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A Strategic Control Model by Emphasis on the Green Approach

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Abstract
The research explores a strategic control model by the emphasis on the green approach based on Simons' levers of control framework. Special consideration is paid for assessing how much green is the organization. The purpose of this paper is to design a strategic control model for Audit institute of social security organization of Iran. The data is gathered from social security organization and Audit institute of social security organization from Jan 2018-19. The research methodology is quantitative method. Five hypotheses were raised at this study. For collecting the required data a standard questionnaire was distributed among 52 managers of the organization and the collected data was analyzed with smart-PLS software. Levers of Control of Simons' framework provide the theoretical background for strategic control. The results demonstrate that all four levers of control are positively associated with strategic control; while the strategic control, has a positive effect on latter variable actions. For investigating green approach, the questions were considered inside of each lever of control to be measured. The results suggest that the green approach is implemented at this organization and has a positive environmental impact as a result. The results suggest that all levers of control have an approximately equal impact on strategic control, while the strategic control has a positive impact on actions. So, this means that for reaching the desired outcome, we should pay enough attention to the strategic control of our organization and its construct while it is a necessity to take actions after assessments.

Key words: Levers of control, Strategic control, Actions, Green Approach.

Introduction

In recent years business environment has become more complex than ever and business environment facing with rapid changes in customers, technologies and competition while organizations need to constantly renew themselves to survive and prosper (Danneels, 2002; Henri, 2006). Decision making concerning strategic changes plays an enormous role for overcoming environmental changes that may have significant affect on firm's performance

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(Nyamori, et al. 2001). As a result, it is important to discover the variables and the relationship among them to face the complicated environment besides implementing internal controls. The control needs of the current environment are significantly different from those developed in earlier periods. Therefore, it has been argued that improvements are urgently required (Nixon and Burns 2005).

Control is a basic and essential element of any organization. The very act of organizing implies control (Child, 1973; Tannenbaum, 1962). Organizing brings staff together in an ordered arrangement to achieve desired outcomes. Control activities are part of the basic structure and design of any organization. Control is a dynamic process. Daft and Macintosh (1984) declare that "Control involves target-setting, activity monitoring, and deficiency-correcting activities".

Control issues vary according to hierarchical level (Anthony and Dearden, 1980; Daft, 1983). Organizational control includes the activities used to achieve desired organizational goals and outcomes. Control activities include planning, motivation of employees, and coordination across departments (Barrett and Fraser, 1977). More particularly, organizational control can be conceptualized as a three stage cycle: first, planning a target or standard of performance; second, monitoring or evaluating activities designed to reach that target; and third, executing corrections if targets or standards are not being reached (Dunbar, 1981; Giglioni and Bedeian, 1974; Lorange and Scott Morton, 1974; Ouchi, 1977; Todd, 1977). The idea that control is used to achieve organizational goals and outcomes and the concept of control process that consists of a three stage cycle, is shared across the fields of organization theory, accounting, and business policy.

The main purpose of this study is to measure four levers of control framework on strategic by considering green approach. This study makes several contributions to the literature. First, it is generally well-accepted that control systems are inter-dependent (Milgrom and Roberts, 1995); however, it is unclear whether they are complements or substitutes. This study finds that when firms underline all levers of control have equal influence on strategic control. Also, the use of performance measures in the interactive system with the use of performance measures in the diagnostic system's associated with the use of performance measures in the diagnostic system.

The evidence suggests that the interdependencies are complementary. Thus, this study provides empirical evidence on the relations among the control systems in the levers of control framework and contributes to growing body of work that investigates relations among control systems (e.g., Anderson and Dekker, 2005; Kennedy and Widener, 2006).

Second, not withstanding a line of research that has investigated the alignment between strategy and a firm's management control systems (Ittner and Larcker, 1997; Lang-Weld-Smith, 1997), Lang-Weld-Smith (1997) concludes that knowledge is limited since studies only investigate single facets of a multifaceted construct. Moreover, Chenhall (2003) argues that accounting studies may suffer from outdated strategy constructs. This has spurred studies to incorporate additional strategic facets such as strategic resources (see e.g., Henri, 2006) and competitive advantage (Widener et al. 2006).

Finally, business are competing with complex, rapidly changing, and knowledge-intensive business models driving the need to better understand the role of performance management systems and how they can better meet managerial needs. A control system can function in different roles (i.e., either interactively or diagnostically). This study sheds insights on the role of the actions and finds generally that internal and external strategic factors are associated with diagnostic and interactive controls besides of other two levers of control. These results add to a growing body of literature that investigate how the role of control systems differs (e.g., Abernethy and Brownell, 1999; Bisbe and Otley, 2004; Henri, 2006).

The main purpose of strategic control at audit institute of social security organization is reaching more transparency and omitting all vague and ambiguity at strategic level and simultaneously at operational level. Lack of transparency and strategic control system has caused many problems that result in economic and social damages. Due to specific environment of Iran and lack of localized strategic control models for accounting organizations, it was an exigency to design a strategic control model.

The novelty of our study is considering actions as the latter variable of strategic control. As the consequences of controls are in vague after implementing, to highlight the outcome, there is a need for following up the ongoing of what is happening next. So, we decided to consider it as a separate variable by considering its different functions and situations that might happen.

This study is organized as follows. Section "Literature review" provides an overview of the control systems that comprise the different management control systems and levers of control framework and develops hypotheses for the management control system and strategic control and their inter-dependencies. Section "research methodology" is in one part that measures four levers of control by use of Structural Equation Modeling which develops five hypotheses for the drivers of the strategic control. Section "Methods" discusses the research method and its measurements. The analyses and results are presented in Section "Results". Finally, conclusions, limitations, and recommendations are discussed in Section "Conclusions".

Literature Review

Anthony (1965) defines management control as the "process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives". Control is, besides planning, organizing and directing, the fourth function of management. It is done through management control systems (MCS), which are defined by Malmi and Brown (2008) as "all the devices and systems managers use to ensure that the behaviors and decisions of their employees are consistent with the organization's objectives and strategies, but exclude pure decision-support systems''.

