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Relationship Between Non-Projected Visual Materials And Teaching Christian Religious Studies Under The New Secondary School Curriculum In Secondary Schools In AKWA IBOM North Senatorial District

James, Inyang Akpan

Department of Curriculum Studies, Educational Administration & Planning
University of Uyo, Uyo, Akwa Ibom State, Nigeria
Assemblies of God Seminary, Anyikang, Bekwarra,
Cross River State, Nigeria

ABSTRACT

This paper investigated the relationship between non-projected visual materials and teaching Christian Religious Studies under the new curriculum in Akwa Ibom North East Senatorial District, Akwa Ibom State. The study adopted a relationship-survey-descriptive design. One research question was posed and one corresponding null hypothesis formulated to guide the study. One thousand, two hundred and sixty (1260) senior secondary school students constituted the population out of which a stratified proportionate random sample of fifty (50) was identified for administration of the rating scales on the two variables for data gathering. The data were subsequently analyzed with basic statistics and the Spearman's Rank Order coefficient of correlation to establish the relationship between the variables. Results showed R of 0.49 and coefficient of determination of 24%. Both X and Y variables were regressed and a regression coefficient of 0.71 was obtained. It was concluded that non-projected visual materials and teaching Christian Religious Studies under the new secondary school curriculum had a moderate but significant relationship. Three recommendations were made one of which was that the principals of secondary schools in Akwa Ibom North Senatorial District should utilize non-projected visual materials as argued in this paper and play down on teaching Christian Religious Studies under the former curriculum.

KEYWORDS: Visual Materials Christian Religion Curriculum

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I. INTRODUCTION

The godfather of instructional materials was John Amos Comenius (1592-1670). He revolutionized teaching with the aid of visual materials to aid students' understanding of the subjects taught. Other notable researchers in the field of instructional materials included Edger Dale (1900-1985). He developed a Cone of Experience and made several contributions to audio and visual instruction, including a methodology for analyzing the content of motion pictures and *Dual Trace Hypothesis*; a restatement of the perseveration—consolidation hypothesis of memory formation specifying that short-term memory is represented neurally by activity in reverberating circuits and that stabilization of these circuits leads to permanent synaptic change, reflecting the formation of long-term memory (*APA Dictionary of Psychology*, Retrieved: 21/5/21). Two dimensional instructional media have length, breath and volume and are called illustrated visual stimuli and symbols (Patrick, 2000). Hoban, Hoban, & Zisman, (1973) argue that visual media are any picture, model, object, or direct device which provide concrete visual experiences to the learners for purposes of introducing, building up, enriching, or clarifying abstract concepts, developing desirable attitudes and stimulating further activity on the part of the learner.

Christian Religious Knowledge (CRS) is an art subject that is so abstract that most of the time, learners do not gain enough experience from a mere verbal instruction. The most frequently used method in teaching CRS has been the teacher-centered method which includes lecture method, memorization, storytelling and dramatization. Thus, such method of teaching and learning of the subject appears to be ineffective. This may lead to frustration, poor performance and lack of interest in the CRS subject as it produces short-term memory in passive students. It is in this context that this study set out to investigate the relationship between projected visual materials and teaching Christian Religious Studies under the new curriculum so that the students can see,

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hear, and do what the teacher wants them to learn at the Junior Secondary School level of education in Akwa Ibom North-East Senatorial District.

