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Change Management in Construction Contracting Organizations in Saudi Arabia

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Abstract Organizational change is inevitable and occurs for many reasons. This study reveals, through in-depth interview, change driving forces, change management process, and effective change management critical factors in contractors. "Increased competition," "New laws and regulations," "Organizational growth," and "Unexpected economic crises" are the most significant drivers for contractor organizational changes. When a change is introduced, contractors follow a systematic process in managing the change but with poor planning and implementation. Top management support and a prior clear definition of a change are the most critical factors for successful change management. The research also provides recommendations such as recruiting change management professionals and considering positive and productive changes management critical factors in their change process to help improving their change management.

Keywords Change Management Construction, Change Process, Driving Forces, Organizational Change, Saudi Arabia

1. Introduction

A contractor, like other business organizations, is a system consists of subsystems organized in a certain way to optimize the contractor's business functionality, providing construction services under a particular set of circumstances such as environment, organizational size, technology, and organizational strategy. This system functionality, however, depends on its designed structure and organization and the circumstances. The optimum system functionality will be achieved only when the system has a perfect fit in such an atmosphere. In search of this perfect fit, a contractor continuously adapts his organization to the varying circumstances resulting in organizational changes. Therefore, organizational changes are unavoidable, do not cease to exist, and occur for many reasons. Consequently, it is logical that contractors manage organizational changes to eliminate or mitigate their negative impacts on the organizations, maximize benefits, and minimize consequences.

Change management is essential to contractors' survival and competitiveness, especially those with a geographically dispersed organizational structure and/or multi-disciplinary nature. The construction industry's dynamic business environment obligates contractors to change their organizations accordingly to survive and to restrain competitiveness. In an environment characterized by increasing competition and customer expectations, change management is becoming a necessary instrument and essential determinant of competitiveness [1] [2].

In the construction industry, changes can occur at the project level or to the overall organizational structure [3]. In this study, change means organizational change, which is the alteration of a contractor's internal setting in response to either internal and/or external circumstances. Alhazemi [4] stated, "This variation from the existing state may be triggered purposefully by the organization itself or may be imposed on the organization by the changes in the external environment."

Managing organizational change is systematic, requiring specific procedures in suitable conditions for such change to be implemented [5]. Unfortunately, 70% of organizations fail to achieve their full potential because of poorly executed changes, not because of failures in the proposed execution strategy itself [6]. The initiation of Vision 2030 in 2016 has set the kingdom of Saudi Arabia to witness a significant transitional phase in which organizations, operating in different industries, have to adapt to the new goals [7]. The Vision encourages all industry sectors to be creative, cost-efficient, and environmentally friendly.

In Saudi Arabia, the construction sector contributes about 4.3% to the overall Gross Domestic Product (GDP) and employs over 25% of the total workforce [8]. This conversion necessitates proper organizational change management in contracting firms to accompany the future of the next phase. Nevertheless, the body of literature on organizational change management in the Middle East and North Africa (MENA), particularly in Saudi Arabia, is still lacking studies in organizational change management [9].

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This study is an attempt to understand the current practice of organizational change implementation, determine the driving forces, and critical factors for effective implantation of organizational change to provide possible measures in concentrating the efforts on the critical factors and increasing the awareness of the driving forces.

Therefore, the objectives of this research are to (1) identify the driving forces behind the initiation of organizational change in contractors' organizations; (2) identify the current practices of managing organizational changes; and (3) determine the critical factors contributing to the efficient implementation of organizational change management in contractors' organizations. This study is believed to contribute to the current body of knowledge in change management and contractors by providing an effective change management process that will help minimize the negative impacts of implementing organizational change and optimize the process of change management. It can also help governmental authorities create legislation and regulation to facilitate anticipated required changes by organizations.

2. Literature Review

2.1. Change Management

Dictionary.com defines change as "to make the form, nature, content, future course, etc. of (something) different from what it is or from what it would be if left alone". Then, organizational change means to become different from one state to another in pursuit of the best structure and organization in changing the surrounding environment to optimize its function. Erdogan [5] used the contingency theory to explain and justify the organizational change and stated "organizations obtain high performances when the organizational characteristics fit these contingencies (environment, organizational size, technology, and organizational strategy). Organizations try to avoid misfits which mean loss of performance; therefore, they adapt according to the changing contingencies to maintain effectiveness". However, what is considered the best organization today could be not at a later time due to changes in the prevailing circumstances. Consequently, the organization will impose changes to cope with the new situation. Therefore, changes are inevitable and will continue as long as an organization always search for the best fit for its operation under dynamic and changing circumstances.

