Structural Equation Modeling of the Relationship between External Analysis and Performance of National Non-Governmental Organizations in the Health Sector of Kenya

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Abstract

The primary purpose of this study was to apply structural equation modeling (SEM) and confirmatory factor analysis (CFA) to establish the relationship between external analysis of micro factors and the performance of non-governmental organizations (NGOs) in the health sector of Kenya. The study utilized a descriptive cross-sectional research design and a positivist research philosophy. The study’s target population was 564 program directors and chief executive officers (CEOs) from 282 national NGOs in the health sector registered with the NGO coordination board. A structured questionnaire was used to collect data from a sample size of 234 program directors and CEOs who were selected using a stratified random sampling procedure. The data were analyzed using descriptive statistics (percentages, frequencies, means, and standard deviations) and inferential statistical methods (CFA and SEM). Data analysis was aided by Analysis of Moment Structures (AMOS) Version 26 and Statistical Package for Social Sciences (SPSS) Version 26. The outcomes of the study revealed that conducting external analysis of micro factors had a significant influence on the performance of national NGOs in the health sector in Kenya ($\beta = 0.559$, $CR = 4.642$, $p< 0.05$). According to the findings, external analysis of the task environment is essential for national NGOs in the health sector in Kenya to achieve their organizational performance goals. The study has implications for national NGOs in the health sector to routinely analyze the task environment to ensure that all micro factors are aligned to the strategies of the organization and thus enhance organizational performance.

Keywords: External Analysis, Kenya, National Health NGOs, Organizational Performance.

Introduction

In the rapidly evolving and dynamic environment, conducting an external analysis of the task environment is vital to ensure the alignment of the organizational strategy to the external environment (Alosani, Yusoff & Al-Dhaafri, 2019). External analysis of the micro factors in the task environment can play an essential role in providing intelligence and insights critical to organisations’ survival, especially in current times characterized by rapid changes in technology and market conditions (Arend et al., 2017). According to Posch and Garaus (2020), understanding the external environment is central to strategic planning and organizational performance. Hence, Usoh and Preston (2017) indicated that appraising the external factors can inform decision-making and provide a mechanism for performance management, which
enables managers to track progress, identify deviations, apply corrective actions, inform resource allocation and make decisions aligned with the firm’s goals. Similarly, Bryson (2018) explained external analysis of micro factors as recognizable proof of a firm’s external constituents to ensure alignment and improved organizational performance.

Organizations that fail to analyze and continually monitor the external environment may not be sustainable. This was confirmed in a study in Ghana by Donkor et al. (2018), which evaluated the effect of market dynamism and the capacity of the organization to monitor the environment and respond accordingly to the performance of small- and medium-scale enterprises (SMEs). The study concluded that external analysis of the task environment in SMEs was positively associated with organizational performance. In Kenya, Namada et al. (2017), Amagoh (2015), Ongonge (2013), and Mungai (2015) confirmed a positive relationship between the strategic planning aspect of external analysis and organizational performance.

The reason that this study’s focus was on NGOs was because the role of NGOs in international development has increased (NGOs Coordination Board, 2019). This has sparked widespread concern and interest among NGO funders, governments, practitioners, academics, policymakers, and the public about the performance of NGOs. Despite their positive growth rate, NGOs are continuously making efforts to demonstrate their performance due to their stricter aid requirements (Kareithi & Lund, 2012). Further, greater competition and resource scarcity mean NGOs ought to adapt and change their approaches to management to continue providing services to society (Laurett & Ferreira, 2018). In Kenya, the NGOs Coordination Board (2019) observes that, as the country seeks to attain Kenya Vision 2030, the Sustainable Development Goals (SDGs), and other national development initiatives, NGOs are making significant contributions to the government's development efforts. Non governmental organizations have effectively promoted population health, social development, and universal access to health services. However, they continue to face various challenges due to limited institutional capacities, reduced government support, and diminishing resources that hinder their performance (Nielsen & Neergaard, 2018). In Kenya, Mkutano and Sang (2018) indicated that only 44% of projects by NGOs are effectively accomplished, thus adversely affecting the performance of the NGOs because most projects by NGOs face budget and time overruns.