The need for proper selection and utilization of instructional materials in teaching secondary school subjects and to promote functional and quality education has been the prime target for Nigeria ever since the inception of Universal Basic Education (UBE) programme. Many attempts have been made in this direction but no appreciable positive results have been recorded at the junior secondary schools level of education. Classroom teachers complain that they have not been exposed to sufficient training on the use of instructional material for teaching Christian religious studies under the new secondary school curriculum. For this reason, they resort to the traditional method of chalk-talk syndrome as the only means of explaining concepts to their pupils. Finally, the level at which instructional materials are utilized for the teaching- learning process in secondary school needs to be re-examined if new curriculum must be successfully implemented. This was why the researcher identified the problem of the relationship between instructional materials and teaching Christian religious studies under the new secondary school curriculum at the junior secondary school level in Akwa Ibom North-East Senatorial District of Akwa Ibom State for investigation, Moreover, there is no research on this problem at the moment. The absence of any research evidence on this problem, therefore, constituted the focus of this paper. Consequently, the specific purpose of this paper was to investigate the relationship between nonprojected visual materials and teaching Christian religious studies under the new secondary school curriculum in Akwa Ibom North East Senatorial District's secondary schools. For example, the new secondary school curriculum requires all students to study some common general senior secondary school subjects that comprise four cross-cutting subjects of English Language, Mathematics, Civic Education and one Entrepreneurial subject in addition to choosing one specialized area of: Senior Secondary Science and Mathematics, Senior Secondary Business Studies, Senior Secondary Humanities or Senior Secondary Technology, Consequently, the objective of this paper is to ascertain the relationship between non-projected visual materials and teaching Christian Religious Studies under the new secondary school curriculum in Akwa Ibom North East Senatorial District's secondary schools. No element of causation is intended in this paper. To guide the study, one research question was posed and the corresponding null hypothesis formulated and stated follows: R.Q. What is the relationship between non-projected visual materials and teaching Christian Religious Studies under the new secondary school curriculum in Akwa Ibom North East Senatorial District's secondary schools? Ho: There is no significant relationship between non-projected visual materials and teaching Christian Religious Studies under the new secondary school curriculum in Akwa Ibom North East Senatorial District's secondary schools.

II. MATERIALS AND METHODS

Definition of Key Variables

Non-projected visual materials are instructional resources that do not require projection for viewing. They are readily available, inexpensive, easily produced and extensively used in the classroom especially where electricity and fund are limited to use projected and electronic materials. Non-projected visuals can also make instruction more meaningful and interesting. Materials such as pictures, photographs, drawings and graphs can move instruction from verbal symbols to a more concrete level of interaction between the teacher and the students, especially if the visuals are displayed effectively on a bulletin board. Non-projected visual materials are made from simple and low-cost materials that may be resourced from textbooks, catalogues, straw boards, cardboard, papers, ceramics, drawings, photographs, specimens, models, graphics and so forth. Patrick (2000) and Hoban, Hoban, & Zisman, (1973) argue that non-projected visual materials are devices that provide concrete visual experiences to the learners for purposes of introducing, building up, enriching, or clarifying abstract concepts, developing desirable attitudes and stimulating further activity on the part of the learner.

Theoretical Model

The following model graphically illustrates the divergent positions of management and academic staff on discipline. A congruence of their perceptions and belief in discipline as a management tool's function as a corrective rather than punitive tool will engender greater loyalty, efficiency and productivity among CRUTECH academic staff.

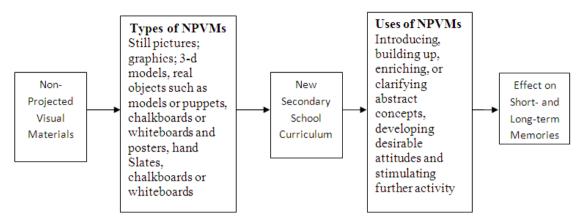


Fig. 1: Non-Projected Visual Materials and Teaching/Learning of CRS, Author (2021)

III. LITERATURE REVIEW

On identification of non-projected visual materials (NPVMs), the following researchers did not only identify but also concluded that it is important to identify relevant non-projected visual materials that help students master the lessons being taught: Mgbeze, 2003; Ndak, 2003; Fen, 2003; Ike, 2005; Pancre, (n.d); Oti (1988), Ames, (2013), Abimbade, 1999; Abimbola, 2004; Anyanwu, 1993). However, the researcher carefully traversed secondary schools in Akwa Ibom North East |Senatorial District and discovered the following non-projected visual materials were available in secondary schools: charts, graphs and drawings and sketches, models, real objects and artifacts, chalkboards, whiteboards and posters. At any rate, no one school had all these non-projected visual materials. The common feature was that while one school had a certain collection, another school had another collection but generally, these were the non-projected visual materials found across secondary schools in Akwa Ibom North East Senatorial District.

The proficiency of teachers in the use of non-projected visual materials lies in the layout rules that are important in the creation of any visual; especially in non-projected visuals. Ames (2013) stated some layout rules in the design and production of non-projected visuals are important for making higher quality visuals. Higher quality visuals are translated into a more effective presentation and significantly increased long-term learning for the students. With regard to teachers' proficiency in the using of non-projected visual materials in the area studied, they are. There have been no incidents of poor handwriting by the teachers, the students' inability to read from the back sets of the class and so on.

