

## The Mediating Effect of Strategic Implementation Between Strategy Formulation and Organizational Performance Within Government Institutions in Yemen

<sup>1</sup>Osama Isaac, <sup>1</sup>Yassien Masoud, <sup>2</sup>Sarminah Samad and <sup>2</sup>Zaini Abdullah

<sup>1</sup>Graduate Business School, Universiti Teknologi MARA, Selangor, Malaysia

<sup>2</sup>Faculty of Business and Management, Universiti Teknologi MARA, Selangor, Malaysia

---

**Abstract:** The purpose of this study is to investigate the relationship between strategy formulation, strategy implementation and organizational performance within government institutions in Yemen. Evaluation of the proposed model was done through questionnaire survey data collected from one hundred and twenty valid responses among employees within the Ministry of Health. The analysis examines the relationship between the variables of the proposed model, including Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) via AMOS. The results show that the data fits the proposed model well, including three second-order constructs; namely strategy formulation which contains three first-order constructs (vision, mission and goals), strategy implementation which contains three first-order constructs (strategy, structure and human resources) and organizational performance which contains four first-order constructs (financial, customer, operation and learning and growth). The model proposed by the research and evidenced by the goodness of fit of the model to the data, explained 80% of the variance in organizational performance. The findings of the multivariate analysis demonstrates three main results. Firstly, strategy formulation has a positive impact on strategy implementation; secondly, strategy implementation has great influence on organizational performance; and finally, strategy implementation mediates the relationship between strategy formulation and organizational performance (as shown by the bootstrapping analysis). The theoretical and practical implications are also discussed.

**Key words:** Strategy formulation, strategy implementation, organizational performance, Yemen, AMOS

---

### INTRODUCTION

Although, government institutions around the world are placing greater emphasis on performance, particularly with regard to the expectations of their stakeholders and customers, Yemeni government institutions are still lagging behind in terms of government institutional effectiveness compared to other countries (Fig. 1). Most organizations operate as a network of various departments that are inextricably interconnected and decisions necessarily affect the activities and outcomes in other network areas, driving the growing need for transparency and focus on performance (Mackie, 2008).

Strategic management is an important topic and has attracted concern among scholars (Wheelen and Hunger, 2012). It has also been a concern of private and public organizations (Kang, 2006). Failure of having strategic management, namely at the formulation and implementation stage which is considered critical, will result in poor performance and effectiveness in the organization (Michaela, 2008). This is also a concern of

the Yemen of Ministry of Health, which as reported by COCA (2014), faced issues in terms of its performance. A preliminary study and report from the Yemen Ministry of Health (PMO, 2014) indicated that the performance of ministry is rather weak, and this has affected the full achievement of its expected vision, mission and goals. This study attempts to achieve the following research objectives:

- To examine the effect of strategy formulation on strategy implementation
- To examine the effect of strategy implementation on organizational performance
- To determine whether the construct of strategy implementation mediates the relationship between Strategy formulation and organizational performance

### Literature review

**Organizational performance:** Organizational performance is one of the most important variables in the management research and arguably the most important indicator in

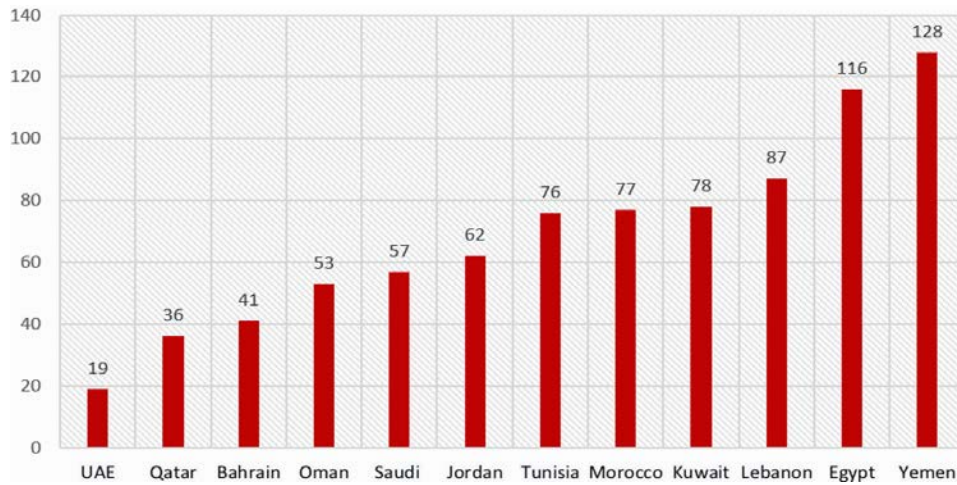


Fig. 1: Government institutions effectiveness: Yemen versus Arab countries (Rank among 143 countries) Global Innovation Index, 2016

determining the overall organizational success (Gavrea and Stegorean, 2011). An organization's performance is the measure of standard or prescribed indicators of effectiveness, efficiency and environmental responsibility such as cycle time, productivity, waste reduction and regulatory compliance (Muchira, 2013). In short, organizational performance is the most important criterion in evaluating organizations, their actions and environments. This is reflected in the pervasive use of organizational performance as a dependent variable in previous research (Richard *et al.*, 2009). According to Qaoud (2006), four areas of performance namely financial (the ability of the organization to have good planning and implementation related to financial aspects for stakeholders needs); public (to achieve the organizational vision, mission and goals); internal processes (the commitment of organization to deliver excellence service to the stakeholders); and learning and growth (the availability of budget for programs to improve employee competency and provide excellent service to the stakeholder).

