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Examining Organizational Improvisation: The Role of Strategic Reasoning and Managerial Factors

Darwina Arshad, and Paul Hughes

Abstract—Recent environmental turbulence including financial crisis, intensified competitive forces, rapid technological change and high market turbulence have dramatically changed the current business climate. The managers firms have to plan and decide what the best approaches that best fit their firms in order to pursue superior performance. This research aims to examine the influence of strategic reasoning and top level managers' individual characteristics on the effectiveness of organizational improvisation and firm performance. Given the lack of studies on these relationships in the previous literature, there is significant contribution to the body of knowledge as well as for managerial practices. 128 responses from top management of technology-based companies in Malaysia were used as a sample. Three hypotheses were examined and the findings confirm that (a) there is no relationship between intuitive reasoning and organizational improvisation but there is a link between rational reasoning and organizational improvisation, (b) top level managers' individual characteristics as a whole affect organizational improvisation; and (c) organizational improvisation positively affects firm performance. The theoretical and managerial implications were discussed in the conclusions.

Keywords—Organizational improvisation, strategic reasoning, firm performance.

I. INTRODUCTION

THEORY holds that strategic managers must plan critically in determining future goals and objectives, directions and actions of firms. Effective strategic planning is not a simple process and numerous companies gain little value from their annual strategic planning process [1]. Sometimes it does not really influence most strategy as much as it should have [2]. Stacey [3] argues against formal planning activities in suggesting that strategies should emerge from the self organizing activities of loose, informal and destabilizing networks. Brews and Hunt [4] expand this thinking and comment that planning should be both specific and flexible, especially in volatile environments, and once formed, the firm must be aware to rework and amend plans incrementally as implementation proceeds by due to the inherent dynamism of the external environment. This implies that plans can be modified until they are implemented and often resulted in

changed or unrealized content [2]. Therefore firms should redesign to support real-time strategy making [1] and this is a vital way for the firm to considerably think of improvisational activity towards better performance.

Improvisation does not necessarily imply the absence of strategic planning. Rather, improvisation can be considered as informal strategic planning [5]. Improvisation afford the tools to create an “emergent” or day-to-day strategy that is necessary to reach the intended goal, which allows a business to become much more responsive to solving the problems and seizing the opportunities that quickly arise and provide input into the company's intended strategy [6]. The manager must think and make reason (either makes rational / analytic or intuitive reasoning process) on which strategies could best fit the current situation of the firm. The reasoning system a manager employs in making business decisions is critically important because it could affect understanding, strategic decision-making, and hence, the performance outcomes of the firm. Strategic reasoning encompasses a manager's ability, or capability, to understand or make sense of their internal environment, strategic circumstances, and competitive marketplace conditions [7].

Managers have to think wisely in making critical decisions as bad outcomes could prove to be fatal to the organization. In many cases, bad decisions lie not only on the decision making process but relatively in the mind of the decision maker [8] and the personal characteristics of the manager. The characteristics of top level management could influence the quality of improvisation [9]. Managerial factors such as level of confidence, attitude towards risk, level of experience, skills and expertise are some key elements that could impact upon strategic decision-making and on the effectiveness of organizational improvisation. At this point, there is an urgent need to carry further research that could determine the key influential factors of top level managers and the role of strategic reasoning in driving improvisation and firm performance (e.g., [9]).

This research area in itself lacks consistency and empirical examination and indeed studies relating it to improvisation and firm performance on top level managers are [to date] absent from the literature. The deficiency in prior empirical research on the link between reasoning and improvisation in the strategic management literature is an indictment of the lack of research in general on the improvisation construct and

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the relationships with firm performance. These are crucial to examine as theoretically, both constructs are vital and theoretically inter-related.

This research aims to examine the influence of strategic reasoning and top level managers' individual characteristics on the effectiveness of organizational improvisation and firm performance. Indeed, whether or not improvisation affords consistent positive performance benefits is as yet not empirically established. Given the lack of studies on these relationships in the previous literature, there is significant contribution to the body of knowledge as well as for managerial practices. For instance, understanding the factors that underpin and facilitate improvisation can enable managers to become better at adapting and making decisions in turbulent climates, stimulating better performance outcomes and developing firm's competitive advantage. There may well be selection policy implications that arise from this and insights into reasoning could prompt managers to review managerial information systems to support managers in creating understanding of their environment and in turn support improvisational activities. Improvisation may also empower managers in crisis times to act above being idle.