Otley (1994, p.294) demonstrates that the activity of management control encompasses parts of both strategic planning and operational control. Undeniably, it is debatably present upon the manager to be continually modifying strategy to fit the environment being faced, and to monitor the executions of corrective actions on an operational level.

The purpose of the management control system (MCS) is to provide information useful in decision- making, planning, and evaluation (Merchant and Otley, 2006). Illustration of the three organizational levels defined by Parsons (1960), Anthony (1965), Anthony and Dearden, (1980) proposed that organizations need three forms of control: operational, managerial and strategic. Operational control takes place at the bottom of the organization and guarantees that specific tasks are carried out efficiently. Managerial control takes place at the middle management level and is the process that middle managers make sure that the departmental activities carry out organizational strategy. At the top level of the organization, control is implemented through strategic planning: the process of deciding goals and choosing strategies to achieve those goals. At this research, we aim to focus on strategic control.

Strategic control is conceptualized as a feed forward process compensating for the selectivity of planning (Scheyogg and Steinman, 1987). The momentum for thinking about strategic control arose out of practical experience. Frequently companies had severe difficulties responding in a well-timed manner to planning failures and unforeseen developments, due to their deficiency of information about the ongoing validity of the chosen strategic plan. While dissimilar in some

aspects, the majority of commentators would agree with the definition of strategic control offered by Schendel and Hofer (1979, p. 18) as:"Strategic control focuses on the dual questions of whether: (1) the strategy is being implemented as planned; and (2) the results produced by the strategy are those intended.” This definition adverts to the traditional review and feedback stage which establishes the last step in the strategic management process. Equivalent views can be found in Glueck and Jauch (1984), Hax and Majluf (1984), Kohler (1976), Steiner (1969), Wheelen and Hunger (1983).

The majority of management thinking about control is feedback-oriented. It takes into attention the comparison of actual performance with predetermined standards to see whether or not plans have been appropriately carried out. Corrective actions should be taken if deviations from the standards of performance have taken place. If this traditional point of view is pursued, the management process begins with planning. These plans describe the intended course of action, which is executed through organizing, staffing, and directing. As a final point, control measures the results and provides feedback to specify whether or not the results comply with the determined course of action. Consequently, managerial planning conducts the control function by defining its standards of performance, the control objects, and the time schedule for control activities. This drawback of delayed response may be mitigated by checking additional frequently for possible deviations from planned performance. Without discharging the value of "adaptive control" (Rowe and Carlson, 1974. p. 14), it should be obvious that simply checking results more frequently does not prevail over the post-action character of that control procedure (Ishikawa and Smith, 1971). Even the earliest achievable information about deviations may come too late (Koontz and Bradspies, 1972).

The link to strategy is obscure, but powerful. Measures that are aligned with strategy not just provide information on whether the strategy is being executed, but as well encourage behaviors consistent with the strategy (Kaplan and Norton, 1992). Malmi and Brown (2008) separated planning control in long range planning and action planning. Planning is strictly related to cybernetic controls in the way that it provides the goals to be achieved over the short and long term.

Anthony (1965, 1988) demonstrates that strategies are taken as given and management control systems motivate, monitor and report on their execution. Another effort to pair strategy and management control can be seen in the concept of strategic control. Strategic control has been identified as a system to assess the relevance of the organization’s strategy to its goals, and when discrepancies exist, to emphasize areas that are in the need for attention (Lorange and Scott Morton, 1986). Although most strategy theorists correctly recognize that strategy formulation and strategy implementation are interrelated (Andrews, 1987). Researchers still tend to conceptually separate strategy implementation from strategy formation. This division has caused to a lack of understanding of the nature of management control. Separating strategy formulation and implementation result in a non-natural dichotomy that equate strategic planning with formulation and management control with execution. Many policy studies relates to the formulation of strategies to reflect environmental needs and organizational strengths (Hofer and Schendel, 1978). Control becomes important when new strategies have to be executed. The role of management control in strategy execution is defined by two issues: first, Level of strategy that is considered as corporate and business level; and the second, executing tools that is considered as structural reorganization, leadership style and organizational control systems (Daft and Macintosh, 1984).

The management control systems accomplish strategy execution by directing and controlling resource inputs, influencing the transformation process, and monitoring departmental outputs

(Daft and Macintosh, 1984). The strategic plan is formulated at the organizational level and is used to formulate a long-range financial plan for the upcoming 5 years. Formal control system elements put more emphasis on planning and measurement, the control of inputs and outputs, and not that much on corrective action or coordination (Daft and Macintosh, 1984). The key to using the management control systems for the execution and evaluation of organizational strategy is linkage. Upper level managers and department level managers must discuss and be aware of the relationship between organizational strategies and departmental activities. In order to execute strategic plans, the strategic and 5-year plans must be communicated to managers throughout the process of formulating budgets, developing performance appraisal systems, and compiling statistical reports. Managers who utilize formal systems to control departmental activities must be informed of company strategic plans and their department's strategic role; input and output targets while monitoring devices can conduct departmental work (Daft and Macintosh, 1984). Feedback and corrective action are partly accomplished through the performance appraisal system and policies and procedures and at our research we have supposed corrective actions as a part of actions' variable.

Chenhall (2003, p. 130) declares that while refinement of concepts and measurement is common in other social sciences, "it is not part of the management control systems' research tradition to spend more time on developing robust measures of the elements of management control systems, particularly where there is ambiguity in the meaning of constructs". Based on resource based viewpoint, Henri declares that the most important concept which should be considered at strategic controls is empowerments of organization, while there should be a dynamic and simultaneous use of diagnostic and interactive levers of control; and empowerments of the organization ends in organizational performance (Henri, 2006).

Levers of Control

Simons (1987, 1990, 1991, 1994, and 1995) conceptualizes a new framework with four levers of strategic control: beliefs systems, boundary systems, interactive control systems and diagnostic control systems. In this paper, the strategic control is considered in relation to Simons' (1995) strategic control framework known as levers of control by emphasis on diagnostic, interactive, beliefs, and boundary controls.

