Dominace Criterion to Organizational Conflict Management: A Demonstration

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Abstract: *The paper studied the demonstration of dominance criterion of a mixed game theory to organizational conflict management. The objective was to theoretically evaluate and analyze the competitive strategies for resolving conflict between management and union of Rockson Engineering Limited in Port Harcourt. The work became necessary as a result of management insensitivity to employees welfare and the decision to retrench workers with fierce opposition from union resulting to strike action. The study adopted secondary source of data with the use of deductive and inductive logic focusing on reviewed literature, files, and records, with particular reference to application of dominance criterion to conflict resolution. Findings from the reviewed literature suggest that the application of dominance criterion as a negotiation strategy improves organizational harmony, and it is pivotal for enhancing the organizations productive and employee welfare even when interest translates to a loss or gain situation. The paper recommended that management and union should always position themselves to accept a zero sum strategy which invariably favors a particular group. And further concludes that dominance criterion principle is a veritable stochastic model that mimics negotiation strategies between two parties.*
Keywords: Conflict, resolution, decision making, gaming, dominance, zero sum, pay-off, two person game, management, and unions.

I. Introduction

The divergent interest between the employer and the employees in an organization makes industrial conflict inevitable. Disputes not properly resolved will eventually lead to industrial conflict, which could be expressed in several forms such as strike, work-to-rule, go-slow, demonstration, and picketing which poses cost to all industrial relation actors. However, the inevitability of conflict in the work place also make available opening and means for resolution through negotiation, integration, confrontation, collective bargaining, arbitration and compromise to mention a few in order to bring about the expected organizational harmony (Fearon, 2009).

The nature of task and work that is been performed in consideration of the number of work force, remuneration and welfare package in an organization triggered the unionization of employees to protect their interest and advance their rights as against management decisions and policies that tend not to be favorable to the employees. Haywood, (2012) assert that this formation has led to series of organizational conflicts that are resolvable through collective bargaining and joint decision making between management and unions (employees' representatives) of any organization, mainly on matters that concern employees' substantive and procedural rules, regarding welfare and mode of work, respectively.

It is on this premise that the application of game theory in decision making became a veritable analytical tool for resolving conflict between management and union in an organization. A game is a formal description of a strategic situation. Game theory is the formal study of conflict and cooperation. Game theoretic concepts apply whenever the actions of several agents are interdependent. These agents may be individuals, groups, organizations, or any combination of these. The concepts of game theory provide a language to formulate structure, analyze, and understand strategic scenarios. Dominance strategy is when a strategy dominates another strategy of a player if it always gives a better payoff to that player, regardless of what the other players are doing. It weakly dominates the other strategy if it is always at least as good (Schultz, 2001).

Hence, decisions reached by management and union, automatically becomes a work practice that is referenced and enforceable by both parties in the organization, so that each part is mindful and careful of issues to advance (game) that will be of gain to them, in order not to lose (recessive player). Gaming involves

delineating "strategies" and "outcomes" (Selten, 2011). Strategy s_A is called a dominant strategy for player M, (Management) if no matter what player choose, playing s_M maximizes player M's pay-off. A strategy s_M is called a strictly dominated strategy for player M, if there is another strategy s_M such that no matter what the other players U (Union) choose, playing s_M gives player M a higher pay-off than playing s_M.

II. Statement of Problem

It remains the prerogative of management to review and restructure policies and decisions as often as such issues is perceived not to be in consonance with the actualization of the organization's objectives. However, this prerogative is associated with some specific problems in the absence of collective bargaining with unions in the organization. Organizations generally deals with conflict arising from (poor) remuneration, excessive work load placed on employees, poor welfare system, nonpayment for overtime work, non adherence to organization's culture, poor working condition, lack of promotion, awards and nonpayment of bonuses to mention a few.