**Strategy formulation:** Strategy formulation refers to the assessment of the external and internal environment and integrating the results into goals and strategies (Daft, 2012). It is defined as the developed phase of long-term plans for the effective management of environmental opportunities and threats on the principle of companies' strengths and weaknesses (Awang, 2012). It has also been examined by various scholars and found to differ from one institution to another and be riddled with several challenges (Njeru, 2014). A study conducted by

(Ongonge, 2013), examined strategy formulation to enhance organizational performance in Kenya. The empirical findings indicated that formulation strategy directly contributed to organizational performance of government agencies and partner organizations involved in the study. The study also revealed that there is a difference between the results and approaches of measuring formulation strategy effectiveness and organizational performance which confirms the case that selecting the appropriate approach to measuring the relationship between implementation strategy and organizational performance must be done with caution. This agree with numerous studies that found that strategy formulation has a positive relationship with strategy implementation and impacts organizational performance (Denison, 2000; Daft, 2012; Franklin, 2011; Aldehayyat and Twaissi, 2011; Owolabi and Makinde, 2012). Therefore, the following hypothesis is proposed:

- H<sub>1</sub>: Strategy formulation has a positive effect on strategy implementation

**Strategy implementation:** Strategy implementation involves the structure of an organization's resources and motivation of its staff to achieve objectives (Muchira, 2013). It is the direction and scope of an organization over the long-term in order to achieve an advantage for itself through its configuration of resources (Johnson *et al.*, 2008). It requires organizations to establish objectives, devise policies, motivate employees and allocate resources to execute formulated strategies (Zaei *et al.*, 2013). Earlier research has provided support for the link between strategy implementation and organizational

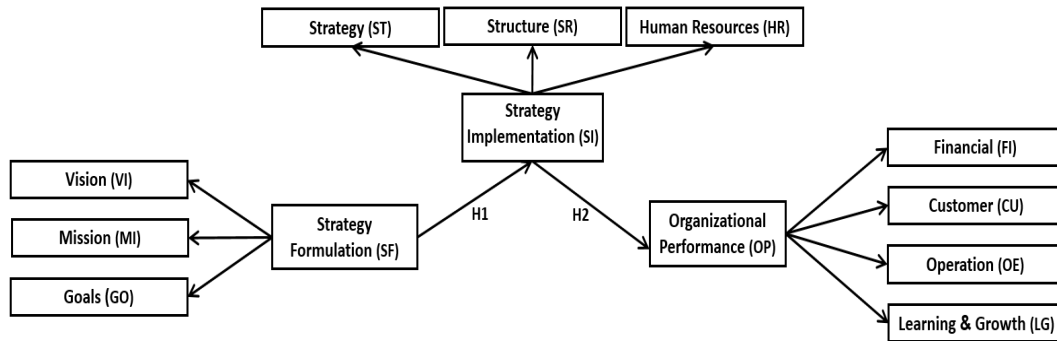


Fig. 2 : Proposed research model

performance. In a cross-sectional study of other industries to access their performance, Muchira (2013) found that implementation strategy influenced organizational performance through various measures such as projected performance of competitors, organization goals, past performance of the business and projected performance of the organization. Ibrahim *et al.* (2012), Gitonga and Newman (2013), also observed the influence of implementation strategy on organizational performance. This leads to the following hypothesis:

- H<sub>2</sub>: Strategy implementation has a positive effect on organizational performance

Various scholars studying strategic management have agreed that strategy implementation is the link between strategy formulation and organizational performance (Daft, 2012). This means that strategy implementation mediates the relationship between strategy formulation and organizational performance, or in other words, strategy formulation impacts the organizational performance through strategy implementation, leading to the following hypothesis:

- H<sub>3</sub>: Strategy implementation mediates the relationship between strategy formulation and organizational performance

## MATERIALS AND METHODS

**Overview of the proposed research model:** This study proposes a research model based on a strategic management model postulated by Qouod (2006) which examined the relationship between strategic management (formulation strategy consist of vision, mission, goals; implementation consists of strategy, structure and human resource) and organizational performance (consists of

financial, customer, internal operational processes, growth and learning aspects). Based on the above, the research model for this study is depicted in Fig. 2.

**Development of instrument:** In this study, the questionnaire (Appendix A) adopted for this study was taken from studies by Qouod (2006) as his research has been widely used and validated by other studies. The questionnaire was distributed in two languages (English and Arabic) and respondents were invited to respond in the language they are most comfortable with. It was divided into three sections, each representing the variables and items being measured, as follows: section A: Demographic; section B: strategy formulation and strategy implementation; and section C: organizational performance. All items in Section B and C were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). In this research, in order to recognize whether the questionnaire was properly constructed and the questions were easy to understand, a pilot study was carried out by distributing 20 questionnaires to middle and top management staff in the Ministry of Health in Yemen.

**Data collection:** In this study, the quantitative approach was chosen as the most appropriate. To collect the data, 130 self-administered questionnaires were distributed to middle and top management staff in the Ministry of Health in Yemen. Respondents were asked to send their replies in the self-addressed envelope which was with the questionnaire. The survey was conducted during the period from 20th of September to 16th of October 2015 with a follow-up reminder sent every seven days. The researcher requested the help of a co-worker in the Ministry to distribute and collect the questionnaires. He began by requesting permission from the General Office at the Ministry of Health to distribute the questionnaires and requesting a list of the total staff in the Ministry of

Health. On receiving permission and the list, he distributed the questionnaires to the departments. Out of 130 questionnaires distributed, 125 were returned, a response rate of 96%.

After examining the returned questionnaires, only 120 questionnaires were found usable in this study, reducing the response rate to 80% which is still high. Table 1 presents the profile of respondents in the study. It shows that the majority of the respondent were males 81.7% with 18.3% being female. In terms of hierarchical position in the Ministry, 52 (43.3 %) were department managers, 44 (36.7%) managers, 22 (18.3%) general manager, with 2 (1.7%) working as deputy sector. In terms of respondent age, the majority between 36-45 year (42.5%), followed by 46-55 year (37.5%); 20-35 (14.2%) and >55 (5.8%). The educational background of respondents revealed 55 (45.8%) with a bachelor degree, 32 (26.7%) holding a master degree. 25 (20.8%) with diploma and 8 (6.7%) holding a Ph.D. In terms of years of experience, 45.8% had >11-20 years, 23.3% had 6-10 years. 20.9% had more than 20 years and 10% had 5 year or <of experience (Table 1).

**RESULTS AND DISCUSSION**

**Descriptive analysis:** Table 2 presents the mean and standard deviation of each variable in the study. Respondents were asked to give their opinion based on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The customer construct for organizational performance records the highest mean score of 3.24 out of 5.0, with a standard deviation of 1.106 which indicates that the employees agree that the Ministry maintain a positive relationship with the public. The financial construct for organizational performance records the lowest mean score of 2.85 out of 5.0, with a standard deviation of 0.831 which indicates that the employees agree that the Ministry's budget is not enough to accomplish its strategy.