Tetteh [11] defined organizational change as a continuous renewing process in the structure, direction, and capabilities of a company to satisfy the external and internal needs initiated by customers. The organizational change comprises of three dimensions: (1) the intensiveness of change implementation; (2) change implementation process; and (3) change components. The term "intensiveness" refers to the period over which an organizational change takes place from development until completion of the process. If a change is initiated in response to an unpredicted emergent situation such as political, social, and/or economic, then change needs to be rapidly implemented. On the other hand, when a particular organization sets a plan to achieve a new vision or to deliver multiple predefined goals, the change process can be implemented gradually or incrementally over a relatively long period. Rodat named the rapid changes "unplanned change" and termed changes that are implemented according to a predefined schedule or plan "planned change" [12]. Erdogan [5] classified organizational changes into developmental, transitional, and transformational. Development is a continual progression of changes. The transition means turning the old state of a particular organization into a new state with a period between the two states. In specific scenarios, the transitional involves the development change. The transformational change occurs when an organization encounters sharp business fluctuations that necessitate a complete business change to rescue the organization from chaos. Leavitt [13] implies that a change to an organization component (tasks, people, structure, and technology) affects the three other components either directly or indirectly.

2.2. Factors Driving to Organizational Changes

Many researchers have asserted that organizational change is typically initiated in response to either internal or external factors. The external factors are technology changes: Advancement of available technologies used in machines and system which will facilitate achieving the ultimate purpose of the organization [14] [15], [16], [17]; Domestic Market Maturation: The volume of a product or service in a local market has been maximized. No further improvements can be made to raise the growth [17]; Changing Customer Needs: The behavior and preferences of the customers' base are shifting to other direction [14] [15] [18]; Increased Global Competition: Continual competition enforces the competitors involved to look forward to re-analyzing the market to survive the challenges [19] [15], [14] [18] [17]; Rules and Regulations: The setting of new legislation which may include rules and regulations that limit or contradict the current firm working system [15] [14]; Political Forces: Wars, borders close, exporting and importing issues and limitations [14] [16]; Social and Cultural Forces: The structure of the society and the relations among the members. Demography of the society may be altered. Assumptions and beliefs may be altered as well [16]; Business Expansion: The supply does not satisfy the demand of a local market [19] [18]; and Labors Market: The fluctuation of the labors market enforces the managers to initiate a change of shortage qualified labors may affect firms' strategy [20].

The internal factors are Organizational Growth When the number of either employees or members increases, or budget growths, more complex hierarchical organization may be needed [21]; Goal Succession: With the ultimate

purpose is achieved, firms may disappear. Thus, a change is essential to survive [21]; New Administrative Behavior: All the issues related to the decision-making process, claims and disputes resolving procedures may result in a move toward a change [22] [21] [14] [20]; Merging and Acquisitions: The firm may adapt to the vision and purpose of the other firm after being merged [21]; Economic Crisis: Unexpected loss, an instant decline in profits, efficiency decrease, all may lead to restructuring the organization [21]; Economical Restriction: The current economic status may develop new constraints in which that firm might restructure itself to adapt to the new limitation [21]; and Group Resistance: Issues in adherence among the different groups. Group Strikes against the management. All of these may insist on the organization to take a step to adopt a different methodology [20].

2.3. Factors of Effective Change Management

Imposing a change in an organization is not easy but somewhat difficult for many constraints. Many researchers have addressed this issue and found through questionnaire surveys, many factors influencing the implementation effectiveness of a change. Employees are one of the factors that impose a significant threat to a successful change through their acts and attitudes. The sources of employees threats are individual readiness to change [20] [23] [25]; individual personal experience [19]; employees' Commitment to change" [25] [23] [26] [27]; employee involvement in the change process [28] [29] [10] [30]. The second source of success factors is communication among employees [28] [25] [3] [29] [30] [26] [11] [27] and communication between management and employees [28] [25] [3]. The third source of successful change is the characteristics of the change plan including a clear definition of the vision for initiating change [28] [25] [30] [26]; development of a realistic change implementation schedule [5] [3] [24] [34]; periodic tracking of the change process [28]; proper selection of the project in which to initiate the organizational change [20]; and forecasting challenges to the change implementation process [28] [25]. The participation, availability, and capabilities of the change management supervisor have also been identified as factors for a successful change [20] [10] [26] [24] [28]. Training employees before change implementation [28] [25] [20] [3] [30] [26] [11]; Leadership techniques [28] [25] [3] [10] [26]; and Support from top management during change implementation [28] have also been identified as factors for successful change.

3. Research Methodology

The methodology employed a structured survey approach, and the survey was filled through intensive face-to-face interviews. The survey consists of six sections. The first two sections sought general information about participants, i.e., experience, job position, education, etc., and their organizations, i.e., annual revenues, number of employees, company age, etc. The third and sixth sections quest information on the impact of driving forces and critical factors qualitatively using Likert scale ranging from 1 to 5, where; 1 = "very low", 2 = "low", 3 = "Moderate", 4 = "high" and 5 = "very high". The fourth and fifth sections consist of questions seeking information on the characteristics associated with change management. Furthermore, the survey was provided in both English and Arabic; an electronic form was provided upon request.