Management and unions often perceive each other to be weak at the negotiation table. This often leads to non compromise in their issues of discourse since both parties' refuse to shift grounds. Management assumes dominance by superimposing stringent working condition on employees. Consequently, unions react by opposing such policies which in turn result in major conflict in the organization. Management inability to implement policies that would enhance timely payment of death benefits to accident victims in the organization, and, the pace of organizational productivity which does not have any significance or reflecting in employee's remuneration. The general objective of this study was to evaluate theoretical competitive negotiation strategies between management and unions in an organization. The specific objectives are:

1. To determine the extent to which organizational productivity is influenced by employee remuneration without recourse to industrial action by union.
2. To determine the degree management dominance is impacted by employee work load such that both are acceptable by parties during negotiation in an organization
3. To ascertain the relationship between policies implementation on accident and death benefits, and timely payment to affected employees in an organization.

III. Conceptual Review

A game is any situation in which the choices of two or more actors (Management M, and Union U), called players, are interrelated, that is, where the outcome does not depend solely on the choice of a single actor (Frank and Branislav, 2009). Games are sometimes thought of as lighthearted diversions. Game theory is a key element in most decision-making processes involving two or more people or organizations. This study explains how game theory can predict the outcome of complex decision-making processes, and how it can help you to improve your own negotiation and decision-making skills. Anthony (2010) asserts that game theory is the theory of independent and interdependent decision making. It is concerned with decision making in organizations where the outcome depends on the decisions of two or more autonomous players, one of which may be nature itself, and where no single decision maker has full control over the outcomes.

The application of reduce game by dominance is applicable on mixed strategy game that is more than two-by-two matrix. If no pure strategy exists, the next step is to eliminate certain strategies (rows and columns) by dominance. Rows and columns of the payoff matrix that are inferior to at least one of the remaining rows and columns are deleted from further consideration, (Prem and Hira 2004).

For example, two players Management (M) and Union (U) play a game, each of them has no choose of the three colors of white (W), black (B), and red (R) independently of the other. Therefore the colors are compared; if both M and U have chosen white (W, W), neither wins anything. If player M selects white and player U black (W, B), player M loses or player U wins. A complete matrix table is shown below to find the optimum strategies for M and U, and the value of the game.

Table 1. Matrix of More than 2 X 2 Alternative Strategies

		Color chosen by U		
		W	B	R
	W	0	-2	7
Color chosen by M	B	2	5	6
	R	3	-3	8

Source: *Operations Research*; (Prem and Hira, 2000; 815)

Solution: This matrix has no saddle point. Evidently, the player U will not play strategy R since this will result in the heaviest losses and highest gains to player M. He can do better by playing columns W or B. Thus R is to be deleted and strategy R is called the dominance strategy. The dominance rule for columns is; every value in the dominated column must be less than or equal to the corresponding value of the dominated column. The resulting matrix is:

Table 2. Matrix of More than 2 X 2 Alternative Strategies

		U	
		W	B
	W	0	-2
M	B	2	5
	R	3	-3

Source: *Operations Research*; (Prem and Hira, 2000; 815)

From the table it is clear that player M will not play row W since it will give him returns lower than given by row B. hence row W is dominated by row B and can be deleted. The dominance rule for rows is; every value in the dominating row must be greater than or equal to the corresponding value of the dominated value.

Table 3. A Reduced Matrix of 2 X 2 Alternative Strategies

		U	
		W	B
M	B	2	5
	R	3	-3

Source: *Operations Research*; (Prem and Hira, 2000; 815)

From the table above, the 2 x 2 matrix can be easily solved. It should be noted that a game reduced by dominance may disclose a saddle point which was not found in the original matrix under rule 1. This is not necessarily a true saddle point since it may not be the least value in its row and the highest value in its column as per the original matrix. Therefore, this pseudo-saddle point is ignored and the reduced game should be solved for mixed strategy.

Conflict: The concept of conflict is multi-dimensional. However, Ubeku, (1985) assert that conflict is a sequence of interaction between groups in society, between groups and government, and between individuals. Conflict exists in the work place as it does in many other parts of life. Conflict is inevitable in labor-management relation, but without cooperation based upon an ideology which will makes it possible to develop constructive industrial relations, the marvels of modern technology and industrialization may lead to disaster (Ubeku, 1958). Organizational conflict is the discord that occurs when the goals, interests or values of different individuals or groups are incompatible and those individuals or groups block or frustrate each other's attempt to achieve their objectives. Conflict is an inevitable part of organizational life since the goals of different stakeholders such as managers and staff are often incompatible (Jones, Gorge, and Hill, 2000). Fajana (1995) defined industrial conflict as the inability of the employers and employees to reach agreement on any issue connected with the subject of employers- employees' interactions. He however pointed out that many discussions on industrial relation and conflict management simply refer to strike because it's the most overt and significant aspect of industrial conflict. Omeru and Oriba (2000) agreed that industrial conflicts occur whenever clash interests/ objectives exist in worker-management relations.