There is extant literature on the link between external analysis of task environment and organizational performance in the context of NGOs (Amagoh, 2015; David et al., 2018; Mungai, 2015; Ongonge, 2013). Amagoh (2015) suggested external analysis as one of the main issues that need to be addressed adequately by management to realize improved NGO performance and effectiveness. However, the study adopted a case study approach focusing on an international NGO (Action Aid), and the results may not be generalizable in the context of national NGOs. Similar to this, David et al. (2018) confirmed a positive link between external analysis and the performance of NGOs in Nigeria. Some studies have demonstrated a positive relationship between strategic planning and NGO performance, using case studies of Action Aid and Enablis East Africa, respectively, in Kenya (Mungai, 2015; Ongonge, 2013). However, the sample frames of the two studies comprised a mix of international and national NGOs. Thus the results could not be generalized to the context of national NGOs in the health sector in Kenya. As a result, this research adds to the extant empirical literature and may provide deeper insights to NGOs and policymakers on the value of performing external analyses of micro factors in the task environment on the performance of national NGOs in the health sector in Kenya.
**Literature Review**

**Theoretical Review**
The contingency theory by Burns and Stalker (1961), which posits that the performance of the organization is due to the fit between the organization and its environment, was used to anchor the study. Several scholars and researchers have made immense contributions toward the growth and advancements of contingency theory. For instance, Miller (1992) and Ven et al. (2013) explain that the performance outcomes of an organization are based on the fit between the demand of an external environment and the design of the internal structure of the prospective organization. Ven et al. (2013) argue that an organization can opt to create complementarities between the internal processes to achieve an internal fit. While for external fit, an organization can achieve this by creating a match between the set of processes and the problem structure (Ven et al., 2013). Crucially, Donaldson (2001) emphasized the importance of the aspect of fit-performance, considering it as a critical component in the contingency perspective. Contingency theory holds that an organization’s strategy must fit the contingencies of its environment. It emphasizes the importance of situational influences on the management of organizations and argues that there is no single best way to manage or organize (Ven et al., 2013). Situational influences include disruptions, environmental uncertainty, and complexity in technology (Bettis & Prahalad, 1995; Tosi & Slocum, 1984). In addition, Ven et al. (2013) argue that the performance outcomes of the organization are a result of the fit between the organization’s external environment and the design of its internal structure.

**Empirical Review**
Understanding the importance of analyzing external factors can enhance organizational performance. Within the management literature, environmental scanning is considered among the first actions in strategic management and is a key factor in gaining and sustaining the competitive advantage of an organization (Analoui & Karami, 2002). Effective scanning of the environment is necessary for successfully aligning an organization’s competitive strategies with environmental requirements and the ultimate achievement of organization performance. In Gaza Strip, Youssef et al., (2017) examined the relationship between environmental scanning and crisis management in UNRWA (a multi-service organization). The findings of their study suggested that strategic environmental scanning has a positive influence on crisis management capacity. Likewise, Amoako et al., (2020) confirmed that external analysis mediated the relationship between internal integration and performance within Small and Medium Enterprises (SMEs). Their study adopted a cross-sectional method and used structural equation modeling to examine the relationship based on 163 validated questionnaires.

Organizational and environmental characteristics have been widely discussed as factors influencing organizational performance. Various scholars have explored this linkage, such as Aldehayyat (2015), who confirmed a positive link between environmental scanning and organizational performance. Critically, Liu et al., (2016) described the two types of external factors that needed to be understood by management for improved decision-making. These factors include external support, which refers to actions supporting the company’s growth and movement, and external pressures, described as all actions that hinder the growth of an organization. In Taiwan, Lin et al. (2016) investigated the dynamics of external fit and internal fit in the context of the electronics industry. The study results indicated that external fit moderated the impact of the interaction effect of external and internal fit on performance. Similarly, Zebal (2018) explored the impact of external market orientations on the monetary...
and non-monetary performance of non-conventional Islamic financial institutions. Results of the study indicated that integration of both internal and external orientations largely influenced the performance of non-conventional financial institutions as opposed to using a single approach.