The population consists of 182 Grade 1 and 2 contractors. The Ministry of Municipal and Rural Affairs in Saudi Arabia classifies contractors in several grades: Grades 1 through 5, where Grade 1 is for megaprojects, and Grade 5 is for small and starting projects. The required sample size to obtain a statistically representative sample of the population was computed using Kish's formulas [31], Equations (1) and (2). The maximum allowed percentage of error was set to 10%, and the planning values of the sample population were considered 0.5 to maximize the sample size. Subsequently, the calculated required sample size was found to be 22 contractors.

$$n_o=(p\times q)/E_2 \quad (1)$$

$$n = n_o/(1+n_o/N) \quad (2)$$

Where p is the planning value of the sample proportion; q is the complement of p; E is the desired margin of error; n is the final estimate of the sample size; n_o is the initial estimate of the sample size; N is the population size.

Further analysis was required. Terrell's transformation index was employed to convert ordinal data into indices to measure the level of influence of factors in driving organizational change. The score above 65% determines the criticality of a particular variable [32]. Terrell's transformation mathematical expression is presented in Equation (3).

$$TS=((ARS-LPRS))/PRSR\times 100 \quad (3)$$

Where ARS is the actual raw score; LPRS is the lowest possible raw score; and PRSR is the possible raw score range.

The coefficient of variation (CV) was calculate, equation (4), to measure the level of agreement of the respondents regarding factors driving to organizational change. CV represents the ratio of the standard deviation to the mean. The lesser the value of CV, the more agreement among the responses.

$$CV=(\text{Standard of deviation})/\text{Mean} \quad (4)$$

4. Results and Discussions

A hard copy of the questionnaire was hand-delivered in the last quarter of 2019 to 50 randomly selected construction contractors in Saudi Arabia and invited to participate in the study through direct interviews. A total of 32 contractors agreed to participate in the study,

representing about 18% of the population, which is slightly lower than the 20-30% typical percent in survey studies in the industry [33]. However, the number of participants is higher than the minimum calculated sample size. The data collection process spanned for 3 months, and each interview setting ranged between 25 to 35 minutes.

4.1. Characteristics of Respondents and Organizations

The results indicate that the participants hold college degrees in civil engineering, finance, business management, and industrial engineering occupying top management positions such as operation manager, general manager, executive manager, and finance manager. The majority (81%) of the participants have more than ten years of experience in the construction industry, of which about 50% of them with current employers. The participants have participated and, in some instances, led several organizational changes. The participants are employed, of which 81% of them have been in existence for more than 20 years. The majority (72%) of the contractors employ more than 1000 people, and the majority (about 78%) the contractors generate revenues more than SR 60 million annually. About 40% of the organization are building contractors, 37% infrastructure contractors, and the remaining are industrial contractors. It is concluded that the participants are well informed in organizational change management, and their organizations have been in existence for many years in which they have experienced many changes. Therefore, the participants and their organizations are considered qualified and trustworthy sources of information related to change and change management. Hence, obtaining information from such calibers increases the reliability of the obtained results.

4.2. Organizational Changes

The results indicate that 52% of the contractors change their organizations gradually. An executive director stated that under a healthy and stable environment, no situation mandates urgent or critical organizational change, a gradual organizational change is the optimum long-term strategy to retain business and competitiveness. It seems that those contractors have been enjoying a steady business flow coinciding with the Kingdom Vision 2030.

The results also indicate that about 35% of the contractors have gone through transitional organization change. That is, their organizations turned from an old state into a new state with a period between the two states. Those contractors made the changes for urgent matters or the elimination of potential resistance from employees. On the other hand, only 13% of the contractors have been affected by the newly emerged economic situations, which required a complete change to rescue their organization. These contractors may have gone through severe economic crises in which, as a reaction, they have laid off a large number of employees, changed their tendering procedures, and shifted from their traditional project types.

The contractors have shown various attitudes toward their organizational change plan. About 29% of the contractors focus on people and their roles in the organization. Those contractors may be involved in the labour-intensive building construction. About 19% of the contractors focus on machines and equipment technology. Those contractors are probably involved in projects, e.g., highway and earthwork, which constitute a large portion of their assets. Another 27% of the contractors concentrate their change plans on organization hierarchy and communication methods. It seems that such contractors believe focusing the change plan on the skeleton and its prevelars leads to achieving the desired state. The remaining and 25% of the contractors are customer-oriented and focus change plans on products and services to be delivered.

4.3. Driving Forces for Organizational Change

Organizational changes are inevitable and could occur for internal and/or external reasons. The participants were asked to measure the impact of listed external and internal factors on driving contractors to organizational change on a 1-5 scale where 1 is the least, and 5 is the most impact. The participants provided numerical scoring expressing their opinions on the impact of factors on driving contractors to organizational changes. Terrel's transformation indices (TS) were calculated and presented in Appendix A. Factors with TS 65% and above are critical. The weighted average, the standard of deviation, and CV for each factor were calculated and presented in Table Appendix B.