Causes of Conflict: The causes of industrial conflicts can be broadly classified into two categories: economic (substantive) and non- economic (procedural) causes. The economic causes will include issues relating to compensation and benefits, wages, bonus, awards, allowances, and leave and holidays without pay, unjust layoffs and retrenchments to mention as few. The non economic factors will include victimization of workers, work conditions, working hours, ill treatment by staff members, sympathetic strikes, political factors, indiscipline etc (Benjamin and Hideaki, 2004).

Negotiation: This is a process of identifying issues of dissenting interest by disputed parties with the purpose of resolving them. Negotiation in modern time is quite different from what it used to be. It used to be full of threat and table-pounding, and involves a shouting competition among ill-prepared and uninformed people. Nowadays,

people are more sophisticated and have at their disposal the service of top-fight and professional negotiators (Nwachukwu, 2000). You begin by distinguishing conflicts that are negotiable from those that are not. Each individual in a conflict needs a clear view of what it wants, and how this requires the cooperation of another person. Each individual must perceive that negotiation offers a positive gain or reduction of a potential loss. Third, each individual must recognize what the other person's need is, and then be willing to discuss a range of solutions that may satisfy those needs. If one or more of these conditions is not met, there can be no negotiation.

Empirical Review

Mandiff, and Singh (2012), conducted a study on competitive market share between Eltredin and Zelmetaphin Agency in Delhi, India; using pure to mixed strategy of game theory. The study adopted the survey research design method, copies of questionnaire was distributed to a sample size of twenty eight (28) using stratified sampling technique drawn from mangers and marketing department of both organization. T-test statistical tool was used in testing the hypotheses. This study was to find out the variation and switch in customers loyalty, and to determine strategy that will optimize the sum of payoff (gain) for Zelmataphin over Eltredin. The outcome was Zelmataphin play strategy A (personal selling) optimal strategy, while Eltredin recessive column strategy B (publicity).

Alexdandiff and Busca (2012) carried out a study on farmer's decision to plant: Rice, Tomatoes, and corn respectively. The yield was dependent on the weather conditions which may be good, bearable, and bad. Dominance concept of game theory was adopted to eliminate alternative strategies in the matrix to 2 x 2 in Kuala Lumpur, Malaysia. The researcher adopted an exploratory research method, using secondary source of data and interview on twelve (12) farmers and eight (8) climatologists. Time series analysis was adopted to compare the expected yield over a period of fifteen years. The study was to examine the climatic condition for strategy A Tomatoes (good weather), and strategy B Corn (bearable weather). The outcome was, player B (corn) played a recessive column and player A (tomatoes) played the optimal sum of payoff.

Feryel and Pinar (2013) conducted a study on prisoners' Dilemma, using dominance of game theory in reducing pure to mixed strategy game. The study adopted survey design method; copies of questionnaire administered to prison staff consisted of forty six (46) as the population size using simply random method. Pearson Product Moment statistical tool was used to test for correlation of the null hypotheses stated.

This study was conducted to find out management decision on multiple complex alternatives to "Corporate" with expected ethnic or to "Defect". To corporate is for a prisoner to cheat by lying in order to receive lesser sentence of six (6) jails, alternatively, defect and receive stricter sentence of twelve months jail sentence. In the game, a "defect" is a dominant strategy and "corporate" is a strictly dominated strategy for both players. An outcome A Pereto dominates an outcome B, at least one player in the game is better off in A and no other player is worst off.

