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Evaluating the Matrix 'Strategy- Structure' Fit in An ODL University System: A Problem And Challenge Focus.

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Abstract: *The need for opening the university doors as a way of starting a new journey for empowering the Zimbabwean and regional society with tertiary education made ZOU to adopt a matrix strategy-structure that honey- combed Faculty specialisation and Regional administration activities. This structure was designed to surpass the tall structures, semi bureaucracies and functional structures that were used by conventional universities for driving their operations. The strategy-structure match produced improved access to tertiary education, increased enrolment and added value to quality of higher education in Zimbabwe. The strategy-structure advantage of ZOU fell as many conventional universities started copying the matrix structure through establishing their multi-campuses around the country. This affected the brand position and physique of ZOU and consequently its enrolment figures. Strategic management principles generally point to the need for a strategy-structure review of ZOU so as to design a more vibrant structure that will make ZOU stand out among local and foreign universities. A study that took a quota sample of 60 regional programme co-ordinators organised around matrix structure was carried out to evaluate the relevance of the matrix structure in ZOU's current and planned operations. The study found out that the matrix structure had problems of clashing time tables, lack of research oriented supervisors and power struggles among matrix bosses and RPCs. The study recommended adoption of a more flexible strategy-structure mix that further empowers RPCs to be responsive to the winds and complexity of environmental change and competitive threats signals. The possible building blocks of the new strategy-structure are the committee, virtual networks and learning organisation designs.*

Keywords: *Matrix Structure, organisational effectiveness, Regional Programme Co-ordinators, Regional Centre, Faculty Centre, dual command, strategy –structure, ODL.*

I. Introduction

Zimbabwe Open University (ZOU) was legally constituted on the 1st of March in 1999 through an Act of Parliament, The ZOU Act[Chapter 25:20]. Its mandate was to offer open and distance education to the local and global society. ZOU's mandate required a different strategic approach to that of the then fully conventional campus universities like UZ and NUST(Tull and Kuk, 2012). ZOU went ahead and established 10 regional campuses as a way of adopting the strategy-structure fit that had power and relevance to open the university education to the society. The changes that had taken place to the needs of external stakeholders(IEG,2012) and student profile of ZOU could have influenced ZOU to adopt a superior structure to that used by conventional universities of that time. The key determinant of organisational effectiveness include strategy capabilities, design of the organisational structure, processes and technology, and the people management processes(Shermon, 2009; Child, 1984). Chandler (1962)'s work had earlier on, linked the constructs of strategy, structure, environment and firm's performance, and concluded that that a firm's performance is a function of its environment, its strategy and its structure. Organisational design is best thought of as a project that requires the same tools, attention, and resources as any other significant business change activity(Kesler and Kates, 2010).

Unlike in conventional universities where much issues to do with faculty learning and lecturing are supervised by the Faculty Dean only, ZOU was designed on the lines of dual chain of command where a geographically defined Regional Director and a Faculty specific Dean provided instructions and guidance on how learning should be done through regional programme co-ordinators. The focus of ensuring learning and teaching was given to the regional programme co-ordinators who are resident in each of the ten (10) physically dispersed regions. To demonstrate the importance of proper structuring in strategic management(Nadler, Tushman and Nadler,1997), ZOU added the 11th virtual region for students working and resident in foreign economies and also opened district centres that are facilitating access to higher education by the society. The people who were put in front to deal with students include the part-time tutors, regional programme clerks and programme co-ordinators. The module became the 'Lecturer in Print' which enabled tutors, students and the co-ordinators to conduct effective concept and skill based lessons. This led to the effectiveness of the

administration of this teaching and learning role of programme co-ordinators and students, respectively, in the initial stages of ZOU's organisational life cycle.

Such a matrix structure of regional programme coordinators (RPCs), faculty deans (FDs) and Regional Directors (RGs) is shown by Fig I below.