The use (utilization) of instructional materials (non-projected visuals) facilitate and ease better understanding, capture more authentic information with better view of images and general sharpening of intelligence. Webb, Mary & Margaret (2004), also emphasize the potentials of non-projected instructional media in education, prepared the first picture books and cartoon for children. Reiser & Dempsey (2007) found that most problems of population explosion usually accompanies knowledge and information explosion. Knowledge is made concrete by the use of non-projected instructional media like still pictures, graphics, 3-D models, Real Objects and Puppets. The most common problem in the junior secondary schools today is that, students learn and forget as a result of too much theoretical expressions and lack of non-projected visuals for instructions by the teachers, while the learners are passive listeners. This is why the new secondary school curriculum was adopted to improve the situation. This argument is supported by Azi (2009) who notes that in a learning situation, three elements constitute what is referred to as the learning event and these are the learners, the stimulus or stimulus situation and the response. Visual media have also been adjudged effective in the teaching and learning process. Greenwood Electronic Media (2001) who summarizes that visual instructional media illustrate and clarify non-verbal symbols and images, quantitative relationship, abstract concept and specific details. They promote greater acquisition and longer retention of factual knowledge, stimulate interest in learning, which leads to plenty of activities, and captivate and hold attention, and they reinforce verbal message. Heeks, (1999) and Aguokogbuo, (2002) concluded that NPVMs provide direct interaction of students with the realities of social and physical environment. The teachers in this technological age has wide spectrum or resources available to them to provide conditions, which help them achieve their objectives. Akomolafe & Adesua (2016) found that many schools and colleges in Ekiti State had no instructional materials. This is supported by the fact that only 38% of the schools and colleges indicated that they had instructional materials. Secondary school teachers in Akwa Ibom North East Senatorial District are appearing proficient in the use of non-projected visual materials when teaching Christian Religious Studies. The teachers are resourceful because with the aid of NPVMs, they motivate the students to study CRS and where NPVMs are not available, teachers improvise to aid students understand the lessons. The effectiveness of using non-projected visual materials is summed up in the Task-Focused Model by Bruner (1966); a systematic instructional design process of translating general principles of learning and instruction into plans for instructional materials and activities. The entire process of learning needs and goals are analyzed and the delivery system is developed to meet those needs. The task-focused model, therefore, outlines step-by-step procedures that facilitate learning. The researcher has been acknowledged as a major supporter of Piaget's theory of cognitive development. There has been noticeable students' improvement in the study of Christian Religious Studies as teachers use this model to teach students this subject under the new secondary school curriculum.

The ongoing secondary education reforms in Nigeria have made it necessary to restructure secondary schools in line with the Federal Government's senior secondary school curriculum, retraining teachers in creative teaching techniques in all the local government areas and assisting civil servants (especially teachers and non-teaching staff in secondary schools) to own personal laptops (computers). These reforms are in line with Lasonen (1996) Leonardo's Project on global trends in secondary education that emphasize distinctive models. The first is the characteristic content of secondary school curriculums and links with employers. This is found in Germany and Austria and it seeks to enhance vocational education. Second, is the cooperative model found in Finland and Norway. This model seeks to facilitate mutual enrichment and cooperation between vocational and general upper secondary schools. It simultaneously preserves their distinctive character. The third is the linked model that is found in France and England and aims at establishing a more formal relationship between vocational and general education through a common qualification structure. The fourth is the Unified Model found in Sweden and Scotland. It deploys a single post-16 education system requiring all students to study some common general subjects similar to the new Federal Government's senior secondary school curriculum that makes it mandatory for all students to offer four cross-cutting subjects of English Language, Mathematics, Civic Education and one Entrepreneurial subject in addition to choosing one specialized area of: Senior Secondary Science and Mathematics, Senior Secondary Business Studies, Senior Secondary Humanities or Senior Secondary Technology FRN, (2014).