Theoretical Framework: Game Theory

Game theory is an integral component of decision sciences popularly called Decision Theory

Decision Theory (DT): Decision Theory was formulated by Abraham Wald in 1950, and defines the act of choosing among alternative with the use of probability techniques. The foundation of modern decision theory (DT), lie in philosophy and economics (Don, 1999; Ichiishi, 1983). The utilitarian philosophers especially Jeremy Bentham and John Stuart Mill, during the eighteenth century developed a model of "economic man" or perfect rationality to explain how people make decisions.

Decision making (DM) is the hallmark of managers; (Fudenberg and Tirole, 2002; CIPM, 2007), every time decision has to be made about resources available, and what to do to achieve effectiveness and efficiency as well as even managing our time at the space of the decision maker is contingent on the decision he will make. As the decision taken by the manager governs the fortune of the business, as right decision will have a salutary effect while the wrong ones may proves to be disastrous, (Prem and Hira, 2000).

However decisions are made under some under different situations, where to provide a rational approach to the managers in dealing with problems confronted with partial, imperfect or uncertain future conditions (Howard, 2009). Decision is an act of being committed into a particular line of action, considering the process of reaching a decision which starts at the point in time of awareness of the need to make a decision. Decision theory encompasses several techniques and theories that could be applied to decision making under stochastic conditions. One of these tools cum theory is "game theory".

Steps in Decision Theory (DT) Approach

The decision theory, (Sugden, 2009), approach generally involves four steps.

i. **List all the viable alternatives:** The first action a decision-maker must take is to list out all the viable alternatives that can be considered in the decision. (Kalai and Samet, 2010), these alternatives are also termed as course of action, simply actions, or strategies, and are known to be under the control of the

decision-maker. For example, in a company there may be only three options: a. expand the present plant, b. construct a new plant, c. outsource

ii. **Identify the expected future events:** This is to list all the future events that may occur. Often, it is possible to identify most of the future events that will occur; the difficulty is to identify which particular event that will not occur. These future events (not under the control of the decision-maker) are termed as state of nature or outcomes in DT. The future events related to the demand are: a. High demand, b. moderate demand, c. low demand, d. no demand

iii. **Construct a payoff table:** The payoff table is a table representing profit margin and its benefits to the decision-maker. Also known as conditional gain or conditional profit table, which is constructed for each possible combination of alternatives course of action and state of nature.

Table 4. Payoff Table

| | | State of nature (product demand) in Naira | | | |
		High	Moderate	Low	Nil
Alternative Strategies:	Expand	5000	2500	-2500	-4000
	Construct	7000	3000	4000	8000
	Outsource	3000	1500	1000	1000

iv. **Select optimum decision criterion:** Finally, the decision-maker will choose criterion which results in largest payoff. The criterion could be based on economic, qualitative or quantitative bases as applicable to the condition in which the decision is been based upon (Gibbons, 1992).

Decision-Making Environments
Four different environments determine conditions upon which decisions are made, according to the degree certainty. Don (1999) opined that degree of certainty may vary from complete certainty to complete uncertainty. The region that lies in-between corresponds to decision-making under risk.

i. **Decision Making Under Certainty (DMUC):** In this only one state of nature exists for each alternative; that is, there is a complete certainty about the future. Umoh (2007) alluded that it is very easy to analyze the situation and make good decisions, since the decision-maker has a perfect knowledge about the future outcomes, he simply chooses alternative with the highest payoff.

ii. **Decision Making Under Uncertainty (DMUU):** Under this, more than one state of nature exist but the decision-maker lacks sufficient knowledge to allow him assign probabilities to each of these states of nature.

iii. **Decision Making Under Risk (DMUR):** Here also, more than one state of nature exists but the decision-maker has sufficient information to allow him assign probabilities to each state of nature.

iv. **Decision Making Under Conflict (DMUC):** Situations exist in which two or more opponents with conflicting objectives try to make decisions with each trying to gain at the cost of the other, such as in management and union negotiation, and firms struggling to maintain market share. These situations are different since the decision-maker is working against an intelligent opponent.

