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# Effectiveness of Management Control Systems in Pakistanis' Firms: A Life-Cycle Perspective

**Faisal Anees[1], Jahanzaib Sultan[2], Muhammad Ishtiaq*[3]**

[1]Assistant Professor, Lyallpur Business School, Government College University, Faisalabad, Punjab, Pakistan.

[2]Assistant Professor, Lyallpur Business School, Government College University, Faisalabad, Punjab, Pakistan.

[3*]Associate Professor, Lyallpur Business School, Government College University, Faisalabad, Punjab, Pakistan.

**Corresponding author:** mishtiaq@gcuf.edu.pk

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*This study provides important insights into the effectiveness of Simons levers of control in the different development stages of the organization (Growth, Maturity, Revival stages). Drawing on the sample of 185 Pakistani firms, results provide that the emphasis on the interactive use of MCS is positively associated with organizational performance for growth-stage organizations. Similarly, our findings establish that emphasis on the boundary control system can be associated with organizational performance for maturity and revival organizations. The results of this study also indicate that emphasis on the diagnostic use of MCS and belief control systems cannot be associated with organizational performance across different OLC stages. Our findings assist top managers in determining the suitability of controls to enhance organizational performance across OLC stages.*

## 1. Introduction

For over two decades, Simons levers of control framework have remained popular with management accounting researchers for various scientific inquiries. Simons developed this framework to foster understanding of the role of management control systems (MCS) for managing the business strategy. Yet, a significant body of research has provided the usefulness of this framework in addressing various business issues such as organizational learning, attention, and performance (Widener, 2007; Beuren et al., 2022); product innovation (Bisbe & Otley, 2004; Fazri et al., 2024); managing CSR strategy (Arjaliès & Mundy, 2013); innovation and entrepreneurship (Henri, 2006; ; Fazri et al., 2024); middle-level engagement in autonomous decisions (Linder & Torp, 2014; Linder & Torp, 2017); creativity (Speklé, Elten, & Widener, 2017); strategic change (Naranjo-gil & Hartmann, 2006) and management of innovation modes (Bedford, 2015; Kanivia et al., 2024).

A stream of research also put a worthy stride in finding the association among Simons levers of control with performance. Empirical literature on this stream of research seems to suggest that the relationship among levers of control and performance is problematic ((Bedford, 2015; Bisbe & Otley, 2004; Hofmann, Wald, & Gleich, 2012; Keasey, Martinez, & Pindado, 2008; Sakka, Barki, & Côté, 2013; Su, Baird, & Schoch, 2015; Tsamenyi, Sahadev, & Qiao, 2011; Widener, 2007; Baird & Tung, 2023). This contrasting state of affair calls for more finely grained research to associate Simons levers of control and performance under multiple contingent variables.

Contingency based research has already identified several organizational variables (e.g. technology, size, culture, strategy, innovation preference) that can not only impact the design of MCS but can play a pivotal role in influencing the impact of these management controls to the several organizational outcomes. Secondly, we overwhelming witness reductionist approach in relevant literature where researchers employed a few levers of Simons model for empirical testing. Considering few controls from a broader control system and considering these few controls for research pursuits can lead not only to a serious model under specification but potentially can provide erroneous results and conclusions (Fisher, 1998; Malmi & Brown, 2008; Voss & Brettel, 2014; Santini et al., 2022).

With such caveats in mind, this research is proposing organizational life cycle (OLC) as a contingency variable that can influence the association among Simons levers of control and organizational performance. This OLC configuration approach is already known to the management accounting literature where several studies have already employed this approach to examine the importance, existence, and level of emphasis on different control tools in different life cycle stages of the organization (Auzair & Langfield-Smith, 2005; Granlund & Taipaleenmäki, 2005; Heinicke, Guenther, & Widener, 2016; Kallunki & Silvola, 2008; Moores & Yuen, 2001; Silvola, 2008; Su, Baird, & Schoch, 2013; Su et al., 2015; Su, Baird, & Schoch, 2017; van Deun & Corbey, 2023). Few studies (Such as Su et al., 2015) have so far considered

the role of OLC stage in solving the problematic link between an emphasis on MCS and organizational performance.

We employ Miller & Friesen (1984) life cycle configuration framework where this framework differentiates organizations or business units on the basis of their different development stages. To differentiate organizations on the basis of their development stages, their configuration approach considers four contingent variables simultaneously: organization situation, structure, strategy and decision-making style. They labeled these different development stages as OLC stages famously known as birth, growth, maturity, revival and decline stages. OLC framework is unique in the sense that it gives opportunities to discuss various organizational variables (organization situation, structure, strategy, and decision-making style) under one umbrella. But for theoretical and practical considerations, we restrict our attention only to the three stages: growth, maturity and revival stages. Our theoretical motivation for such a course of action is based on Simons (1995) recommendation where he recommends that his formal framework is designed for big organizations. Therefore, for birth staged organizations where more informal controls are emphasized, naturally makes this framework irrelevant. For practical reasons, this is extremely difficult to envisage such random sample particularly at organizational level where decline staged organizations can be found together with other organizations who are in other development stages.

This study is motivated to find an association among emphasis on Simons levers of control (Diagnostic, Interactive, Belief, Boundary systems) and organizational performance in different development stages of organizations (Growth, Maturity, Revival stages). OLC literature in management accounting already suggests that the importance, existence, and formalization of different controls differ in different development stages. Simons (1995) also recommends that various organizational variables can hinder the effectiveness of different MCS. Further, this study wants to contribute to the empirical literature by exploring the potential role of OLC stage as a moderator in the relationship among Simons levers of control and organizational performance.

Building on Pakistani SMEs sample, the findings demonstrate that interactive use of management control systems enhances organizational performance specifically in growth-stage organizations, while OLC stages negatively moderate this relationship, indicating diminishing effectiveness as organizations mature. Boundary control systems prove most beneficial for maturity and revival stage organizations, aligning with their need for exploitative innovation and risk management. Diagnostic control systems show no significant association with performance across any OLC stage, suggesting their effectiveness may depend on factors beyond organizational development stages. Similarly, belief control systems demonstrate no direct performance association, though OLC stages positively moderate this relationship.

The remainder of the paper is structured as follows. In Section 2, we introduce the Simons framework, then the relevant literature about the moderating role of OLC approach and the effectiveness of Simons levers of control across OLC stages. Section 3 discusses the method used for the collection of data and further highlights variables used in this study. This is followed

by the results section where we provide empirical results along with debate on results. Finally, we end our discussion by providing limitations and contributions of the study.

## 2. Theory and Hypothesis Development

### 2.1 Simons Framework

According to Simons (1995), for successful implementation of the strategy, top management must put their attention to four strategic issues: critical performance measurements, strategic uncertainties, core values, risks to be avoided which ultimately provide the basis for his four levers. Simons (1995) maintains that in order to balance predictable goal achievement and creative innovation, an organization needs four levers of controls: Diagnostic controls, Interactive controls, Belief controls and Boundary controls. Diagnostic and interactive levers are feedback and performance measurement systems. Simons (2000) defines diagnostic control system as "the formal information systems that managers use to monitor organizational outcomes and correct deviations from the pre-set standards of the performance". As opposed to diagnostic control systems, interactive control system deals with double-loop learning rather than single-loop feedback. Simons (1995) defines belief systems as "the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purposes, and direction for the organization". Finally, boundary control serves to ensure risks to be avoided both in operational and strategic boundaries of the organization by putting limits on actions of employees.