IV. RESEARCH METHODOLOGY

This study adopted a relationship-survey-description methodology because the events happened naturally. What was required was to ascertain the relationship between non-projected visual materials and teaching Christian religious studies under the new secondary school curriculum in the area under investigation. The population of the study consisted of 1260 senior secondary school students from the identified five secondary schools as shown in Appendix 1. From the above population, a proportionate random sample of fifty (50) students was used for administration of a five-point Non-Projected Visual Materials and Teaching Christian Religious Studies Rating Scales. The respondents were simply required to rate the two variables on a four-point scale of Very Strong Relationship (VSR), Strong Relation (SR), Moderate Relationship (MR) and Weak Relationship (WR). The raw scores of the respondents' rating of the two variables are shown in Appendices 3 represented by serial number (for the respondents), X (for non-projected visual materials) and Y (for teaching Christian Religious Studies). The data were analyzed with the Spearman's Rank Order (correlation coefficient) (R) to establish the correlation between the two variables (Appendix 4)

V. RESULTS

Data gathered for the study were presented in four tables: Appendix 1 (Population Distribution) Appendix 2 (Sample Distribution) Appendix 3 (Raw Scores for Non-Projected Visual Materials) and Teaching Christian Religious Studies). Table 4 shows the analyses of the data using Spearman's Coefficient of Correlation. The following results were obtained for the two variables represented by X and Y. Table 1: Basic Descriptive Statistics

| Computation | X | Y |
|-------------|--------|--------|
| Mean | 47.68 | 69.04 |
| N | 50 | 50 |
| Variance | 338.60 | 367.26 |
| SD | 18.40 | 19.16 |

Calculation of rho

$$\Sigma D^2 = 10,095$$
; No = 50

Substituting in the Formula, we have:

$$0 = 1 - \frac{6 \times 10,095}{50(50^2 - 1)} \qquad \frac{60750}{=} \qquad 124950 = 0.49$$

 $r^2 = 0.49$

Coefficient of determination = $\sqrt{0.49}$ = 24%

Table 2: 4-Way Guide for interpreting rho values

| Value of r | Interpretation |
|-------------|--------------------------|
| 0.76 - 1.00 | Very Strong Relationship |
| 0.51 - 0.75 | Strong Relationship |
| 0.26 - 0.50 | Moderate Relationship |
| 0.00 - 0.25 | Weak Relationship |

VI. DISCUSSION

There was a correlation (R) of 0.49 between non-projected visual materials and teaching Christian Religious Studies which according to (Nwanna in Nworgu, 2006) is moderate. This finding implies that non-projected visual materials have a moderate but significant correlation with teaching Christian Religious Studies. This finding solves the problem of whether or not there is a relationship between the two variables. However, this does not imply any causation between the two variables and students' performance in Christian Religious Studies. Consequently, the proportion or percentage of the variance of the dependent variable Y was accounted for or predicted by the coefficient of determination (Nworgu, 2006) which is the r^2 of the coefficient of correlation. In this paper, therefore, the r^2 of 0.49 was 0.24%. This meant that 24% of Non-projected visual materials (X) could be used to predict the teaching of Christian Religious Studies (Y). To further confirm this result, the Rx^2 and Ry^2 were regressed and a regression coefficient of 0.71 was obtained. This significantly confirms the 49% coefficient of determination which indicated that based on the relationship between the two variables; non-projected visual materials may guarantee teaching Christian Religious Studies to the value of 49%.

VII. CONCLUSION

This paper concludes that the relationship between non-projected visual materials and teaching Christian Religious Studies under the new secondary school curriculum was statistically moderate and significant at the alpha level of 0.05; more so, as reflected in the correlation (R) of 0.49 and a coefficient of determination of 24%. This conclusion was informed by the argument that non-projected visual materials help in identifying teaching ineffectiveness in Christian Religious Studies under the old curriculum and correcting them that constituted the background of this paper. This coupled with a better regime of classroom management places secondary schools in Akwa Ibom North East Senatorial District in good advantage to ensure improved students' performance in Christian Religious Studies internal and external examinations. This finding applies to the area under investigation, but could also apply to other secondary schools in Akwa Ibom State, Nigeria or elsewhere that has the same characteristics as those that obtained at Akwa Ibom |North East Senatorial District, Akwa Ibom State.

VIII. RECOMMENDATIONS

Based on the analyses of data for this paper and the findings made, the following recommendations are made:

- (i) The principals of secondary schools in Akwa Ibom North East Senatorial District should utilize non-projected visual materials as argued in this paper and play down on teaching Christian Religious Studies under the former curriculum.
- (ii) There should be more research into the effect of non-projected visual materials on teaching Christian Religious Studies under the new secondary school curriculum.
- (iii) There should also be research conducted on the relationship between non-projected visual materials, teaching Christian Religious Studies under the new secondary school curriculum and students' performance on the subject.