2.3.4 Game Theory
The theory of games is based on minimize-maximum losses arising from two or more strategies principle opined by Neumann, J. Von., in 1928, but was co-published with Morgenstern in 1944 in their work named "Theory of Game and Economic Behavior". The theory implies that each competitor , in this case management and union, each act so as to minimize maximum loss (or maximize minimum gain) or achieve best of the worst condition. This theory is helpful when two or more individual or organization with conflicting objectives try to make decision (Selten, 2011; Farrell, 2009; Schultz, 2001). In such situations, a decision made by one decision-maker affects the decision made by one or more of the remaining decision-maker and the final outcome depend upon the decision of all the parties.

Such situation arises in the field of business, industry, economic, sociology, and military training. This theory is applicable to wide variety of situations such as two players struggling to win at chess, candidates fighting an election, two planning war tactics, firms struggling to maintain their market share, negotiation between management and unions (Gardner, 1995). So far only simple competitive problem have been analyzed by this mathematical theory. The theory does not describe how the game should be played; it describes only the procedure and principle by which plays should be selected.

Dominance: Since all players are assumed to be rational, they make choices which result in the outcome they prefer most, given what their opponents do. In the extreme case, a player may have two strategies M and U so that, given any combination of strategies of the other players, the outcome resulting from M is better than the outcome resulting from U. Then strategy M is said to dominate strategy U. M rational player will never choose to play a dominated strategy. In some games, examination of which strategies are dominated results in the conclusion that rational players could only ever choose one of their strategies.

Types of Games

Two Person Game: In this there are finite numbers of participants (two) and for more than two is called *n*-person game. This category of game represents situations where the interests of players are partly opposed and partly coincident. Say, for example, workers' union in an organization is threatening not to participate in overtime work unless management ascents to the timely payment of accident and death benefits of their colleague (Stein, 1983; Tarar, 2001). If management refuses the union now complicates the game by additionally threatening not to cooperate in preparations for normal work activities, if their demands are not met. Management has a choice between conceding and refusing, and which ever option it selects, the union has four choices: to resume both normal work practices; to participate in overtime work only; to corporate with policies on employees only; or not to accept participation in either (Friedman, 1990). Only one of the possible strategic combinations leads to a satisfactory outcome from the management's point of view But if management refusing to meet the union's demands notwithstanding the resumption of normal work, although clearly some outcomes are worst than others (Smith, and Stam, 2004; Wagner, 2000). Both players (management and union) prefer some outcomes to others. For example, both would rather see a resumption of participation in normal work since productivity and profitability of the organization depends on it than not to resume participation in either. So the players' interests are simultaneously opposed and coincident. This is an example of a ***mixed strategy game.***

Zero-Sum Game: Sometimes the interest of players can be completely opposed. Say, for example, that a number of retail outlets are each vying for business from a common finite catchment area. Each has to decide whether or not to reduce prices, without knowing what the others have decided. Assuming that turnover increases when prices are dropped, various strategic combinations result in gains or losses for some of the retailers, but if one retailer gains customers, another must lose them (Aliprantis, Brown, and Burkinshaw, 1990). So this is a ***zero-sum non-cooperative game*** and unlike cooperative games, players need to conceal their intentions from each other.

Pure Strategy Game is a game where the saddle point is strictly determined by the player, it stipulating in advance what the player will do in response to every eventuality. If a player selects a strategy without knowing which strategies were chosen by the other players, then the player's pure strategies are simply equivalent to his or her choices. If, on the other hand, a player's strategy is selected subsequent to those of other players and knowing what they were, then there will be more pure strategies than choices (Niou, and Ordeshook, 1999).

Game Models

There are various types of game models; Umoh, (2007), suggest that they are based on the factors like the number of players participating, the sum of gains or losses and the number of strategies available.

$$\begin{pmatrix} a_{11} & a_{12} & a_{13} & a_{14} & a_{mn} \\ a_{21} & a_{22} & a_{23} & a_{24} & a_{mn} \\ a_{31} & a_{32} & a_{33} & a_{34} & a_{mn} \\ a_{41} & a_{42} & a_{43} & a_{44} & a_{mn} \\ a_{51} & a_{52} & a_{53} & a_{54} & a_{mn} \end{pmatrix}$$

Game model seek to provide a pattern and a guide to which the game is to be played, the number of players could finite and infinite cum strategies available. In most cases involves only two players, which will suggest the reduction in the alternative strategies to 2 X 2 matrix by elimination (dominance). But if the players are more than two (***n***-persons), then the players are required to be grouped into ***n*** mutually exclusive group with the same interest and strategies to be chosen (Nash, 1982; O'Neill, 1994; Walt, 1999). If the sum of payoffs (gain or losses) to the players is zero, the game is called zero-sum or constant-sum game (non zero-sum game), and if the number of strategies (moves or choices) is finite, the game is called a finite game; if not, it is infinite game (Wittman, 2013).