**Measurement model assessment and Confirmatory Factor Analysis (CFA):** As shown in Table 3, all the goodness-of-fit indices exceeded their respective common acceptance levels as suggested by previous research, thus demonstrating that the measurement model exhibited a fairly good fit with the data collected ( $\chi^2/df = 1.328$ , CFI = 0.945, RMSEA = 0.052, NFI = 0.814, TLI = 0.940, IFI = 0.946, PNFI = 0.733 and PGFI = 0.661). However, in this study, GFI and AGFI (0.785 and 0.745, respectively) do not fit. In such a case, Sharma *et al.* (2005) recommend that these indices should not be used because of the sensitivity and the fact that they have becomes less popular in recent years. Therefore, the

Table 1: Summary of demographic profile of respondents

| Demographic item    | Categories             | Frequency | Percentage |
|---------------------|------------------------|-----------|------------|
| Gender              | Male                   | 98        | 81.7       |
|                     | Female                 | 22        | 18.3       |
| Position            | Department manager     | 52        | 43.3       |
|                     | Administrative manager | 44        | 36.7       |
|                     | General manager        | 22        | 18.3       |
|                     | Deputy sector          | 2         | 1.7        |
| Age                 | 20-35                  | 17        | 14.2       |
|                     | 36-45                  | 51        | 42.5       |
|                     | 46-55                  | 45        | 37.5       |
|                     | >55                    | 7         | 5.8        |
| Level of education  | Diploma                | 25        | 20.8       |
|                     | Bachelor               | 55        | 45.8       |
|                     | Master                 | 32        | 26.7       |
|                     | PhD                    | 8         | 6.7        |
| Years of experience | 1-5                    | 12        | 10.0       |
|                     | 6-10                   | 28        | 23.3       |
|                     | 11-20                  | 55        | 45.8       |
|                     | >20                    | 25        | 20.9       |

Table 2: Mean and standard deviation

| 2nd-order construct | 1st-order construct | M    | SD    |
|---------------------|---------------------|------|-------|
| SF                  | VI                  | 2.99 | 0.998 |
|                     | MI                  | 2.94 | 0.891 |
|                     | GO                  | 3.09 | 0.909 |
| SI                  | ST                  | 3.14 | 0.902 |
|                     | SR                  | 2.91 | 0.831 |
|                     | HR                  | 3.04 | 1.016 |
| OP                  | FI                  | 2.85 | 0.831 |
|                     | CU                  | 3.24 | 1.106 |
|                     | OE                  | 3.04 | 1.005 |
|                     | LG                  | 2.92 | 0.936 |

M = Mean; SD = Standard Deviation, The measurement used is five-point scale ranging from 1 (strongly Disagree) to 5 (strongly Agree); SF: Strategy Formulation, VI: Vision, MI: Mission, GO: Goals, SI: Strategy Implementation, ST: Strategy, SR: Structure, HR: Human Resources, OP: Organizational Performance, FI: Financial, CU: Customer, OE: Operation and LG: Learning and Growth

psychometric properties of the measurement model in terms of construct reliability, indicator reliability, convergent validity and discriminant validity were evaluated as follows.

For the Construct reliability, this study tested the individual Cronbach's alpha coefficients to measure the reliability of each of the three constructs in the measurement model. The results indicate that all the individual Cronbach's alpha coefficients of the three constructs ranging from 0.904 to 0.931 were greater than the recommended level of 0.7 (Kannan and Tan, 2005). Additionally, for testing construct reliability all the Composite Reliability (CR) values ranging from 0.945-0.992 were higher than 0.7 (Kline, 2010; Gefen *et al.*, 2000) which adequately indicates that the construct reliability is fulfilled as shown in Table 4. Therefore, the achieved Cronbach's alpha and CR for all constructs were considered to be sufficiently error-free.

Factor loading was used to test Indicator reliability. High loadings on a construct indicate that the associated indicators seem to have much in common which is captured by the construct (Hair *et al.*,

Table 3: Goodness-of-fit indices for the measurement model

| Fit index          | Cited                      | Admissibility | Result  | Fit (Yes/No) |
|--------------------|----------------------------|---------------|---------|--------------|
| $\chi^2$           |                            |               | 520.382 |              |
| df                 |                            |               | 392.000 |              |
| P value            |                            | >.05          | 0.000   | No           |
| X <sup>2</sup> /DF | Kline (2010)               | 1.00 - 5.00   | 1.328   | Yes          |
| RMSEA              | Steiger (1990)             | <.08          | 0.052   | Yes          |
| GFI                | Joreskog and Sorbom (1993) | >.90          | 0.785   | No           |
| AGFI               | Jöreskog and Sörbom (1993) | >.80          | 0.745   | No           |
| NFI                | Bentler and Bonnet (1980)  | >.80          | 0.814   | Yes          |
| PNFI               | Bentler and Bonnet (1980)  | >.05          | 0.733   | Yes          |
| IFI                | Bollen (1990)              | >.90          | 0.946   | Yes          |
| TLI                | Tucker and Lewis (1973)    | >.90          | 0.940   | Yes          |
| CFI                | Byrne (2010)               | >.90          | 0.945   | Yes          |
| PGFI               | James <i>et al.</i> (1982) | >.50          | 0.661   | Yes          |

Note: X<sup>2</sup> = Chi Square, DF = Degree of freedom, GFI = Goodness-of-fit, NFI = Normed fit index, IFI = the increment fit index, TLI = Tucker-Lewis coefficient Index, CFI = Comparative-fit-index, RMSEA = Root Mean Square Error of Approximation, PNFI = Parsimony Normed Fit Index, AGFI = Adjusted Goodness of Fit Index; \*\*\*The indexes in bold are recommended since they are frequently reported in literature (Awang, 2012)