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DECLARATION OF INTEREST STATEMENT

I hereby declare that: Neither the University of Uyo, Uyo, Akwa Ibom State, Nigeria (where I am a student) nor Assemblies of God Seminary, Anyikang, Bekwarra, Cross River State, Nigeria (where I lecture) or I have any pecuniary or other interest, direct or indirect, in any matter that raises or may raise a conflict with my research paper titled: Relationship between Non-Projected Visual Materials and Teaching Christian Religious

Studies under the New Secondary School Curriculum in Secondary Schools in Akwa Ibom North Senatorial District.

REFERENCES

- [1]. Abimbade, A. (1999). *Principles and practice of educational technology*. Ibadan: Nigeria International Publisher Ltd.
- [2]. Abimbola, I.O & A.O .Obolade, eds, (2004). *Fundamental Principles And Practice of Instruction*. Ilorin: Department of Curriculum Studies and Educational Technology, University of Ilorin.
- [3]. Aguokogbuo, C. M. (2000). Curriculum development and implementation for Africa. Nsukka: Mike Social Press.
- [4]. Akomolafe, C. O. & Adesua, V. O. (2016). The Impact of Physical Facilities on Students' Level of Motivation and Academic Performance in Senior Secondary Schools in South West Nigeria; *Journal of Education and Practice, Vol.7, No.4*, www.iiste.org; ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
- [5]. Akwa Ibom State Secondary Education Board (2021), Uyo, Akwa Ibom State; Nigeria.
- [6]. Ames, J. (2013). *Instructional Media*. Springfield, Missouri: Global University.
- [7]. Anyanwu, J. N. (1993); Educational Technology with Practical; Owerri: Totan.
- [8]. APA Dictionary of Psychology, Retrieved: 21/5/21
- [9]. Azi, J. I. (2009). Post Graduate Lecture Notes: Instructional Technology, ABU-Zaria.
- [10]. Brunner, J. S; Goodnow, J. J; & Austin, G.A. (1966). A Study of Thinking. New York: Wiley.
- [11]. Dale, E. (1946). Audio-Visual methods in Teaching. New York: Holt, Rinehart and Wiston, (3rd Ed).
- [12]. Federal Government of Nigeria (2014). National Policy on Education; Lagos, NERDC Press.
- [13]. Fen, D. N. (2003). The influence of graphic instructional visuals in teaching biology in secondary schools. *Unpublished PhD? Thesis* Federal University of Technology, Minna.
- [14]. Greenwood Electronic Media (2001), *Greenwood Electronic Media Creates Online Guides for Events that Shaped the Modern Age.* www.gem.greenwood.com. accessed 13th September 2005.
- [15]. Heeks, R. (1999), Information and communication technologies, Poverty and development, working paper series, *Paper No. 5, Manchester, Eng.*: Institute for Development Policy and Management.
- [16]. Hoban, C. F. Hoban, C. F. Jr. & Zisman, S. B. (1937). Visualizing the curriculum. New York: Cordon Co.
- [17]. Lasonen, J. (1996). Reforming upper secondary education in Europe: the Leonardo da Vinci project post-16 strategies surveys of strategies for post-16 education to improve the parity of esteem for initial vocational education in eight European educational systems. theory into practice, 92; Jyvaskyla: Institute for Educational Research, University of Jyvaskyla.
- [18]. Mgbeze G.M (2003) Influence of graphic visuals junior secondary school, students' performance in Christian Religious Studies in Niger State. (incomplete citation)
- [19]. Ndak, F.D. (2003). A Study to Determine the Influence of Graphic Instructional Visuals in Teaching Biology in Secondary Schools in FCT Abuja: Unpublished Master's (in what?) Thesis. Federal University of Technology, Minna.
- [20]. Nworgu, B. G. (2015). Educational research: basic issues and methodology; Nsukka: University Trust Publishers.
- [21]. Oti, N..O. (1988). Caring for Children in the Church. Enugu: Assemblies of God Nigeria.
- [22]. Pancare, R. (n.d). "How to use charts and diagrams in classroom".www.ehow.com/how-5836308-use-char... (Accessed May 15, 2016)
- [23]. Patrick, S. (2000). The Effect of Visual Aids and Tactile Stimuli on the Teaching of English Language in Selected Secondary Schools in Bosso Local Government Area of Niger State. *Unpublished M. Tech. Thesis*; Federal University of Technology, Minna.
- [24]. Reiser, R. A. & John V. D (eds). (2006). Trends and issues in instructional design and technology; Prentice Hall. ISBN: 0131708058 (probably the best buy (incomplete citation)
- [25]. Webb, M. & Cox, M. (2002). A review of pedagogy related to information and communications technology, Technology, *Pedagogy and Education*, *Vol.* 13(3); 235 286, DOI: 10.1080/14759390400200183

