The optimal structure for managing NGOs` projects in Lebanon

Ghenwa Al Hakim*, Rabih Zotti and Joseph Haddad

Department of Business Management, Faculty of Business Administration and Finance, Sagesse University, Lebanon.

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In response to the structural problems faced by some of the non-governmental organizations (NGOs) in Lebanon, evaluating the different structures’ performance is particularly important especially in developing countries that require NGOs to provide speedy, timely and effective response to beneficiary needs. The aim of this paper is to identify the optimal structure for managing NGOs’ projects, especially when integrating the structural factors with other critical factors that impacted the projects’ performance of these NGOs. The study viewed projects performance in terms of projects’ meeting their targets within the assigned budget and schedule. One hundred thirty-two questionnaires were self-administered to professional project managers, some of them working at mechanistic NGOs adopting either a functional, weak matrix or balanced matrix project structures while others are working at organic NGOs adopting either a project-based or strong matrix project structures. Correlation analysis was used to test the influence of each critical factor on projects’ performance while regression analysis was used to study the influence among critical factors. The study identified that the adopted structure in the mechanistic NGOs had a negative influence on the projects` performance. On the other hand, the adopted structure emerged as positive significant factor to the project’s performances of organic NGOs. However, when the critical factors are being integrated all together to test their influence on projects’ performance, the adopted structure appeared to be a highly significant positive factor to the projects’ performances of the organic NGOs adopting the project-based structure only.

Key words: NGOs, organizational structure, projects, mechanistic structure, organic structure, functional project structure, weak matrix structure, balanced matrix structure, strong matrix structure, project-based structure, Lebanon.

INTRODUCTION

In executing humanitarian projects, providing speedy, timely and effective interventions is the core objective of all NGOs operating in countries affected by crisis or poor economic conditions. In Lebanon, NGOs are considered major pillars for humanitarian, economic and sustainable development. They play a major role in enhancing democratic participation, improving living conditions of communities affected by different crisis, empowering women and youth, maintaining peace, safeguarding rights and enhancing proper governance whether within the framework of the NGOs or within the society. However, some NGOs suffer from major structural problems that hinder the pace of its humanitarian and Emergency response (MSAL, 2004) (Internal governance

*E-mail: ghenwa_ha@hotmail.com.

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of NGOs in Lebanon). It is widely recognized that the choice of organizational structure affects the projects performance (Neu and Brown, 2008). Organizational structure as described by Mintzberg usually defines the method by which individuals and groups are organized and their tasks are coordinated (Mintzberg, 1989). Csaszar, the writer of the famous article, "Organizational structure as a determinant of performance", who developed and tested a model on the organizational structure and its effects on project's success or failure, referred to the organizational structure as a decision-making network among individuals, which influence the number of initiatives taken by the organization (Csaszar, 2012). In this regard, it is important to mention the work of Thomas Steward tackling the case of Signal company. This study defined the organizational structure as a systematic way of grouping tasks, reporting and organizing relationships and communication patterns within the organization. It depicts how the different parts of organizations fit as shown in any organization organogram (Stewart, 1992). In addition to the structural factors, authors and researchers referred to many other factors that influence projects' performance. Belassi and Tukel developed a new comprehensive framework that grouped critical factors into four categories. The first factors group is related to the project including size and value; the second factors group is related to the project manager and team composition; the third factors group is related to the organization including structural factors; and the fourth and last factor group is related to the external environment (Belassi and Tukel, 1996).

Following his study on IT projects’ success, Murray, J.P identified critical factors to be based on comprehensive project planning, top management commitment and support to the project, adequate funding, well done accurate set of project specification, proper project scheduling, risk assessment in addition to ensuring that organizations can stay the project course (Murray, 2001). Another study done on Chinese information systems companies by Dong et al. (2004) revealed that critical factors included effective communication, top management support, user involvement, project managers and team composition, project planning and definition, project control in addition to the technological support (Dong et al., 2004). In countries like Lebanon that host vast number of refugees fleeing the horror of war and armed conflicts, the NGOs effective response is of vital importance to refugees’ wellbeing.