		Geographical Orientations (Regional Directors)						
		RDA	RDB	RDC	RDD	RDE	…	RDJ
Faculty (Faculty Deans) orientation	Faculty Dean1 (Commerce and Law)	RPCs (1A)	RPCs (1B)	RPCs (1C)	RPCs (1D)	RPCs (1E)	…	RPCs (1J)
	Faculty Dean 2 (Arts and Education)	RPCs (2A)	RPCs (2B)	RPCs (2C)	RPCs (2D)	RPCs (2E)	…	RPCs (2J)
	Faculty Dean 3 (Social sciences)	RPCs (3A)	RPCs (3B)	RPCs (3C)	RPCs (3D)	RPCs (3E)	…	RPCs (3J)
	Faculty Dean 4 (Science)	RPCs (4A)	RPCs (4B)	RPCs (4C)	RPCs (4D)	RPCs (4E)	…	RPCs (4J)
	Faculty Dean 5 (Agriculture)	RPCs (5A)	RPCs (5B)	RPCs (5C)	RPCs (5D)	RPCs (5E)	…	RPCs (5J)

Figure I: ZOUs Faculty-Regions Matrix Structure.

Key: 3A refers to Programme Co-ordinator in the Social Sciences and in Region A

Source: Adapted From ZOU Internal Records (2016)

It can be seen from Fig I above that the matrix structure is making regional programme co-ordinators receive dual instructions from 'Faculty Deans/Chairpersons/Programme Leaders' and 'Regional Directors/Deputy Regional Directors'. For instance, the RPC labelled **3A** is receiving instructions from the Regional Director of Region A and from Social Science Dean labelled **3**. The key advantage of matrix structure was the assumed flexibility which is associated with ability to create, redefine and dissolve teams as needed by the management. Matrix structure allowed programme-co-ordinators to make both faculty and regional decisions which could motivate and commit them to the organisation(Robbins, 1994). Ability to widen and deepen skills of employees is another source of strength that could have accrued to ZOU's continued use of matrix organisation structure.

Tjahjano, Dwyer and Habib(2009) also agreed to the importance of matrix structure in ZOU by asserting that a strong matrix approach increases the amount of work that could be completed, and also that ownership and accountability would be easier to implement and track.

The ability of using lecturers for both regional work and faculty work could have contributed to the efficiency of ZOU in its staff utilisation. The team members(RPCs in this case) were able to retain the functional(faculty) membership and served as a bridge between faculty instructions and regional activities. Those instructions, however, mainly point to the internal documents and processes of the open and distance learning (ODL) university with less emphasis on external stakeholder satisfaction. ZOU's other key benefit from matrix structure was the ability to decentralise and delegate some day to day activities to its regional campuses.

Though Stoner and Freeman(1989) professed that matrix structures will be common place in future, organisations who later applied them did not train the respective project and functional managers the requisite human skills for driving such an organisation design. For instance, Stoner and Freeman(1989) had already warned that matrix employees who were only oriented of functional lines might need to be protected and re-trained before they are assigned to project teams that are led on matrix styles. The purpose of organisational structure and control is to co-ordinate employees' activities and motivate them for better performance(Jeyarathmn, 2008)

Though another wave of changes(2008 to 2015) in the external environment could indicate that the ZOU matrix structure is more relevant than when it was introduced(IEG, 2012), the increasing competition from local conventional universities(Tull and Kuk, 2012) who are also matrixing might require ZOU to proactively evaluate the relevance of that structure. The key challenge of the matrix strategy-structure applied by ZOU on regional programme co-ordinators is the uncertainty about reporting relationships in cases where both the functional managers(faculty people) and project managers(regional people) assign contrasting and overlapping duties. This could have made some RPCs to be fearful and too careful in their operations, and making the university and society forgo innovation output from these researchers. The managers on the vertical and horizontal sides of the matrix could also treat the matrix structure as a form of anarchy and self-empire in which they have unlimited freedom to exercise and experiment their powers over the matrixed lecturers. Griffin(2011) said that core technology, environment, organisation size and organisational life cycle are situational factors that need to be considered when evaluating and redesigning an organisational structure. The strategy adopted by the organisation also influence the pattern of its staff deployment, and skills required(Galbraith and Kates, 2008). The level of ZOU's information technology, the changing customer and