Simons (1995) supposed that senior managers may utilize different aspects of the control system to focus on four key levers that are critical to the successful execution of strategy. Core values, which impact belief systems, and interactive control systems, which control strategic uncertainties, are expressed as creating positive and inspirational forces. Boundary systems, which control risks, and diagnostic control systems, which control critical performance variables, construct constraints and ensure acquiescence with rules. Simons (2000) states that reliance on the beliefs, boundary, and diagnostic systems can ease the efficient use of management attention. The interactive control system is designed to assist the organization manage those issues that have larger information insufficiencies and therefore, are more costly to the firm in the way consume the managerial attention (Galbraith, 1973).

Interactive controls provide top managers with a mechanism to discover the new strategic opportunities. As strategy emerges through the interactive control structure, objectives and critical success factors should be redefined and conveyed all over the organization. Thus, interactive controls become effective through a support structure (Chenhall and Morris, 1995). Within the levers of control framework, Weidner posits that the interactive use of performance measures affects the diagnostic use of performance measures since the latter provides the

essential structure that enables the interactive control system to be effective (Weidner, 2007). As the organization adjusts to the strategy that emerges through the interactive system, the diagnostic performance measurement system must also adjust in order to reflect the firm's new strategic position and significant success factors.

Firms use diagnostic control systems to manage both strategic uncertainty and risk (Galbraith, 1973; Simons, 2000). In order to reduce the information processing load for top managers, decision rights can be delegated throughout the organization (Galbraith, 1973). Performance measures placed in a diagnostic control system then give direction to these empowered employees, which help make sure that their behaviors are aligned with organizational goals. Moreover, diagnostic controls ease information processing through the provision of exception reporting. In the presence of uncertainty and risk, the need to process information can become important. Galbraith (1973, p. 15) suggests that just the once firms have implemented goal setting their subsequently step is to either "reduce the need for information processing" or "increase the capacity to process the information". One way to increase information processing capacity is to employ in a vertical information system (Galbraith, 1973), like an interactive control system. Information is spread vertically all over the organization to operating managers and lower-level employees, which stimulate action, attention, and dialogue. Interactive control system is described by Simons (1995, p. 102) as: "By choosing to use a control system interactively, top managers signal their preferences for search, ratify important decisions, and maintain and activate surveillance throughout the organization. All subordinate managers will engage in the interactive dialogue to the extent demanded by their position. Thus, the system may remain interactive down three or four levels in the organization. . . ".

For using a performance measure diagnostically it should be possible to set a goal, measure outputs, and compute variances (Galbraith, 1973; Simons, 2000). This entails that the properties of the measures should be stable, with low variation. Managers can evaluate operations, standardize processes, and implement procedures to ensure safety and quality (Simons, 2000). Measures of internal strategic factors such as safety, quality, internal innovation, and cost of inputs lead to being captured in a more routine type of performance measurement system that let managers to use these measures diagnostically, look for exceptions, and gather feedback information. Additionally, there are measures accessible to provide managers with information as regards the risk that assets may become impaired. From the other side, measures of competitor tactics, customer switching costs, and new technology usually have larger variation.

Environmental uncertainty, will cause measures to be less accurate and thus noisier (Banker and Datar, 1989), therefore not tending to use as a diagnostic control. Whereas these measures might ease discussion among top management and lead to an interactive use, they might not be stable or routine adequate to use diagnostically. Empirical research shows that interactive systems are effective in firms confronting different types of risk and uncertainty, as well as competitive, market, and technological risk and environmental uncertainty (see e.g., Bisbe and Otley, 2004; Simons, 1991). Bisbe and Otley (2004) demonstrate that firms that confront high degrees of innovation risk and uncertainty have higher firm performance when a control system is used interactively. Simons (1991) finds that uncertainties associated with product technology, new product introductions, and market competition are linked with the use of interactive controls. Additionally, Simons (2000, p. 261) declares that "interactive control systems are essential to monitor competitive risks in a culture that could potentially create barriers to impede the free how of information about emerging threats and opportunities". Abernethy and Brownell (1999) discover that the interactive use of budgets improves performance in hospitals facing strategic change.

An interactive control system is a double loop learning system, which is a more complicated type of learning tool than is a single loop system (Argyris, 1977). The purpose of interactive controls is to augment managers' abilities to anticipate and efficiently manage future uncertainties (Simons, 2000). So far organizational learning is predicated on learning from past events (Levitt and March, 1988). Levitt and March (1988) declare that the deficiency of experience and complexity of a given situation can reduce learning. As interactive systems are anticipated to engage managers in scanning and seeking behaviors that might result in emergent strategy, interactive systems probably help managers handle situations that are high in complexity and with the ones that the managers may have little experience.

Simons (1990, 1991, 2000) particularly indicates the interactive system as a facilitator of organizational learning. It is a system that firms implement to facilitate the information processing demands and ease the learning process by using vertical channels throughout the organization (Galbraith, 1973). The control system shapes new strategies, suggests new ideas and possibilities, and encourages curiosity and seeking behavior (Dent, 1990; Hopwood, 1987; Simons, 1994). It also provides a signal downward in the organization concerning the significant arena for proposing and implementing new ideas (Simons, 1990, 1991). Abernethy and Brownell (1999) provide empirical support of the relation between interactive controls and organizational learning. In a study of 63 hospitals they find that an interactive control system makes easy the organizational learning and the organizational learning is better when the budgeting system is used interactively rather than diagnostically (see also Henri, 2006).

Simons (1994) argues that the diagnostic system is used to communicate the strategy that emerges through the interactive system. In related empirical work, Chenhall and Morris (1995) find that organic decision processes, similar in nature to interactive controls, are more efficient when joined with a formal management control system (see also Henri, 2006). Simons (2000, p. 305) underlines the relation of the diagnostic and interactive systems when he says, "the information and learning generated by interactive systems can be embedded in the strategies and goals that are monitored by diagnostic control systems".