Table 4: Loading, cronbach's alpha, CR and AVE

| 2nd-order construct | 1st-order construct | Item | Loading (above 0.5) | $\alpha$ (above 0.7) | CR (>0.7) | AVE (above 0.5) |
|---------------------|---------------------|------|---------------------|----------------------|-----------|-----------------|
| SF                  | VI                  | VI1  | 0.77                | 0.927                | 0.973     | 0.924           |
|                     |                     | VI2  | 0.74                |                      |           |                 |
|                     |                     | VI3  | 0.79                |                      |           |                 |
|                     | MI                  | MI1  | 0.79                |                      |           |                 |
|                     |                     | MI2  | 0.82                |                      |           |                 |
|                     |                     | MI3  | 0.80                |                      |           |                 |
|                     | GO                  | GO1  | 0.82                |                      |           |                 |
|                     |                     | GO2  | 0.82                |                      |           |                 |
|                     |                     | GO3  | 0.76                |                      |           |                 |
| SI                  | ST                  | ST1  | 0.67                | 0.904                | 0.945     | 0.853           |
|                     |                     | ST2  | 0.83                |                      |           |                 |
|                     |                     | ST3  | 0.76                |                      |           |                 |
|                     | SR                  | SR1  | 0.73                |                      |           |                 |
|                     |                     | SR2  | 0.81                |                      |           |                 |
|                     |                     | SR3  | 0.75                |                      |           |                 |
|                     | HR                  | HR1  | 0.71                |                      |           |                 |
|                     |                     | HR2  | 0.80                |                      |           |                 |
|                     |                     | HR3  | 0.80                |                      |           |                 |
| OP                  | FI                  | FI1  | 0.53                | 0.931                | 0.992     | 0.967           |
|                     |                     | FI2  | 0.74                |                      |           |                 |
|                     |                     | FI3  | 0.69                |                      |           |                 |
|                     | CU                  | CU1  | 0.82                |                      |           |                 |
|                     |                     | CU2  | 0.80                |                      |           |                 |
|                     |                     | CU3  | 0.87                |                      |           |                 |
|                     | OE                  | OE1  | 0.74                |                      |           |                 |
|                     |                     | OE2  | 0.68                |                      |           |                 |
|                     |                     | OE3  | 0.69                |                      |           |                 |
|                     | LG                  | LG1  | 0.80                |                      |           |                 |
|                     |                     | LG2  | 0.71                |                      |           |                 |
|                     |                     | LG3  | 0.80                |                      |           |                 |

$\alpha$  = Cronbach's alpha; CR = Composite Reliability, AVE = Average Variance Extracted, CR =  $(\sum K)^2 / (\sum K)^2 + (\sum 1-K^2)$ , AVE =  $\sum K^2 / n$ ; where K = factor loading of every item, n = number of item in a model; SF: strategy formulation, VI: vision, MI: mission, GO: goals, SI: strategy implementation, ST: strategy, SR: structure, HR: human resources, OP: organizational performance, FI: financial, CU: customer, OE: operation, and LG: learning and growth.

2013). Factor loadings >0.50 are considered to be very significant (Hair *et al.*, 2010). The loadings for all items exceeded the recommended value of 0.5 as shown in Table 4. The loading for all items in the model have fulfilled all the requirements without being eliminated from the scale.

This study used the Average Variance Extracted (AVE) to test convergent validity, which indicated that all AVE values were higher than the recommended value 0.50 (Hair *et al.*, 2010), ranging from 0.924-0.967. The

convergent validity for all constructs was therefore successfully fulfilled and exhibited adequate convergent validity as Table 4 shows.

The discriminant validity of the measurement model was checked using Fornell-Larcker criterion (Fornell and Larcker, 1981). As shown in Table 5, the correlations between the factors ranging from 0.841-0.885 are smaller than the square root of the average variance extracted estimates which are in the range of 0.923 to 0.983. This indicates that the constructs are strongly related to their

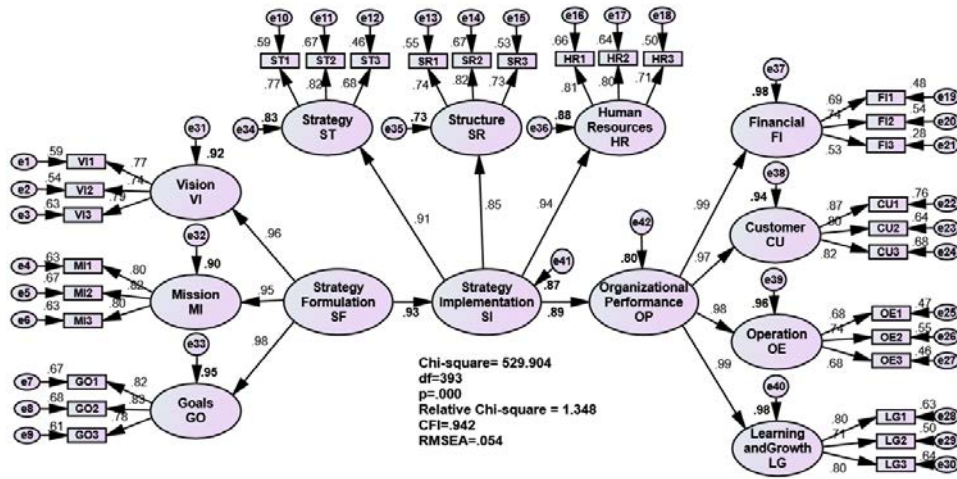


Fig. 3: Research structural model results

Table 5: Results of discriminant validity by fomell-larcker criterion for the model

|                | 1     | 2     | 3     |
|----------------|-------|-------|-------|
| <b>Factors</b> | SF    | SI    | OP    |
| SF             | 0.961 |       |       |
| SI             | 0.885 | 0.923 |       |
| OP             | 0.876 | 0.841 | 0.983 |

Diagonals represent the square root of the average variance extracted while the other entries represent the correlations; SF: strategy formulation, SI: strategy implementation, OP: organizational performance.

respective indicators compared to other constructs of the model. Hence, the discriminant validity of the constructs is fulfilled.

**Structural model assessment:** The goodness-of-fit of the structural model was comparable to the previous CFA measurement model. In this structural model, the values are recorded as  $X^2/df = 1.348$ ,  $CFI = 0.942$  and  $RMSEA = 0.054$ . These fit indices provide the evidence of adequate fit between the hypothesized model and the observed data (Byrne, 2010). Thus, we could proceed to examine the path coefficients of the structural model.

**Hypotheses tests:** The hypotheses of this study were tested using structural equation modeling as presented in Figure 3 and the structural model assessment as shown in Table 6, provides the indication of the hypotheses tests. The results of the three main hypotheses indicate that strategy formulation significantly predict the strategy implementation. Hence, H1 is accepted ( $\beta = 0.93$ ;  $p < 0.001$ ). Strategy implementation, also significantly predicts organizational performance, thereby supporting H2 ( $\beta = 0.89$ ;  $p < 0.001$ ). Note that the standardized path coefficient indicates the strengths of the relationships between the independent

and dependent variables, so the direct effects of strategy formulation on strategy implementation is much stronger than the direct effects of strategy implementation on organizational performance as evident from the values of path coefficient.