competitor behaviour, its infrastructure, branch and employee size, and organisational life cycle will largely determine the urgency of redesigning(Nadler, Tushman and Nadler, 1997; Pettgrew and Fenton, 2000) its faculty-region matrix structure around the regional programme co-ordinators(Griffin, 2011). Good structure allows the organisations like ZOU to improve their abilities and create value and develop competitive advantage over other players in same product-market space(Jeyarathmn, 2008).

Now that GZU, UZ, MSU, Solusi, AU in Zimbabwe and NUST are operating on their multi- campuses and benefiting from the flexibility and convenience that originally gave ZOU its advantage, there is need for ZOU to re-evaluate the strategic relevance of the matrix strategy-structure that it is using on their regional programme co-ordinators. The key question in organisational design is whether the organisation's current structure is appropriate for the new strategy that enable it to fight competition and delight its stakeholders(Tjahjano, Dwyer and Habib, 2009)? The thrust of this research is to establish and evaluate the extent to which the current matrix structure is perceived as giving problems by the ZOU regional programme co-ordinators.

II. Literature Review

2.1 The Concept of The Matrix Strategy- Structure

A matrix structure involves two bosses or supervisors who give instruction to a subordinate. The other supervisor provides the project orientated guidance, while the other focus on giving skill-specific supervision to the same employee for achieving the projects results (Middleton, 1967). The two bosses have rights to subordinate's time and their instructions are formal and compelling (Galbraith, 2008). Griffin(2011) said a matrix structure is a result of superimposing a project form of departmentalisation on an existing functional organisation. Since project managers co-ordinate teams of employees drawn from different functional departments, this means a multi-command system will be in place. Stoner and Freeman(1989) defined a matrix structure as an organisation design where each employee reports to both a functional manager and a project manager. There is a vertical chain of command and a horizontal chain of command (Stoner, Freeman and Gilbert, 1999). The matrix strategy-structures evolved from being a temporary overlay, to a permanent over-lay and into a mature matrix(Stoner and Freeman, 1989). Temporary overlay were short-term matrices that are created for specific projects, while permanent overlay are matrices where project teams are continued for on-going purposes. The mature matrix is where both the functional side and project side of the structure are permanent and balanced, with power held equally by both a functional manager and project manager(Stoner and Freeman, 1989). Tjahjano, Dwyer and Habib(2009) gave the four possible forms of matrix structure, namely; weak matrix, balanced matrix, strong matrix and projectised structure. In a weak matrix the staff work on different projects but still report within their respective functional managers. In a balance matrix the project managers have more authority over resources and limited control over the overall budget. Employees report to both functional and project managers. Strong matrix strategy-structure gives the project manager full control over resources and budget.

Though matrix structures were designed for aerospace industry as temporary institutions, large companies have adopted this structure for formalising and creating permanent structures. A matrix structure may work when there is a strong pressure from the environment, for example increasing competition. It is also needed when large amount of information need to be processed. ZOU had some regional flow of information and faculty flow of information which enhanced the organisation's capacity for processing information. The need and pressure for sharing resources also make the matrix structure more relevant compared to functional and hierarchical designs. Matrix structure thrive on strong communication skills, teamwork, adaptability, shared goals and adaptable reward systems(Metcalfe, 2014).

