test. The validity and reliability of the questionnaire was tested. The validity of questionnaire was confirmed by factor analysis. Internal consistency was examined by Cronbach's alpha. Cronbach's alpha of service dimension was in range from 0.63 to 0.82 (Vanniarajan and Anbazhagan 2007 and Burch et. al, 2004).

## 4. Evaluation Procedure and Analysis

### 4.1 Item Analysis

The sub-scales of service quality performance with respect to Tangibles, Empathy, Reliability, Professor and Career Guidance pertaining to major dimensions of SERVPERF failed to achieve acceptable levels of internal consistency [0.50 recommended by Kakati and

Dhar (2002)]. During this process, four items were deleted and reliabilities of the remaining sub-scales ranged from 0.63 to 0.82.

**4.2 Exploratory Factor Analysis (EFA)**

The Exploratory Factor Analysis (EFA) has been subsequently performed on the total 16 items out of which 12 items were obtained through scale purification. The suitability of the data set for EFA was examined using the KMO statistic and Bartlett's test of Sphericity.

The KMO statistic which measures the overall sampling adequacy of the factor analysis produced a value of 0.901 which is meritorious (KMO as a measure of sampling adequacy, where values greater than 0.5 is acceptable, values between 0.5 & 0.7 are mediocre, 0.7 & 0.8 are good, 0.8 & 0.9 meritorious and above 0.9 superb) and Bartlett's test of Sphericity also known as zero identity matrix yielded *X2* value of 1.175E3 ($p < 0.000$) which suggests that the intercorrelation matrix contains sufficient common variance to render factor analysis.

The sample data were then examined using Principal Component Anaysis (PCA) as the extraction technique and varimax as the orthogonal rotation method. To improve the construct validity through EFA, two commonly employed decision rules were initially applied to identify the factors underlying service quality performance: a) deleting items with insignificant factor loadings (FL≥0.50) and b) excluding single item factors from the stand point of parsimony.

The outcome of EFA suggested a three factor solution, accounting for 47.709% of the variance.

As emerging factors comprised as many as 12 items, EFA was repeated to reduce the items to a more tractable number. A more stringent criterion specifying that item with loadings less than 0.50 on a given factor be deleted. Out of 16 items, 12 survived this process, loading on nine distinct factors. Based on the shared meaning among the items of each factor, the three factors were labelled as Tangibles, Empathy and Professors and their Alpha reliability coefficients were 0.766, 0.663 and 0.632 respectively.

**4.3 Construct and predictive validity**

KMO value was meritorious at 0.901, indicating construct validity. The dependent variable of service quality performance has shown definite relationship with independent variables of tangibles, empathy and professors. Step-wise regression model explain suitable predictors and one-way ANOVA analysis also measure subject-wise impact on service quality performance thereby explaining predictive validity of scale items.

### 4.4 Key operational factors purified through factor analysis

Factor analysis yielded three factors from 16 items. Four statements were deleted while purifying the data. In all the three dimensions, four items in factor 1 exhibited 'above average' response, five items in factor 2 were explained 'average' response, and three items in factor 3 were also accorded 'average' response. Four items within factor 1 scoring 'above average' response were 'knowledge base (4.2857)', 'teacher's preparation (4.2893), 'overall rating (4.00) and teacher's advice (4.0857). However, 'average response' items within factor 2 were 'syllabus (3.7714)', 'extent of coverage of course (3.7643)' 'depth of course (3.3607', 'extent of efforts on students (3.8036)' and 'availability of library material (3.4429)' and three items also exhibiting 'average' response within factor 3 were 'usage of IT (3.1147)', 'ability in evaluation (3.7107) and 'teacher's accessibility (3.9929). After the scale purification, three significant factors have been identified and KMO (0.901) and Bartlett's test of Sphericity (1.175E3 ($p < 0.000$)) provide for satisfactory evidence for the suitability of the data set. Also three suitable factors and 12 items have been obtained with high factor loadings and Eigen values thereby **answering two research questions (RQ1 & RQ2) and supporting proposition one (P1)**.

### 4.5 Successful predictors of Service Quality Performance Variables as dependent variable

Table 2 shows the results of step-wise multiple regression analysis using 6 items to predict the dependent variable of service quality performance. The results of the regression analysis shows six independent variables as significant in the regression model namely, teacher's preparation, teacher's advice, extent of coverage, extent of interaction, syllabus and knowledge base of teachers.

The regression analysis has been applied on the data (scale items) obtained after scale purification. The value of R as 0.470, 0.577, 0.655, 0.644, 0.651 and 0.659 signify positive correlation between predictor and the outcome. 'Teacher's preparation' has emerged as the strongest predictor whereas 'knowledge base' was found to be the weakest as confirmed by their relative't'-values. The total variability in service quality performance accounted for by these three independent variables is 43.50%. Change in $R^2$ was also found to be significant as the values of F are well below 0.05 percent significance level. The value of Durbin-Watson being close to 2 is also indicative of the fact that errors in regression are independent. Six suitable predictors have been identified. Each predictor explains significant relationship with

the overall service performance as dependent variable through its R values, Beta values & t-values (Table 2).