### 2.2. The Moderating Role of OLC Stages

There is a consensus among all different OLC stages models that an organization follows a predictable pattern in each of its unique stage over time (Moores & Yuen, 2001). In fact, this predictable pattern in the internal and external contexts of the organization provides a rationale for contemplating different development stages of an organization. By simultaneously considering four contingent variables (organizational strategy, structure, situation, decision-making styles), Miller & Friesen (1984) life-cycle stage model, provides five OLC stages: birth, growth, maturity, revival and decline stages.

In the birth stage, an organization is considered to follow a centralized decision-making style, narrow scope of products, niche strategy. Organizations are small in size and engaged in uncompetitive environment and founder influence is at maximum in every domain of organization. Compared to the birth stage, growth stage organizations become larger in size, ownership starts to disperse and organizational structures tend to become more decentralize and complex (Lester, Parnell, Carraher, Parnell, & Carraher, 2003). More formal structures are now required and therefore functional specializations are needed to foster. The top management has started to delegate the powers to the subordinates as to follow every daily-routine matter is impossible by now. By this stage, niche strategy has been abandoned to emphasize growth and early diversification initiatives. Unlike birth-stage organizations, organizational environment has become more dynamic and competitive and now initiatives for innovation and team-style

working are actively followed (Quinn & Cameron, 1983).

Maturity-stage firms are comparatively larger in size and more dispersion of ownership is present in the firms. Maturity staged firms have a more stable environment unlike in the other stages of organizations which leads to more emphasis on defender strategy thereby shifting firms' focus from diversification and product innovation to profitability and efficiency (Lester et al., 2003). Due to the stability of operations, now decision-making power lies in top management and middle-level management powers have been constrained (Miller & Friesen, 1984). Rules and procedures are now actively emphasized. Decision-making style in these organizations centers on risk-aversion initiatives which reflected with narrower choice of products and tightening of innovation budgets. Efficiency and performance indicators are now very critical (Quinn & Cameron, 1983).

Revival-staged firms are characterized with largest size and most dispersion of ownership among all OLC stages and engaging in a highly hostile, dynamic and heterogeneous environment. In this organizational stage, active innovations and a range of products are a place for the pursuit of strategy in a hostile environment (Moores & Yuen, 2001). Divisional structures are emphasized by delegating powers to divisional heads who are responsible for their divisional performance (Lester et al., 2003). The decision-making styles in these organizations are flexible and analytical to address high level of risk.

Organizations in the decline stage are characterized by low financial resources and profit reduction. Ownership is tightly held with the board, owners, and shareholders having a significant influence on decision making. Organizational structures are highly centralized and little powers are delegated to subordinates. The organizational goal is to survive without any preference for strategy. There is a tendency for internal orientation where owners and managers aim to preserve resources rather than customers' preferences (Quinn & Cameron, 1983).

Management accounting and OLC literatures suggest that characteristics of management accounting practices differ across life-cycle stages of the organization to better match the internal and external needs of an organization and each stage presents a driving force or contingency to which an organization has to respond. Moores & Yuen (2001) reported that the formality of MCS changes across all life-cycle stages of the organization to respond to the organizational characteristics. Auzair & Langfield-Smith (2005) found that organizations in the maturity stage of their life-cycle placed much emphasis on bureaucratic controls while comparing it with the growth stage. Consistent with Miller & Friesen (1984) life-cycle model, Kallunki & Silvola (2008) found that activity-based costing differs across all life stages of organization and these systems found more common in maturity and revival-staged firms as they emphasized more on efficiency and performance. Similarly, Su et al., (2013) found that the extent of usage of MCS was associated with OLC-stages and three types of controls ( input, output, behavior) were more emphasized in growth and revival stages. In another study, Su et al., (2017) provided that interactive and diagnostic controls were used to a greater extent in growth and revival stages.

Silvola (2008) submitted that management control techniques and business planning differed in each stage of organizational life-cycle.

These evidences suggest that the formality of different controls differs across different stages of the organization to better match the needs of organizational internal and external characteristics. The alternate emphasis on different management accounting practices in different life cycle stages suggests that a certain set of management accounting practices are more appropriate in one stage than the other. For instance, Abernethy & Brownell (1999) suggest that the effective results of the diagnostic use of MCS are more pronounced in a setting where job descriptions and procedures are well specified. On the other hand, interactive use of MCS seems more effective in circumstances, where the search of original ideas is invigorated. Similarly, belief control system seems more fit in settings where momentum for opportunity-seeking attempts are required (Sheehan, 2006). Finally, boundary control system is more effective in a setting where firms are engaged in activities of exploitative innovation (Bedford, 2015). This study predicts that the effectiveness of each lever of control will vary across OLC stages (Growth, Maturity, Revival)[1] because each stage presents a contingency to which an organization has to respond with suitable matches of controls. Thus, this research predicts that organizational life-cycle stage act as a moderator, which can affect the strength or nature of the relationship between the emphasis on particular lever of control and organizational performance. By identifying and testing relevant interaction effects, pertaining to the relationship between levers of control and organizational performance, the sophistication of this field of inquiry will grow in number of ways.

In the coming hypothesis, this study will discuss that each organizational stage is characterized by the set of unique contingent variables and levers of control are designed for the unique purpose(s) amid their functional challenges. Before elucidating and hypothesizing the effectiveness of each lever of control in different OLC stages, this study wants to hypothesize that association among levers of control and organizational performance is moderated by OLC stages. This leads to following expectations

***H1: Organizational life-cycle stages moderate the relationship between the diagnostic use of MCS and organizational performance.***
***H2: Organizational life-cycle stages moderate the relationship between the interactive use of MCS and organizational performance.***
***H3: Organizational life-cycle stages moderate the relationship between belief control and organizational performance.***
***H4: Organizational life-cycle stages moderate the relationship between boundary control and organizational performance.***

[1] In this study, we are considering only three stages. See introduction section for this motivation.

### 2.3 The Diagnostic use of MCS and performance Across OLC Stages

For the effectiveness of this control, organizational goals, strategies and critical success factors must be clearly codified (Bedford, 2015). Su, Baird, & Schoch (2014) identify that the effectiveness of this control is associated with designing clear, stable and well-understood critical success factors. Abernethy & Brownell (1999) suggest that the effective results of this control are more pronounced in a setting where job descriptions and procedures are well specified. Henri (2006) also endorsed that effectiveness of diagnostic control is associated with the critical review of critical performance variables which enable organizations in the achievement of the strategy. Hence, prior MCS literature has identified several organizational variables that can have important impact on the effectiveness of this control.

In the *growth stage* where the organizational environment becomes dynamic and competitive. At this stage, this control can face a lot of difficulties in setting critical success factors accurately and clearly which ultimately can undermine the effectiveness of this control (Su et al., 2017). Therefore, we expect that this control has no impact on performance in the growth stage.

In *maturity staged* organizations, emphasis is made on efficiency, productivity and timely responses (Miller & Friesen,1984). In a centralized structure and stable environment, goals and desired expected factors can clearly be set. Thus, the presence of stability and certainty in the organization, provide a perfect context where this control can be associated with the enhanced performance as the firm is in a better position to codify critical success factors clearly.