**Conceptual Framework**

A conceptual framework provides a visual relationship between various variables often derived from one or more theories (Saunders et al., 2016). The hypothesized relationship between external analysis and organizational performance is outlined in the conceptual framework in Figure 1. Organizational performance was the dependent variable in this research, and its constructs were project success, project management success, and NGO success. External analysis, whose constructs were competition and partnership analysis, was the study's independent variable.

**Figure 1: Conceptual Framework**

Analysis of the external environment aids in determining where a company wants to be or might place itself concerning the task environment that can include competitors and collaborators (Comprehensive Strategic Management, 2018). The main procedure for external analysis is to acknowledge the existing situation, imagine the ideal future state, and then fill in the gaps and set the desired direction for the organization. External analysis of the micro factors in the task environment was operationalized in this research utilizing two external dimensions: competition (Fathalikhani et al., 2018; Schwenger et al., 2014) and collaboration (Fathalikhani et al., 2018; Hansen & Spitzeck, 2011; Nijhof, de Bruijn, & Honders, 2008). The hypothesis generated from the conceptual framework was:

\[ H_1: \text{External analysis of micro factors in the task environment has a significant influence on the organizational performance of national NGOs in the health sector in Kenya.} \]

**Methodology**

This study used a descriptive research approach and a positivist research philosophy. Cooper and Schindler (2014) posit that the positivistic ideology, which is founded on facts, objectivity, impartiality, measurement, and the validity of outcomes, lead the research. Based on the questionnaire that was administered during data collection to acquire insight, the descriptive study design assisted to create an accurate profile of the extent to which the targeted NGOs conducted external appraisal of micro factors in the task environment and also the performance of national NGOs in the health sector. According to Saunders et al. (2016), the descriptive research design is appropriate for studies that use questionnaires.
was 564 program directors and CEOs of Kenya's 282 national NGOs in the health sector registered by the NGOs Coordination Board (2019).

Stratified random sampling procedure was applied in selecting the sample. This entailed dividing the national NGOs in the health sector into eight regions and proportionally distributing the sample depending on the percentage of the population in each region. Yamane’s (1967) sample calculation formula was used, resulting in a sample size of 234 program directors and CEOs. The questionnaire survey approach was employed to collect primary data for the research, and a structured questionnaire was used. This study used descriptive (percentages, frequencies, means, and standard deviations) and inferential statistics (CFA and SEM) to analyze the gathered data. The descriptive analysis was aided by the Statistical Package for Social Sciences (SPSS) version 26 while CFA and SEM were conducted using analysis of a moment structures (AMOS) version 26. SEM was used to test the study hypothesis on the influence of external analysis of micro factors in the task environment on the organizational performance of national NGOs in the health sector in Kenya.

Findings
The authors had distributed 234 questionnaires to program directors and CEOs of national NGOs in the health sector in Kenya and 227 questionnaires were collected signifying a response rate of 97%. According to Chandra and Sharma (2019), this response rate is adequate for a questionnaire survey as it exceeds the minimum required response rate of 60%. The demographic characteristics of the respondents indicated that 39.2% of respondents were between the ages of 36 and 45, 53% were male and 39.2% had bachelor's degrees. Besides, 30% had worked in the national NGOs for 7 to 10 years while 47.6% were program directors. These study findings implied that the respondents had a high level of education, held top management positions, and had sufficient experience in NGOs to provide useful information regarding conducting external appraisal of micro factors and performance of the NGOs. Furthermore, 42.7% of the national NGOs in the health sector had been operational for between 11 and 20 years and 69.6% of NGOs had less than 50 employees.