The results show that the variation of responses on factors driving contractors to organizational change is relatively low, as measured by the coefficient of variation (CV), which is regarded as a good indication implying that there is a relatively high level of agreement among contractors in rating the driving factors. All the 5 critical driving factors have coefficient of variations ranging from 18% to 29%. Comparatively, the remaining 10 driving factors have higher coefficients of variation, ranging from 18% to 64%.

4.3.1. External Forces

The results indicate that all external factors are drivers to organizational changes, but with differing levels of impact. The contractors consider the "Increased competition," the "New laws and regulations," and the "Advancements in technology" as high and critical external factors (Terrell's indices are 79.69%, 78.91%, and 71.09%, respectively) driving contractors to make organizational changes. The high impact and criticality of the "Increased competition" could be attributed to the sharp decrease in the number of construction projects initiated in Saudi Arabia in the last five years. According to one respondent, the types of construction projects have become less varied. Heavy industrial engineering projects are increasing in response to Vision 2030 while building construction is becoming

less and scarce and, hence, competition is significantly increased. The coefficient of variation is 20%, reflecting that the respondents significantly agreed with the ranking of the increased competition variable.

The "New laws and regulations" has the second critical force driving contractors to make organizational changes. Its related coefficient of variation (18%) reflected a high degree of agreement among the individuals surveyed. One respondent explained that once the government establishes new laws and regulations and/or modifies existing ones, contractors are obligated to secure projects and to avoid potential penalties, to adopt them, which sometimes derive organizational change. Another respondent working for a Grade 1 contractor mentioned that for megaprojects, contracting companies usually request loans from banks to finance the work during its lifecycle. In the last few years, the sharp decrease in the number of projects initiated has reduced the overall financial liquidity of contractors; the banks have temporarily paused granting loans. However, for specific types of projects (usually heavy engineering construction projects), banks may lend to the contracting firm after conducting their feasibility study of the proposed project. The interviewee concluded that this shift by banks from granting loans easily to limiting lending has significantly altered the project types and modified the composition of company departments, mostly in the technical and tendering areas.

The "Advancements in technology" is the third-ranked critical force driving contractors to make changes to their organizations. This high rank could be related to how technology is changing, driving contractors to evolve to accommodate these shifts. For example, in the last decade, BIM has been increasingly integrated into the construction industry in Saudi Arabia. A considerable number of recent mega- and high-budget public projects have been designed using BIM-based computer applications. Moreover, BIM technology provides effective coordination plans for stakeholders in the project, replacing the traditional method. Also, smartphones now facilitate the communication process on project sites, reducing overhead. However, the associated coefficient of variation was high (31%), indicating that advancements in technology were less important for a considerable number of respondents.

Labor market issues were not considered critical and were ranked fourth. One respondent commented that the required Saudization of organizations' employees negatively impacted the company's financial and technical performance. He explained that the company was looking forward to empowering Saudi skill attainment and eager to integrate workers into their current business system. However, a significant portion of his Saudi employees demanded high monthly wages (usually triple that of non-Saudi workers), and their performance and technical knowledge were poor. Moreover, if given a better work opportunity outside the company, Saudi workers tended to leave without notice. The situation dramatically hindered the internal functioning of his company and consumed substantial financial resources and time.

Both social and cultural issues were not considered critical and ranked relatively low, with high coefficients of variation (37% for both). According to one respondent, cultural and social issues were only of minimal consideration to the department of business development. He stated that as an example, the integration of females had not changed at all. One respondent emphasized the impact of global and local political conditions on contracting companies, commenting that the: Political state of a certain country directly affects the construction industry. Saudi Arabia has a stable political state. However, since the nearby countries are having wars or revolutions resulting in [an] unsafe work environment, a minor portion of the contracting firms working in the construction industry of Saudi Arabia have been negatively impacted. Undertaking projects in nearby countries include high risk, which eventually [increases] the total cost resulting in a fewer number of projects.

One interviewee stated that Geographical conditions are an important external force. He explained that since organizational changes are continuously taking place, his company began to consider issues related to geography more carefully. Issues such as the expected increase in residents in certain areas, potential commercial growth, and local construction laws have become important in their business development department. Such issues could result in tremendous shifts in the projects undertaken in the future.

Another interviewee revealed that financing issues such as loans and financial guarantee statements have a great effect on their company's system in general and on the project management department in particular.

4.3.2. Internal Forces

Regarding the internal forces, only two were considered critical: organizational growth and unexpected economic crises. These had Terrell's indices of 74.22% and 65.53%, respectively. Organizational growth was ranked first and most critical. When a firm's budget or employee count increases, the process of coordinating resources becomes more complicated. Hence, new departments are essential and must be developed quickly to facilitate the communication process throughout the firm and optimize the use of existing resources. The coefficient of variation was 18%; thus, respondents agreed that organizational growth was of high importance. Goal succession was also evaluated as critical and ranked second on the list of internal forces. New goals are essential since they motivate employees. Setting new goals, targets, and objectives often require changing the current work system of a firm to facilitate goal achievement.