**Hence, the regression model is tested and proved to be fit thereby supporting two research questions (RQ1 & RQ2) and proposition 2 (P2).**

### 4.6 An Analysis of Subject--Wise Impact on Service Quality Performance using One-way ANOVA Test

The subject-wise variation in responses in 28 disciplines with respect to service quality performance variables has been assessed using one-way ANOVA test. Table 3 explains categorical impact on sixteen service quality performance variables namely, 'adequacy of syllabus', 'availability of library material & facilities', 'depth of course content', 'extent of coverage of course', 'course relevance to real life situations', 'extent of interaction between students and teachers', 'usage of ICT', 'extent of efforts required by students', 'teacher's preparation', 'knowledge base of teachers', 'accessibility of the teachers', 'ability to design evaluation strategies', 'communication skill of the teachers', 'extent of teacher's advice', 'teacher's fairness in internal assessment', and 'overall rating of teaching and learning'. Significance value of levene's statistic and homogeneity of variances and F (robust test of equality of means) less than 0.05 indicated significant variances across subject groups. The table 3 is divided into between group effects (the experimental effects) and within group effects (unsystematic variation). Since MSR is less than MSM, that is unsystematic variation (within group effects) is less than systematic variation, then F-ratio would be more than 01 and hence significant at 0.05 level. This means there is significant variation across subject-groups with respect to service quality performance. However, subject-wise mean scores explain that highest response was obtained in subjects i.e., history, political science, BCA, environmental science, geography, PG Hindi, UG Hindi, computer applications, mathematics, education, and music with respect to **'adequacy of syllabus'**. Service quality performance with respect to the **'availability of library material and facilities'** stood above average in subjects namely, geography, PG Hindi, Education, Music and Urdu. With respect to the **'depth of the course content'** covered subjects, namely, BCA, geography, UG Hindi, Computer applications and music scored 'above average' response. **'Extent of course coverage'** dimension achieved highest mean scores in subjects i.e., economics, sociology, BCA, geography, psychology, UG Hindi, Biotechnology, Computer Applications, Dogri, Education and Music. Subjects such as History, BCA, Computer Applications, Education and Music obtained 'above average mean score' with respect to **'course relevance to real life situations'**. Highest mean response was obtained for the **'extent of interaction between**

**students and teachers'** dimension in subjects namely, history, economics, political science, sociology, bca, statistics, geography, psychology, PG hindi, UG hindi, computer applications, bba, mathematics, dogri, education, music and urdu. Students of BCA, Education, Music accorded above average scores for **'usage of ICT'**. Students revealed high level of satisfaction in subjects such as history, economics, political science, geography, PG hindi, UG hindi, physics, computer applications, electronics, dogri, music and urdu with respect to **'extent of efforts required by students'**. '**Teacher's preparation'** dimension was assigned highest score by the students of all subjects except for statistics, Bsc chemistry, biotechnology, botany, bba, commerce and electronics. **'Knowledge base of the teachers'** was given highest rank by the students of history, economics, political science, sociology, BCA, environmental science, geography, psychology, PG English, PG Hindi, General English, UG Hindi, Bsc Chemistry, physics, zoology, computer applications, BBA, commerce, mathematics, dogri, education, music and urdu. Service quality performance in terms of **'accessibility of the teacher'** was yielded highest response in subjects namely, history, economics, sericulture, BCA, environmental science, geography, PG English, PG Hindi, BBA, Mathematics, Electronics, Dogri, education and music. **'Teacher's ability to design evaluation strategies'** was placed highest in history, economics, BCA, geography, PG English, UG Hindi, computer applications, mathematics, dogri, music and urdu. Students of history, economics, political science, sociology, BCA, environmental science, geography, psychology, PG English, PG Hindi, Gen English, UG Hindi, physics, Computer applications, BBA, mathematics, dogri, education, music and urdu assigned highest mean values to the **'communication skill of teachers'**. **'Extent of teacher's advice'** was considered 'excellent to good' by the students of history, political science, sociology, BCA, environmental science, psychology, PG Hindi, Gen English, UG Hindi, physics, Computer applications, BBA, mathematics, electronics, dogri, music and urdu. Students response towards **'teacher's fairness in internal assessment'** was highly positive in subjects like economics, sociology, BCA, geography, PG Hindi, Gen English, UG Hindi, Mathematics, Dogri, Education, Music and Urdu. Finally, **'overall rating of teaching & learning or service quality performance'** in higher education was found to be highest in subjects like history, economics, political science, sociology, BCA, environmental science, PG Hindi, Gen English, UG Hindi, Physics, Computer Applications, BBA, Mathematics, Dogri, Education, Music and Urdu. Significant mean differences have been observed across 28 subjects with respect to 16 dimensions. Also, values of levene's statistic and homogeneity of variances and F (robust test of equality of

means) indicate significant variation thereby **satisfying two research questions (RQ1 & RQ2) and Proposition 3(P3).**

## 5. Managerial implications

The results showed that the service quality performance at GDC, Udhampur was moderate from the students' perspective. This means there is a space for improvements. Career guidance has not been important dimension of service performance in an observed faculty. The dimension career guidance was examined by 'course's applicability / relevance to real life situations'. Six suitable predictors of service quality performance are significant from point of view of their relationship with overall service performance, variability accounted by these independents, mean responses and Cronbach's Alpha scores signifying consistency in scale items. These significant statements are: teacher's preparation, teacher's advice, extent of coverage, extent of interaction, syllabus and knowledge base of teachers. The statement such as 'communication skill of the teachers' and 'fairness in the internal assessment' were termed insignificant and ranked 'below average' by the students merely because understanding of the subject-matter could not be reached among the students and some variations might have been found in evaluation practices or may be that students were overconfident of their performance.