Weidner (2007) demonstrates that firms use both an interactive and diagnostic system, and the more top managers rely on the interactive control system, the more they will rely on the diagnostic control system to provide the structure necessary to enable the interactive system to be effective. Thus, at this study, we aim to use interactive and diagnostic levers of control to measure strategic control.

A feature of the levers of control framework is that managers must decide how much emphasis they will place on each of the four levers of control systems (Merchant and Otley, 2006). The eventuality framework holds that environmental variables are important to consider in the design of the management control system (Chenhall, 2003). In the levers of control framework the environmental variable is strategic uncertainty, which is defined as "the emerging threats and opportunities that could invalidate the assumptions upon which the current business strategy is based" (Simons, 2000, p. 215). Uncertainty means that there is a gap between the information known and desired (Galbraith, 1973). Thus the more uncertainty, the more monitoring is required to reduce the information gap (Simons, 2000). A second type of environmental variable in the levers of control is strategic risk, which is defined as "an unexpected event or set of conditions that significantly reduces the ability of managers to implement their intended business strategy" (Simons, 2000, p. 255).

Definitions adopted in empirical studies are not just reflective of control practices that may vary between settings. Most common apply of levers of control in the literature relates to diagnostic and interactive control systems. Whereas definitions of these constructs by Widener

(2007) and Henri (2006) have gained traction, they are themselves inconsistent in the way they are acted. Weidner (2007) has developed a model based on four levers of control of Simons. She has considered strategic uncertainties and strategic risks as strategic elements and prior to levers of control, while attention and learning has been considered as costs and benefits as a result of control systems, where these costs and benefits themselves result in performance. Henri (2006) suggests that there are positive relationships among performance measurement, interactive use of control, diagnostic use of control, and dynamic tensions between these two levers of control with Systems with capabilities (Organizational learning, Entrepreneurship, Market orientation, and Innovativeness) the same definition as organizational empowerment. Additionally, capabilities have positive effect on organizational performance.

Furthermore, the domain of observables in qualitative studies of levers of control is quite different, and generally includes broader definitions than those adopted in quantitative studies, leading to parallel and inconsistent development of the quantitative and qualitative literatures. For instance, Tessier and Otley (2012) illustrate similar concerns with the vagueness of levers of control constructs, but develop a different framework. Bisbe et al. (2007) concentrate on the conceptual definition of practice-based constructs more commonly, by utilizing interactive control systems in the levers of control framework as an example. They conduct a rigorous review of the empirical literature and identify the formative elements of the interactive control systems construct, which include elements such as face-to-face challenges and intensive utilize by both operating and top management. These formative elements thus incorporate control practices usually identified in the empirical literature examining interactive control systems. A second common theme in critiques of the levers of control framework is the limited application of the framework to informal control systems (Ferreira and Otley, 2009). Tekavčič et al. (2008) study the Simons' four levers of control systems at a Slovenian company with a case study method and come to the conclusion that incorporates a wider range of controls, including informal (i.e. social) mechanisms, to provide a more comprehensive analysis, as opposed to the majority of prior studies focusing on a more limited range of controls.

The results suggest that an interactive utilize of performance measurement system encourages organizational capabilities by focusing organizational concentration on strategic priorities and excitation dialogue (Mohamed et al. 2008). Furthermore, by establishing constraints to make certain compliance with orders, the diagnostic use of performance measurement system put forth negative pressure on organizational capabilities (Mohamed et al. 2008). The study found that both diagnostic and interactive uses of performance measurement system along with the beliefs system and boundary system facilitate the efficient utilize of management concentration (Mohamed et al. 2008). Conflicting views of control purposes may result in a rejection of a proposed new strategic control system (Kasurinen, 2002). Menon (2018) states that Real world examples and prior empirical findings are used to show that if such mental models are not accounted for, the outcomes envisaged by the analysis may possibly are different from those obtained in reality.

Mundy (2010) underlines the importance of the concept of balance in Simons' work, and remarks the lack of understanding regarding this concept. She underlines this research by using a case approach and concludes that balance is formed by how managers use the management control system. The simultaneous use of the management control system both to direct and to empower middle-level managers requires purposeful intervention by senior managers that as a result creation of constructive tensions takes place (Mundy, 2010)..

Furthermore supporting Simons' (1995) contention that the four control levers work together is Speklé et al. research at 2014. They find that a system containing all four levers of control is

positively related to creativity. Similar to Mundy (2010) they find that all four control levers have a significant role in the control system, and that the combination of both the negative and the positive forces enhances creativity (Speklé et al., 2014). Kuris et al. (2015) reveal a stable solution consisting of four patterns of control, which interpret from a perspective of configurational thinking as manifestations of balance. They study the concept of balance to provide empirically informed insights on different balancing arrangements that exist in a cross-section of business units (Kuris et al. 2015). Findings from other studies recommend that all four control levers are essential in the strategic control systems in order to be effective and to result in a beneficial dynamic tension (Bruining et al. 2004; Tuomela, 2005; Widener, 2007; Kruis et al. 2015).

Environmental Levers of Control Applying

An emerging stream of literature has explored the link between management controls and the environmental strategy. Nonetheless, this literature has provided an incomplete picture of this link, remarkably because of the lack of distinction between the intended and realized strategy and the lack of attention is paid to multiple environmental strategic intentions (Journeault et al. 2016). Although prior studies point to much potential for energy efficiency augmentation in industry, empirical research that adapts findings of environmental control to the context of energy management remains broadly neglected. Particularly, previous environmental researches suggest that the execution of energy management control systems could be an effective lever for companies to improve their production systems and operations toward energy efficiency (Schulze et al. 2018). This is why, it is important to consider environmental factors in strategic controls measurement and to pay attention for having a green approach.