The three lowest-ranked factors were changes in administrative behavior, employee resistance, and mergers and acquisitions. All had very high coefficients of variation, around 65%, implying significant disagreement among the respondents. One respondent stated that the authorities protect contracting firms in Saudi Arabia against groups'

strikes; hence, he evaluated the effect of group resistance to be very low. Moreover, when his organization initiates a change, everyone must obey whether or not they are satisfied. Anyone who obstructs the change implementation process is replaced. The respondent commented: "We have a large number of unemployed engineers in Saudi Arabia who are willing to start work immediately."

Regarding changes in administrative behavior, one respondent who had 25 years of experience in HR management stated that a considerable number of private contracting companies are family businesses. Some are classified as Grade 1 or 2 organizations. In firms owned by a single family, it can be challenging to manage the business internally. He explained that conflicts appear suddenly and periodically, such as when selling company assets, there are deaths in the family, and money is borrowed from banks. Furthermore, top management (i.e., the family) may have no professional career experience, which significantly affects the overall decision-making process.

4.4. Process of Organizational Change

The results indicate that in the event of an organizational change, contractors apply a structured system that consists of change plan preparation, creation, content development, and implementation. The results indicate that about 53.13% of the contractors engage all employees in the planning phase of the change process, and, unfortunately, only 43.75% of contractors convey to employees the motivation behind organizational changes.

The process of change management commonly consists of 4 key-stages: (1) change-plan preparation, prepared by either internal committee formed by top management or by an external hired consultant; (2) change-plan creation; (3) change-plan content; and (4) change-plan implementation. Change-plan creation can involve numerous activities such as identifying required resources before change plan and conducting a risk assessment. The sequential stage is the change-plan content, which aims to communicate what has been done in the change-plan (i.e., defining responsibilities and authorities, establishing cost/time baseline, etc.) creation stage to stakeholders through documents. The stage at which proposed and created plans are being executed is called change-plan implementation. Before initiating a change, firms usually conduct specific assessments of the situation to make go/no-go decision for the change. The force field analysis model of Lewin created in 1951 can be considered a powerful tool such that for any situation or task, there are two opposing forces; driving forces and restraining forces. When the situation is examined, both driving forces and restraining forces are identified and weighted. The equilibrium is accomplished when the sum of driving forces equals the sum of re-straining forces.

4.4.1. Change Plan Preparation

The results indicate that the majority of contractors (93.75%) create internal committees to prepare their organizational change plans. These contractors present high confidence in their employees to prepare change plans. A considerable number of contractors justified their dependence on their employees and stated that they trust the capabilities of their employees, employees become more committed, less resistant to change, and less costly than an external consultant. Very few (about 19%) procure external consultants' services to support their internal committees in the preparation of change plans. Those contractors believe augmenting internal committees with external consultants add value and eliminates bias. Only two contractors use external consultants to prepare change plans.

4.4.2. Change Plan Creation

The majority of the contractors (87.5%) indicate that organizational change teams, in consultation with senior leaders, define the goals and vision of a proposed change. Since defining the goals and vision of a change sets the baseline for a change, it was not surprising that all contractors reported taking this step. The vast majority, 84.375%, engage senior leaders in the implementation process. The respondents reported that top management, usually represented by either the executive director or general director, justify and imitate organizational changes. Of the total, 81.25% reported that financial and human resources are identified before planning the change. However, most respondents told the researchers that resources were only roughly estimated, with no exact details or alternative scenarios for risky situations. This behavior reflects the minimal effort often expended by contractors when planning changes. Also, 81.25% of respondents define the responsibilities of the workers and staff concerning the change. According to one respondent with more than 25 years of experience, assigning responsibilities to individuals involved in any process is critical to significantly reduce conflicts, to improve progress, and reduce expenses.

About (59.375%) of the participants stated that they perform risk assessments for the most essential, and, in most cases, risks are identified through verbal conversations or negotiations among top management and change supervisors (usually department managers). The results indicate that contractors do not conduct detailed feasibility studies, sensitivity analyses, or exploration of multiple scenarios. The results indicate that only about 42% of the contractors assess the readiness of the organization and the employees for the change and identify areas of resistance within the organization. Only 50% of the contractors identify at the early stage of the change planning people or groups who will eventually be impacted by the change. It seems that contractors are keen to change, but they do not have the knowledge to do so. The careless assessment of various aspects of a change reflects the weakness of organizational change management. One respondent attributed this weakness to the fact that contractors are more

concerned about construction projects' problems or matters, so they spent most of their managerial and technical efforts on the project side of the business.

4.4.3. Change Plan Content

It was expected that the change plan content to be written and include topics related to change activities, responsibilities assignments, activities durations and schedule, estimated cost, and setting milestones. Surprisingly, a significant portion (more than 90%) of contractors usually do not develop documents or on-paper change plans except for costs and payments to track and monitor. Around 60% of the contractors stated that change plan contents are assignment distribution to designated individuals. , about 43.75% develop lists or agenda items for process activities, about 46.87% roughly estimate activity duration in absolute values, only 53.13% set activity start and end dates, and 56.25% set major milestones or establish documents reflecting a detailed baseline computed based on calculations and forecasts for tracking purposes. They discuss issues verbally and informally and at the change initiation stage. Contractors do not have procedures to plan changes. One respondent from a firm classified among the top 20 contracting firms in Saudi Arabia reported that since the construction industry is project-based, issues related to the organization garner minimal attention and are significantly less frequently addressed than are those related to actual construction projects. In part, his statement explains the poor performance of these contractors in planning for organizational change.