The SERVPERF scale was found to explain a great deal of the variation in service quality and doesn't cater to the needs of faculty in assessing some of the non-academic aspects, reputation, access, programme issues and understanding. Such aspects are covered under HEDPERF scale representing wider coverage of service quality performance. Therefore, adoption and administration of new scale for better strategic-orientation and research in higher educational institutions is a need of an hour (Burch et al. 2004).

## 6. Conclusion and Recommendations for future research

Measuring higher education service quality is complex issue along with attracting and satisfying students especially in one transition economy. This case study provides insights into the students' perception of service quality factors based upon an empirical analysis of a sample of udhampur students. The results have shown that SERVPERF can be used by educational institutions in the transition period but with limited dimensions to cover. Therefore, modified questionnaire with forty one statements were identified as important tool in the evaluation of service performance in higher education.

The factors that have a significant influence on the students' perception of service quality were Non-academic aspects such as: sincere interest in solving problem, caring and

individualized Attention, efficient/prompt dealing with complaints, responding to request for assistance, accurate and retrievable records, promises kept, convenient opening hours, positive attitude, good communication, knowledgeable of systems/procedures, feeling secured and confident, service within reasonable time frame and confidentiality of information. In relation to this, the course management teams should be able to identify and understand various levels of student's expectations across six dimensions namely, non-academic aspects, academic aspects, reputation, access, programme issues and understanding. This study has several limitations and only represents a first step in measuring service performance at GDC, Udhampur. The research sample is relatively small and also the dimensions covered are not adequate.

This research paper recommends HEDPERF scale based on the research conducted by Abdullah that customer-orientation is an important factor for service quality maintenance. Thus, designing an instrument that is catering to a specific variable is more feasible. Abdullah developed HEdPERF (Higher education performance) model. He adopted a methodology where he verified factors relating to service quality from consumers‟ i.e. students perspective. Once no errors were discovered after performing the test of normality, Confirmatory Factor Analysis (CFA) and reliability analysis and also the dimensions were properly related, then the Validity test was conducted, which shows that the all the dimensions clearly define the purpose of study. Lastly, the Multiple regression analysis was applied to check the impact of the six dimensions on the quality of services (Abdullah, 2006). The findings were positive and it showed that the six dimensions do have an impact on the service quality management. However the limitations of the study is that the model (HEDPERF) is referring to only one industry and therefore, can be applied for assessing Service quality performance of one particular educational institute. Hence, further research shall be conducted based on HEDPERF scale for ensuring wider coverage and better assessment of service quality performance for strategic decision-making.

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**Table 1: Summary of Results Showing Factor Loadings and Variance Explained After Scale Purification (Using Rotated Component Method) for Students Experiences of Service Quality Performance in Govt. Degree College, Udhampur During 2014-15**

| Factor-wise dimension | Mean | Standard deviation | Factor loadings | Eigen value | Variance explained % | Cumulative variance % | Communality | Alpha coefficient |
|---|---|---|---|---|---|---|---|---|
| **Factor 1** | **4.148** | **0.945** | | **5.344** | **16.962** | **16.962** | | **0.766** |
| 1. Knowledge base of the teacher (as perceived by you) | 4.286 | 0.937 | 0.814 | | | | 0.690 | |
| 2. Teacher's preparation for the classes. | 4.289 | 0.879 | 0.746 | | | | 0.655 | |
| 3. Overall Service quality Performance (teaching & Learning) | 3.932 | 0.994 | 0.566 | | | | 0.558 | |
| 4. The extent of teacher's advise | 4.086 | 0.969 | 0.519 | | | | 0.413 | |
| **Factor 2** | **3.628** | **0.997** | | **1.240** | **15.992** | **32.954** | | **0.663** |
| 1. The syllabus of each course | 3.771 | 0.874 | 0.744 | | | | 0.557 | |
| 2. Extent of coverage of course | 3.764 | 0.966 | 0.625 | | | | 0.495 | |
| 3. Depth of the course content including project work if any | 3.361 | 1.009 | 0.599 | | | | 0.434 | |
| 4. Extent of efforts required by students | 3.803 | 0.966 | 0.512 | | | | 0.400 | |
| 5. Availability of library material and facilities for the course | 3.443 | 1.772 | 0.499 | | | | 0.360 | |
| **Factor 3** | **3.606** | **1.067** | | **1.049** | **14.755** | **47.709** | | **0.632** |
| 1. Usage of ICT in preparation / conduct of class. | 3.114 | 1.301 | 0.673 | | | | 0.474 | |
| 2. Ability of the teacher to design evaluation strategies | 3.711 | 0.979 | 0.646 | | | | 0.555 | |
| 3. Accessibility of the teacher in and out of the class. | 3.992 | 0.919 | 0.564 | | | | 0.436 | |
| **Grand Total** | | | | | | | | **0.821** |

**Footnotes: K MO Value**= 0.901**; Bartlett's test of sphercity = 1.175E3 df = 120, sig. =** .000; **Extraction Method:** Principal Component Analysis and Varimax with Kaiser Normalization**;** Rotation converged in 5 iterations.