Descriptive Analysis for External Analysis
The extent to which the surveyed NGOs engaged in external analysis of micro factors was investigated. This was done by computing the means and standard deviation of the two constructs (competition and partnership) that were used to measure external analysis of micro factors. Respondents were asked to indicate their level of agreement towards statements on a scale of one to four, with 1 indicating ‘strongly disagree’ and 4 indicating ‘strongly agree’. The responses were analyzed using means (M) and standard deviations (SD). Table 1 shows the findings.

Table 1: Descriptive Statistics for External Analysis

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std.Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competition</td>
<td>1.80</td>
<td>4.00</td>
<td>3.2425</td>
<td>.45667</td>
</tr>
<tr>
<td>Partnership</td>
<td>1.00</td>
<td>4.00</td>
<td>3.3598</td>
<td>.44176</td>
</tr>
</tbody>
</table>

The findings summarized in Table 1 indicate that respondents agreed that their national health NGOs engaged in external analysis of partnership (M = 3.36, SD = 0.442) and competition (M = 3.24, SD = 0.457). These findings imply that the national NGOs that participated in the study largely engaged in external analysis of micro factors in the task environment that comprised of
an analysis of partnerships and competition. Besides, since the two standard deviations were less than 1, this implied that most of the responses did not deviate significantly from the means.

**Confirmatory Factor Analysis for External Analysis**

Confirmatory Factor Analysis (CFA) was conducted to establish the scope that the gathered data for external analysis of micro factors fitted the hypothesized empirical model. There were 5 items (COMP1 – COMP5) used to measure external analysis of competition, and 7 items (PT1 – PT7) for measuring analysis of partnership. Fitting of the CFA model comprised of scale purification which led to elimination from further analysis of items that had factor loadings of less than 0.5 towards their respective latent constructs. Figure 2 shows how the remaining items explained the first-order latent constructs of competition and partnership.

![Figure 2: Confirmatory Factor Analysis for External Analysis](image)

\[ \chi^2 = 83.706; \text{DF}=34; \text{CFI}=0.938; \text{RMSEA}=0.062 \]

Results displayed in Figure 1 indicate that the factor loadings for the two constructs were all above 0.5 thus indicating construct validity. Moreover, the model fit indices (\(\chi^2 = 83.706; \text{DF}=34; \text{CFI}=0.938; \text{RMSEA}=0.062\)) indicated that the model was a good fit. The covariance between external analysis of micro factors of competition and partnership was 0.52 which was below 0.9 and thus indicating discriminant validity between the two constructs.

**Descriptive Statistics for Organizational Performance**

The study sought to find out the extent of organizational performance as measured using different items in the national NGOs in the health sector that participated in the study. To accomplish this, respondents were asked to score their level of agreement with statements on a scale of one to four, with one indicating ‘strongly disagree’ and four indicating ‘strongly
agree’. The analysis of the responses was through means (M) and standard deviations (SD). Table 2 shows the findings of the descriptive statistics.