4.4.4. Change Plan Implementation

The planning for a change, as observed above, is simple and informal, and consequently, the implementation of the plan is also simple. The majority of the contractors consider each department manager a change agent/supervisor, and his subordinates fall within his responsibility. The change agent has to ensure that the change plan is fulfilled and applied according to top management (in most cases, executive directors). Then, change agents report directly to top management in frequent meetings. At the implementation stage, senior leaders manage and track change progress. Besides, about 53.13% of the contractors monitor and track the change process through a specified formal follow-up procedure. Approximately 60% of the contractors do not provide training, instructional sessions, and/or communication channels for top management and employees. Almost all contractors do not give high consideration to interdepartmental communication. Only two interviewees emphasized interdepartmental communication and its importance to facilitate the information exchange process and to optimize the change progress highly. Furthermore, 18.75% stated that they employed new leadership techniques or altered their existing methods of management.

4.5. Effective Change Management Successful Factors (Barriers)

The participants were asked to measure the impact of listed factors depriving organizational change on a 1-5 scale where 1 is the least, and 5 is the most impact. The participants provided numerical scoring expressing their opinions on the impact of factors on organizational changes. The weighted average for each factor was calculated, and then it was divided by the upper scale of the measurements in what is referred to as the "Terrel's Transformation Index" (TTS) therefore the level of the impact of factor besides Terrel's transformation index were calculated and presented in Appendix C. Factors with Terrell's indices above 65% are critical [33]. Appendixes C and D present the computation procedure for obtaining Terrell's transformation values. The success or failure of change management centers around five categorical factors: Employees, Communication, Change Agent, and Planning and Scheduling, as shown in Appendixes C and D.

4.5.1. Employees

Although employees are the heart of any organization, the contractors consider their impact on the success of change management moderate and not critical. The results indicate that "Individual's personal experience" and "Employee's commitment to a change" are critical factors, and the contractors consider their impact on the effectiveness of change management as moderate. The factor coefficients of variation in this category range from 23% to 37%, indicating that contractors agree with the moderate impact of those factors on the effectiveness of change management. It seems that contractors do not give great consideration to employees when they introduce an organizational change. A considerable number of interviewees stated that changes are implemented regardless of employees' reactions.

4.5.2. Communications

The contractors consider the impact of this category consisting of two factors on the effectiveness and success of change management critical. However, the results indicate that contractors consider the impact of "Communication between management and employees" on the effectiveness of change management as high and critical, but the "Communication among the employees" as moderate and not critical. When introducing a change, the contractors use an approach dependent on a communication channel, transmitting instructions from management and reports from change Agents. This observation explains the high importance of this critical factor to the success of change management. Unfortunately, most of the contractors agree on these assessments, as shown in the narrow-calculated coefficient of variance. Communicating across departments is a key determinant of successful change implementation. One respondent commented on how communication is a critical factor in ensuring an effective change

implementation process. When an organization goes through a major change, it is important to connect company departments to ensure that they are aligned; this is accomplished by providing effective communication channels. Doing so facilitates updates being delivered in a timely fashion across all departments, as well as expertise exchange and information synchronization. Most companies focused on connecting management with lower-level employees, unintentionally neglecting to connect different departments in the organization.

4.5.3. Change Agent/Supervisor

The contractors asserted that the change Agent is critical with a high impact on the effectiveness of the change management. The contractors stated that the "Capability of a change agent/ supervisor" is critical and has a high impact on change management's effectiveness. The CV of this factor is 21% reflecting a high level of agreement among the contractors concerning its impact on the effectiveness of the change management. It seems that the change management approach that contractors apply mandates them to emphasize the importance of the Agent's capabilities for successful change management.

The contractors also attach the success of change management to the "Extent to which a change agent/ supervisor is participating in the change process." This factor is considered critical and has a moderate impact on the effectiveness of change management. Interestingly, the "Availability of a change agent/ supervisor" is declared not critical but has a moderate impact on change management's effectiveness. It seems that contractors believe they have sufficient capable agents in their organizations. One respondent commented that providing an unbiased committee or team for developing, running, and tracking the change process is essential for a successful change. A balanced change implementation process is more likely to be effective because it facilitates a friendly work environment in which employees are mentally and physically motivated to initiate change. Moreover, unbiased teams will inspire trust among employees, one of the top factors ensuring effective workforce production.