**Table 2: Regression Model Summary (with coefficient) of Service Quality Performance Variables as Predictors of overall Teaching and Training as Dependent Variable (Step-wise multiple regression method)**

| Model | R | $R^2$ | Adj $R^2$ | Standard Error of Estimate | F value (ANOVA) | Sig. Level | Standardised Beta Co-efficient | t Value | Sig. Level | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. (Constant) | | | | | | | | | | |
| ▪ Teacher's Preparation | 0.470 | 0.221 | 0.218 | 0.879 | 78.671 | 0.000 | 0.470 | 8.870 | 0.000 | |
| 2. (Constant) | | | | | | | | | | |
| ▪ Teacher's Preparation | | | | | | | 0.357 | 6.882 | 0.000 | |
| ▪ Teacher's Advise | 0.577 | 0.333 | 0.328 | 0.815 | 46.516 | 0.000 | 0.353 | 6.820 | 0.000 | |
| 3. (Constant) | | | | | | | | | | |
| ▪ Teacher's Preparation | | | | | | | 0.289 | 5.726 | 0.000 | |
| ▪ Teacher's Advise | | | | | | | 0.303 | 6.071 | 0.000 | |
| ▪ Extent of Coverage | 0.635 | 0.404 | 0.397 | 0.772 | 32.824 | 0.022 | 0.283 | 5.729 | 0.000 | |
| 4. (Constant) | | | | | | | | | | |
| ▪ Teacher's Preparation | | | | | | | 0.248 | 4.659 | 0.000 | |
| ▪ Teacher's Advise | | | | | | | 0.289 | 5.788 | 0.000 | |
| ▪ Extent of Coverage | | | | | | | 0.266 | 5.365 | 0.000 | |
| ▪ Extent of Interaction | 0.644 | 0.415 | 0.406 | 0.766 | 5.330 | 0.037 | 0.120 | 2.309 | 0.022 | |
| 5. (Constant) | | | | | | | | | | |
| ▪ Teacher's Preparation | | | | | | | 0.238 | 4.492 | 0.000 | |
| ▪ Teacher's Advise | | | | | | | 0.281 | 5.667 | 0.000 | |
| ▪ Extent of Coverage | | | | | | | 0.237 | 4.613 | 0.000 | |
| ▪ Extent of Interaction | | | | | | | 0.113 | 2.180 | 0.030 | |
| ▪ Syllabus | 0.651 | 0.424 | 0.414 | 0.761 | 4.396 | 0.024 | 0.104 | 2.097 | 0.037 | |
| 6. (Constant) | | | | | | | | | | |
| ▪ Teacher's Preparation | | | | | | | 0.180 | 3.077 | 0.002 | |
| ▪ Teacher's Advise | | | | | | | 0.247 | 4.790 | 0.000 | |
| ▪ Extent of Coverage | | | | | | | 0.210 | 4.029 | 0.000 | |
| ▪ Extent of Interaction | | | | | | | 0.112 | 2.181 | 0.030 | |
| ▪ Syllabus | | | | | | | 0.114 | 2.304 | 0.022 | |
| ▪ Knowledge Base | 0.659 | 0.435 | 0.422 | 0.755 | 5.178 | | 0.135 | 2.276 | 0.024 | 1.846 |

**Footnotes:** 1. * 'Values Significant at p≤ 0.05

**Table 3: An Analysis of Subject--Wise Impact on Service Quality Performance of Govt. Degree College, Udhampur Using One-way ANOVA Test**