Utilizing the results of the literature, this research assessed the influence of four main factors on the projects’ performance of NGOs in Lebanon. The four factors comprised of project planning factors, the team expertise factors, the structural factors in addition to the external factors. At first, the study looked into the influence of each single variable alone on projects performance in attempt to identify and evaluate the impact of the adopted structure. Then, it was highly prominent to integrate all the factors together to assess and evaluate the influence of the structural factors among the other factors on projects performance. The latter approach allowed the study to highlight the factors that can reduce the negative influence of the adopted structure in the organizations that suffer from a problem of inadequate structure. Most importantly, it enabled us to identify which structure had a significant positive influence on the projects’ performance and thus can be specified as an optimal structure for managing NGOs projects. Questionnaires were designed based on the factors listed in this study and self-administered to professional project managers of NGOs in Lebanon. This research aim at identifying the structure that can optimize the performance of NGOs projects in Lebanon, therefore, it was limited to those large NGOs that have been operating for more than 10 years in Lebanon. Constraint by the desire of some project managers wishing to keep their projects’ performance as confidential; this study was restricted to 20 Humanitarian NGOs. The target population comprised of 200 project managers desegregated among the 5 organizational types. Systematic sampling was applied to each cluster in order to pick up the appropriate number of project managers from each organizational type to come up with a sample size of 132 project managers, which is most representative of the population. Retrieved questionnaires were analyzed using Pearson Product Moment Correlation and Regression Analysis provided by SPSS v25. Significant recommendations are made.

Models of organizational structure

Two models of organizational structure occupy two opposite poles with respect to each other’s, the opposite poles with respect to each other’s, the mechanistic and the organic. Dickson, Resick and Hangs studied the case of enterprises in different business environments and focused on identifying the features of environments and focused on identifying the features of mechanistic structures. In such type of structure, jobs are highly differentiated and specialized, rules and procedures are clearly identified, and a military style of hierarchy systems is adopted. On the other hand, the organic structure is the opposite polar of the mechanistic structure characterized by less specialized tasks, overlapped responsibilities, more generalized positions where there is no specificity of works requirements for each position, behavior is managed by set of shared values and goals rather than rules and instructions. Communication from top management is a sort of counsel and support, and upward messages tend to take the form of reporting and updating on the decisions that have been made at the lower management (Dickson et al., 2006). Hatch and Cunliffe who did several studies on the application of
mechanistic structure, argued that this structure is that such rigid, complex and formal processes with high centralization of business activities that characterize this structure. It encompasses application of strong rules, specialization, narrow range of control and vertical communication where superiors give orders to subordinates. There are clear job description, responsibilities and prestige accompanied with each position. In such type of structure, initiatives towards improving work processes are not encouraged causing creativity and innovation to be limited. This suggests that in this type of structure, accountability and responsibility are forced to the top and the employee major role is to follow the already established rules and procedures (Hatch and Cunliffe, 2006). In a study of the relationship between the organization structural characteristics and conditions of economy and markets, Lawrence and Lorsch identified major characteristics of companies that apply the organic structure. Companies with characteristics of the organic structure present few rules and procedures, ambiguous responsibilities with subjective system and complex needs to motivate employees (Lawrence and Lorsch, 1967). According to Adestam and Gunmmo, these types of structures are characterized by being less complex, less formalized, offering higher level of decentralization and freedom. The number of managerial levels is few while the range of control is wider with a horizontal system of communication. Authority is based on expertise and knowledge rather than hierarchical level. In this structure, an effective interaction among the team members allows for problem solving and redefinition of roles and responsibilities according to the situation. Meanwhile, organizational management encourages devil advocate thinking and the use of creativity and expertise. Departments never work in Silo and employee seek consultation from each other's rather than instructions. This structure supports innovative thinking and thus it is very effective in highly turbulent environment (Adestam and Gunmmo, 2008).