The benefit of matrix structure were outlined by Stoner and freeman(1989) as ability to provide flexibility to the organisation, stimulating interdisciplinary co-operation, highly involving and challenging to employees, developing more employee skills, freeing top management for planning, motivates employees to identify the outcome of their efforts, and allows identification and re-deployment of experts to crucial areas. In large, complex organisations that follow the matrix structure, employees face multiple roles that compete for their time, and in most cases the role are conflicting. The dual command system is existing between the Regional Directors and Faculty Deans of Zimbabwe Open University around regional programme co-ordinators. It is believed that the matrix structure balance the degree programme specifics and the geographical locations of students. This structure is said to suffer from an internal focus, loss of initiative and accountability by Galbraith (2010). Nesheim, Olsen and Tobiassen (2011) also reflected the weakness of a matrix structure by stressing that matrix-like organisations require dialogue and communication in order to reconcile supplementary goals and considerations. Campbell and Strikwenda (2013) said managers in matrix structure are normally appraised on efficiency and productivity, and this makes them reluctant to hold extra resources for exploring new opportunities and supporting risky projects. Matrix structure enables the employees to work in different projects

simultaneously(Jeyarathmn, 2008) and good for training the soft human skills(Metcalfe, 2014) which frees top management to concentrate on strategic issues.

Though the matrix structure was said to be better than the traditional chain of command in the area of responding to the wind of change, saving costs and achieving some balanced decision making(Robbins, 1994), it has many weaknesses that make it unsuitable for the current operating environment like ZOU. Weisbord, Charns and Lawrence (1980) said the major weaknesses of matrix structure include some formless state of confusion on roles and responsibilities, it encourages power struggles between the matrix bosses, excessive internal pre-occupation and loss of external orientation (navel gazing). On the weaknesses side, Stoner and Freeman(1989) said that matrix structure is likely to create a feeling of anarchy, encourages power struggles, lead to more idle talk than to action, demands high interpersonal skills, could be costly to implement, duplication of management duties and might also affect employee morale when personnel are re-arranged. This might mean that, if the existing operations of programme co-ordinators is not reviewed, the matrix structure might put ZOU into a state of stagnation and long term ineffectiveness(Nadler et al, 2012). Matrix structure could also suffer some challenges similar to that of group dynamic, which include taking longer to make decisions, dominance by few individuals, and some associated compromises that mis-direct ZOU from pursuing its primary mandates and goals. More time could also be used by regional lecturers for co-ordinating the activities. The matrix bosses should also learn that leadership is an attitude not a title, and that the matrix culture get things done through good personal relationships, and also requires thinking from the perspectives of others and effective listening to views of both subordinates and superiors(Metcalfe, 2014).

Though matrix structure is having some irrelevancies in this environment, De Klerk and Kroon (2007) in their South African studies established that matrix structure was more prevalent at 42.9%, while full networking cultures existed at 25% rate. Given possible weaknesses of the matrix structure and the impossibilities of going back to tall structures and pure functional structures applied by other slow universities, Griffin(2011) propose that contemporary organisations, like ZOU, might need to test the use of team structure, virtual organisation, learning organisation and network structures. In teams, the co-ordinators will be working on specific university projects without the burden of reporting to the regional and faculty hierarchies. The virtual structure is where staff will be recruited for special activities to be done by the university. Part-time tutors complement the virtual structure of ZOU. A learning organisation facilitate the life long learning and personal development of all its employees and also transforms itself to meet the demands of the external environment. ZOU also need the international dimension of its organisational design. A new strategy-structure culture will lead to development of new ideas and competencies (Hiriyappa, 2008;Nadler et al, 1997) that meet the challenges of new operational demands.

III. Research Methodology

A positivist-quantitative research paradigm that applied the cross-sectional survey was used in this study. The study took a regional campus- based quota sample targeting a minimum of 3 region based lecturers to be the key respondents. Gender distribution achieved 17 females and 43 males. Master's Degree holders were 56 and those with PhDs were 4. The RPCs who work in regions around the national centre(Harare and Mash-Regions) were 29, while those who work in regional campuses distant from Harare were 31. A Likert scaled questionnaire that had seven(7) matrix structure problem statements was used in the survey. A sample size of 60 questionnaires was achieved through drop and pick and face to face interviews at some meetings, conferences and workshops that involved RPCS, and also at their regional centres. The sample size was generally adequate with a KMO of 0.66. A high questionnaire reliability value of 0.88 Cronbach Alpha was achieved. An SPSS version 19 was able to produce Chi-Square tests, T-tests, mean values and basic percentage frequencies. The benchmark mean value for the analysis was 2.50, where anything above 2.50 showed some disagreement on the intensity of the matrix structure problem. The T test was used for measuring and testing the overall acceptability of the matrix problems' ratings by respondents. Chi-square tests measured the association between demographic profiles of respondents and some selected matrix strategy-structure problems. The discussion was done to enable understanding of some existing limitations of the strategy-structure fit being applied by ZOU in running its 'region –faculty' operations.