When a firm enters in *revival stage*, the generation of new ideas, rapid diversification, and searches for innovation become critical factors. Henri (2006) reflects diagnostic control as mechanistic control where mechanistic control is associated with tight control of operations and highly structured channels of the communication. Unlike the growth stage, the organization has improved organizational capability for setting expected goals specifically and has entered in divisional structure from the functional structure where the importance of constant monitoring has become very important. Provided that the emphasis on diagnostic controls have documented with curbing innovation initiatives and organizational capabilities (Henri, 2006; Simons, 1995) but in many ways, it alleviates burdens of mangers for constant monitoring (Hofmann et al., 2012). Therefore, we expect that this control is positively associated with organizational performance for revival staged organizations. The following expectations are posed:

***H5(a): The emphasis on the diagnostic approach is not expected to be associated with organizational performance in the growth stage.***

***H5 (b): The emphasis on the diagnostic approach is expected to be positively associated with the organizational performance in maturity and revival stages.***

### 2.4 The Interactive Use of Control and Performance Across all OLC Stages

The interactive control system deals with double-loop learning rather than single-loop feedback which is the case in the diagnostic control system.The concerned issue to deal with is strategic uncertainties and to tackle such uncertainties, the emphasis is placed on improved

organizational participation, learning and innovation and thereby top management encourages face to face discussions and debates across all levels of organization (Bisbe & Malagueño, 2009). For deriving effective results from this control, managers of firms are needed to meaningfully interact at various levels of the firm.

*Growth staged* organizations emphasize departmentalized, decentralized functional-based structure, environmental scanning and analytical cum multiplex decision-making style (Miller & Friesen, 1984). For product innovation and environmental scanning, debates, face-to-face dialogues are required in order to cope with environmental uncertainty ( Henri, 2006). Further, in this stage organizations tend to follow the organic organizational structure which can facilitate dialogue and discussions. Hence, growth staged organizations can capitalize on their prevailing structure and culture for milking benefits of this control system.

*Maturity staged* firms are characterized by centralized decision-making and conservatism (Lester et al., 2003). The effectiveness of this control is more prominent where organizations tend to follow an organic structure. Therefore, the prevailing centralized decision-making and conservatism in this stage offer an organizational block for deriving benefits of this control. Abernethy & Brownell (1999) reported that the interactive use of MCS is expensive control to implement. Similarly, Tuomela (2005) also, submitted that interactive control can be costly in terms of time consumption, therefore, we predict that emphasis on interactive role is negatively associated with the performance at this OLC stage.

When organizations enter in *revival stage*, generation of new ideas, rapid diversification, and searches for innovation becomes critical factors for these firms (Miller & Friesen, 1984). Firms pursue rapid innovation, acquisition, diversification and risk-taking initiatives. In a divisional structure, highly efficient communication between top managers and divisions is crucial in order to unify the direction and foster the highly needed innovation initiatives. With interactive controls, top manages can intervene in divisional managers' decisions for promoting common innovation initiatives within the organization. Though the prevailing divisional structure is not ideal for the effectiveness of this control but the benefits of this control can outweigh the costly use of this control. Thus, the following hypotheses are as posed:

***H6(a): The emphasis on the interactive use of MCS is expected to be positively associated with the organizational performance in growth and revival stages.***
***H6(b): The emphasis on the interactive use of MCS is expected to be negatively associated with organizational performance in the maturity stage.***

**2.5 Belief Systems and Performance Across OLC Stages**

Simons (2000) explains belief control as a set of explicitly shared beliefs that provides purpose, direction and basic values for the organization. But to function this control effectively, top managers are required to formally communicate and reinforce these organizational definitions systematically. The belief control provides guidance and momentum to opportunity-seeking attempts (Simons, 2005). Thus, with this control variance-increasing behaviors are

legitimized. According to Bedford (2015), the effectiveness of this control is associated with the strategic orientation and situation of the organization.

Organizations in the *growth stage* are aiming at incremental innovation in product lines with rapid growth goals. In growth staged organizations, boldness continues to prevail (Quinn & Cameron, 1983). Simons (1995) presents belief systems lever to act as an inspirational and creative force that stimulates the search for new opportunities. Moreover, a prevalent functional structure can also provide stimuli for these organizations to reinforce organizational definitions systematically. Hence, in incremental innovation and rapid growth orientation, we expect this lever to be positively associated with organizational performance.

*Maturity staged* firms are conservative, tend to imitate innovations rather than going for it, emphasize the efficiency and profitability of operations and characterized by conservatism (Lester et al., 2003). In the presence of stability and continuity of operations, therefore, momentum to opportunity-seeking attempts is less required. Further, this control promotes variance increasing behaviors from pre-established routines and expectations (Bedford, 2015). Too much emphasis on this control in this stage can bring the organization too far from their established routines and competencies at the expense of organizational resources (Bedford, 2015). Hence, this study expects that a belief system is not associated with performance in maturity staged firms.

*Revival-staged* firms are engaged in a highly hostile, dynamic and heterogeneous environment (Moores & Yuen, 2001). Divisional structures are implemented to cope with market heterogeneity by emphasizing the strategy of diversification (Miller & Friesen, 1984). The complexity of markets makes imperative for organizations to explore new. We expect that by stressing on belief control systems, revival stages organizations can guide and foster opportunity-seeking attempts in a hostile, dynamic and heterogeneous environment. This control can act as a device to communicate the ambitious course of action among different divisions. This control can act as a common flag to employees of a large organization. Therefore, this study predicts a positive association between emphasis on belief control and performance of the organization in revival stages firms. The following expectations are posed:

***H7(a): The emphasis on belief control is expected to be positively associated with the performance in growth and revival stages.***
***H7(b): The emphasis on belief control is expected to be not associated with the performance in maturity stage.***

**2.6 Boundary Control System and Performance Across OLC Stages**

Simons argues that boundary systems define the appropriate conduct of employees, limit search and experimentation activities. Boundary systems, over time, tend to restrict the testing of innovative alternatives and their experimentation, only to the sanctioned domains of the organization (Bedford, 2015). On one hand, this control can improve the subordinates search efficiency, but on the other hand, boundary system can also leave important portions of the environment, unexplored and untested which can cause under-development of the potential

variety of experience and knowledge necessary for the maximizing returns from exploratory innovation (Bedford, 2015).

Organizations in the *growth stage* are aiming at dynamic innovation in product lines with rapid growth goals (Miller & Friesen, 1984). Miller & Friesen (1984) in their study characterized this stage with bold, innovative and growth orientation. Though the emphasis on this control can bring efficiency to the search and discovery efforts but it can also significantly reduce experimentation activities which can limit knowledge and experience necessary for exploratory innovation (Bedford, 2015). Therefore, this study expects no association between the emphasis on boundary system control and the organizational performance for growth staged organizations.

*Maturity staged* organizations emphasize on risk-aversion initiatives reflected with narrower choice of products and tightening of innovation budgets (Lester et al., 2003). These organizations are looking for imitations of innovations rather than dynamic innovations for growth (Miller & Friesen, 1984). Bedford (2015) found that the emphasis on this control was associated with performance for those firms who want to deepen their scope rather than expanding the scope of search opportunity. In similar lines, this study predicts that boundary systems control can be associated with enhanced organizational performance in maturity staged organizations.