IV. Methodology

The data as gathered would enable the researcher to strategically align and represent variables in accordance with alternative strategies for management and union in a matrix form by using figures; in such a way that if management should chose a strategy option, it will influence the satisfaction of union's objective. These strategies will be reduced to two using dominance for form 2 X 2 matrix. In determining a pay-off matrix, alternative strategies will be developed for player M (Management) and player U (Union):

$$U$$

$$
\begin{array}{c}
\\
M_1 \\
M_2 \\
M \quad M_3 \\
M_4 \\
M_5
\end{array}
\begin{array}{cccc}
U_1 & U_2 & U_3 & U_4 \\
\left(\begin{array}{cccc}
-2 & 0 & 1 & 2 \\
4 & 7 & -3 & 1 \\
3 & 5 & -6 & -3 \\
1 & 3 & 2 & 4 \\
2 & 4 & -4 & 0
\end{array}\right)
\end{array}
\begin{array}{c}
\text{Row max} \\
\left(\begin{array}{c}
1 \\
9 \\
-1 \\
10 \\
2
\end{array}\right)
\end{array}
$$

$$\text{Column min:} \quad \begin{bmatrix} 8 & 19 & -10 & 4 \end{bmatrix}$$

This means that M_2 row is said to dominate the M_1 row which is known as a recessive row. However, the first condition states that all elements in each row of the matrix are added to get each row total, and these rows total are known as total row maximum. The concept of dominance is applied by eliminating each row by determining the value of each row total, if it is higher than the next row value directly below it. And, if the row total value below is higher than the total row value above, it eliminates it viz-a-viz on all total rows of the total row maximum, which will give us:

$$
M \quad
\begin{array}{c}
U \\
\begin{bmatrix}
4 & -3 \\
1 & 2
\end{bmatrix}
\end{array}
$$

Applying the Formula

$$U_1 \quad = \quad \frac{z - y}{(w+z) - (x+y)}$$

Substitute the matrix values into the formula

$$U_1 = \frac{2 - 1}{(4+2) - (-3+1)} = \frac{1}{6+2} = \frac{1}{8}$$

$$U_2 = \quad U_1 + U_2 = 1$$
$$1 - U_1 = U_2$$
$$U = \quad 1 - \tfrac{1}{8}$$
$$= \tfrac{7}{8}$$

Therefore,

$$x_o = \begin{bmatrix} U_1 \\ U_2 \end{bmatrix} = \begin{bmatrix} \tfrac{1}{8} \\ \tfrac{7}{8} \end{bmatrix}$$

Hence, replace the recessive rows with zeros (0)

$$x_o = \begin{bmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \\ x_5 \end{bmatrix} = \begin{bmatrix} 0 \\ \tfrac{1}{8} \\ 0 \\ \tfrac{7}{8} \\ 0 \end{bmatrix}$$

This is the optimal strategy for row player

$$q_1 = \frac{z - x}{(w+z) - (x + y)}$$

$$\frac{2 - (-3)}{(4+2) - (-3+1)} = \frac{2+3}{6-(-2)} = \frac{2+3}{6+2} \quad q_1 = \tfrac{5}{8}$$

$$q_2 = \quad q_1 + q_2 = 1$$
$$1 - q_1 = q_2$$
$$1 - \tfrac{5}{8} = \tfrac{3}{8}$$

Therefore,

$$y_o = \begin{bmatrix} q_1, q_2 \end{bmatrix} = \begin{bmatrix} \tfrac{-5}{12}, \tfrac{7}{12} \end{bmatrix}$$