| Subjects | Service Performance Dimensions | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1. Syllabus of Each course | | | 2. Availability of Library material & Facilities | | | 3. Depth of the Course content | | | 4. Extent of coverage of Course | | | 5. Course relevance to real life situations | | | 6. Extent of Interaction between Students & Teachers | | | 7. Usage of ICT | | | 8. Extent of Efforts required by students | | |
| **Section A** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** |
| 1. History | 4.10 | .738 | .233 | 3.60 | 1.173 | .371 | 3.80 | 1.03 | .327 | 3.90 | 1.197 | .378 | 4.50 | .707 | .224 | 4.30 | 1.06 | .335 | 3.30 | 1.418 | .448 | 4.50 | .527 | .166 |
| 2. Economics | 3.70 | .823 | .260 | 3.70 | .823 | .260 | 3.60 | 1.174 | .371 | 4.20 | .789 | .249 | 3.30 | 1.25 | .396 | 4.30 | 1.25 | .396 | 2.70 | .949 | .300 | 4.10 | .567 | .179 |
| 3. Political Science | 4.20 | .632 | .200 | 3.90 | .994 | .314 | 3.20 | 1.03 | .327 | 3.70 | 1.159 | .367 | 3.70 | 1.06 | .335 | 4.50 | .707 | .224 | 2.80 | 1.549 | .489 | 4.00 | .471 | .149 |
| 4. Sericulture | 3.30 | .823 | .260 | 3.30 | 1.70 | .538 | 3.30 | .823 | .260 | 3.30 | .483 | .153 | 2.70 | 1.06 | .335 | 3.90 | 1.37 | .433 | 3.20 | 1.316 | .416 | 3.90 | 1.100 | .348 |
| 5. Sociology | 3.50 | .707 | .224 | 2.70 | .948 | .300 | 3.40 | .699 | .221 | 4.10 | .316 | .100 | 3.70 | .675 | .213 | 4.20 | .632 | .200 | 3.00 | 1.054 | .333 | 3.70 | 1.059 | .335 |
| 6. BCA | 4.10 | .316 | .100 | 3.90 | .875 | .277 | 4.10 | .567 | .179 | 4.50 | .527 | .167 | 4.10 | .567 | .180 | 4.70 | .483 | .153 | 4.90 | .316 | .100 | 4.10 | .316 | .100 |
| 7. Environmental Science | 4.00 | .943 | .298 | 3.90 | .738 | .233 | 3.70 | .949 | .300 | 3.60 | 1.07 | .339 | 3.80 | 1.03 | .326 | 3.80 | 1.135 | .359 | 3.60 | 1.075 | .340 | 3.10 | .875 | .276 |
| 8. Statistics | 3.90 | .738 | .233 | 3.90 | 1.00 | .348 | 2.80 | .788 | .249 | 3.50 | 1.27 | .401 | 3.20 | .919 | .290 | 4.20 | .422 | .133 | 3.00 | 1.414 | .447 | 3.50 | 1.26 | .401 |
| 9. Geography | 4.30 | .675 | .213 | 4.00 | .471 | .149 | 4.00 | .471 | .149 | 4.20 | .632 | .200 | 3.90 | .567 | .180 | 4.60 | .699 | .221 | 3.20 | 1.135 | .359 | 4.30 | .674 | .213 |
| 10. Psychology | 3.70 | .948 | .300 | 3.40 | .966 | .305 | 3.40 | .843 | .267 | 4.00 | .471 | .149 | 3.90 | .738 | .233 | 4.40 | .516 | .163 | 3.80 | .788 | .249 | 3.90 | .567 | .179 |
| 11. PG English | 3.30 | 1.418 | .448 | 3.10 | 1.45 | .458 | 3.70 | .675 | .213 | 3.60 | .699 | .221 | 3.50 | .527 | .167 | 4.70 | .483 | .153 | 3.20 | .788 | .249 | 3.40 | 1.07 | .339 |
| 12. PG Hindi | 4.10 | .316 | .100 | 4.10 | .316 | .100 | 3.50 | .972 | .307 | 3.70 | .823 | .260 | 3.00 | 1.155 | .365 | 4.10 | .568 | .180 | 2.70 | 1.494 | .472 | 4.60 | .516 | .163 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13. Gen English | 3.70 | .675 | .213 | 2.90 | .994 | .314 | 3.10 | .568 | .180 | 3.50 | .972 | .307 | 3.70 | .949 | .300 | 3.80 | 1.03 | .327 | 3.60 | .699 | .221 | 3.80 | .518 | .290 |
| 14. UG Hindi | 4.10 | 1.197 | .379 | 3.90 | .994 | .314 | 4.00 | .667 | .211 | 4.20 | 1.03 | .326 | 3.90 | 1.197 | .379 | 4.10 | .875 | .277 | 3.30 | 1.567 | .495 | 4.30 | .674 | .213 |
| 15. BSc Chemistry | 3.10 | .738 | .233 | 2.90 | .994 | .314 | 2.60 | .966 | .306 | 2.90 | .876 | .277 | 2.90 | 1.197 | .379 | 3.70 | 1.159 | .367 | 2.80 | 1.316 | .416 | 3.80 | 1.135 | .359 |