4.5.4. Planning and Scheduling

This category is considered the most critical for the effectiveness of change management. The criticality of this group is natural as the planning stage of any proposed change is the foundation upon which the change depends. All its fundamental factors are critical and have a high impact on the effectiveness of change management. The contractors consider impacts of the "Developing a realistic change implementation schedule," the "Proper selection of a project in which the organizational change process is going to be initiated" and "Having a clear definition of the change before starting the change implementation" on the effectiveness of the change management are high. Dobrovič and Timková [5] argued that when a change is planned carefully and the time variable is taken into account, it is more likely to be successful. The contractors also consider the impact of the "Forecasting challenges that may occur during the change implementation process" on the effectiveness of change management is moderate. We believe this factor has been underrated despite its importance to the success of implementing the desired change. Forecasting future challenges is essential to identify constraints and create solutions for a smooth ride through the change implementation.

4.5.5. Top Management

The results indicate that top management is the second most critical dimension for ensuring successful change management. Top management's support during the change implementation process is ranked first and considered the most critical. Changes often replace existing beliefs, culture, and work systems with which individuals are familiar and comfortable. Hence, when changes are applied, employees may feel anxious and resistant, increasing the level of opposition. Thus, top management has a significant impact on change management's success through verbal and physical supports, such as kind messages or by monetary compensation or work breaks, to all employees involved in the change. This behavior will reduce resistance and decrease the likelihood of rejection behavior. An interviewee indicated that addressing employees' fears and concerns have been top management's focus for the last five years because the organization's overall production has been significantly enhanced once they begin to focus on employees.

Communication between top management and employees was ranked fourth, supporting this statement. Moreover, the associated coefficient of variation of the first factor is 17%, indicating a high level of agreement among the respondents and reflecting the significance of the factor. The contractors also consider the impact of the "Tracking the change process performance periodically" on the effectiveness of change management high for monitoring and controlling. The contractors are collectively (CV is 15%) consider the impact of the "Leadership techniques" on the effectiveness of change management between moderate to high.

5. Conclusions

Contractors in Saudi Arabia regularly engage in organizational changes in response to internal critical drivers, including "Goal Succession" and "Organizational Growth"; and external critical drivers, including "Advancement of technology," "New laws and regulations," and "Increased competition."

The contractors are conscious of success factors for effective change management and manage changes through a systematic approach. They form change management teams consisting of department heads to plan and execute changes under the direction of senior leaders, mostly the

executive manager. However, the planning is performed between the top management and separate department heads with no documentation except for associated costs and payments. As a change is being executed, top management tracks the cost and time performance not based on formal or predefined procedures, but rather by checking on milestones according to a general baseline. Commonly, implementation processes employed by contracting firms take the form of frequent physical reporting by change supervisors (mostly department managers) to top management regarding the flow of the process and including any recent updates. In general, change management is considered lousy and ineffective. Hence, contractors' performances are not improving.

We believe that contractors are to recruit change management professionals to plan and implement changes. Simultaneously, contractors are advised to improve their change management by considering the positive and productive change management critical factors in their change process with great emphasis on factors related to employees and communications. Change management affects the people touched by organizational change. Whether an organization is fixing a problem or taking advantage of a new opportunity, a contractor is advised to ensure that the whole team embraces top management's new direction and adopts and properly learns to use a new system and process. Face-to-face communication methods such as conferences, periodical meetings, seminars, and interactive sessions, along with traditional methods like telephone, fax, and email, are excellent tools to enhance connections between top management and employees.

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Appendix

Appendix A. Terrell's Indices Computation of External and Internal Forces

Forces		Raw Score	Lowest Possible Score	Score Range	TS	Rank	Decision
External	**EX1:** Advancement of the technology	123	32	128	71.09	3	Critical
	EX2: New Laws and regulations	133	32	128	78.91	2	Critical
	EX3: Domestic market maturation	103	32	128	55.47	7	Not Critical
	EX4: Increased competition	134	32	128	79.69	1	Critical
	EX5: Labour market issues	114	32	128	64.06	4	Not Critical
	EX6: Changed customers' needs	111	32	128	61.72	5	Not Critical
	EX7: Social issues	91	32	128	50.00	8	Not Critical
	EX8: Cultural issues	105	32	128	46.09	9	Not Critical
	EX9: Business Expansion	96	32	128	57.03	6	Not Critical
Internal	**IN1:** Unexpected crisis	112	32	128	62.50	3	Not Critical
	IN2: Employees resistance	72	32	128	31.25	5	Not Critical
	IN3: Merging and acquisition issues	72	32	128	31.25	5	Not Critical
	IN4: Changed administrative behaviours	82	32	128	39.06	4	Not Critical
	IN5: Goal Succession	116	32	128	65.63	2	Critical
	IN6: Organizational Growth	127	32	128	74.22	1	Critical