Given large size in *revival staged* firms where divisional structures are implemented to cope with hostility, dynamism, and heterogeneity of the environment (Miller & Friesen, 1984). As these firms are characterized by divisional structures, boundary systems can help in the smooth and efficient innovations by stating off-limits to the subordinates in the strategic domain. This can also foster a clear and consistent response in the operational domain of the organization by highlighting risks to avoid. According to Arjaliès & Mundy (2013), boundary systems become particularly important when costs of non-compliance, reputation, and environmental uncertainty are high. Acknowledging that emphasis on the boundary system at this stage of the organization can leave important portions of the environment unexplored and untested but for revival staged organization costs appear too high if they neglect their boundary systems. As boundary control systems help firm in avoiding important risks therefore, this study predicts that emphasis on boundary systems is positively associated with organizational performance for revival staged organizations. This leads to following expectations:

***H8(a): The emphasis on boundary systems is expected to be not associated with the organizational performance for growth, staged organizations.***

***H8(b): The emphasis on boundary systems is expected to be positively associated with the organizational performance for maturity and revival staged organizations.***

## 3. Data and Variables

### 3.1 Sample

To test these hypotheses, data has been gathered through a web-based questionnaire from Pakistani small and medium level companies. As claims of management controls do not limit to

a certain industry, thus, this study adopted a sample of Pakistani companies covering a variety of industries through Orbis database. This study tries to maintain the structural features of organizations on the basis of employee size with the availability of senior executive contacts in the said database. Three criterions then adopted: 50 to 250 employee ranged organizations, excluding all organizations other than private corporate companies and condition of senior executive's contacts in the database. In literature there are many ways to define SME, however, this study wants to rely on popular approach where size has been considered as selecting criterion for defining a SME (López & Hiebl, 2015). This approach is popular in management accounting research for depicting a structural feature of an organization to ensure that MCS are at place in the exploratory sample. This exercise resulted in a workable sample of 2761. Then we started to explore the LinkedIn contacts of companies and extracted top management team contacts by following a predetermined protocol. In our protocol, we defined top management team in line with the definition of Henri (2006), where he defined top management team as two levels of organization's hierarchy. We extracted several aspects of the top management team members such as email, first and last names and their organizational roles. In 771 companies, we could not find any top management contacts on LinkedIn so, we eliminated these firms in our final sample. To our final sample of 1987 companies, we contacted one member of top management team (CEO, CFO, COO, Sales Director, GM) by maintaining a similar order of preference because several times we had all said contacts of the top management team.

Before sending our questionnaire in march 2023, our initial draft was sent to four academicians who held substantial psychometric expertise and thereby requested to highlight words understandability issues, face validity issues, layout issues, issue in the design of response format and any technical problems related with the completion of the online survey. Further, the initial draft was circulated among four professionals (not part of the sample) for the pre-tests (to curb response error) of the online questionnaire and they also asked to highlight any of the above issues. This whole activity resulted in some minor modifications to the wordings and layout out of the questionnaire.

The questionnaire was submitted in line with the survey implementation strategies of Dillman (2011) wherein the first emailing activity, we introduced the purpose of the research and provided to the participants the online link of the questionnaire. Three follow-ups were made in different working days and in different working timings and in each emailing activity, we tried to encourage the potential participants by ensuring the total confidentiality of the participants and with the promise the summary of the project. We also made some modifications to the suggested implementation strategy.

We received 225 distributed questionnaires among 1987 participants, making an initial response rate of 11.37 per cent. In these collected responses, 05 responses had to drop for quality reasons. We also noticed that 16 respondents had too few responses, so we excluded them. Further, we found multiple missing values in our dependent variable, so 19 responses were excluded in our hypotheses testing to avoid any artificial rise or decline in relationships among

the variables. Dropping of these responses also improved our average completion rate of the survey from 77 per cent to 97 per cent as indicated by our emailing software. In remaining responses, we also found small number of missing values. We thereby performed Little's missing completely at random (MCAR) test where results of the test found acceptable. Thus, in a small number of cases, we changed the missing values with mean values following the expectation-maximization process. The final complete data set composed of 185 responses making a final response rate of 9.08 per cent. To complete the analysis, CEO/ Adm.Manager (64.01 %), CFO (19.09 %), Sales Director (10.11 %), GM (3 %) and COO (3 %) participated in the survey.

This response rate is relatively lower but comparable to many influential studies in similar management control studies (Auzair & Langfield-Smith, 2005; Heinicke et al., 2016; Kallunki, Laitinen, & Silvola, 2011; Widener, 2007). Though direct contact with the potential respondents with emails offers a unique opportunity to better connect with the potential respondents but there are some structural problems that are associated with this approach as well. For instance, Silvola (2008) draws attention to this aspect by highlighting the overwhelming preference of respondents in Finland for traditional postal questionnaires rather than the web-questionnaire. Further, Van der Stede, Young & Chen (2006) draw attention to the decline of response rate in social sciences due to an increased number of unsolicited emails, increased job stress and pressure within the potential respondents. Further, we received 33 emails where respondents excused to participate in the survey for variety of reasons such as their organizational secrecy policy, security policy of their web-management system, perceiving little value in participating in academic survey, preference for participation in low-length questionnaire, overwhelming requests for participation in the surveys and their current job stress.

For a low response rate, Van der Stede et al., (2006) maintains that the results can even be generalizable if non-response bias is low. They further highlight that early vs late respondent's comparison is the most common analysis for non-response bias in management accounting to ensure that the sample is representative. To test the potential effect of non-response bias in our results, we classified respondents as early respondents (first 20 % responses) and late respondents (last 20% responses) where we compared the mean values of the survey items using Mann-Whitney U Test.

There were no significant mean differences revealed in early and late respondents. As cautioned by Van der Stede et al., (2006) where they indicated the possibility of biased samples in case of low response rate if any of organizational characteristics is affecting the pattern of responses. Therefore, industry and size of respondent's firms were compared with the initial sample, revealing that there were no significant differences ($P < .05$). Further, our emailing software allowed us to determine the opening rate of our invitation and reminder emails, and after the conclusion of the survey, there were 259 emails that were never opened by target recipients with no indication of some apparent pattern. Overall, these tests suggest that there is no significant non-response-bias in the sample.

### 3.2 Variables

In this study, we adopted all measures already validated in previous studies. Reflective measurement models are undeniably the most dominant measurement constructs in management accounting particularly in emphasizing management control systems as reflected in various influential works (Heinicke et al., 2016; Henri, 2006; Su et al., 2015; Widener, 2007). But few authors also took the formative route for the choice of measurement models in their works (Bedford, 2015; Bisbe, Batista-Foguet, & Chenhall, 2007). Unlike reflective models, indicators of formative measures define the construct as they are not interchangeable. Dropping some of the indicator can seriously harm the conceptual meaning of the construct because in such models' causality runs from indicators to construct (Coltman et al., 2008). As suggested by Coltman et al., (2008), strong tradition for the choice of reflective measurements can introduce measurement biases. Further, they advise that if authors have successfully devised indicators for formative models, then these models always outperform reflective measurement models as reflective models explain less variance when compared with formative models. Recently, Bedford (2015) validated indicators for Simons levers of control.