| 16. Biotechnology | 3.60 | .966 | .305 | 2.50 | 1.57 | .477 | 3.30 | .823 | .260 | 4.00 | .943 | .298 | 2.90 | 1.197 | .379 | 3.50 | 1.08 | .341 | 3.00 | 1.154 | .365 | 3.40 | 1.173 | .371 |
| 17. Physics | 3.80 | .788 | .249 | 3.00 | 1.155 | .365 | 2.80 | .919 | .291 | 3.30 | .823 | .260 | 3.60 | 1.35 | .427 | 3.70 | .948 | .300 | 2.70 | 1.418 | .448 | 4.00 | .616 | .210 |
| 18. Botany | 3.40 | .966 | .305 | 2.20 | .788 | .249 | 2.30 | .823 | .260 | 2.90 | 1.197 | .379 | 2.60 | 1.174 | .371 | 2.80 | 1.55 | .489 | 1.60 | 1.264 | .400 | 2.20 | 1.135 | .359 |
| 19. Zoology | 3.60 | .516 | .163 | 3.30 | 1.34 | .423 | 3.30 | .675 | .213 | 3.30 | .675 | .213 | 2.90 | .876 | .277 | 4.10 | .994 | .314 | 2.20 | 1.39 | .442 | 3.20 | .632 | .200 |
| 20. Computer Applications | 4.50 | .527 | .167 | 3.50 | 1.27 | .401 | 4.20 | .632 | .200 | 4.20 | 1.03 | .326 | 4.00 | .471 | .149 | 4.60 | .516 | .163 | 3.80 | .421 | .133 | 4.10 | 1.28 | .406 |
| 21. BBA | 2.90 | .316 | .100 | 3.00 | 1.25 | .394 | 2.90 | 1.10 | .348 | 3.80 | .789 | .249 | 3.20 | 1.32 | .416 | 4.40 | .516 | .163 | 3.20 | .632 | .200 | 3.10 | .737 | .233 |
| 22. Commerce | 2.40 | .966 | .305 | 2.40 | 1.35 | .427 | 2.60 | 1.26 | .400 | 2.80 | 1.23 | .389 | 3.50 | 1.18 | .373 | 3.30 | 1.34 | .423 | 2.10 | 1.286 | .406 | 3.10 | 1.197 | .378 |
| 23. Mathematics | 4.00 | .471 | .149 | 3.60 | .966 | .305 | 3.70 | 1.25 | .396 | 3.90 | .567 | .179 | 3.70 | .823 | .260 | 4.50 | .527 | .167 | 3.00 | 1.247 | .394 | 3.90 | .737 | .233 |
| 24. Electronics | 4.00 | .471 | .149 | 3.60 | 1.43 | .452 | 3.10 | 1.197 | .379 | 3.70 | 1.16 | .367 | 3.60 | 1.35 | .427 | 3.40 | 1.71 | .541 | 3.70 | .674 | .213 | 4.00 | .992 | .298 |
| 25. Dogri | 3.80 | .632 | .200 | 3.80 | 1.135 | .359 | 3.70 | .675 | .213 | 4.10 | .568 | .179 | 3.70 | 1.160 | .367 | 4.50 | .527 | .167 | 2.70 | 1.059 | .335 | 4.00 | .471 | .149 |
| 26. Education | 4.10 | .567 | .180 | 4.10 | .875 | .277 | 2.40 | .843 | .267 | 4.10 | .738 | .233 | 4.20 | .632 | .200 | 4.60 | .516 | .163 | 4.00 | .942 | .298 | 3.60 | .699 | .221 |
| 27. Music | 4.60 | .516 | .163 | 4.20 | .919 | .290 | 4.20 | .788 | .249 | 4.60 | .843 | .267 | 4.50 | .707 | .224 | 5.00 | .00 | .00 | 4.5 | .707 | .223 | 4.60 | .516 | .163 |
| 28. Urdu | 3.80 | 1.03 | .326 | 4.00 | .667 | .211 | 3.40 | 1.35 | .427 | 3.80 | 1.135 | .359 | 3.20 | .919 | .291 | 4.50 | .527 | .167 | 1.60 | 1.07 | .339 | 4.30 | .483 | .057 |
| **Average** | 3.771 | 0.72 | 0.23 | 3.44 | 1.04 | 0.329 | 3.360 | 0.877 | 0.277 | 3.764 | 0.857 | 0.271 | 3.55 | 0.955 | 0.302 | 4.15 | 0.826 | 0.261 | 3.114 | 1.076 | .344 | 3.80 | 0.785 | .249 |
| **Levene Statistics*** | 3.052(.000) | | | 2.428 (.000) | | | 1.951 (.004) | | | 2.036 (0.003) | | | 2.332 (.000) | | | 4.191 (.000) | | | 2.265 (.001) | | | 2.835 (.000) | |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sum of Squares (Between Groups)** | 62.171 | | | 85.886 | | | 77.268 | | | 57.643 | | | 69.100 | | | 68.500 | | | 151.343 | | | 78.296 | | |
| **Mean Squares** | 2.303 | | | 3.181 | | | 2.862 | | | 2.135 | | | 2.559 | | | 2.537 | | | 5.605 | | | 2.900 | | |
| **F Value*** | 3.838 (.000) | | | 2.697 (.000) | | | 3.479 (.000) | | | 2.653 (.000) | | | 2.598 (.000) | | | 3.027 (.000) | | | 4.400 (.000) | | | 4.017 (.000) | | |
| **Subjects** | **Service Performance Dimensions** | | | | | | | | | | | | | | | | | | | | | | | |