Effectiveness of organizational structures

Burns and Stalker conducted a comprehensive research on the effect of external environment on a pattern of the administrative and economic activity of 20 British and Scottish companies. The study showed that whenever the environment is stable, a mechanistic structure is highly recommended because it is easy to predict tasks and activities. However, by the time the environment becomes more uncertain, it becomes urgent to have a structure with no hierarchy, decisions to be made through people with more expertise or leadership skills in a decentralized manner. Meanwhile, effective structures are those that effectively respond to changing conditions (Burns and Stalker, 2005). Scheffel, Cunha and Lima in the study of a contingency plan to technology-based companies applying a mechanistic structure, clarified that the organic structure emerged as an optimal assumption to structural change that allows these companies to adopt to their environment, and follow the evolution of technology and pace of innovation (Scheffel et al., 2012). Morgan in his turn argued that organic structures are more effective in companies whose strategies require innovation and flexible arrangements (Morgan, 2002). Zanzi argued that the mechanistic structure can be effective when the firms seek efficiency and standardization of business tasks (Zanzi, 1987). In an article published by Sophie Johnson, reference was made to new businesses as typically having few rules and less defined roles providing a space for more flexible and adoptable situations. Such situations are called organic. As organizations grow in size, new rules and regulations are needed in order to govern the business increasing operations. The formation of such new rules and roles makes the structure more mechanistic. The most mechanistic structure is the functional structure characterized by such rigid hierarchy and it is the first formal structure adopted by small companies. In such stage of the organizational life cycle, there are many management layers exerting control, however when such bureaucracy becomes an impediment, businesses should switch to more organic form granting more control to employees. In this respect, the organizational life cycle plays a major role in depicting structural changes. During the introduction phase, the organizations tend to be more organic with few rules and formal procedures. As the organizations move towards the growth stage, the organizations start to adopt more formal rules and procedures rendering the structure more mechanistic. Changes in the business environment may make the existing structure inappropriate to respond competitively to market needs, for example in responding to a competitive new market entry, the mechanistic structures aren’t so light to avoid the threats as less bureaucratic companies can do. Furthermore, major strategic changes may render the adopted structure inappropriate, especially when the organizations seek cost leadership in a structure that does not support efficiency and the same applies for those that aim for innovation and creativity in such rigid mechanistic form (Johnson, 2019).

Structures for projects performance

According to Schwalbe, creating successful projects requires project managers to balance the performances within the triple constraints of time, cost and quality deliverables. Establishing an effective structure for managing projects is a core activity for accomplishing organizational goals (Schwalbe, 2007). In the perspective of Clifford and Erik, there exists three types of project management structure, the functional, matrix and project-
based structures (Clifford and Erik, 2008).

**Functional structure**

Griffin who studied the case of small companies applying the functional structure, argued that these companies tend to sort employees on their specific skills and job functions and best suited to these organizations with single product or service (Griffin, 2014). In the perspective of Clifford and Erik (2008) this structure provides a maximum flexibility in the use of staffing where individual experts can be used by various projects. Consequently, technical knowledge of the functional units is accessible to all project teams. Furthermore, this structure does not violate the unity of command principle where there is only one boss thus avoiding the conflict of interest. However, managing multiple projects through this structure is not easy task. Functional staff usually prioritize their daily tasks over the projects’ work causing projects to be sub optimized. Furthermore, project managers are given a very limited authority and have to strike through the numerous levels of management to get projects done (Clifford and Erik, 2008). Following the result of a study conducted by Aljaz Stare on the project performance of Slovenian enterprise adopting the functional structure, it was revealed that the 90% of the enterprise in the study executed projects with significant delays while only 2% ran projects over budgets (Stare, 2011).

**Project-based Structure**

Dusan Dobera, the writer of the famous article “Project Management Organizations”, described the pure project organizations as standing on the other extreme of the possibilities for project management. This approach provides self-contained divisions for managing projects separated from the home organization. The project divisions become an independent segment with its own specialized technical and administrative staff for managing the projects. This structure provides several advantages to projects including delegating full authority to project managers with full leadership over the project activities. The project staff reports directly to the project manager and the advice from top management and functional department is not always necessary. Communication lines are shortened because functional departments are bypassed, and the project manager communicates directly with top management. As the authority is centralized at the project manager level, decisions are taken rapidly with prompt response to customer requests thus improving the lead-time to market and quality of output. The structure itself is simple and easily applicable and understandable. Such types of structures have a tendency to support the holistic approach of the projects (Bobera, 2008). Kerzner and Kerzner (2017) authors of a book, project management “A system Approach to Planning, Scheduling and Control”, utilized the result of mail survey sent to 50 aerospace companies in the US adopting project-based structures. The survey included questions on how well the project-based organization met its desired objectives with the available structure. The results of the survey showed that the companies achieved significant improvement in profitability and customer relations (Kerzner and Kerzner, 2017). However, adopting this approach incurs high costs for the organizations and may result in duplication of both efforts and resources. There is a high possibility that project teams develop more loyalty to the project than the mother organization resulting in severe competition among the organizations’ projects themselves. Moreover, at the end of each projects, project teams worry about their destiny as well as the mother organization need to deal with the consequences of reducing its work portfolio (Jack et al., 2010).