#### 3.2.1 Independent Variables

In our work, three of four control levers were measured through formative measurement models (Interactive, Belief, Boundary) and diagnostic control was measured with reflective measurement model. For pragmatic reasons, we limited the scope of interactive and diagnostic control systems by opting for only budgets and performance measurement systems. To measure Simon's levers of control, we adopted Bedford (2015) validated questions. Based on the formative model explained by Bisbe et al., (2007), Bedford (2015) measures interactive controls by defining five dimensions of the construct which were used to access the extent to which top management emphasize on this control for (a) Providing a recurring and frequent agenda for top management activities (b) Providing a recurring and frequent agenda for subordinate activities (c) Continual challenge and debate of underlying data, assumptions, and action plans with subordinates and peers (d) Attention on strategic uncertainties (i.e. factors that may invalidate current strategy or provide opportunities for new strategic initiatives (e) Providing shared views of the organization to the employees.

To measure the boundary control system, Bedford (2015) defines four dimensions of the construct which were used to access the extent to which top management emphasizes on (a) Codes of conduct or similar statements are relied upon to define appropriate behavior (b) Policies or guidelines that stipulate specific areas for, or limits on, opportunity search and experimentation (c) Top management actively communicate risks and activities to be avoided by subordinates (d) Sanctions or punishments applied to subordinates who engage in risks and activities outside organizational policy, irrespective of the outcome.

Drawing on literature, Bedford (2015) defines four attributes of belief systems that were used to access the extent to which top management emphasizes on (a) Values, purpose and direction of the organization are codified in formal documents (e.g. mission or value statements,

credos, statements of purpose (b) top management actively communicates core values to subordinates (c) formal statements of values are used to create a commitment to the long-term vision of top management (d) formal statements of values used to motivate and guide subordinates in searching for new opportunities.

Being formative models, belief, boundary and interactive controls do not necessarily present conceptual commonality in every indicator. For instance, in case of emphasizing on boundary system, it does not necessary that an organization is emphasizing this system for communicating risks to subordinates and at the same time an organization is using a boundary system for limiting search and experimentation activities.

To validate formative models, we examined the weights and multicollinearity of the construct. As very low weights can suggest that indicators are irrelevant to the construct and higher multicollinearity among indicators can advise that indicators are tapping into the same facet of the construct (Coltman et al., 2008). Relevant statistical analysis for all formative indicators suggested that all weights positively and significantly contribute to the construct. Further, variance inflation factors (VIFs) values among indicators in each of the construct found below the tolerance level of 5 (Coltman et al., 2008). Based on Henri (2006) and Widener (2007) works, Bedford (2015) measures diagnostic control through a reflective measurement model with five items which was used to assess the extent to which top management uses budgets and performance measures for (a) identifying critical performance variables (b) setting targets for critical performance variables (c) monitoring progress toward critical performance targets (d) providing information to correct deviations from preset performance targets (e) reviewing key areas of performance. For the diagnostic control system, a single-factor solution was obtained with satisfactory internal reliability of $\alpha = .96$, as shown in appendix A.

### 3.2.2 Dependent Variable

For measuring organizational performance, we opted subjective measures of performance and measured it with five items (Bedford, 2015; Govindarajan & Gupta, 1985; Widener, 2007). Van der Stede et al., (2006) also highlight the merits of both subjective and objective measures of performance. They also opined that the choice of either measure for firm performance should be guided by research objectives and settings. Our performance measure is based on reflective measurement model where all items load on a single factor with satisfactory reliability of $\alpha = .86$. These five items capture (a) financial performance (b) sales growth of new (less than 2 years) product or service into existing markets (c) sales growth of existing (older than 2 years) product or service into new markets (d) relative market share for primary products/services (f) overall performance.

### 3.2.3 Control Variables

Two control variables are also incorporated in the analysis which are environmental dynamism and environmental hostility. These environmental variables can be associated with organizational performance as hostile, dynamic and turbulent environments can leave profound

effect on performance outcomes for an organization (Bedford, 2015; Wallace, Little, Hill, & Ridge, 2010). Environmental dynamism is interpreted as the unpredictability in the environment, originating from changing in various external factors (Li & Liu, 2014). Based on prior literature (Bedford, 2015; Chenhall & Morris, 1993; Gordon & Narayanan, 1984), this study opts for the formative route to measure environmental dynamism with five items reflecting unpredictability in following dimensions (a) customers (b) suppliers (c) competitors (d) technological advances (e) economic/regulatory changes. Environmental uncertainty refers to the degree of threats originating from competitors, making difficult for a firm to achieve sustainable pivotal resources, growth pursuits and market demands (Dess & Beard, 1984). Backed by prior literature, we measured environmental hostility on the basis of three defining dimensions reflecting degree of threats emanating from environment for (a) competing main products/services (b) maintaining pivotal resources (c) achieving desired growth pursuits (Bedford, 2015; Dess & Beard, 1984; Miller & Friesen, 1984). Our choice for the formative route for these two variables is based on theoretical considerations (Coltman et al., 2008).

To validate these constructs, we examined the weights and multicollinearity of the construct. We found negative weights in some of the indicators for these two control variables with an insignificant contribution to the construct. Though, VIFs values found below 5 in all indicators of each construct. We decided to retain all the indicators as the dropping of indicators can change the meaning of the construct (Coltman et al., 2008).

### 3.3 OLC classification

To identify OLC stage, we found two prevalent approaches in management accounting literature. In the first approach, the authors adopted a lengthy 54 items instrument that was originally proposed by Miller & Friesen (1984). By adopting this instrument and afterward performing cluster analysis, researchers identified OLC stages (Moores & Yuen, 2001; Su et al., 2015, 2017). The other approach is a self-categorization approach where respondents were asked to identify OLC stage in one of the given stages mentioned in their instrument (Auzair & Langfield-Smith, 2005; Kallunki & Silvola, 2008; Silvola, 2008).

We adopted a self-categorization approach in this work where respondents have to identify one of the given OLC stage. We adopted this approach because the adoption of 54 instruments could have significantly enhanced the length of our instrument and could have serious implications for the response rate of this study. As witnessed in previous studies, the self-categorization approach mainly deals with the perception of the respondent for the identification of OLC stage, therefore, this approach can also lead to misunderstanding of OLC stage and thus generate inconsistent views among the respondents. To answer this challenge, we presented OLC stage as a profile to the respondents where each stage is defined according to the theoretical concepts defined in the Miller & Friesen (1984) framework. Respondents can interpret and differentiate different OLC stages in line with theoretical grounds advanced in the OLC framework. For example, in the case of the maturity stage, we also provided to the respondents the notable characteristics of this stage such as the bureaucratic structure of the organization,

efficiency and profitability focus, risk aversion policies, serving a well-defined market, dispersed ownership, and slower growth. Similarly, all five stages presented in our instrument. This analysis deals with three stages of the organization, but we presented all the five stages to the respondents so that respondents can easily identify each stage of OLC framework. Respondents who identified their organizations in either of the birth and decline stages, subsequently excluded from our analysis, unlike placing either of the stages to the next closest stage (Kallunki & Silvola, 2008; Silvola, 2008)

## 4. Results

### 4.1: Descriptive statistics

Table 1 provides descriptive statistics for the variables used in this study and also highlights OLC stage characteristics. Table 1 shows that the average number of employees increases across OLC stages but drops in the decline stage. In addition, summary statistics reveal that average age and average product scope of the organization increase across OLC stages but drop in the decline stage. These statistics are in line with Miller & Friesen's (1984) descriptions of OLC stages. Hence, the classification of OLC stages is considered to be appropriate.