IV. Data Analysis, Presentation and Discussion

The major discussion of findings provides an evaluation of the major matrix strategy- structure problems as expressed by regional programme co-ordinators in ZOU's 10 regional campuses. The discussion of results are covered by the mean value discussion and hypotheses testing sections.

4.1 Discussion of Mean Values and Variable Ranking

The discussion is based on the research results presented on Table I below.

Table I: Matrix Structure Problems and Regional Programme Co-ordinators

	Means	SA	A	N S	DA	S DA
Conflicts on time tables and events	**2.30**	26.7	38.3	15.0	18.3	1.7
Less duties are to do with research	**2.33**	33.3	21.7	25.0	18.3	1.7
Two bosses setting their scores on RPCs	**2.50**	28.3	16.7	35.0	16.7	3.3
Absence from office **only** means you are not working	**2.58**	30.0	15.0	30.0	16.7	8.3
Clashing of duties allocated by region and faculty	**2.60**	23.3	26.7	21.7	23.3	5.0
Less duties are to do with community service	**2.87**	20.0	16.7	26.7	30.0	6.7
Differences in time perception between faculty people and regional lecturers	**2.88**	18.3	13.3	33.3	31.7	3.3
Overall Mean Value	**2.58**	-	-	-	-	-

On the matrix strategy- structure problems the five most critical problems were found to be on conflicts on time table and events (m=2.30), less duties were to do with research (m=2.33), two bosses settling their scores on RPCs (m=2.50), absence from office only means you are not working (m=2.58), clashing of duties allocated by region and faculty (m=2.60). Some events organised by the faculties were not taking into consideration the regional programmes. This sometimes forced regional programme co-ordinators to explain a lot to the two bosses: the regional director and the respective faculty dean or his representatives. While programme co-ordinators need to participate in problem solving research, their two matrix bosses are not giving them work that meet the research role expectations of the dual commanded RPCs. When performance appraisal come, the two bosses usually rate the RPCs poorly on the research and publication index, and distancing themselves from being the cause of such poor performance. The power of the two bosses is usually tested and practiced on the regional programme co-ordinators. The regional directors might give more administrative work to RPCs so that they divert them from getting involved in direct faculty based academic work. This all make RPCs concentrate on internal activities, and especially on pleasing the two bosses rather than satisfying other internal and external stakeholders of the university.

Though the formal job description of RPCs require them to engage in community service(m=2.87), no formal instructions are given to them for achieving this task. Any attempt by RPCs to participate in social activities is over monitored and regarded as absence from the 'physical office', though it is not absence from the 'role office'. Enrolment is increased when the RPCs interact with community members at weddings, church programmes, career days in schools, at research conference centres and during consultations.

Differences in time perception between faculty people and regional lecturers(m=2.88), though less frequent, was found to also reduce organisational cohesion and progrees.

The time orientation of faculty people and regional directors (including RPCs) was said to be different. When regions want learning materials the faculty people would not be responsive due to their perceptual and physical distances. This cause the RPCs to delay in implementing some core university programmes. The overall mean for the matrix problems measure was found to be 2.58. It is slightly positive since it is just above the 2.50 bench mark.

4.2 Hypotheses Testing on Matrix Structure Problems.

H_1 : The Regional Programme Co-ordinators Perceived The Matrix Structure Problems As Generally Large.

The overall acceptability hypothesis testing results for this measure is given below.

We carried out a one-sample T test at 0.05 level of significance and produced the results in Table II below.