**Matrix structures**

Kerzner argued that matrix structure is an attempt to combine the advantages of both the functional and the project-based structure (Kerzner, 2006). Therefore, the form that the matrix might take depends on whether it looks like more project-based or more functional. Larson and Gobeli referred to three types of matrix- the functional (weak), balanced and project (strong). Each type provides different level of authority to project managers (Erik and Gobeli, 1988). Functional weak form: Matrices in which the functional manager has more authority than the project manager. Balanced form: the matrices where the both the functional and project managers share the authority and accountability for managing projects. Normally the project manager sets the overall plan and the functional manager determines how work will be accomplished. The strong project form: the project manager has more authority than the functional manager. Functional departments act as a subcontractor for projects (Clifford and Erik, 2008). The strong matrix structure provides project managers with more control over projects enabling quick response to clients’ needs. However, shutting down projects can be as bad as in the case project-based structure. Furthermore, projects putting lot of emphasis on the consultation of the functions might delay the decision-making process. The weak functional matrix allows project manager to have access to the technology and skills of the functional departments, thus avoiding duplication associated with pure project structures. However, the very limited authority provided to the project managers cause lots of conflicts and internal confusion. The balanced matrix structure allows staff to develop
strong attachment to the project while remaining a part of the functions. Sharing resources and equipment across projects ensure efficient use of organizational resources. Furthermore, communication is improved both vertically and horizontally. However, this structure usually violates the unity of command principle where the project team members have at least two bosses, the functional and the project manager. This creates a lot frustration and confusion among the staff who get stuck between functional requirements and demanding projects (Baccarin, 1999).

**Effectiveness of project management structures**

According to Kerzner, twelve factors should be taken into account when selecting the appropriate structure. These factors are “uncertainty, technology, size, duration, complexity, importance, customers, interdependency within and interdependency between, criticality of time, criticality of resources and differentiation”. Following a deep study on the 12 factors in different structural forms, Kerzner was able to identify the relative status of each factor in each of the organizational structure. Organization aiming at selecting the appropriate structure for managing project should take into account the compatibility of each factor status with project good performance. For example, if the organization is operating in a stable environment with little uncertainty, the functional or weak matrix might be a good choice. However, monitoring the level of uncertainty alone is not sufficient, as the relative effect of the other twelve factors should be taken into account when deciding on the best structure (Kerzner, 2006). Mishra and Soota (2005) claimed that the functional structure is only effective in a stable environment with routine and continuous tasks.

This structure allows the project to lose its bigger image and be in a narrow view. It brings many problems to projects due to the delayed decision-making that slows down the project pace. On the other extreme, multidisciplinary structures like the project-based structure provide clearer accountability and authority that speeds up the whole process. Such type of structures can be very demanding in terms of the human resources and that’s why it is recommended for big projects.

However, in case a compromise is needed, the matrix structure is the best fit where it minimizes the need for large a number of staff, while empowering project managers (Mishra and Soota, 2008). Other authors like Shikha introduced five principles for effective organizational design. These principles encompassed of division of labor, unity of command, authority and responsibility, the span of control and Contingency factors (Shikha, 2013).

In this respect, it is significant to highlight a very important research conducted by Larson and Gobeli on the use and effectiveness of project management structures in the construction and new product development field. This research was conducted in more than 14 countries in Europe and it aimed at studying the effectiveness of project management structures across different countries (Figure 1).

As depicted in Figure 1, in the construction projects, the strong matrix was ranked as most effective followed by the pure project-based. In the new product development projects, the pure project was ranked as most effective followed by strong matrix then balance matrix. The study that tackled the case of 540 development projects found that over 50% of projects applying the project based and Strong matrix met their schedule successfully, 42% of projects applying the balanced matrix met their schedule successfully, 36% of those applying the weak matrix and 25% of those applying the functional structures met their schedules successfully. On the cost index side, the results showed that over 50% of projects applying the balanced matrix were completed on budget, 47% of projects applying the project-based structure and 46% applying the Strong matrix were completed on budget while only 25% of projects applying the functional and weak matrix structure were successful in meeting the budget. On the quality performance index, over 70% of projects applying the Strong matrix, project based, and balanced matrix achieved successful results while 50% success rate was recorded for projects applying the weak matrix and the functional structure. The overall results of this important research showed that the functional structure and the weak matrix provide the least successful performance of the projects key indicators in terms of time, cost and quality deliverables. The Strong matrix, the project based and the balanced matrix tend to be successful with slight differences but the balanced matrix tends to be less successful in terms of the time index but it is still better than the functional structure and weak matrix structure (Erik and Gobeli, 1988). Based on the above theories, this research made the following assumptions to be tested throughout this study:

**Hypothesis 1:** A relationship exists between the NGOs’ project structure and its performance.

**Hypothesis 2:** The pure functional, weak and balanced matrix are the least effective structures for managing NGOs’ projects.