**Table No 1:** Descriptive Statistics **(n=185)**

| Variable | Mean | SD | Theoretical Range | Actual Range |
|---|---|---|---|---|
| **Panel A: Descriptive Statistics (Scale variables)** | | | | |
| Diagnostic Control | 4.977 | 1.414 | 1.00-7.00 | 1.00-7.00 |
| Interactive Control | 4.371 | 1.611 | 1.00-7.00 | 1.00-7.00 |
| Belief Control | 4.478 | 1.540 | 1.00-7.00 | 1.00-7.00 |
| Boundary Control | 3.991 | 1.201 | 1.00-7.00 | 1.00-7.00 |
| Performance | 4.412 | 1.035 | 1.00-7.00 | 2.00-7.00 |
| Environmental Hostility | 4.957 | 1.440 | 1.00-7.00 | 1.00-7.00 |
| Environmental Dynamism | 3.6449 | 1.061 | 1.00-7.00 | 1.00-7.00 |
| Size (Based on # of employees) | 82.06 | | | |

| Variable | Frequencies | % | Avg Size | Avg Age | Avg Products |
|---|---|---|---|---|---|
| Panel B: Frequencies and Characteristics for OLC stages | | | | | |
| Birth | 06 | 3.00 | 10.00 | 04 | 1.54 |
| Growth | 57 | 29.00 | 45 | 15.32 | 3.89 |
| Maturity | 76 | 39.00 | 125 | 17.87 | 4.89 |
| Revival | 52 | 26.00 | 155 | 28.25 | 5.98 |
| Decline | 4 | 2.00 | 35 | 14.25 | 3.98 |

A correlation matrix is presented in Table 2. All correlations are below the r = .60, except for the association between diagnostic and interactive controls. However, previous studies

already documented a high association among these two controls (Bedford, 2015; Widener, 2007).

To test the hypothesis, PLS structural model was estimated. PLS-SEM has received considerable popularity in business research. This popularity can be attributed to its ability to handle various problematic modeling issues such as unusual data characteristics and complex models (Hair , Sarstedt, Hopkins, & G. Kuppelwieser, 2014). As PLS structural model does not assume distributional assumptions, bootstrapping (5000 samples) is performed to evaluate the statistical significance of the path coefficients. Table 3 presents our baseline results.

**Table 2 Correlations Matrix**

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Diagnostic | 1 | | | | | | | |
| 2 | Boundary | .359** | 1 | | | | | | |
| 3 | Interactive | .655** | .401** | 1 | | | | | |
| 4 | Belief | .419** | .336** | .415** | 1 | | | | |
| 5 | Performance | .188** | .287** | .189** | .192** | 1 | | | |
| 6 | Envir_dynas | 0.069 | .183** | 0.091 | .105* | 0.086 | 1 | | |
| 7 | Envir_uncert | 0.069 | .148** | .118* | .122* | 0.045 | .333** | 1 | |
| 8 | OLC-stage | -0.016 | -.135* | -0.094 | -0.018 | -.153** | 0.053 | 0.053 | 1 |

*** and ** denotes significance at .05 and .01 levels respectively by using a two-tailed test.**

**Table No 3: PLS structural Model: controls and organizational performance for OLC stages**

| **Paths from** | **Paths to Performance** | | |
|---|---|---|---|
| | **Growth Organizations N=57** | **Maturity organizations N= 67** | **Revival organizations N= 52** |
| Diagnostic Control | -0.063 (0.701) | -0.118 (0.920) | -0.121 (0.882) |
| Interactive Control | 0.451 (2.243) *** | 0.213 (1.655) | 0.341 (1.201) |
| Belief Control | -0.151 (1.012) | 0.13(0.946) | 0.034 (0.249) |
| Boundary Control | 0.142 (0.263) | 0.253 (2.015) ** | 0.446 (3.473) *** |
| *Controls* | | | |
| *Envir_uncert* | 0.110 (0.620) | 0.316 (1.482) | -0.231 (1.273) |
| *Envir_dynas* | 0.381 (3.254) *** | -0.044 (0.311) | -0.285 (1.161) |
| $R^2$ | 0.385 | 0.346 | 0.511 |
| Stone-Giesser $Q^2$ | .157 | 0.162 | 0.325 |

***, ** and *** denotes significance at .10, .05 and .01 levels respectively by using a two-tailed test**

$R^2$ and Stone-Giesser $Q^2$ reflect the overall incidence of significant relationships and models' capability to predict respectively. Our motivation to adopt these measures rather than model fitness statistics is based on the nature of the PLS structural model where the emphasis is placed on maximizing the variance explained ( Hair et al., 2011). The analysis was performed

with SmartPLS version 4. The results along with $R^2$, Stone-Giesser $Q^{2,}$ and control paths are shown in Table 04. $R^2$ values are .385,.346, .541 for growth, mature and revival organizations respectively. These values are considered moderate in PLS structural model (Hair et al., 2019). Using a blindfolding procedure with an omission value of seven gives the Stone-Giesser $Q^2$ value of .157,.162 and .325 for our endogenous constructs. Stone-Giesser $Q^2$ greater than 0 indicates that our explanatory variables have predictability relevance, thus, this measure supports the predictive relevance of the models. Our results suggest that our model has good predictability.

While examining the effects of levers of control on performance for growth organizations, our results indicate that the coefficient of interactive control ($\beta$=0.451, P < .05) is positive and significant. But we could not find evidence to indicate a significant association between other levers of control and performance. For maturity organizations, results indicate that the coefficient of boundary control ($\beta$=0.253, P < .05) is positive and significant. For revival staged organizations, our results indicate that the coefficient of boundary control ($\beta$=0.446, P < .00) is positive and significant.

These results are consistent with hypotheses H5(a), H7(b), H8(a) and H8(b). Thus, we accept these hypotheses. We also partially accept H6(a) indicating a positive relationship between interactive use of MCS and organizational performance for growth-staged organizations. We followed Henseler & Fassott (2010) guidelines for testing and interpreting moderation effects in PLS path models. While focusing on our dataset, we compared the suitability of both product terms and group comparisons approaches for moderation effects in our PLS path model. Henseler & Fassott (2010) highlight that both product terms and group comparisons approaches are likely to bring similar results, as long as construct measurement-do not vary across the groups. By highlighting the merits and demerits of both approaches, they favored the product terms approach for moderation effects in PLS path models. They also recommend using two-stage PLS approach if one of exogenous or moderating variable is formative. Therefore, we found the two-stage PLS approach more suitable in our PLS path model. Two-stage PLS approach is comprised of two stages, where in first stage main effect PLS path model is estimated. In the second stage, the interaction term is formed as an element-wise product of construct scores of independent and moderator variables. We also followed the guideline's by Henseler & Fassott (2010), where they advise to use original indicators in step 1 and before entering stage 2, unstandardized scores should be mean-centered.