APPENDICES

Appendix 1: Population Distribution by Secondary School

| S/No. | Name of Secondary School | No. of Senior Sec. School Students | Percentage (%) |
|-------|--------------------------|---------------------------------------|----------------|
| 1 | Comm. Sec. School, Aka | | (/ |
| | Offot, Uyo, Uyo LGA | 349 | 28 |
| 2 | Nsit People's Grammar | | |

| Total | | 1,260 | 100 |
|-------|-----------------------------|-------|-----|
| | LGA | | |
| | Akpan Etok, Ibesikpo Asutan | 180 | 14 |
| 5 | Comm. Sec. School, Ikot | | |
| | Ibiono Ibom LGA | | |
| 4 | Comm.Sec. School, Idiro, | 266 | 21 |
| | LGA | | |
| 3 | Itam Sec. School, Itam, Itu | 187 | 15 |
| | Ibom LGA | | |
| | School, Afaha Offiong, Nsit | 278 | 22 |

Appendix 2: Sample Distribution S/No. No. of sampled Percentage Campus students (%) Comm. Sec. School, Aka Offot, Uyo, Uyo 14 1 28 Nsit People's Grammar School, Afaha 2 11 Offiong, Nsit Ibom LGA 22 Itam Sec. School, Itam, Itu LGA 3 8 15 4 Comm.Sec. School, Idiro, Ibiono Ibom LGA 10 21 5 Comm. Sec. School, Ikot Akpan Etok, 7 Ibesikpo Asutan LGA 14 Total **50** 100

| S/No | Discipline (X) | Effective Job |
|------|----------------|-----------------|
| | | Performance (Y) |
| 1. | 38 | 80 |
| 2. | 71 | 71 |
| 3. | 49 | 81 |
| 4. | 29 | 62 |
| 5. | 36 | 79 |
| 6. | 47 | 77 |
| 7. | 29 | 73 |
| 8. | 35 | 88 |
| 9. | 58 | 90 |
| 10. | 77 | 69 |
| 11. | 66 | 63 |
| 12. | 28 | 75 |
| 13. | 48 | 60 |
| 14. | 40 | 68 |
| 15. | 32 | 93 |
| 16. | 70 | 57 |
| 17. | 38 | 78 |
| 18. | 51 | 89 |
| 19. | 49 | 88 |
| 20. | 45 | 81 |
| 21. | 38 | 50 |
| 22. | 45 | 76 |
| 23. | 46 | 49 |
| 24. | 28 | 50 |
| 25. | 46 | 82 |
| 26. | 50 | 70 |
| 27. | 53 | 89 |
| 28. | 58 | 83 |
| 29. | 26 | 68 |
| 30. | 38 | 79 |
| 31. | 69 | 48 |
| 32. | 48 | 70 |

| 33. 51 89 34. 38 79 35. 55 81 36. 68 50 37. 40 78 38. 46 49 39. 68 80 40. 46 82 |
|---|
| 35. 55 81 36. 68 50 37. 40 78 38. 46 49 39. 68 80 |
| 36. 68 50 37. 40 78 38. 46 49 39. 68 80 |
| 37. 40 78 38. 46 49 39. 68 80 |
| 38. 46 49 39. 68 80 |
| 39. 68 80 |
| |
| 40. 46 82 |
| |
| 41. 36 48 |
| 42. 45 83 |
| 43. 28 59 |
| 44. 61 54 |
| 45. 46 90 |
| 46. 48 91 |
| 47. 36 89 |
| 48. 30 75 |
| 49. 31 79 |
| 50. 40 77 |