Schulze et al. (2018) investigate the energy management control systems implementation's relationship with energy efficiency. The results provide evidence that the extent of energy management control systems implementation positively relates to firms' energy efficiency. Findings also suggest that companies may increase the relationship of energy management control systems and energy efficiency performance by establishing an energy manager or using external energy consulting support.

Wang et al. (2018) conducted a study that its results show that corporate environmental actions follow an inverted U-shape as control of environmental practices moves from the central government to the most decentralized administrative level. This curvilinear relationship is positively moderated by the stringency of environmental regulation and negatively moderated by environmental monitoring capacity. China's government is trying to improve the environmental performance of the firms it controls. The results show that the concurrence of two contravening government influences on corporate environmental practices. First, a performance-enhancing effect of the regulatory pressure by multiple authorities and second, a performance-diminishing effect of the autonomy enjoyed by local governments. Both the most centralized and decentralized controlled firms in China show significant weaker environmental performance than those controlled by intermediary levels of government. The strictness of sectorial environmental regulation and environmental monitoring capacity affect the potency of the Chinese government's green grip.

Journeault et al. (2016) have examined an eco-control model by considering the ability of eco-control to support competitive environmental strategies by translating strategic intentions into eco-practices and the extent to which the role of eco-controls, when translating environmental strategic intentions into eco-practices, varies when strategic intent is

predominately based on eco-efficiency or eco-branding. The results suggest that the high proportion of either eco-efficiency or eco-branding intent results in variations in the use of beliefs, boundaries, diagnostic and interactive levers of eco-control which the framework of control variables is suggested by Simons. More particularly, the results show that firms focusing on eco-efficiency intent based on the levers of eco-control to convert their strategic intentions into eco-production practices more than organizations focusing just on eco-branding intent to employ eco-marketing practices. In addition, while the implementation of the levers of eco-control framework is driven by eco-efficiency intentions, organizations might act on cost reduction prior to using eco-controls to execute eco-marketing practices when augmenting revenues. Conceptual factors of this study are size, stakeholders, pressures, and public visibility. This model shows that there is positive association between competitive environmental strategic intentions with four levers of control and eco-production practice and eco-marketing practice; while there is a positive association among levers of control and eco-production practice and eco-marketing practice.

Pondeville et al. (2013) studied the role of contextual and strategic factors in the development of environmental management control systems in manufacturing companies. As contextual factors roles of perceived ecological environmental uncertainty, perceived stakeholder pressures are supposed, while for strategic factors it is considered that the degree of corporate environmental pro-activity on the development of environmental management control systems is the variables. The results suggest that companies that perceive higher ecological environmental uncertainty are less inclined to develop a proactive environmental strategy, environmental information system, or formal environmental management control system. Market, community, and organizational stakeholders inspire environmental pro-activity, as well as the development of various environmental management control systems.

By considering the literature of strategic management and strategic control, these questions are raised:

What is appropriate model for strategic control at Audit institute of social security organization?

How is the relationship between variables?

And we tend to answer these questions at our research. Based on the past literature, we aim to design the appropriate strategic control model and identifying the relationship among them by using structural equation modeling; while for investigating strategic control; we have proposed and used levers of control introduced by Simons as Boundary, Belief, diagnostic and interactive controls by considering green approach; besides of considering actions as the latter variable of strategic control.

Research Method

Research methodology of this research in terms of purpose is practical, because it uses the first hand data and designs a new model based on it and will be used in its related industry. That means this study suggests a strategic control model for Audit institute of social security organization which is practical. Also, this study is development in its matter of research methodology. This research is quantitative, based on the derived study model and for more précised measurement of strategic control variable; we used Simons' levers of control framework and variable actions as the latter variable of the strategic control variable. To reach this aim, we used structural equation modeling by the analysis of the data which was collected by the help of a questionnaire that was distributed among the 52 managers of the audit institute of social security

organization. The validity of questionnaire is confirmed by experts consisted of five university professors and the reliability of the construct was measured by using Cronbach's alpha test. The construct validity of questionnaire was tested using Cronbach's alpha test. After announcement of the questionnaire's consistency by five experts, a pre-test was done. Seven questionnaires were distributed and the analysis of construct validity of pre-test which was measured by Cronbach's alpha which was 0.93 and is above 0.90 that means it is acceptable. Smart-PLS software is used for analyzing the data.

Structural equation Model

Modeling methods are employed for studying the phenomena than require the utilization of complex variable set. Structural Equation Modeling (SEM) is preferred when studying the causal relations and the latent constructs among the variables is in question. The reason is it can be used to analyze complex theoretical models and its practicability. The objective of SEM is to explain the system of correlative dependent relations between one or more manifest variables and latent constructs simultaneously. It serves to determine how the theoretical model that denotes relevant systems is supported by sample data, i.e., estimation of relations between the main constructs. Because there is no single criterion for the theoretical model fit evaluation obtained as a result of SEM, a wide array of fit indices was developed (Schermelleh-Engel and Moosbrugger, 2003; Ding et al. 1995; Sugawara and MacCallum, 1993). Studies conducted through SEM were undertaken by using empirical and non-empirical data so as to develop and confirm theory (Bentler and Dudgeon, 1996; Wang et al. 1996; Bentler, 1994). Simulation studies were conducted to test the robustness of SEM, because the assumptions required usually cannot be verified in practice. Because these studies were conducted in order to verify hypothesis, a known theoretical model was taken as a reference and the behaviors of the most commonly used techniques in specific conditions were observed. The parameter estimations obtained through the estimation techniques based on various distributional conditions and sample size, standard errors and the bias of model fit indices were researched in the studies conducted. At the second stage of this study, we use SEM for investigation of interactive and diagnostic levers of control based on levers of control of Simons.

Sample

The sample society of this study is the Audit institute of social security organization. The sampling method which was used at this study was available and random sampling by providing a list of managers who are familiar with the concept of strategic management including strategic planning, strategic execution and strategic control. A list of the people, whom could complete the questionnaire due to the knowledge of strategic control they have, was provided through the responsible focal point of the organization.