With respect to hypothesis 01 to 04, we proposed the contingency effects of OLC stages on the emphasis on levers of control - performance relationship. The results of the moderation effect of OLC stages on the association among levers of control with organizational performance are provided in Table 4. To obtained the results for moderating effects, we ran moderating analysis on the full sample through bootstrapping procedure. As suggested by Henseler & Fassott (2010), we assessed whether paths coefficients capturing the interaction effects significantly differed from zero. Then, we determined the strength of moderating effects for identifying potential moderating effects in the sample.

Results reveal that the impact of interactive use of MCS on performance varies with the development of OLC stages (β=-0.391, P < .01). This result suggests that the effect of interactive use of MCS on performance turns negative with the development of OLC stages.

**Table No 4: Pls structural Model: moderating effect of OLC stages on the association among levers of controls with organizational performance**

| **Variables** | **Paths to** | | | |
|---|---|---|---|---|
| | **Organizational Performance** | | | |
| | **Main Effects model** | | **Interaction Effects model** | |
| | **Coefficient** | **T -values** | **Coefficient** | **T -values** |
| *Main Variables* | | | | |
| Diagnostic Control | 0.181 | 1.493 | 0.125 | 0.921 |
| Interactive Control | -0.127 | 0.994 | -0.077 | 0.534 |
| Belief Control | 0.084 | 0.991 | 0.071 | 0.866 |
| Boundary Control | 0.325 | 3.913*** | 0.362 | 4.332*** |
| Diagnostic Control *Life-Cycle Stage | | | 0.217 | 1.716* |
| Interactive Control*Life-Cycle Stage | | | -0.392 | 2.829*** |
| Belief Control*Life-Cycle Stage | | | 0.183 | 2.182*** |
| Boundary Control*Life-Cycle Stage | | | 0.138 | 1.704* |
| Life-Cycle Stage | | | 0.125 | 2.847*** |
| *Control Variables* | | | | |
| Envir_uncert | 0.316 | 1.482 | 0.110 | 0.620 |
| Envir_dynas | -0.044 | 0.311 | -0.087 | 0.125 |
| $R^2$ | 0.171 | | 0.253 | |
| Stone-Giesser $Q^2$ | 0.098 | | 0.146 | |

| Fit Measures | Endogenous Construct | Main Effects Model | Interaction Effects Model |
|---|---|---|---|
| $R^2$ | Organizational Performance | .171 | .253 |
| $\Delta R^2$ | | | .082 |
| $f^2$ | | | .11 |

***, ** and *** denotes significance at .10, .05 and .01 levels respectively by using a two-tailed test**

Similarly, the effect of belief control on performance varies with the induction of OLC stage as moderator (β=-0.183, P < .01), implying that effect of belief control system on performance turns positive with this research founds that coefficients of other interaction terms are statistically significant at P< .10 but below the generally accepted tolerance level (P <.05)

prevalent in accounting studies. While determining the strength of the moderating effect), the value of $f^2$ (.11) indicates a moderate strength of the moderating effect (Henseler & Fassott, 2010).

These findings indicate that we can accept only our hypotheses 02 and 03 and for hypotheses 01 and 04 we cannot draw any significant evidence to accept them.

**4.2 Discussion**

Findings of this work provide important insights on the suitability of Simons levers of control within specific OLC stages of the organization. Findings suggest that emphasis on interactive use of MCS can enhance organizational performance for growth-staged organizations. Prior research finds this control with beneficial consequences for innovative initiatives. However, findings of this work suggest that in growth organizations where radical innovation is pursued, improved organizational performance can be achieved by emphasizing on this control. Therefore, to enhance organizational performance, managers can place more emphasis on improved organizational participation and learning by encouraging face-to-face discussions and debates in growth-staged organizations.Moreover, findings of this work indicate that OLC stages negatively moderate the relationship between the interactive use of MCS and organizational performance. These results indicate that the nature of the relationship between the interactive use of MCS and organizational performance varies with the development of OLC stages. These finding is parallel to Bedford (2015) conclusion that the effectiveness of interactive use of MCS is relevant in firms who engage in exploratory innovation but this relationship varies when firms change the mode of innovation such as exploitative innovation. This work relies on Miller & Friesen (1984) life-cycle configuration framework who also propose the similar change in mode of innovation over the development of OLC stages. However, our findings can't fully endorse the findings of Su et al., (2015) where they provide that OLC stages positively moderates the relationship between the interactive use of MCS and organizational performance. Findings of this work support their findings that the emphasis on the interactive use of MCS is positively associated with organizational performance for growth-staged organizations and emphasis on this control can stifle organizational performance for revival stage organizations.

Similarly, these findings establish that emphasis on the boundary control system can be associated with improved organizational performance for maturity and revival organizations. This finding also supports the conclusion of Bedford (2015) that emphasis on boundary control can enhance organizational performance for those firms who are engaged in exploitative innovation which is the case for maturity and revival organizations. Similarly, findings of this work also support Arjaliès & Mundy (2013) work, where they find that boundary systems become particularly important when costs of non-compliance, reputation, and environmental uncertainty are high which is the case for maturity and revival organizations. Therefore, for superior performance in these stages, top managers can consider placing more emphasis on this control by defining the appropriate conduct of employees and limiting search and experimentation activities. Findings of this work do no indicate that OLC stage act as moderator

which can alter the nature or strength of relationship for emphasis on boundary control-performance relationship.

While prior research indicates that emphasis on the diagnostic use of MCS is important for the performance of firms who are seeking to exploit existing technological capabilities and markets (Bedford, 2015; Hofmann et al., 2012; Su et al., 2015). Instead, findings of this study do not reveal a positive association between diagnostic use of MCS and organizational performance across OLC stages. Thus, findings suggest that the effectiveness of this control cannot be related to a certain OLC stage. Further, results reveal that OLC stage as moderating variable do not influence the relationship between the use of diagnostic control and performance.

Similarly, findings of this work do not provide any association between belief control and performance across OLC stages. A possible explanation can be found in Ouchi (1979) framework, where social controls rather than formal controls can be more effective in SMEs setting. Heinicke et al., (2016) also propose that the size can play an important role for the effective results of this control. Findings of this work provide that OLC stages positively moderate the relationship between belief control systems and organizational performance indicating that the effect of belief control on performance strengthens with the development of OLC stages. These findings indicate that other factors (such as culture, age, size etc.) may play important role to influence the effectiveness of Belief control rather than contingent variables described in Miller & Friesen (1984) life-cycle configuration framework.

## 5. Conclusion

This work takes an important step in understanding the effectiveness of Simons levers of control within different life-cycle stages (Growth, Maturity, Revival) of the organization. In this work, we propose that the effectiveness of Simons controls (Diagnostic, Interactive, Belief, Boundary systems) can vary in different OLC stages. Drawing on the sample of Pakistani SMEs, this work empirically shows that the emphasis on the diagnostic use of MCS and belief control system cannot be associated with organizational performance across OLC stages. Therefore, this study cannot support the view that an organization can rely on the sole employment of these controls for flourishing organizational performance across OLC stages. But this work reveals that emphasis on interactive use of MCS can enhance organizational performance in growth stage of organizations where they are aiming at dynamic innovation in product lines with rapid growth goals coupled with prevalent organic structure to support such aims. In relation to this control, this work also indicates that OLC stages negatively moderate the relationship between the interactive use of MCS and organizational performance. This shows that the association between emphasis on interactive use of MCS and performance is negatively influenced with the development of OLC stages. Similarly, this work shows that emphasis on the boundary control system can be associated with organizational performance for maturity and revival organizations. These findings imply that the performance results of boundary control are more pronounced in a setting where organizations are seeking incremental innovation rather than the radical innovation.