The  $R^2$  value indicates the amount of variance of dependent variables which is explained by the independent variables. Hence, a larger  $R^2$  value increases the predictive ability of the structural model. It is crucial to ensure that the  $R^2$  values should be high enough for the model to achieve a minimum level of explanatory power (Urbach and Ahlemann, 2010). Falk and Miller (1992) recommended that the  $R^2$  values should be equal to or greater than 0.10 in order for the explained variance of a particular endogenous construct to be deemed adequate. Cohen (1988) suggested  $R^2$  is substantial when it is greater than 0.26. with acceptable power above 0.02 and according to Chin (1998) that  $R^2$  is substantial when it is greater than 0.65 with acceptable power above 0.19. On the other hand, Hair *et al.* (2013) recommended that  $R^2$  has to be  $>0.75$  in order to be deemed substantial with acceptable power above 0.25. Table 7 shows the result of  $R^2$  from the structural model, which indicates that all the  $R^2$  values are high enough for the model to achieve an acceptable level of explanatory power. Note that the highest variance explained in endogenous construct found in the strategy implementation (87%) by exogenous construct strategy formulation. And explained 80% of the variance in organizational performance by strategy implementation.

**Mediation assessment:** Assessing the direct and indirect relationships between the exogenous and endogenous latent variable is another important evaluation of a

Table 6: Structural path analysis result

| Hypothesis | Dependent variables | Independent variables | Estimate B (path coefficient) | SE    | C.R (t-value) | p-value | Decision  |
|------------|---------------------|-----------------------|-------------------------------|-------|---------------|---------|-----------|
| H1         | SI                  | SF                    | 0.93                          | 0.131 | 7.566         | ***     | Supported |
| H2         | OP                  | SI                    | 0.89                          | 0.127 | 6.743         | ***     | Supported |

SF = Strategy Formulation, SI = Strategy Implementation, OP = Organizational performance, \*\*\*, \*\*, \*p<0.001; 0.01; 0.05, SE = Standard Error, CR = Critical ratio

Table 7: Coefficient of determination result R<sup>2</sup>

| Exogenous construct | Endogenous construct | R <sup>2</sup> | Cohen (1988) | Chin (1998) | Hair <i>et al.</i> (2013) |
|---------------------|----------------------|----------------|--------------|-------------|---------------------------|
| SF                  | SI                   | .87            | Substantial  | Substantial | Substantial               |
| SI                  | OP                   | .80            | Substantial  | Substantial | Substantial               |

SF: Strategy Formulation, SI: Strategy Implementation, OP: Organizational Performance

Table 8: Mediation effect of strategy implementation

| Variable | Parameters | Estimate B (path coefficient) | SE    | C.R (t-value) | p-value | Result      |
|----------|------------|-------------------------------|-------|---------------|---------|-------------|
| path c   | OP<---SF   | 0.61                          | 0.183 | 3.404         | ***     | Significant |
| path a   | SI<---SF   | 0.93                          | 0.131 | 7.566         | ***     | Significant |
| path b   | OP<---SI   | 0.89                          | 0.127 | 6.743         | ***     | Significant |
| path c'  | OP<---SF   | 0.87                          | 0.126 | 6.968         | ***     | Significant |

Sf: Strategy Formulation, SI: Strategy Implementation, OP: Organizational Performance, \*\*\*p<.000; \*\*p<.01; \*p<.05, SE = Standard Error, CR = Critical Ratio

Table 9: Bootstrapping the indirect effect of strategy implementation

| Hypothesis | Relationship | Std. beta | SE    | t-value | Decision  |
|------------|--------------|-----------|-------|---------|-----------|
| H3         | SF-SI-OP     | 0.828     | 0.143 | 5.790** | Supported |

Preacher and Hayes 2004 (2008); SF: Strategy Formulation, SI: Strategy Implementation, OP: Organizational Performance

structural model (Henseler *et al.*, 2009). This section tests the mediation Hypothesis (H<sup>3</sup>) as follow: Strategy implementation mediate the relationship between strategy formulation and organizational performance.

According to Field (2013) for this hypothesis to be true: strategy formulation must predict organizational performance in the first place (path c); strategy formulation must predict strategy implementation (path a); strategy implementation must predict organizational performance (path b) and the relationship between strategy formulation and organizational performance should be smaller when strategy implementation is included in the model than when it isn't. We can distinguish between the direct effect of strategy formulation on organizational performance, which is the relationship between them controlling for strategy implementation and the indirect effect, which is the effect of strategy formulation on organizational performance through the strategy implementation.

Table 8 shows the result of the direct path (c) in which the relationship between strategy formulation and organizational performance is significant ( $\beta = 0.61$ ,  $p < 0.001$ ) suggesting that the direct effect condition is satisfied. Furthermore, the path coefficients (a) in this model indicate that strategy formulation is positively linked to strategy implementation ( $\beta = 0.93$ ,  $p < 0.001$ ) while the path coefficients (b) indicate that strategy implementation is positively linked to organizational performance ( $\beta = 0.89$ ,  $p < 0.001$ ). Finally, the findings show the direct (c') relationship between strategy formulation and organizational performance ( $\beta = 0.87$ ,  $p < 0.001$ ),

shrinks upon the addition of strategy implementation to the model but is still significant, indicating that a mediation effect exists. While the path coefficient value decreased, the R<sup>2</sup> value on organizational performance increased from 0.76 (or 76%) to 0.80 (or 80%) when strategy implementation was included in the model.

The second method to test the mediation effect was based on the (Preacher and Hayes, 2004, 2008) method of bootstrapping the indirect effect. Table 9 shows the result of the bootstrapping analysis which indicates that the indirect effect  $\beta = 0.83$  was significant with a t-value of 5.790. Preacher and Hayes (2008) indicated that if a 0.83, 95% Boot CI: [LL = 0.586, UL = 0.932] does not straddle a 0 in between, it indicates there is mediation. Thus, this study concludes that the mediation effect of a strategy implementation variable is statistically significant, indicating that H3 was also supported.

The major purpose of the study is to investigate the relationship between strategy formulation, strategy implementation and organizational performance within government institutions in Yemen. This study discusses its findings based on the three main objectives mentioned earlier.