Data Collection

The data collection tools is by the use of field method and distribution of questionnaire besides of library method which includes documents review, books and research reports and papers and internet searches were conducted to review and formulate the literature of the research topic. A questionnaire was designed based on a standard questionnaire and after pre-testing, it was

distributed among the managers of the list which was provided at by the organization. As there was no more available sample, only 52 questionnaires were distributed.
This research is done by following these steps:

First, we used documentary study method for data extraction from strategic management literature and thematic analyses of theories at this field.

Second, the required data from document review from social security organization and audit institute of social security organization and their strategies were done. Thirdly, the questionnaires were distributed for data collecting the data. The territory of the research, form time framework, is from Jan 2018 to Jan 2019 and its duration is approximately one year. The location territory of this research is audit institute of social security of Iran and thematic territory of this research is at strategic management and strategic control.

Conceptual Framework

As mentioned before, the aim of this research is to investigate strategic control by levers of control framework introduced by Simons (1995) and in the following to estimate the effect of strategic control on actions. First, four levers of control framework is applied to the strategic control. Second, it is hypothesized that strategic control is an antecedent to actions. The different constructs and their relationships as research's model are shown in figure 1 and are explained in more details in the following sections.

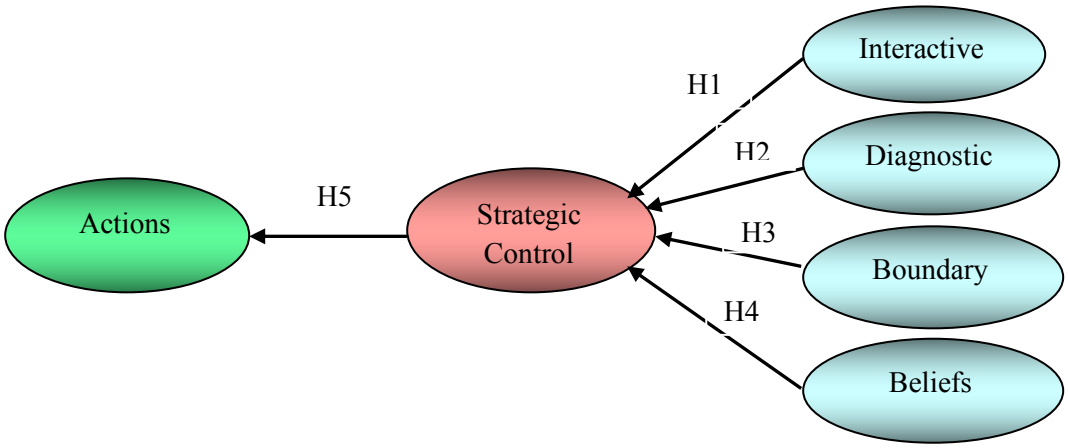

Figure 1. Conceptual Model of the Research

Result and Discussion

The main variable Strategic control includes the four levers of control introduced by Simons (1994). The last and the most important main variable that is the lost one at strategic control models, is' Actions'. We reached four main components of it which includes: Strategic actions/No-Action, Corrective actions, empowerment and change.
Actions at our suggested strategic management control system can be defined as:" The need of fulfillment of reaching desired outcomes aligned with vision, mission, and goals and in the need for change, corrective actions, empowerment or strategic actions as a result of strategic control which can cause adjustments at strategic plans and strategic implementation".

At present research, the social security organization is the only major external influential factor on Audit institute of social security organization and the other factors are internal. As the nature of the activity of Audit institute of social security organization that is auditing and due to the data analyses that is done, diagnostic control is the most significant lever of strategic control at this organization, while internal control is an exigency for acceptable effectiveness and performance of the organization. Each variable of the proposed strategic control model and Observant which is extracted from relevant literature of strategic management is shown at table 1.

Table 1. Variables and Observant of the Research's Model

Variable	Observant
Diagnostic Control	Determining and correcting the deviations from performance standards
Interactive Control	Strategic uncertainties and strategic emergencies
Beliefs Control	Belief systems, Mission statement, Values
Boundary Control	Business code of ethics, Red lines and green lines of staff for opportunistic behaviors
Strategic Control	Diagnostic Control Interactive Control Belief Control Boundary Control
Actions	Strategic Actions/ No-Action Corrective Actions Empowerment Change

The model has similarities and differences with previous studies. Our study point out that strategic control is an antecedent variable for actions that previously done studies hadn't pointed out this variable particularly as a separate variable. While in previous studies, merely it has been paid to actions, we found out that the variable actions can be seen as corrective actions, strategic actions/No-Action, empowerment and change as an important variable as a latter variable of strategic control. The reason for considering actions as a separate variable is that most of the time the importance of what should be done is ignored and this important step is in vague after discovering. Our research's finding is in accordance with Harrison (1991) which considers corrective actions as the last variable at his suggested strategic control model; and it is accordance with Henri's suggested strategic control model (2006) which supposes empowerment as a latter variable for interactive and diagnostic levers of control. For gaining the best result from the strategic control that this study proposes, it is recommended that apply all levers of control to have a comprehensive control system. We tried to explore the major variables and the relationship among them that affect strategic control and lead us to a comprehensive strategic control concept.

Apparently, diagnostic lever of control is the dominant lever of the control at Audit institute of social security organization, while we shouldn't ignore other levers of control besides of it. The lost variable of strategic management systems by highlighting strategic controls' important role is variable "actions" that should be considered. Commonly, after controlling we find a need for minor or major changes, corrective actions, empowerment or strategic actions or taking no-

action. Accordingly as this is an important variable that mostly is forgotten to be pointed out, while the data indicates it as a major variable at strategic control concept. By considering dynamic nature of changes and the need of organizations for implementing these changes as actions they are taking, with analyses of the data of our research, we suggest actions as a separate variable. As the dominant and major variables of strategic control at this research are interactive control, diagnostic control, beliefs control, and boundary control; we tended to measure all levers of strategic control's variable based on Siomons' levers of control framework. In the following, we aim to measure the latter variable actions. As a result, five Hypotheses are raised.