| | **9.Teacher's Preparation** | | | **10. Knowledge base of the teacher** | | | **11. Accessibility of the teacher** | | | **12. Ability to design evaluation strategies** | | | **13. Communication skill of the teachers** | | | **14. Extent of teacher's Advise** | | | **15. Teacher's fairness in Internal Assessment** | | | **16. Overall rating of Teaching & Learning** | | |
| **Section B** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** | **Mean** | **S.D** | **S.E** |
| 1. History | 4.50 | .707 | .223 | 4.60 | .966 | .305 | 4.00 | 1.05 | .333 | 4.20 | .788 | .249 | 4.50 | .707 | .223 | 4.30 | .823 | .260 | 3.90 | 1.100 | .348 | 4.30 | .675 | .213 |
| 2. Economics | 4.80 | .632 | .200 | 4.70 | .679 | .213 | 4.10 | .994 | .314 | 4.10 | .567 | .179 | 4.20 | .632 | .200 | 3.90 | .994 | .314 | 4.20 | .919 | .290 | 4.00 | .667 | .211 |
| 3. Political Science | 4.50 | .972 | .307 | 4.30 | .483 | .153 | 3.60 | .843 | .267 | 3.50 | .972 | .307 | 4.20 | .632 | .200 | 4.20 | .422 | .133 | 3.60 | .966 | .305 | 4.50 | .527 | .167 |
| 4. Sericulture | 4.10 | .738 | .233 | 3.50 | 1.434 | .453 | 4.10 | .738 | .233 | 3.20 | 1.135 | .359 | 3.50 | 1.27 | .401 | 3.40 | 1.429 | .452 | 3.20 | 1.23 | .389 | 3.20 | 1.399 | .442 |
| 5. Sociology | 4.30 | .483 | .153 | 4.40 | .516 | .163 | 3.50 | 1.178 | .373 | 3.90 | .994 | .314 | 4.50 | .527 | .167 | 4.10 | 1.100 | .348 | 4.00 | .471 | .149 | 4.10 | .738 | .233 |
| 6. BCA | 4.90 | .316 | .100 | 4.90 | .316 | .100 | 4.50 | .527 | .167 | 4.50 | .527 | .167 | 4.60 | .516 | .163 | 4.50 | .527 | .167 | 4.40 | .516 | .163 | 4.50 | .527 | .167 |
| 7. Environmental Science | 4.70 | .483 | .153 | 4.20 | 1.03 | .326 | 4.10 | .876 | .277 | 3.80 | .788 | .249 | 4.50 | .527 | .167 | 4.00 | .943 | .298 | 3.90 | .567 | .179 | 4.10 | .876 | .277 |
| 8. Statistics | 3.20 | .789 | .249 | 3.90 | 1.197 | .379 | 3.50 | .527 | .167 | 3.20 | .632 | .200 | 3.80 | .788 | .249 | 3.80 | 1.135 | .359 | 3.90 | 1.100 | .348 | 3.60 | 1.174 | .371 |
| 9. Geography | 4.50 | .972 | .307 | 4.10 | .876 | .277 | 4.50 | .527 | .167 | 4.00 | .817 | .258 | 4.40 | .516 | .163 | 3.90 | 1.100 | .348 | 4.20 | .919 | .291 | 3.80 | 1.03 | .326 |
| 10. Psychology | 4.40 | .699 | .221 | 4.40 | .516 | .163 | 3.50 | 1.17 | .373 | 3.50 | 1.08 | .341 | 4.30 | 1.05 | .335 | 4.10 | .994 | .314 | 3.80 | .919 | .291 | 3.90 | .994 | .314 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 9 | | | | | | | | | | | | | | | |
| 11. PG English | 4.60 | .516 | .163 | 4.40 | .699 | .221 | 4.20 | .423 | .133 | 4.50 | .707 | .224 | 4.50 | .707 | .223 | 3.90 | .875 | .277 | 3.70 | .948 | .300 | 3.80 | 1.22 | .389 |
| 12. PG Hindi | 4.80 | .422 | .133 | 4.80 | .422 | .133 | 4.40 | .516 | .163 | 3.60 | .699 | .221 | 4.20 | .632 | .200 | 4.70 | .483 | .153 | 4.40 | .516 | .163 | 4.50 | .527 | .167 |
| 13. Gen English | 4.50 | .527 | .167 | 4.30 | .483 | .153 | 3.60 | .966 | .305 | 3.80 | .919 | .290 | 4.00 | 1.155 | .365 | 4.00 | .667 | .211 | 4.00 | .667 | .211 | 4.00 | .667 | .211 |
| 14. UG Hindi | 4.80 | .422 | .133 | 4.50 | .707 | .223 | 4.40 | .516 | .163 | 4.20 | .632 | .200 | 4.20 | .632 | .200 | 4.50 | .707 | .223 | 4.50 | .527 | .167 | 4.50 | .527 | .167 |
| 15. BSc Chemistry | 3.90 | 1.19 | .378 | 4.20 | 1.316 | .416 | 3.80 | .788 | .249 | 3.30 | 1.34 | .423 | 3.70 | 1.337 | .423 | 3.70 | .949 | .300 | 3.20 | 1.476 | .467 | 3.10 | 1.28 | .407 |