Table 2: Descriptive Statistics for Organizational Performance

<table>
<thead>
<tr>
<th>Statements on Organizational performance</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>In our organization, projects are completed within the required time</td>
<td>3.36</td>
<td>.588</td>
</tr>
<tr>
<td>In our organization, development projects create desired output contributing to project management success</td>
<td>3.40</td>
<td>.518</td>
</tr>
<tr>
<td>In our organization, the completed development projects meet desired quality standards resulting to project management success</td>
<td>3.39</td>
<td>.507</td>
</tr>
<tr>
<td>In our organization, the quality standards of our completed development projects contribute to project management success</td>
<td>3.42</td>
<td>.521</td>
</tr>
<tr>
<td>In our organization, completion of projects within the required time contributes to project management success</td>
<td>3.46</td>
<td>.542</td>
</tr>
<tr>
<td>In our organization, completion of projects within the allocated budget demonstrates project management success</td>
<td>3.42</td>
<td>.521</td>
</tr>
<tr>
<td>In our organization, projects deliver desired customer satisfaction demonstrating project success</td>
<td>3.41</td>
<td>.511</td>
</tr>
<tr>
<td>In our organization, projects deliver desired impact demonstrating project success</td>
<td>3.40</td>
<td>.500</td>
</tr>
<tr>
<td>In our organization, projects’ outputs contribute to development objectives demonstrating project success</td>
<td>3.41</td>
<td>.519</td>
</tr>
<tr>
<td>In our organization, projects’ outputs contribute to the achievement of organizational vision resulting in NGO success</td>
<td>3.40</td>
<td>.509</td>
</tr>
<tr>
<td>In our organization, projects’ outputs contribute to the achievement of organizational mission resulting in NGO success</td>
<td>3.40</td>
<td>.509</td>
</tr>
<tr>
<td>In our organization, projects’ outputs contribute to the achievement of organizational objectives resulting in NGO success</td>
<td>3.38</td>
<td>.514</td>
</tr>
<tr>
<td>In our organization, the achievement of projects’ desired outputs contributes to NGO success</td>
<td>3.44</td>
<td>.498</td>
</tr>
<tr>
<td>In our organization, projects’ impact directly contributes to our NGO's success</td>
<td>3.39</td>
<td>.497</td>
</tr>
<tr>
<td>In our organization, projects’ impact contributes to the socio-economic development of the country demonstrating NGO success</td>
<td>3.46</td>
<td>.499</td>
</tr>
</tbody>
</table>

The study results provided in Table 2 show that all the items had means around 3.0 and standard deviations below 1, demonstrating that most of the responses closely congregated around the means. Specifically, respondents agreed that in their organizations, completion of projects within the required time contributes to project management success (M = 3.46, SD = 0.542). This had the highest mean amongst all the items that were used to measure organizational performance. Besides, respondents agreed that in their organizations, projects are completed within the required time (M = 3.36, SD = 0.588). This item had the lowest mean compared to the other items that measured organizational performance. The findings indicate that respondents agreed to all the statements provided on organizational performance. This implied that in the surveyed national health NGOs, projects were completed within the required time, created the desired outputs contributing to project management success, met desired quality standards resulting to project management success, and generally, completion of projects was within the allocated budget demonstrating project management success. Moreover, the findings
indicate that the respondents agreed that in the national NGOs in the health sector in Kenya, projects delivered anticipated customer satisfaction signifying project success.

**Confirmatory Factor Analysis for Organizational Performance**

CFA was conducted to examine the extent to which the gathered data for the organizational performance variable fitted the hypothesized empirical model of the study. There were 15 items used to measure the variable (OP1 – OP15). However, due to the poor fit of the model and the reduced capacity of some of the items to have significant loadings towards organizational performance, 4 items were excluded and only 11 items with loadings above 0.5 were maintained. Figure 3 indicates how these items explained the organizational performance variable.

![Figure 3: Model Fit for Organizational Performance](image)

\[ \chi^2 = 100.182; \chi^2/df = 2.277; DF=44; CFI=0.977; RMSEA=0.053 \]

**SEM of External Analysis on Organizational Performance**

SEM was utilized to investigate the effect of undertaking external analysis of micro factors on the organizational performance of the national NGOs in the health sector in Kenya. The model's explanatory power (r squared), model fit indices, and regression coefficients were generated. The fitness of the path model was assessed, and the results revealed that the RMSEA value was
0.058, the CFI was 0.943, and the chi-square/df value was 1.756. these indicated that the model satisfied the fitness test. The standardized regression coefficients and the r squared of the path model are provided in Figure 3. The findings indicate that external appraisal/analysis of micro factors in the task environment (competition and partnership) accounted for 31% (r squared = 0.31) of the variation in organizational performance of national NGOs in the health sector in Kenya. These findings imply that there was an unexplained variance of 69%. Thus, other factors not included in the model explained 69% of the variation in organizational performance of national NGOs in the health sector of Kenya.