Table II: One-Sample Test For Matrix Structure Problems

	Test Value = 2.50					
	T	df			95% Confidence Interval of the Difference	
			Sig. (2-tailed)	Mean Difference	Lower	Upper
MatrixPro	.914	6	.396	.08000	-.1342	.2942

Since the t-calculated value of 0.914 is greater than the upper limit of 0.294 at p-value of 0.396, we reject the null hypothesis and conclude that the regional programme co-ordinators did not perceive the matrix structure problem as large. This position, however, does not mean that the organisation should ignore some critical matrix structure problems that had means below or above 2.50. The organisation should also go ahead and design structures that will enable it to defend its core business.

H_2: There Is An Association Between Regional Location Of Respondents And Rating Of Matrix Structure Problem

The chi-square test analysis results of respondents' perceptions on matrix structure problems and regional location of respondents are given in Table III below.

Table III: Regional Location and Matrix Structure Problem

		Accept H_0 if :	P-Value (Cal.)	Decision
(a)	Conflicts on time tables and events	p-< 0.05	0.494	Reject H_0. No association
(b)	Less duties are to do with research	p-< 0.05	0.607	Reject H_0. No association
(c)	Two bosses settling their scores with RPCs	p-< 0.05	0.446	Reject H_0. No association
(d)	Absence from office only means you are not working	p-< 0.05	0.362	Reject H_0. No association

In testing the association between location of regional programme co-ordinators and their perception of matrix strategy-structure problems, Table III, that contain four critical variables, was considered. The chi-square tests produced p-values which were greater than 0.05 and hence led to the rejection of the null hypothesis. It shows that regional programme co-ordinators in all the 10 geographical places did not differ much on their perception of matrix structure problems. This could be showing that behaviour of most regional directors and deans were perceived similarly by programme co-ordinators. The matrix strategy-structure could also be described as a dominant and strong culture due to its widespread influence across all the 10 regional campuses.

H_3: There Is An Association Between Experience Of Respondents And Rating Of Matrix Structure Problem

The chi-square test analysis results of respondents' perceptions on matrix structure problems and experience of respondents are shown on Table IV below.

Table IV: Experience of RPCs and Matrix Structure Problems

		Accept H_0 if :	P-Value (Cal.)	Decision
(a)	Conflicts on time tables and events	p-< 0.05	0.447	Reject H_0. No association
(b)	Less duties are to do with research	p-< 0.05	0.000*	Accept H_0. There is an association
(c)	Two bosses settling their scores with RPCs	p-< 0.05	0.258	Reject H_0. No association
(d)	Absence from office only means you are not working	p-< 0.05	0.055*	Reject H_0. Slightly insignificant association

The test results for this hypothesis is on Table IV. The study concluded that there is no association between experience of regional programme co-ordinators(RPCs) and 'conflicts on time and events', 'absence from office only means you are not working' and 'two bosses settling their scores through RPCs'. There was, however, an association between experience and 'less duties are to do with research', with more experienced RPCs strongly agreeing on the problem than those with less years of experience. Since many variables led to the rejection of the hypothesis, we conclude that there was no association between experience and matrix strategy-structure perception.

V. Conclusions

The study concluded that regional campuses and faculties had major matrix problems that include clashing on time tables and events, giving co-ordinators less duties that are to do with research and community service, and having the two matrix bosses settling their scores through RPCs. The study established that, although programme co-ordinators were a bit tolerant to the existing matrix strategy-structure problems, they accepted the need for some interventions for reducing conflicts among matrix bosses. The study also concluded that the regional location and experience of programme co-ordinators had no association to the overall matrix strategy-structure problem perceptions.

VI. Recommendations

The researcher recommends ZOU to empower programme co-ordinators with resources that enable them to interact with industry and prospective students. The study also recommend the matrixing functional managers and regional directors to be trained on how to proactively deal with regional programme co-ordinators' task and operational expectations. ZOU's top management might need to create some new strategy-structure options that can produce higher competitive advantage and operational results that surpass the capacity of the existing matrix structure.

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