| 16. Biotechnology | 3.30 | .949 | .300 | 3.40 | 1.07 | .339 | 3.20 | 1.03 | .326 | 3.30 | .483 | .153 | 3.20 | 1.476 | .467 | 3.60 | 1.07 | .339 | 3.70 | 1.06 | .335 | 3.30 | .675 | .213 |
| 17. Physics | 4.50 | .899 | .269 | 4.70 | .675 | .213 | 3.90 | 1.197 | .379 | 3.10 | 1.100 | .348 | 4.20 | 1.03 | .326 | 4.50 | .527 | .167 | 3.60 | 1.349 | .427 | 4.10 | .316 | .100 |
| 18. Botany | 2.80 | 1.23 | .389 | 2.90 | 1.728 | .547 | 2.80 | 1.03 | .326 | 2.80 | 1.229 | .389 | 2.80 | .789 | .249 | 2.40 | 1.174 | .371 | 2.60 | 1.429 | .452 | 2.00 | .816 | .258 |
| 19. Zoology | 4.10 | .876 | .277 | 4.30 | .675 | .213 | 3.70 | .823 | .260 | 3.20 | .632 | .200 | 3.80 | .919 | .290 | 3.90 | .875 | .277 | 3.40 | .843 | .267 | 3.40 | 1.07 | .339 |
| 20. Computer Applications | 4.80 | .422 | .133 | 4.80 | .422 | .133 | 5.00 | .00 | .00 | 4.40 | .966 | .305 | 4.40 | .516 | .163 | 4.50 | .707 | .224 | 3.90 | .875 | .277 | 4.50 | .707 | .223 |
| 21. BBA | 3.90 | .738 | .233 | 4.50 | .527 | .167 | 4.10 | .316 | .100 | 3.90 | .568 | .180 | 4.40 | .516 | .163 | 4.60 | .516 | .163 | 3.80 | .789 | .249 | 4.00 | .471 | .149 |
| 22. Commerce | 3.70 | .823 | .260 | 4.00 | .816 | .258 | 3.80 | 1.033 | .326 | 2.60 | .966 | .305 | 3.90 | .875 | .277 | 3.80 | .632 | .200 | 2.90 | 1.370 | .433 | 3.20 | .919 | .290 |
| 23. Mathematics | 4.70 | .483 | .153 | 4.40 | .966 | .305 | 4.60 | .516 | .163 | 4.00 | .667 | .211 | 4.40 | .516 | .163 | 4.40 | .516 | .163 | 4.70 | .483 | .153 | 4.20 | .632 | .200 |
| 24. Electronics | 3.50 | .707 | .223 | 3.80 | 1.39 | .442 | 4.10 | 1.197 | .378 | 3.40 | .966 | .305 | 3.90 | .567 | .180 | 4.60 | .516 | .163 | 3.80 | .788 | .249 | 3.60 | 1.26 | .400 |
| 25. Dogri | 4.50 | .707 | .223 | 4.40 | .516 | .163 | 4.50 | .527 | .167 | 4.10 | .738 | .233 | 4.00 | .943 | .298 | 4.20 | .919 | .290 | 4.30 | .823 | .260 | 4.40 | .516 | .163 |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 26. Education | 4.60 | .516 | .163 | 4.40 | .516 | .163 | 4.30 | .823 | .260 | 3.30 | 1.252 | .396 | 4.50 | .527 | .167 | 3.60 | 1.505 | .476 | 4.00 | .816 | .258 | 4.40 | .699 | .221 |
| 27. Music | 4.50 | .707 | .223 | 4.70 | .483 | .153 | 4.20 | 1.03 | .326 | 4.50 | .527 | .167 | 4.70 | .483 | .153 | 4.70 | .483 | .153 | 5.00 | .00 | .00 | 4.50 | .707 | .223 |
| 28. Urdu | 4.70 | .483 | .153 | 4.50 | .707 | .224 | 3.80 | .632 | .200 | 4.00 | .943 | .298 | 4.10 | .738 | .233 | 4.60 | .699 | .221 | 4.00 | .667 | .210 | 4.60 | .699 | .221 |
| **Average** | 4.28 | 0.69 | 0.21 | 4.28 | 0.79 | 0.24 | 3.99 | 0.77 | 0.24 | 3.71 | 0.84 | 0.26 | 4.12 | 0.76 | 0.24 | 4.08 | 0.83 | 0.263 | 3.87 | .861 | .272 | 3.93 | .796 | .252 |
| **Levene Statistics*** | 1.787(0.012) | | | 4.188 (.000) | | | 2.915 (.000) | | | 1.710 (.019) | | | 1.777 (.013) | | | 2.705 (.000) | | | 2.959 (.000) | | | 2.465 (.000) | | |
| **Sum of Squares (Between Groups)** | 81.668 | | | 55.743 | | | 60.186 | | | 73.868 | | | 51.471 | | | 66.543 | | | 72.871 | | | 95.611 | | |
| **Mean Squares** | 3.025 | | | 2.065 | | | 2.229 | | | 2.736 | | | 1.906 | | | 2.465 | | | 2.699 | | | 3.541 | | |
| **F Value*** | 5.693(.000) | | | 2.747 (.000) | | | 3.195 (.000) | | | 3.559 (.000) | | | 2.853 (.000) | | | 3.178 (.000) | | | 3.163 (.000) | | | 4.955 (.000) | | |

**Footnotes: *Values are significant at 0.05 percent level; Figures in parentheses denote 'significance value'.**