**Hypothesis 3:** The pure project and strong matrix are the most effective structures for managing NGOs’ projects.

**METHODOLOGY**

This research used the surveying strategy, which was carried out through an anonymous, online filled questionnaire.

**Scope of the study**

The study was carried out in 20 humanitarian NGOs in Lebanon.
encompassing of 200 project managers working at the different five organizational form. The study was limited to this number of NGOs since the other NGOs were strictly confidential about their projects’ performance and thus they refrained from participating in this study.

Data collection

The questionnaire was used as a main data collection and it was designed to foster quantitative data to be analyzed statistically using SPSS v25.

Design of the data collection technique

The design of the questionnaire followed the objectives of the research. Accordingly, project managers were asked to rank their level of agreement with the below:

(i) Problems facing projects’ implementation (Project planning problems, Structural problems, lack of necessary expertise problems in addition to external problems)
(ii) Projects meeting their time, cost and technical performance.

(iii) The relative influence of the planning, structural, technical expertise in addition to external factors on the projects’ overall performance.

Sampling and sample size determination

The 200 project managers in this study were desegregated into clusters according to the five organizational types as depicted in Table 1. Systematic sampling was administered to the homogenous strata in an attempt to obtain the most representative sample. According to Bradley, systematic sampling allows the researcher to select sample at regular intervals, requiring calculating the sampling proportion to be able to obtain the sample from each cluster (Bradley, 1999). The actual sample size was determined through the table developed by Bartlett, Kotrlik and Higgins who provided sample size determination for both categorical and continuous data (Bartlett et al., 2001).

For a population size of 200 project managers considering a 5% margin of error, the minimum sample size is 132 project managers to be selected from the different organizational type using systematic sampling (Table 1).

Data analysis techniques

(1) Descriptive statistics used to determine the mean and standard deviations of the respondent’s agreements with the questionnaires components.
(2) Pearson Product Moment Correlation used to determine the influence of each factor listed in this study on the projects overall performance.

Table 1. Sample size of the population.

| Cluster or sample frame (Total number of project managers by clusters) | Population | Sample proportion | Sample size |
|-----------------------------------------------------------------------|------------|-------------------|------------|
| Mechanistic organizational structure                                  |            |                   |            |
| Functional                                                            | 35         | 0.175             | 23         |
| Weak matrix                                                           | 35         | 0.175             | 23         |
| Balanced matrix                                                       | 30         | 0.15              | 20         |
| Organic organizational structure                                       |            |                   |            |
| Strong matrix                                                         | 50         | 0.25              | 33         |
| Project-based                                                         | 50         | 0.25              | 33         |
| Total                                                                 | 200        | 1                 | 132        |
(3) Multiple regression analysis used to delineate the influence among the factors in the study and their significance to projects overall performance when being integrated all together.

RESULTS AND DISCUSSION

Variables in this study

Dependent variable: Projects Overall Performance
Independent variables: Project planning factors- team expertise factor- structural factors-external factors.

Problems associated with projects' implementation

The study ranked project managers level of agreement regarding the problems facing projects’ implementation according to the mean and standard deviations of their responses. Therefore, each of the five structures were identified as either most or least problematic structure with respect to four types of problems; project planning, structural, lack of expertise and external problems. The pie chart below shows the types of problems faced by each organizational type and provides a comprehensive representation of the least and most problematic structures. As such, the least and the most structures were classified as per the following:

Least problematic structures

(1) Project-based structure: first least problematic structure facing some challenges from external environment.

(2) Strong matrix structure: second least problematic structure facing some structural problems (bulk procurement delays and contracts’ procedures delays) in addition to some external problems.

Most problematic structures

(1) Weak matrix structure: first most problematic structure facing planning, structural and external problems
(2) Functional structure: second most problematic structure facing planning, structural and external problems
(3) Balanced matrix structure: third most problematic structure facing planning, structural and external problems.

The results revealed that none of the NGOs in this study face the problem of the lack of the necessary expertise to execute projects (Figure 2).

The influence of each of the project planning, structural, team expertise and external factors on projects’ overall performance

In order to test the assumptions in this study and identify the influence of each single variable on projects overall performance, correlation analysis was utilized and yielded the below results depicted in Table 2. The correlation analysis allowed testing the following null hypothesis:

Null hypothesis 1: A relationship does not exist between the NGOs structure and their projects overall
null hypothesis 2: The functional structure, weak and balanced matrix structures are the most effective structures for managing NGOs projects.

null hypothesis 3: The strong matrix and the project-based structures are the least effective structures for managing NGOs projects.