Hence, replace recessive columns with zeros (0)

$$y_o = \begin{bmatrix} q_1, q_2, q_3, q_4, q_5 \end{bmatrix} = \begin{bmatrix} 0, \tfrac{5}{8}, 0, \tfrac{3}{8}, 0 \end{bmatrix}$$

This is the optimal strategy for column players

EXPECTED VALUE E(v)

$$E(v) \quad = \quad \frac{wz - xy}{(w+z) - (x + y)}$$

$$\frac{4(2) - (-3)}{(4+2) - (-3+1)}$$

$$\frac{8 + 3}{6 - 2}$$

$$E(v) = \frac{11}{8} \quad +ve$$

The E(v) is positive, and it is in favor of row player.

To find the optimal strategy for management, M_1: 2-1 divided by 4+2 x -3+1, will be 1divided by 6+2 = 1 over 8. For M_2: 1-M_1, which is 1- 1 over 8 = 1 over 8. The result is positive in favor of row player (M). The optimal strategy for Union will be, U_1: 2 minus -3 divided by 4+2 – (-3+1), will give 5 divided 6+2 = 5 over 8. For U_2; 1 – M_1, which is 1 – 5 over 8 = 3 over 8, column optimal strategy. The expected outcome will be ad-bc divided by a x d – b x c; which is 4x2 – (-3) divided by 4+2 – (-3+1), which will be 11 over 8. This depicts positive in favor of row player (management).

Critique of the Reviewed Literature

This section will accommodate or identify the gaps, omissions, commission, novelty, and soundness of literature reviewed. Empirical works reviewed in the literature has contributed immensely to the understanding of dominance criterion, and how it would be applied in game theory for easy decision making in a competitive environment.

The work of Mandiff, (2012), is very insightful to the understanding of dominance concept. The method adopted was very systematic and adequate, also in the use of the T-test which is a test for difference considering the small sample size of the study with the result arrived at. The techniques, procedures and elements of the study were carefully adopted without omissions observed. But for a competitive study, to determine the percentage change in customer's loyalty to an organization's product; transition matrix model would have been more appropriate for the study.

The work of Alexandro and Busca (2012) is very analytical, and their contribution is a road map that should be adopted by farmers for an optimal yield. The methodology designed for the study was appropriate, and the time series analytical tool used was a best-fit for such study dealing with forecasting. Variables considered for the study were carefully considered without omissions, and no commission was observed considering the peculiarity of the study.

Feryel and Pinar (2013) study on prisoners' dilemma showed how diverse the application of dominance concept of the game theory is, in handling decision matters. The research design, population of study and the correlation test tool were all appropriate for the study; omissions and commissions were not observed.

Critique of the Theoretical Framework

Game theory gives insight into less-known aspects, which arises in situations of conflict interest, but the techniques of solving games involving mixed strategies particularly in cases of large pay-off matrix, is very complicated. Game theory provides a framework for analyzing decision making in situations where interdependence of firms is considered; but the assumptions that players have the knowledge about their own pay-offs and that of other is not practical in real life situation, and all the competitive problems cannot be analyzed with the help of game theory.

V. Conclusions

A relatively simple procedure of dominance criterion is presented; though it involves logical and rational thinking in its application to suit current spate of development in negotiation between two parties (management and union) in an organization. Dominance criterion principle provides alternative strategies for chose to players in order to determine the sum of pay-off at every strategic option chosen by management or union, and its application satisfies stochastic processes for achieving an objective in an organization. As against

the usefulness of this concept, management is required to understand the circumstances for the application of variables for negotiation, in order to achieve a stable state or condition between management and unions.

VI. Recommendations

Based on the findings from the reviewed literature of this study, this paper recommends the followings:

1. Management should adopt dominance criterion as a tool for easy and quick resolution (negotiation) of disputes between two parties as often as conflict arises in an organization.
2. Management and union are required to acknowledge or accept the particular party or group to which the game favors or harms (recessive player).
3. Management should not manipulate the variables of the objectives criterion in order to make unions or a group to be a recessive player, but to make an opening for the game to play out its self in resolving conflict in an organization.

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