H_1: Diagnostic lever of control is positively associated with the strategic control.
H_2: Interactive lever of control is positively associated with the strategic control.
H_3: Boundary lever of control is positively associated with the strategic control.
H_4: Beliefs lever of control is positively associated with the strategic control.
H_5: Strategic control is positively associated with the actions.

Following the hypotheses that are raised, we measure the variables and test them in continue.

Reliability and Validity of construct

We used a questionnaire to collect the data and investigate the share of each lever of control at variable strategic control. At this study, as all levers of control, like what Weiner highlights at his study at 2007, is important to be discovered, we separately measured these four levers of control. To reach this aim, we used to modify the questionnaire designed by Frezzati et al. (2017) and designed our study's questionnaire consistent of five questions for estimating each lever of control. We also tried to consider the green approach and design our questions based on environmental friendly approach while we were designing the questionnaire. . The consistency of the questioner was announced by five authorities at the average of 88%. All items were measured with a five-point Likert-type scale (1= strongly disagree, 5= strongly agree). For data analyses, quantitative analyses is done by Partial Least Square (PLS) software that is considered as appropriate method for this research due to non-normality of the data and the small sample made available for structural equation modeling based on covariance and variance (Frezzati et al. 2017; Hair et al. 2014; Hensler et al. 2009; Ringle et al. 2012). The construct validity of questionnaire was tested using Cronbach's alpha test. After announcement of the questionnaire's consistency by five experts, a pre-test was done. Seven questionnaires were distributed and the analysis of construct validity of pre-test which was measured by Cronbach's alpha which was 0.93 and is above 0.90 that means it is acceptable. The questionnaire consisted of 30 questions which for each variable 5 question were considered. The questionnaire was distributed among 52 manager of Audit institute of social security organization of Iran. All of the questionnaires were returned. Overall Cronbach alpha of the questioner was 0.92 that indicates a high amount of validity. In addition, all constructs used in the final analyses have acceptable Cronbach's Alphas (Nunnally, 1978). The constructs are theoretically distinct and measured using either validated scales or questions drawn from the underlying literature. The reliability and validity of constructs are indicated at table 2.

From the results, we can come to this conclusion that the reliability and validity of the constructs are acceptable. The internal consistency of the constructs was evaluated by the Cronbach α coefficient. As noted above, all scales met the recommended reliability coefficient of 0.70 (Nunnally, 1978). The composite reliability of all latent variables are higher than 0.7, the value that is considered satisfactory by Hair et al. (2010). So, as the amounts of composite

reliability, and Rho-A all are above the acceptable amounts, this means the reliability and validity of the constructs.

Table 2. Reliability and Validity of Constructs

Variable	Cronbach's Alpha	Rho-A	Composite Reliability
Diagnostic Control	0.862	0.928	0.892
Interactive Control	0.925	0.946	0.930
Beliefs Control	0.902	0.944	0.912
Boundary Control	0.932	0.943	0.912
Strategic Control	0.850	0.909	0.870
Actions	0.894	0.903	0.892

Hypotheses Testing

The hypotheses were evaluated through a structural equation model analysis using smart-PLS. In the present structural model the maximum number of paths directed at a latent variable is 5 demonstrating that 50 is the minimum number of observations required to estimate the path model according to the «rule of thumb» generally used (Hair et al. 2013; Barclay et al. 1995).
A small p-value (typically ≤ 0.05) indicates strong evidence against the null hypothesis, so you reject the null hypothesis. All amounts of our study's p-values are smaller than 0.05 which means that all null hypotheses are rejected. It is noted that values above 0.5 have been recommended for average variance extracted (Chin, 1998; Henseler et al. 2010; Ringle et al. 2012) and the Average Variance Extracted (AVE) amounts of our research are higher than suggested amount are acceptable. Convergent validity explains which items truly represent the intended latent construct and indeed correlate with other measures of the same latent constructs (Hair et al. 2006). As Fornell and Larcker (1981) suggest, Convergent validity is assessed by Average Variance Extracted (AVE) of each latent construct. On the other side, discriminant validity refers to the extent to which a certain latent construct is different from another latent construct (Duarte and Raposo, 2010). At our research, discriminant validity is ascertained by using AVE, as Fornell and Larcker (1981) suggest. It is achievable by comparision of the correlation among the latent constructs with square roots of AVE (Fornell and Larker, 1981). Also, Fornell and Larcker, (1981) suggest that the square roots of the AVEs should be greater than the correlation among the latent variables for achieving satisfactory discriminant validity. At our study, the square roots of the AVEs are all greater than the correlation among the latent variables that means sufficient discriminant validity. Also, all the t-values were significant and more than 1.96 amount ($p < 0.005$) as shown in table 3 (Fornell and Larcker 1981), also, all the amounts of R^2 are acceptable as shown in table 3.All the paths depicted in the research's model are supported and the t-values associated with them were positive and significant (t- value>1.96, $p < 0.005$).

Model Fit

The analysis indicates that all variables have significant explanatory power. We use the Chi-square, the net fit index (NFI), and the Standardized Root Mean Square Residual (SRMR) as indicators of model fit. An insignificant Chi-square (Joreskog, 1969), a NFI close to 1 (Bentler, 1990), and an SRMR of less than 0.05 (Kline, 2011; Hu and Bentler, 1999; Schermelleh-Engel and Moosbrugger, 2003; Lacobucci, 2010) indicates good fit. As shown in Table 5, the base model is reasonably well-fitting. Also, Blindfolding test is used for calculating Stone-Geisser's Q^2

value (Stone, 1974; Geisser, 1974), which represents an evaluation criterion for the cross-validated predictive relevance of the PLS path model. The results show that redundancy Q^2 value is positive and above zero, suggesting predictive relevance of model (Chin, 1998; Hensler et al. 2009). We can conclude from the results that that our all five hypotheses are accepted. Table 4 shows summary of hypotheses testing. From the results, we can come to this conclusion that our research's model is in good fit.