**Findings related to objective 1:** The first objective was to examine the effect of strategy formulation on strategy implementation. This objective was studied, though hypothesis H1 and the results indicated that strategy formulation has a significant and positive impact on

strategy implementation. Thus (H1) is supported. This result is consistent with the finding of a study conducted by Owolabi and Makinde (2012) who found a significant positive effect of strategy formulation on strategy implementation. As well as Muogbo (2013) and Gichunge (2011a, b) emphasized the positive relationship between strategy formulation and strategy implementation.

**Findings related to objective 2:** The second objective of this study was to examine the effect of strategy implementation on organizational performance. This objective was studied, though hypothesis H2 and the findings showed that the strategy implementation has a significant and positive influence on performance. Thus, H2 is supported. This result supports by a research finding of Muchira (2013) which concluded that strategy implementation influences organizational performance positively, along with Mohamud and Mohamud (2015) and Aligholi and Gheshlagh (2014) who they also indicated that strategy implementation has a significant positive impact on organizational performance.

**Findings related to objective 3:** The third objective of this study was to determine whether the construct of strategy implementation mediates the relationship between strategy formulation and organizational performance. This objective was studied through hypothesis H3 and the findings showed that strategy formulation indirectly influences organizational performance through the strategy implementation. Thus, H3 is accepted. These results were consistent with the work of Daft (2012) both of whom state that the strategic planning process is an interdependent relationship of strategy formulation, strategy implementation and organizational performance.

**Implications for research:** The main contribution of this research is the role of strategy formulation on strategy implementation, the role of strategy implementation on organizational performance and the role of strategy implementation as a mediating variable between strategy formulation and organizational performance. The main contribution of this study is the highlighting of strategic management components that contribute significantly to organizational performance. It provides evidence of research synthesizing empirical research, theories and ideas from various sources of academic disciplines and will contribute to the existing body of knowledge especially on strategic management, formulation and implementation strategy and organizational performance and the possible extension of study development in these areas. This study has also reaffirmed the applicability of

the theory to government organizations and developing countries and undoubtedly will provide better insights for researchers and be a reference point for further research.

**Implication for practice:** The study is important from both a scientific and a practical perspectives for researchers and scholars in public administration. It will provide the Ministry of Health in Yemen and other stakeholders with important data and insights on their current state and practice of formulation and implementation strategies. The findings are expected to improve the application of such formulation and implementation strategies to overcome national health challenges, improve the health care system, enhance delivery services and make such services accessible, affordable and equitable. The study could lead to improved health system efficiency, reduced waste and better use of idle potentials. These in turn will enable the Ministry of Health to provide more services per unit cost, thus making the best use of the available budget. This study and its findings will serve as a reference source in the field of strategic planning in developing countries.

**Limitations and suggestions for future work:** This research has the potential to open horizons for researchers to conduct other studies in the field of strategic planning and prompts several suggestions for the future researches. There is a need for more studies to examine the relationship between strategic management practices and organizational performance and examining the moderating effect of leadership style on this relationship. The research could be conducted over a wider area to include employees from all or other government and selected private sectors. A new approach health development could be through studying the causes of the strategic management failure of many of ministries in Yemen. A study of the impact of personal characteristics (such as namely, educational attainment and experience) could possibly enhance strategic management and planning practices. A study could be done to investigate and compare ministries and organizations in Yemen in terms of their current strategic planning practices. The impact of good practices of strategic planning or strategic management on government performance is possible by focusing on employees' performance. Another study could be done to investigate the relationship between culture and performance. Ultimately, there might be a need for more studies related to strategic management in Yemen as well as separate studies on governmental initiatives and policies in relation to it.



**CONCLUSION**

Clear and well-defined strategy formulation and implementation policies, which are important corporate governance issues, are needed to help a leader make the right decision about ways to obtain outstanding performance (Sioncke and Parmentier, 2007). This study investigated the relationship between strategy formulation, strategy implementation and performance within government institutions in Yemen. Based on the

findings in relation to this objective, the study concluded that the results indicated that strategy formulation has a significant and positive impact on strategy implementation, that organizational performance is influenced significantly and positively by strategy implementation and that strategy formulation positively impacts organizational performance through strategy implementation, meaning that strategy implementation worked as a mediating variable in the proposed model for this study.

**APPENDIX**

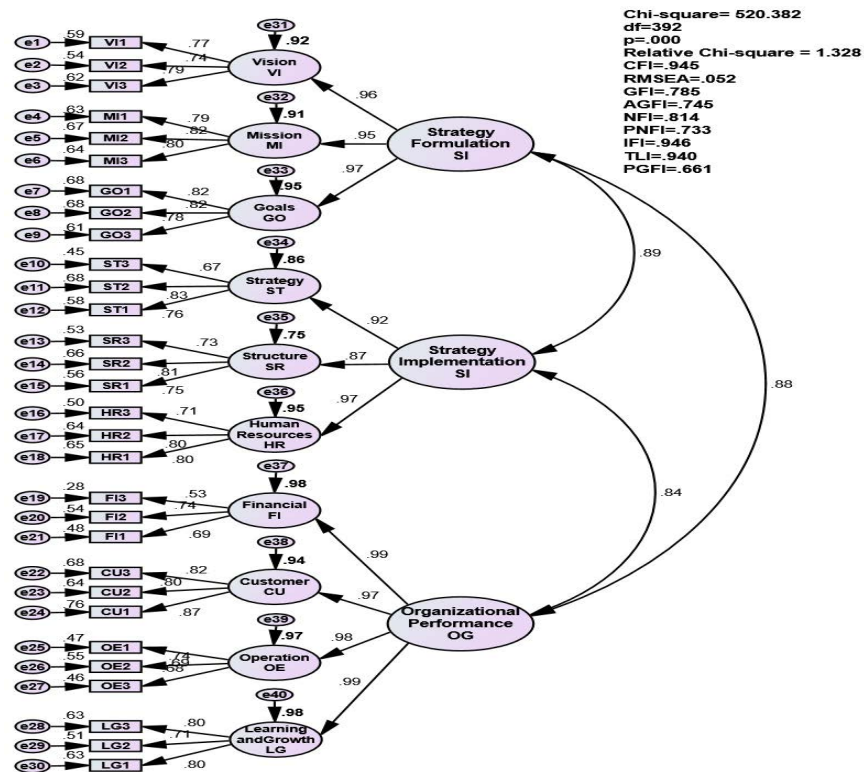
Appendix: Instrument for strategy formulation