As shown in Table 2, the adopted structure at each of the functional, weak and balanced matrix NGOs had a negative impact over the projects overall performance. On the other hand, in each of the strong matrix and project-based NGOs, the adopted structure had a positive influence over the projects’ overall performance. Therefore, these results allowed the successful rejection of the first null hypothesis about the absence of a relationship between the adopted structure and projects’ overall performance in the five organizational type.

The correlation analysis referred to a strong significant negative influence of the adopted structure over the projects overall performance of the functional and balanced matrix NGOs. On the contrary and despite of the presence of a negative relationship between the adopted structure and the projects overall performance of weak matrix NGOs, this negative influence was ranked as weak and insignificant to projects’ overall performance. Therefore, the results allowed for successful rejection of the second null hypothesis highlighting the functional and balanced matrix NGOs as the most effective structures for managing NGOs projects. However, in the case of weak matrix NGOs, the results didn’t allow any possibility of rejecting the null hypothesis that this structure is the most effective structure for managing NGOs projects.

Regarding the strong matrix and project-based NGOs, the correlation analysis highlighted a positive significant relationship between the adopted structure and projects’ overall performance. However, this significant positive relationship was marked as strong in the case of project-based NGOs and moderate in the case of strong matrix NGOs. Therefore, this allowed for successful rejection of the third null hypothesis stating that the strong matrix and project-based structures are the least effective structures for managing NGOs projects.

Table 2. Correlation analysis of the five organizational types.

| Structures Variables | Functional Structure | Weak Matrix Structure | Balanced Matrix Structure | Strong Matrix Structure | Project-based Structure |
|----------------------|----------------------|-----------------------|--------------------------|------------------------|------------------------|
| Planning Factors     | +++ (Sig)            | +                     | +++ (Sig)                | +                      | +                      |
| Team Expertise Factors | +++ (Sig)          | +++ (Sig)            | +++ (Sig)                | -                      | -                      |
| Structural Factors   | --- (Sig)           | -                     | --- (Sig)                | ++ (Sig)               | +++ (Sig)              |
| External Environmental Factors | +                | +                     |                          |                        | -                      |

+++ Strong positive correlation; ++Moderate positive correlation; + Weak positive correlation
--- Strong negative correlation  --: Moderate negative correlation - Weak negative correlation

The influence among critical factors

Integrating the critical factors all together is prominent to determine the projects’ overall performance of each of the five organizational type. Multiple regression analysis was utilized and contributed to understanding the below questions that came up after conducting correlation analysis:

1) What are the critical factors that could reduce the negative impact of the adopted structure at each of the functional and balanced matrix NGOs?
2) Why the adopted structure didn’t have significant impact over the projects’ performance of the weak matrix NGOs?
3) Why the adopted structure had a moderate and not strong positive impact over the performance of strong matrix NGOs?
4) Would the adopted structure at the project-based NGOs still have a positive significant impact over the projects’ overall performance even when being integrated with the other factors?
5) What are the least and the most effective structures for managing NGOs project tackling the case of the 20 NGOs in the study?
6) What is the optimal structure for managing NGOs projects? could this structure be drawn as a model?

The results of multiple regression analysis are depicted in Tables 3 and 4.

Functional and balanced matrix NGOs

As shown in Table 2, a good percentage of the changes in projects overall performance can be attributed to the factors listed in the study (76% in the case of functional structure and 69% in the case of balanced matrix structure). Regarding the factors that appeared to be most significant to the projects overall performance, it is the team expertise factor that was manifested to have this significant positive influence on the projects’ overall performance.
### Table 3. Model Summary of the five organizational types.

| Model Summary | Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---------------|-------|---|----------|-------------------|---------------------------|
| Functional structure | 3     | 0.885\(^c\) | 0.782     | 0.761             | 0.54927                   |
|                 |       |       |          | c. Predictors: (Constant), External Environment, Team expertise |
| Weak matrix structure | 4     | 0.521\(^d\) | 0.271     | 0.237             | 0.61132                   |
|                 |       |       |          | d. Predictors: (Constant), Team expertise |
| Balanced matrix structure | 4     | 0.843\(^d\) | 0.711     | 0.695             | 0.55526                   |
|                 |       |       |          | d. Predictors: (Constant), Team expertise |
| Strong matrix structure | 4     | 0.580\(^d\) | 0.336     | 0.315             | 0.36622                   |
|                 |       |       |          | d. Predictors: (Constant), External Environment |
| Project-based structure | 4     | 0.810\(^d\) | 0.656     | 0.645             | 0.34748                   |
|                 |       |       |          | d. Predictors: (Constant), Adopted Structure |