Appendix 4: Calculation of rho

| Appendix 4: Calculation of rho | | | | | | |
|--------------------------------|---------------|---------------|----|----|---------|-------|
| | Discipline as | Effective Job | | | | 2 |
| S/No. | a Magt Tool | Performance | Rx | Ry | (Rx-Ry) | D^2 |
| 1 | 38 | 80 | 21 | 9 | +12 | 144 |
| 2 | 91 | 31 | 1 | 29 | -28 | 784 |
| 3 | 49 | 81 | 14 | 14 | 0 | 0 |
| 4 | 29 | 62 | 28 | 19 | +9 | 81 |
| 5 | 36 | 79 | 22 | 10 | +12 | 144 |
| 6 | 47 | 77 | 16 | 12 | +4 | 16 |
| 7 | 29 | 73 | 28 | 15 | +13 | 169 |
| 8 | 35 | 88 | 23 | 5 | +18 | 324 |
| 9 | 48 | 90 | 14 | 2 | +12 | 144 |
| 10 | 77 | 39 | 8 | 24 | -16 | 256 |
| 11 | 66 | 33 | 10 | 28 | -18 | 324 |
| 12 | 28 | 75 | 29 | 14 | +15 | 225 |
| 13 | 26 | 60 | 30 | 20 | +20 | 400 |
| 14 | 40 | 68 | 20 | 18 | +2 | 4 |
| 15 | 32 | 93 | 25 | 1 | +24 | 576 |
| 16 | 70 | 37 | 9 | 25 | -16 | 256 |
| 17 | 38 | 78 | 21 | 11 | +10 | 100 |
| 18 | 51 | 89 | 13 | 4 | +9 | 81 |
| 19 | 49 | 88 | 14 | 5 | +9 | 81 |
| 20 | 45 | 81 | 18 | 8 | +10 | 100 |
| 21 | 38 | 70 | 21 | 16 | +5 | 25 |
| 22 | 45 | 76 | 18 | 13 | +5 | 25 |
| 23 | 86 | 49 | 4 | 22 | -18 | 324 |
| 24 | 28 | 70 | 29 | 16 | +13 | 169 |
| 25 | 46 | 82 | 17 | 7 | +10 | 100 |
| 26 | 31 | 70 | 26 | 16 | +10 | 100 |
| 27 | 43 | 90 | 19 | 4 | +15 | 225 |
| 28 | 58 | 83 | 12 | 6 | +12 | 144 |
| 29 | 26 | 68 | 30 | 18 | +12 | 144 |
| 30 | 38 | 79 | 21 | 10 | +11 | 121 |
| 31 | 79 | 28 | 7 | 31 | -24 | 576 |
| 32 | 48 | 70 | 15 | 16 | -1 | 1 |
| 33 | 50 | 89 | 13 | 4 | +9 | 81 |
| 34 | 38 | 79 | 21 | 10 | +11 | 121 |
| 35 | 81 | 55 | 6 | 21 | -15 | 225 |
| 36 | 68 | 30 | 9 | 30 | -21 | 441 |
| 37 | 40 | 78 | 20 | 11 | +9 | 81 |
| <i>31</i> | 70 | 70 | 20 | 11 | 17 | 01 |

| Total | 50 | | | | | 10095 |
|-------|----|----|----|----|-----|-------|
| 50 | 40 | 77 | 20 | 12 | +8 | 64 |
| 49 | 31 | 79 | 26 | 10 | +16 | 256 |
| 48 | 30 | 75 | 27 | 14 | +13 | 169 |
| 47 | 89 | 36 | 2 | 26 | -24 | 576 |
| 46 | 33 | 91 | 24 | 2 | +22 | 434 |
| 45 | 46 | 90 | 17 | 3 | +14 | 196 |
| 44 | 61 | 34 | 11 | 27 | -16 | 256 |
| 43 | 28 | 69 | 29 | 17 | +12 | 144 |
| 42 | 83 | 45 | 5 | 23 | -18 | 324 |
| 41 | 36 | 78 | 22 | 11 | +11 | 121 |
| 40 | 46 | 82 | 17 | 7 | +10 | 100 |
| 39 | 48 | 80 | 14 | 9 | +5 | 25 |
| 38 | 86 | 49 | 4 | 22 | -18 | 324 |

 $\Sigma D^2 = 10,095$; No = 50

Substituting in the Formula, we have:

$$\circ = 1 - \frac{6 \times 10,095}{\cancel{5}0(50^2 - 1)}$$
 $\frac{60750}{=}$ $124950 = 0.49$

 $r^2 = 0.49$

Coefficient of determination = $\sqrt{0.49} = 2\overline{4\%}$

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