| 2nd-order Construct               | 1st-order  | Items   | Rating scale  | Source       |
|-----------------------------------|--|---|---|--------------|
| Strategy formulation              | Vision   |   |   |              |
|                                   | VI1  | The vision of the ministry is stated clearly.   | 5-point Likert scale: (1) Strongly disagree to (5) Strongly agree | Qouod (2006) |
|                                   | VI2  | The vision of the ministry is used to set priorities.   |   |              |
| VI3                               | The vision of the ministry is widely known and drives activities |   |   |              |
| Mission                           | MI1  | The mission of the ministry is consistent with its philosophy   |   |              |
|                                   | MI2  | The mission of the ministry helps to formulate its strategy.  |   |              |
|                                   | MI3  | Ministry reviews its mission after analyzing strengths, weaknesses, opportunities and threats.                                  |   |              |
| Goals                             | GO1  | The objectives of the ministry are formulated collectively according to the priorities.   |   |              |
|                                   | GO2  | Ministry reviews its objectives after analyzing strengths, weaknesses, opportunities and threats                                |   |              |
|                                   | GO3  | The vision, mission, and objectives are integrated and consistent   |   |              |
| <b>Strategy implementation</b>    |  |   |   |              |
| Strategy                          | ST1  | The pass process of implementation of the strategy in the light of the vision and mission directives                            | 5-point Likert scale: (1) Strongly disagree To (5) Strongly agree | Qouod (2006) |
|                                   | ST2  | Administrative systems and communications support, incentives and decisions help the implementation of the strategy             |   |              |
|                                   | ST3  | Providing information systems and control contribute to the effective implementation of the strategy                            |   |              |
| Structure                         | SR1  | Ministry depends to initialize organizational structure in the implementation of the strategy                                   |   |              |
|                                   | SR2  | Hierarchy and responsibilities within the ministry are clear and established  |   |              |
|                                   | SR3  | The current structure of the ministry is appropriate to implement its strategic plans and goals.                                |   |              |
| Human Resources                   | HR1  | Ministry has concrete and realistic human resource plan   |   |              |
|                                   | HR2  | There exists plan for staff training and development and improve their performance  |   |              |
|                                   | HR3  | Ministry regularly conducts performance appraisal and reviews   |   |              |
| <b>Organizational performance</b> |  |   |   |              |
| Financial                         | FI1  | Represents the financial side in one of the most important priorities of the performance of senior management                   | 5-point Likert scale: (1) Strongly disagree To (5) Strongly agree | Qouod (2006) |
|                                   | FI2  | Ministry's budget is enough to accomplish its strategy.   |   |              |
|                                   | FI3  | The ministry is working to assess the impact of fiscal spending in different areas  |   |              |
| Customer                          | CU1  | Ministry focused on fulfilling quality and speed required by the public   |   |              |
|                                   | CU2  | Ministry's reputation in the performance of its business and maintain a positive relationship with the public                   |   |              |
|                                   | CU3  | The ministry has programs in the social and environmental responsibility check public satisfaction                              |   |              |
| Operation                         | OE1  | The internal operations focus on transforming internal goals into reality   |   |              |
|                                   | OE2  | The internal processes of planning, organizing, directing and controlling had directly impacted the performance of the strategy |   |              |

Appendix: Continue

| 2nd-order Construct        | 1st-order | Items   | Rating Scale | Source |
|----------------------------|-----------|---|--------------|--------|
|                            | OE3       | Internal operating processes are integrated with the other aspects of institutional performance                             |              |        |
| <b>Learning and growth</b> |           |   |              |        |
|                            | LG1       | The ministry seeks to see what is new in the business world and apply it to their work                                      |              |        |
|                            | LG5       | The ministry focuses on growth and learning in order to enhance the department's ability to adapt to changing circumstances |              |        |
|                            | LG3       | The ministry based foundations of scientific research to solve problems faced by the ministry                               |              |        |

Final Result of CFA:



REFERENCES

Aldehayyat, J.S. and N. Twaissi, 2011. Strategic planning and corporate performance relationship in small business firms: Evidence from a Middle East country context. *Int. J. Bus. Manage.*, 6: 255-263.

Aligholi, M. and Y.B. Gheshlagh, 2014. Evaluation of the influence of strategic management dimensions on organizational performance. *J. Appl. Environ. Biol. Sci.*, 4: 78-86.

Awang, Z., 2012. *A Handbook on Structural Equation Modeling using AMOS*. 4th Edn., University Teknologi MARA Press, Malaysia.

Bentler, P.M. and D.G. Bonnet, 1980. Significance tests and goodness of fit in the analysis of covariance structures. *Psychol. Bull.*, 88: 588-606.

Bollen, K.A., 1990. Overall fit in covariance structure models: Two types of sample size effects. *Psychol. Bull.*, 107: 256-259.

Byrne, B.M., 2010. *Structural Equation Modeling With AMOS: Basic Concepts, Applications and Programming*. 2nd Edn., Routledge, New York, USA.,

COCA., 2014. Report central organization for control and auditing. Central Organization for Control and Auditing, Yemen.

Chin, W.W., 1998. Commentary: Issues and opinion on structural equation modeling. *MIS Q.*, 22: 7-16.

Cohen, J., 1988. *Statistical Power Analysis for the Behavioral Sciences*. L. Erlbaum Associates, New Jersey, USA., ISBN-13: 9780805802832, Pages: 567.