### Table 4. Coefficients of the five organizational types.

| Coefficients\(^a\) | Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
|---------------------|-------|-----------------------------|---------------------------|---|-----|
|                     |       | B | Std. Error | Beta |     |     |
| Functional structure | (Constant) | -1.029 | 0.494 |     | -2.085 | 0.050 |
|                     | 3     | Team expertise | 0.883 | 0.107 | 0.857 | 8.219 | 0.000 |
|                     |       | External Environment | 0.242 | 0.107 | 0.236 | 2.267 | 0.035 |
|                     |       | a. Dependent Variable: Projects’ Overall Performance |
| Weak Matrix Structure | (Constant) | 1.006 | 0.373 |     | 2.700 | 0.013 |
|                     | 4     | Team expertise | 0.417 | 0.149 | 0.521 | 2.796 | 0.011 |
|                     |       | a. Dependent Variable: Projects’ Overall Performance |
| Balanced Matrix Structure | (Constant) | 0.422 | 0.400 |     | 1.056 | 0.305 |
|                     | 4     | Team expertise | 0.794 | 0.119 | 0.843 | 6.656 | 0.000 |
|                     |       | a. Dependent Variable: Projects Overall Performance |
| Strong Matrix Structure | (Constant) | 5.091 | 0.159 |     | 32.110 | 0.000 |
|                     | 4     | External Environment | -0.289 | 0.073 | -0.580 | -3.965 | 0.000 |
|                     |       | a. Dependent Variable: Projects’ Overall Performance |
| Project-based Structure | (Constant) | 0.044 | 0.601 |     | 0.074 | 0.942 |
|                     | 4     | Adopted Structure | 0.963 | 0.125 | 0.810 | 7.692 | 0.000 |
|                     |       | a. Dependent Variable: Projects’ Overall Performance |
performance of each functional and balanced matrix NGOs as depicted in Table 3. Furthermore, the external factors appeared to have a positive significant impact over the performance of functional NGOs. Therefore, the team expertise factor could reduce the impact of the negative structure in each of the functional and balanced matrix NGOs in addition to the external factors in the case of functional NGOs. The regression equations for both functional and balanced matrix NGOs are as per the following:

Projects overall performance (Functional NGOs) = -1.029 +0.883 (Team expertise factors) +0.242 (External factors)  
Projects overall performance (Balanced Matrix NGOs) = 0.442 +0.794 (Team expertise factors).

**Weak and strong matrix NGOs**

The results shown in Table 2 revealed that there are many factors, not listed in this study, affecting the projects overall performance of each of the weak and strong matrix NGOs (23% of the changes in projects overall performance can be attributed to the study factors in the case of weak matrix NGOs and 31% can be attributed to the study factors in case of strong matrix NGOs). However, it is worth mentioning the significant positive impact of the team expertise factor in case of weak matrix NGOs and significant negative impact of the external environment in the case of strong matrix NGOs. Therefore, when discovering the many other factors and study the influence among each others, it would be more obvious the influence of the adopted structures in both type of organizations. The regression equations for both the weak and strong matrix NGOs are as per the following:

Projects overall performance (weak matrix NGOs) = 1.006 +0.417 (Team expertise factors)  
Projects overall performance (strong matrix NGOs) = 5.091 – 0.289 (External factors).

**Project- based NGOs**

Results on the factors affecting the projects’ overall performance of project-based NGOs showed that an acceptable percentage of the changes in the projects’ overall performance can be attributed to the factors listed in this study (64% of the changes in the projects’ overall performance can be attributed to study factors). Furthermore, the adopted structure also emerged as a significant positive factor to projects overall performance even when being integrated with the other factors. The regression equation of the project-based NGOs is as per the following:

Projects overall performance (project-based NGOs) = 0.963 (adopted structure).

**The optimal structure for managing NGOs projects**

The findings of the study showed the project-based structure as the least problematic structure and its projects are performing very well in terms of cost, time and quality deliverables. Driven by the main purpose of this study to identify the best structure that can ensure optimal performance of the NGOs projects in Lebanon especially when being integrated with other factors, the project-based structure emerged as a sole structure that appeared to be highly and positively connected to projects overall performance. However, drawing this structure as a model require increasing the scope of the research to include more humanitarian NGOs and more countries similar to Lebanon. Furthermore, repeating this study tackling other NGOs and yielding the same results allow for generalization that the project-based structure is the optimal structure for managing NGOs projects.