This work has a number of practical implications for top managers and corporate leaders. This work empirically establishes that the suitability and relevance of Simons levers of control for improved organizational performance can depend on the organizational life-cycle stages. For improved performance, top managers can consider placing more emphasis on the boundary control by defining the appropriate conduct of employees and limiting search and experimentation activities for maturity and revival staged organizations. Similarly, enhanced organizational performance can also be achieved by emphasizing on interactive use of MCS for growth organizations that engage in exploratory innovation.

This study contributes to MCS literature by shedding light on the important role of the use of MCS in promoting or hindering organizational performance in OLC stages. Relying on contingency theory, our findings suggest that the suitability and relevance of Simons levers of control for enhancing organizational performance can depend on the development stage of the organization. Thus, this study contributes to MCS literature by providing an understanding of the effectiveness of Simons levers of control in different development stages of the organization. Our findings assist top managers in determining the suitability of controls in order to enhance organizational performance across OLC stages.

This study is subject to limitations as well. First, this study collects data through a survey instrument, therefore, this study may be affected by common method bias. We took considerable attention towards construct development and survey implementation where diagnostic tests suggested us that there was no considerable bias of significant concern. Second, this study is carried out in the SMEs environment, thus, we cannot endorse our findings to much bigger corporations. Thus, caution is needed for generalizing the results of our study.

**Appendix A**

**Construct measures and indicators loadings/weights.**

| Measures | Measurement Model | Loadings/ Weights | VIFs |
|---|---|---|---|
| 1. Belief Systems | Formative | | |
| To what extent in your organization…. | | | |
| 1.1 Values, purpose and direction of the organization are codified in formal documents? (e.g. mission or value statements, credos, statements of purpose) | | 0.26 | 1.90 |
| 1.2 Top management actively communicates core values to subordinates | | 0.36 | 2.05 |
| 1.3 Formal statements of values are used to create a commitment to the long-term vision of top management | | 0.23 | 3.45 |
| 1.4 Formal statements of values used to motivate and guide subordinates in searching for new opportunities | | 0.33 | 2.62 |
| 2. Boundary Systems | Formative | | |
| To what extent in your organization…. | | | |

| | | | |
|---|---|---|---|
| 2.1 Codes of conduct or similar statements are relied upon to define appropriate behavior | | 0.39 | 1.59 |
| 2.2 Policies or guidelines that stipulate specific areas for, or limits on, opportunity search and experimentation | | 0.32 | 1.52 |
| 2.3 Top management actively communicate risks and activities to be avoided by subordinates | | 0.33 | 1.39 |
| 2.4 Sanctions or punishments applied to subordinates who engage in risks and activities outside organizational policy, irrespective of the outcome | | 0.29 | 1.33 |
| | | | |
| 3. Diagnostic Systems (Cronbach alphas=0.964; AVE=0.874; CR=0.97) | **Reflective** | | |
| To what extent does the top management team use budgets and performance measures for…. | | | |
| 3.1 Identifying critical performance variables (i.e. factors that indicate achievement of current strategy) | | **0.91** | **5.77** |
| 3.2 Setting targets for critical performance variables | | **0.94** | **7.18** |
| 3.3 Monitoring progress toward critical performance targets | | **0.96** | **8.16** |
| 3.4 Providing information to correct deviations from preset performance targets | | **0.93** | **5.48** |
| 3.5 Reviewing key areas of performance | | **0.93** | **4.51** |
| | | | |
| 4. Interactive Control | Formative | | |
| To what extent does the top management team use budgets and performance measures for…. | | | |
| 4.1 Providing a recurring and frequent agenda for top management activities | | 0.23 | 3.78 |
| 4.2 Providing a recurring and frequent agenda for subordinate activities | | 0.21 | 4.58 |
| 4.3 Continual challenge and debate of underlying data, assumptions, and action plans with subordinates and peers | | 0.24 | 4.31 |
| 4.4 Attention on strategic uncertainties (i.e. factors that may invalidate current strategy or provide opportunities for new strategic initiatives) | | 0.22 | 3.06 |
| 4.5 Providing shared views of the organization to the employees | | 0.24 | 2.22 |
| | | | |
| 5. Performance (Cronbach alphas=0.855; AVE=0.637; CR=0.897) | **Reflective** | | |
| Rate performance of your organization on the following dimensions to that of your competitors over the past year | | | |
| 5.1 Financial performance | | **0.72** | **1.62** |
| 5.2 Sales growth of new (less than 2 years) product or service markets | | **0.73** | **1.63** |
| 5.3 Sales growth of existing (older than 2 years) product or service markets | | **0.78** | **1.83** |
| 5.4 Relative market share for primary products/services | | **0.83** | **2.32** |
| 5.5 Overall performance | | **0.91** | **3.26** |
| | | | |
| 6. Environmental Dynamism | Formative | | |

| | | | |
|---|---|---|---|
| Over the past three years how many changes have occurred that have had a material impact on the nature of your business? | | | |
| 6.1 Customers (e.g. Customers' requirements) | | 0.31 | 1.25 |
| 6.2 Suppliers (e.g. Quality of resources) | | 0.12 | 1.89 |
| 6.3 Competitors (e.g. Competitors entering or leaving) | | 0.01 | 2.25 |
| 6.4 Technological (e.g. R&D advances) | | 0.52 | 1.98 |
| 6.5 Economic/regulatory | | 0.41 | 1.11 |
| 7. Environmental Hostility | Formative | | |
| 7.1 How intense is the competition for your main products or services? | | 0.47 | 1.09 |
| 7.2 How difficult is it to obtain the necessary inputs for your business? | | -0.33 | 1.09 |
| 7.3 How many strategic opportunities are currently available to your business? | | 0.77 | 1.02 |

| | |
|---|---|
| 8. Organizational Life Cycle Stage | N/A |
| The following are the famous life cycle stages of organizations. Please, identify the stage of your organization at the start of 2023 | |
| 8.1 Birth (Notable characteristics: organization dominated by the owner, power highly centralized, Young in age, informal structure | |
| 8.2 Growth (Notable characteristics: functional basis, rapid growth policies, related expansion of product scope in closely areas, relatively older than birth stage) | |
| 8.3Maturity (Notable characteristics bureaucratic structure, focus on efficiency and profitability, serving a well-defined market, dispersed ownership, slower growth, risk aversion policies) | |
| 4.Revival (Notable characteristics: the divisional basis of organization, ownership is very dispersed, substantial innovation focus, rapid growth, products offering into unrelated markets) | |
| 5. Decline (Notable characteristics: bureaucratic structure, price-cutting, slow growth, low level of innovation, no clear strategy, unappealing products to customers, earlier markets seem to dry up) | |

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