Appendix B. CV of External and Internal Forces

Forces		Level of Impact					Scores Mean	Standard Deviation	CV
		5	4	3	2	1			
External	Advancement of the technology	9	14	5	3	1	3.84	1.05	0.27
	New Laws and regulations	11	16	4	1	0	4.16	0.77	0.18
	Domestic market maturation	5	10	7	7	3	3.22	1.24	0.38
	Increased competition	12	16	2	2	0	4.19	0.82	0.2
	Labour market issues	9	9	9	1	4	3.56	1.29	0.36
	Changed customers' needs	5	11	11	4	1	3.47	1.02	0.29
	Social issues	1	12	9	6	4	3.00	1.11	0.37
	Cultural issues	0	9	14	4	5	3.32	1.02	0.36
	Business Expansion	2	15	7	6	2	3.28	1.05	0.32

Forces		Level of Impact					Scores Mean	Standard Deviation	CV
		5	4	3	2	1			
Internal	Unexpected Economic crisis	6	16	4	4	2	3.63	1.13	0.31
	Employees resistance	1	5	6	9	11	2.25	1.19	0.53
	Merging and acquisition issues	2	6	4	9	8	2.25	1.44	0.64
	Changed administrative behaviours	3	10	1	9	6	2.56	1.56	0.61
	Goal Succession	3	16	8	4	1	3.50	0.95	0.27
	Organizational Growth	7	18	6	1	0	3.97	0.74	0.29

Appendix C. Terrell's Indices Computation of Change Management Factors

Category	Change Management Factors	Raw Score	Lowest Possible Score	Score Range	TTI (%)	Decision
Employees	Individual's readiness to change.	111	32	128	61.72	Not Critical
	Individual's personal experience.	116	32	128	65.63	Critical
	Employee's commitment to change.	121	32	128	69.53	Critical
	The extent to which employees are involved in the change process.	108	32	128	59.38	Not Critical
				Average TTR	**64.07**	Not Critical
Communication	Communication among the employees.	114	32	128	64.06	Not Critical
	Communication between management and employees.	129	32	128	75.78	Critical
				Average TTR	**69.92**	Critical
Change Agent	The extent to which a change agent/ supervisor is participating in the change process.	120	32	128	68.75	Critical
	The capability of a change agent/ supervisor.	130	32	128	76.56	Critical
	The availability of a change agent/ supervisor.	113	32	128	63.28	Not Critical
				Average TTR	**69.53**	Critical
Planning and Scheduling	Tracking the change process performance periodically.	125	32	128	72.66	Critical
	Defining change vision clearly before starting the change implementation.	130	32	128	76.56	Critical
	Developing a realistic change implementation schedule.	133	32	128	78.91	Critical
	Proper selection of a project in which the organizational change process is going to be initiated.	133	32	128	78.91	Critical
	Forecasting challenges that may occur during the change implementation process.	116	32	128	65.63	Critical
				Average TTR	**74.53**	Critical
Top Management	Leadership techniques.	118	32	128	67.19	Critical
	Top management support during the change implementation process	138	32	128	82.81	Critical
	Training and teaching the employees before starting the change implementation.	114	32	128	64.06	Not Critical
				Average TTR	**71.35**	Critical

Appendix D. Ranking of Change Management Factors

Group	Change Management Factors	Level of Impact					Scores Mean	Standard Deviation	RII	Rank	CV
		5	4	3	2	1					
Employees	Individual's readiness to change.	6	15	2	6	3	3.47	1.27	0.69	12	0.37
	Individual's personal experience.	3	18	7	4	0	3.63	0.83	0.73	9	0.23
	Employee's commitment to change.	7	16	4	5	0	3.78	0.97	0.76	6	0.26
	The extent to which employees are involved in the change process.	4	13	7	7	1	3.38	1.07	0.68	13	0.32
Communication	Communication among the employees.	3	19	4	5	1	3.56	0.98	0.71	10	0.28
	Communication between management and employees.	6	22	3	1	0	4.03	0.65	0.81	4	0.16
Change Agent	The extent to which a change agent/ supervisor is participating in the change process.	3	22	4	2	1	3.75	0.84	0.75	7	0.22
	The capability of a change agent/ supervisor.	9	18	4	0	1	4.06	0.84	0.81	3	0.21
	The availability of a change agent/ supervisor.	5	13	8	6	0	3.53	0.98	0.71	11	0.28
Planning and Scheduling	Having a clear definition of the change before starting the change implementation.	12	12	6	2	0	4.06	0.91	0..81	3	0.22
	Developing a realistic change implementation schedule	14	12	3	3	0	4.16	0.95	0.83	2	0.23
	Proper selection of a project in which the organizational change process is going to be initiated.	11	16	4	1	0	4.16	0.77	0.83	2	0.16
	Forecasting challenges that may occur during the change implementation process.	8	10	9	4	1	3.63	1.10	0.73	9	0.30
Top Management	Leadership techniques.	5	18	5	2	2	3.69	1.03	0.74	8	0.15
	Top management support during the change implementation process	15	12	5	0	0	4.31	0.74	0.86	1	0.17
	Training and teaching the employees before starting the change implementation.	5	16	4	6	1	3.56	1.08	0.71	10	0.30
	Tracking the change process performance periodically.	10	13	6	2	1	3.91	1.03	0.78	5	0.26

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