Table3. Path Coefficient, T-Value, R^2, and SRMR

	Standard Deviation	R	T-Value	P-Value	AVE	R^2
Diagnostic Control	0.152	0.923	4.033	0.001	0.714	
Interactive Control	0.153	0.902	2.426	0.002	0.591	
Beliefs Control	0.192	0.911	1.991	0.003	0.678	
Boundary Control	0.185	0.940	3.463	0.002	0.732	
Strategic Control	0.172	0.969	5.078	0.003	0.616	0.938
Actions	0.163	0.975	9.112	0.004	0.627	0.950

Table 4. Summary of Hypotheses Testing

Hypotheses	Statement	Finding
H_1	Diagnostic lever of control is positively associated with the strategic control.	Supported
H_2	Interactive lever of control is positively associated with the strategic control.	Supported
H_3	Boundary lever of control is positively associated with the strategic control.	Supported
H_4	Beliefs lever of control is positively associated with the strategic control.	Supported
H_5	Strategic control is positively associated with the actions.	Supported

Table5. Chi-Square, NFI, SRMR, and Q^2

Indicator	Amount
Chi-Square	1694.531
NFI	0.901
SRMR	0.046
Q^2	Actions 0.464
	Strategic Control 0.497

Conclusion and Recommendations

This study provides evidence on levers of control framework. We find that all levers of control have approximate equal importance and weight on strategic control. We discovered all levers of control as an important antecedent variable on strategic control, while strategic control, itself, is an important antecedent variable of the variable actions. The important thing that makes this research different from previously done studies is the implication of actions as a separate variable. Actions variable's implication highlights the importance of acting after strategic control. This is while, due to the results of our study, actions have been never considered as an important variable at strategic control literature; hence because of its importance in reaching the desired outcome and due to the analyzed data, it is an important variable at strategic control system. Actions at our suggested strategic management control system can be defined as:" The indigence

of fulfillment of reaching desired outcomes aligned with vision, mission, goals and, plans in the need for change, corrective actions, empowerment or strategic actions".

It also documents that the interactive, diagnostic, beliefs, and boundary levers of control have a positive significant associated with strategic control and are appropriate predictors for strategic control. These findings are in accordance with Henri (2006) and Harrison (1991) findings about considering corrective actions and empowerment at their suggested strategic control's models.

Similar to most studies, there are limitations. As our research is done just in one organization, it cannot be generalized. The survey data relies on 52 respondents. Steps were taken to make sure the reliability of the data (i.e., random sample, pre-test of instrument, construct and content validity). Both diagnostic and interactive controls tests show that there is no reason to expect bias (common method test, non-response bias). Nevertheless, measures may be noisy and caution should be taken when generalizing the results to other populations. The results demonstrate that organizations should pay equal importance for using all levers of control at organizations.

Regardless of the limitations, this study results in three implications for theory and practice.

First, this study demonstrates that both levers of control of levers of control are inter-dependent and complementary. Particularly, the results illustrate that the interactive lever of control is inter-dependent with the diagnostic lever of control, the latter of which is consistent with Henri (2006) who demonstrates that dynamic tension results from the use of performance measures in dual roles. An important implication for organizations is that in order to realize the full benefits of levers of control usage, they must use them both diagnostically and interactively. The findings are also consistent with Chenhall and Morris (1995) who argue that structure is necessary for interactive type controls to be effective. In this study, the diagnostic system provides the structure that enables the interactive system to be effective since the diagnostic system is a mechanism by which the employees learn of the new strategy and accordingly, the new goals and objectives with which to align behavior. The results suggest that managers should consider all these levers of control when designing their control system. It also provides empirical evidence that the control systems are complementary. This is consistent with Simons (2000) who argues that an effective control system, comprised of the four control levels working in harmony and balance, facilitates organizational performance.

Second, strategy not only drives the importance of controls, but also the role of controls (Weidner, 2007). Apparently, all levers of control are equally important for strategic control at Audit institute of social security organization, while we shouldn't ignore taking actions besides of it. Green approach is implemented at this organization before and as we measured at strategic control model it is working well and falls into the predefined standards. The lost variable of strategic control system by highlighting strategic controls' important role is variable "actions" that should be considered. More often, after controlling we find a need for minor or major changes, corrective actions, empowerment or strategic actions or taking no-action. Accordingly, as this is an important variable that mostly is forgotten to be pointed out, while the data indicates it as a major variable at strategic control concept. By considering dynamic nature of changes and the need of organizations for implementing these changes as actions they are taking, with analyses of the data of our research, we suggest actions as a separate variable. The empirical results in this paper suggest that it is the structured, formal process of the diagnostic system that brings to life the benefits of the interactive system, in presence of beliefs systems and boundary systems. This finding illustrates the importance of studying multiple control systems.

The novelty of our study is considering actions as the latter variable of strategic control. This paper presents a more complete model of the strategic control systems by considering actions as a major variable. As the consequences of controls are in vague after implementing, to highlight the

outcome, there is a need for following up the ongoing of what is happening next. So, we decided to consider it as a separate variable by considering its different functions and situations that might happen. At future studies, the research's proposed strategic control model can be evaluated by implementing at various industries and research societies. Also, it can be recommended that other variables of strategic management system and control systems can be implement to this research's model and to be measured in different industries.

Our research's finding is in accordance with Harrison (1991) which considers corrective actions as the last variable at his suggested strategic control model; and it is accordance with Henri's suggested strategic control model (2006) which supposes empowerment as a latter variable for interactive and diagnostic levers of control. Also, our findings contribute to a growing and important line of literature on the levers of control framework (e.g., Mundy, 2010; Tessier and Otley, 2012; Widener, 2007) as well as literature on combinations of control (e.g., Malmi and Brown, 2008). To conclude, the way strategic control systems are used has several implications for problems related to its use. As our research model is analyzed through quantitative method at one organization and as a result it can't be generalized and there is a need for its testing and measuring with large sample.

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