**CONCLUSION AND RECOMMENDATIONS**

The research made the following recommendation:

The adopted structure at the functional organizations in the study has a strong negative impact over its projects’ overall performance. However, there are many other factors like the planning, team expertise, external environmental factors and many other factors contributing to the positive performance of the projects. Project managers in such type of organizations should work hard to limit the negative effect of the adopted structure by enhancing the performance of the other factors contributing to the positive projects’ overall performance especially the team expert and external environmental factors.

Although the adopted structure does not have strong negative influence on the performance of projects at the weak matrix organizations, project managers in such type of organizations should be aware of the many challenges and problems that face projects implementation as this organization emerged as a highly problematic structure. Therefore, projects managers are advised to monitor the effect of the many factors that affect projects overall performance, take advantage of the factors that have positive influence especially the team expertise and limit the effect of the adopted structure and the other factors that influence negatively projects performance. Since there are many factors that influence projects overall performance other than the ones listed in the study, this structure requires further research to assess all the factors that works in conjunction with each other’s. This approach might enable top management to identify those factors that have good influence and works towards
enhancing them, and state the factors that has negative influence and discharge all the efforts towards mitigating their negative effects on projects overall performance.

The adopted structure at the balanced matrix NGOs has a strong negative effect over the projects overall performance, however similar to the case of the functional structure; top management should monitor the effects of the other factors that influence projects’ overall performance. The findings highlighted the neutral feedback of project managers regarding most of the problems facing projects’ implementation, this issue triggers researchers’ eagerness and curiosity to discover more in depth the effect of those problems. Therefore, the study recommends further research for such type of structure in the form of a case study to understand deeply how projects are treated within a climate of balancing the authority accountability between the functions and projects.

The case of strong matrix NGOs suggests the presence of many other factors as well that influence projects overall performance requiring further research to assess the influence of those factors. The findings showed that this structure suffer from problems related to procurement delays for bulk procurement and contracts procedures delay. Since a major characteristic of this structure is empowering projects by delegating the authority to project managers, the study recommends that NGOs adopting this structure can look further for delegating much more authority to projects to ensure optimal performance. Meanwhile, since such type of organizations are very close to project-based organizations, the research suggests that those NGOs can discuss further approaches related to restructuring their operations towards moving to full project authority instead of delegating a partial authority. Moreover, those NGOs should monitor effectively the external environmental factors and mitigate any potential challenges.

The project-based NGOs appeared as the least problematic organizations delegating full authority to projects. The adopted structure of such NGOs appeared to have a significant and positive influence on projects overall performance. Supporting many authors findings regarding the advantages of this structure, this study was able to bring insights that for the case of NGOs in the study, the project-based structure can best mitigate the challenges that face projects implementation and ensure that projects can perform well within the constraints of time, cost and quality deliverables.

Mechanistic to organic

Driven by the humanitarian and development approach of those NGOs in Lebanon, it is prominent that their projects stand effectively to their end objectives and no compromise should be tolerated at any of the projects key indicators. Therefore, the study recommends that NGOs in Lebanon consider the advantages of the project-based structure in expediting the pace of their operation while not compromising on the quality and budgetary performance of their projects, as a mean to serve their overall humanitarian objective of reaching a world free of violence, war, diseases, poverty and many other forms of crisis. Furthermore, the study highlighted that mechanistic organization that allows the introduction of functional, weak and balanced matrix structures for managing projects, causes the introduction of structures that have negative impact on managing projects. On the other extreme, the organic organizational structure that allows the introduction of strong matrix and projectized project structure, triggers the introduction of structures that have positive influence on managing projects. According to the literature, the mechanistic structure is characterized by such formalized and centralized approach with lots of bureaucracy while the organic structure is characterized by such decentralized and less formalized approach. The responses of project managers of NGOs in Lebanon reveal that those working in centralized mechanistic organizations suffer from many problems including the problem of adopted structure and those working at decentralized organic organizations face less problems in implementing their projects and don’t suffer from the problems of inadequacy of adopted structure.

Meanwhile, the study recommends that humanitarian organizations in this study adopting a mechanistic, highly formalized, centralized and bureaucratic structures to perform the necessary restructuring and move towards being organic, decentralized and less bureaucratic to enhance the overall performances of their projects. Since the impact of NGOs projects is measured in the number of lives saved and effective interventions in times of crisis, these NGOs should adopt a structure that offers a decentralized, less formalized and less bureaucratic approach to better serve their humanitarian missions in Lebanon.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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