The regression path coefficients were produced for the study to evaluate the hypothesis about the effect of performing external analysis of micro factors in the task environment on organizational performance. Table 3 summarizes the regression estimates for the SEM.

**Table 3: Regression Coefficients for External Analysis on Organizational Performance**

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Estimate</th>
<th>Beta</th>
<th>S.E</th>
<th>CR</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.572</td>
<td>.197</td>
<td>2.904</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Competition</td>
<td>1.645</td>
<td>.795</td>
<td>.371</td>
<td>4.433</td>
<td>0.000</td>
</tr>
<tr>
<td>Partnership</td>
<td>1.000</td>
<td>.649</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OP</td>
<td>.830</td>
<td>.559</td>
<td>.179</td>
<td>4.642</td>
<td>0.000</td>
</tr>
</tbody>
</table>
The study results provided in Table 3 show that external analysis of micro factors in the task environment had a statistically significant positive influence on the organizational performance of national NGOs in the health sector in Kenya ($\beta = 0.559$, $CR = 4.642$, $p<0.05$). The study hence accepted the hypothesis of the study and concluded that undertaking external appraisal of micro factors in the task environment had a significant effect on the organizational performance of national NGOs in the health sector in Kenya.

The derived regression equation was;

$$\text{Organizational Performance} = 0.572 + 0.559 \text{ External Appraisal} + \epsilon$$

The regression model indicates that a unit improvement in conducting of external analysis of micro factors would lead to a corresponding improvement of 0.559 in the organizational performance of national NGOs in the health sector of Kenya when all other factors are held constant.

**Discussion**

The findings from the study established that undertaking external analysis of micro factors had a significant positive effect on the organizational performance of national NGOs in the health sector in Kenya. These findings concur with the findings by Moudud-Ul-Huq (2020) who determined that understanding competition and partnership of the external environment by management is critical. The study also supports the findings by Khattak and Ali (2020) that intense banking competition results to lower profitability and increased risk irrespective of the bank type, but appraising the competition and having effective responses are positively linked to performance. The findings are also in line with the findings by Anning-dorson et al. (2017) which emphasized the importance of organizations gathering adequate knowledge from the external environment to help develop competitive innovative strategies that lead to the realization of performance benefits. These similarities may be due to the universal importance of external analysis as a key factor in enabling an organization to scan the external environment and devise effective strategic responses and thereby enhancing its organizational performance.

In line with the conceptual framework, two identified micro factors, competition and partnerships, contributed to this relationship between external analysis and organizational performance. On competition, the study findings concur with Moudud-Ul-Huq (2020) and Schwenger et al. (2014) who found that analysis of competition does affect organization performance both in the for-profit and not-for-profit contexts. The findings further support the findings by Schwenger et al. (2014) that analysis of competition has forced the NGOs to adopt for-profit strategies. This is because increased competition forces NGOs to adopt partnerships to enhance their competitiveness. This was affirmed by Darling and Venkitachalam (2021) who assessed the strategic competencies of a National Health Services (NHS) unit for improved organizational performance.

**Conclusion and Recommendations**

The findings of the study indicated that conducting external analysis of micro factors had a positive and significant effect on the organizational performance of national NGOs in the health sector in Kenya. The study recommends that undertaking effective external analysis is vital for national NGOs in the health sector in Kenya to enable them to accomplish their organizational performance goals. Further, the study concludes that critical aspects entailed in
external analysis of micro factors include external analysis of partnerships and analysis of the competition. The policymakers would use the findings to devise new policies or amend the existing ones to make the external environmental factors of competition and partnerships conducive for NGOs.

The findings from this study lead to the recommendation that senior management in national health NGOs should consider and assess all occurrences outside the organization that have the potential to impact the organization's operation and performance. This includes competition, partnerships, and other external forces such as legal, political social, and economic environments. Besides, senior management in national health NGOs should analyze the task environment to ensure that all micro factors such as resource providers, competitors, and clients, are analyzed to ensure that they are aligned to the organizational performance.

References


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