Daft, R.L., 2012. *New Era of Management*. 10th Edn., South-Western College, USA.,

- Denison, D.R., H.J. Cho and J. Young, 2000. Diagnosing organizational cultures: Validating a model and method. Working Paper, International Institute for Management Development, University of Michigan, Ann Arbor, MI., USA.
- Falk, R.F. and N.B. Miller, 1992. A Primer for Soft Modeling. The University of Akron Press, Akron, Ohio, ISBN-13: 9780962262845, Pages: 103.
- Field, A., 2013. Discovering Statistics Using IBM SPSS Statistics. 4th Edn., SAGE Publications, New York, USA.,.
- Fornell, C. and D.F. Larcker, 1981. Evaluating structural equation models with unobservable variables and measurement error. *J. Market. Res.*, 18: 39-50.
- Franklin, P.W., 2011. Relationship between strategic planning and non-profit organizational performance. PhD Thesis, Capella University, Minneapolis, Minnesota.
- Gavrea, C., L. Ilies and R. Stegorean, 2011. Determinants of organizational performance: The case of Romania. *Manage. Marketing*, 6: 285-300.
- Gefen, D., D.W. Straub and M.C. Boudreau, 2000. Structural equation modeling and regression: Guidelines for research practice. *Commun. Assoc. Inform. Syst.*, 4: 1-77.
- Gichunge, M.E., 2011a. The effect of formal strategic management on organizational performance: A study of selected medium sized manufacturing enterprises in Nairobi. PhD Thesis, Kenyatta University, Nairobi, Kenya.
- Gichunge, M.E., 2011b. The effect of formal strategic management on organizational performance: A study of selected medium sized manufacturing enterprises in Nairobi. PhD Thesis, Kenyatta University, Nairobi, Kenya.
- Gitonga, and M. Newman, 2013. Effects of strategic plan implementation on organizational performance: A case study of Nakuru water and sanitation services company (NAWASSCO). Master Thesis, Kabarak University, Nakuru, Kenya.
- Hair, J.F., G.T.M. Hult, C.M. Ringle and M. Sarstedt, 2013. A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). SAGE Publication, Thousand Oaks, CA., USA., ISBN-13: 978-1452217444, Pages: 328.
- Hair, J.F., W.C. Black, B.J. Babin and R.E. Anderson, 2010. *Multivariate Data Analysis*. 7th Edn., Pearson, New Jersey, USA.,.
- Henseler, J., C.M. Ringle and R.R. Sinkovics, 2009. The use of partial least squares path modeling in international marketing. *Adv. Int. Market.*, 20: 277-319.
- Ibrahim, M., M. Sulaiman, A. Kahtani and A.I. Jarad, 2012. The relationship between strategy implementation and performance of manufacturing firms in Indonesia: The role of formality structure as a moderator. *World Appl. Sci. J.*, 20: 955-964.
- James, L.R., S.A. Muliak and J.M. Brett, 1982. *Causal Analysis: Models, Assumptions and Data*. Sage, Beverly Hills, California.,.
- Johnson, G., K. Scholes and R. Whittington, 2008. *Exploring Corporate Strategy: Text and Cases*. Financial Times Prentice Hall, Harlow, UK., ISBN-13: 9780273711926, Pages: 878.
- Joreskog, K. and D. Sorbom, 1993. LISREL 8: Structural Equation Modeling with the SIMPLIS Command Language. Scientific Software International Inc, Chicago, Illinois, ISBN:0-89498-033-5, Pages: 277.
- Kang, Y.C., 2006. Understanding the applicability of strategic management in the public sector. PhD Thesis, Rutgers University-Newark, New Jersey, USA.,.
- Kannan, V.R. and K.C. Tan, 2005. Just in time, total quality management and supply chain management: Understanding their linkages and impact on business performance. *Omega*, 33: 153-162.
- Kline, R.B., 2010. *Principles and Practice of Structural Equation Modeling*. 3rd Edn., The Guilford Press, New York, USA.,.
- Mackie, D.B., 2008. Organizational performance management in a government context: A literature review. Scottish Government Social Research, UK.
- Mohamud, G.Y. and A.S. Mohamud, 2015. The relationship between strategic management and organizational performance in mogadishu-Somalia. *Eur. J. Res. Reflection Manage. Sci.*, 3: 42-51.
- Muchira, W.N., 2013. Relationship between strategy implementation and performance in commercial banks in Kenya. MBA Thesis, University of Nairobi, Nairobi, Kenya.
- Muogbo, U.S., 2013. The impact of strategic management on organisational growth and development: A study of selected manufacturing firms in Anambra State. *IOSR. J. Bus. Manage.*, 7: 24-32.
- Njeru, S.N., 2014. Strategy formulation process in public secondary schools in Embu County. Master Thesis, University of Nairobi, Nairobi, Kenya.
- Ongonge, J., 2013. Relationship between strategic planning and organization's performance in Non-Governmental Organizations (NGOS): A case of actionaid. Master Thesis, University of Nairobi, Nairobi, Kenya.

- Owolabi, S.A. and O.G. Makinde, 2012. The effects of strategic planning on corporate performance in University Education: A study of Babcock University. Kuwait Chapter Arabian J. Bus. Manage. Rev., 2: 27-44.
- PMO., 2014. Ministry of health report. Prime Minister Office in Yemen, Yemen.
- Preacher, K.J. and A.F. Hayes, 2004. SPSS and SAS procedures for estimating indirect effects in simple mediation models. Behav. Res. Meth. Instrum. Comput., 36: 717-731.
- Preacher, K.J. and A.F. Hayes, 2008. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. Behav. Res. Methods, 40: 879-891.
- Qouod, G.A., 2006. The role of strategic management towards improving institutional performance in public organizations in the Hashemite Kingdom of Jordan. PhD Thesia, Cairo University, Giza, Egypt.
- Richard, P.J., T.M. Devinney, G.S. Yip and G. Johnson, 2009. Measuring organizational performance: Towards methodological best practice. J. Manage., 35: 718-804.
- Sharma, S., S. Mukherjee, A. Kumar and W.R. Dillon, 2005. A simulation study to investigate the use of cutoff values for assessing model fit in covariance structure models. J. Bus. Res., 58: 935-943.
- Sioncke, G. and A. Parmentier, 2007. Different approaches to strategy formulations. Total Qual. Manage. Bus. Excellence, 18: 181-187.
- Steiger, J.H., 1990. Structural model evaluation and modification: An interval estimation approach. Multivariate Behav. Res., 25: 173-180.
- Tucker, L.R. and C. Lewis, 1973. A reliability coefficient for maximum likelihood factor analysis. Psychometrika, 38: 1-10.
- Urbach, N. and F. Ahlemann, 2010. Structural equation modeling in information systems research using partial least squares. J. Inf. Technol. Theory Appl., 11: 5-39.
- Wheelen, T.L. and J.D. Hunger, 2012. Strategic Management and Business Policy. 13th Edn., Prentice Hall, New York, USA.,.
- Zaei, M.E., M.H. Yarahmadzahi and A. Abtin, 2013. Strategic management practices in the local authorities: Factors associated with adoption of strategic management practices in the local authorities. Interdiscip. J. Contemp. Res. Bus., 5: 739-74.