The main research focus of this study can be summarized in the following question:

How does organizational improvisation determine firm performance?

This basic question is further subdivided into specific research questions:

1. How does the strategic reasoning process affect the execution of organizational improvisation?
2. What are the individual characteristics of top managers that act as factors influencing organizational improvisation?
3. How does organizational improvisation affect firm performance?

II. LITERATURE REVIEW AND HYPOTHESES

A. Strategic Reasoning and Organizational Improvisation

In a rapidly changing environment, managers in organizations tend to formulate and implement strategies by using vast amounts of information. However, high environmental volatility through market and technological turbulence, fast changes in customer preferences, threats from competitors and weaknesses from organizational forces might all lead to situations where managers have insufficient relevant information to make perfect decisions ([10]; [11]; [12]; [13]; [14]). Concurrently, managers may not have the luxury of time to rely on long winded rational and analytical decision-making or planning processes [15]. Insufficiency of information would affect managerial decision-making as managers would act under conditions of limited or bounded rationality. According to March and Simon [12], "*our decisions are not fully thought through and we can only be rational within limit*". Managers must act under uncertainty and can never have access to full information in order to make optimal decisions. Based on bounded rationality, the manager

has to amend the strategic plan and take decisions often in difficult and time sensitive situations; thus the leading to 'spur of the moment' decision-making which exemplifies improvisation [14].

Improvisation is a form of intuition guiding action in a spontaneous way [16]; [17] and it is an alternative to rigid thinking in which something is done or produced on the spur of the moment rather than as a result of a deliberate process of thought and evaluation [14]. It involves a high degree of spontaneity and intuition and intuitive insight, technical ability, group dynamics, motivation, awareness and understanding as enhancing factors for improvisation [16]. According to Crossan and Sorrenti [16], there are degrees of intuition and spontaneity of action from low to high. They state that spontaneous responses could appear from comparatively routine in nature, with relatively little or no intuition applied; to the level of fairly intuitive responses with no set standard, policy and procedure to rely on. Thus, improvisation is an act but not necessarily one that implies creative destruction or wilful inappropriate risk-taking. Meanwhile, Vera and Crossan [18] highlight that improvisation is a conscious choice people make rather than a random behaviour. The decision to improvise may be made on the spot or may be an option considered in advance, as when firm have formal or informal norms enabling people to depart from routines at certain times to come up with something new.

Organizational improvisation is a vital skill as it can contribute to making meaningful decisions, within a limited timescale, without the best information and resources [19]. The interrelationship between reasoning and improvisation is conceivably positive though there is no previous empirical research that has proved a direct link between both factors. Klein [20] studied the emergency services and armed forces in the USA and found that 80% to 95% of decisions in loosely structured, time pressured situations have automatically response actions (intuitive reasoning process). Nonetheless improvisation could provide a negative consequence to decision-making [21]. The improvisational process could lead to improper decision-making due to the tendency of improvisers to act as unconscious or rapid mode of decisions when they are facing with limited time and information where the flexibility and speed are a crucial point to be considered in their mind. Further, it is also expected to create some bad actions from improvisers when they could not manage with the variability of the quality of improvisational actions and indeed, improvising may be unsuitable under various conditions [16].

With regards to improvisation and decision-making, management writers have concluded that much of the reasoning and decision-making of senior management, particularly at executive level, is intuitive and rarely rational and logical [15]. Burke and Miller [22] demonstrate that 90% of the managers studied used intuitive decision-making to speed up practices if quick action is required in a complex business scenario. Meanwhile, Spanish managers who have a managerial style of improvisation generally like to make

informal and spontaneous decision-making and they believe that “*things turn out well when they are not planned*” [23]. This corroborates Leybourne and Sadler-Smith’s [24] findings which suggest that project managers’ intuitive decision making is positively related to their use of improvisation.

Nonetheless, intuitive and rational thinking processes should be used together in improvisational practice. This concurrent process is best used in alternating stages, a stage of intuitive thinking where imagination is encouraged followed by a rational logical stage where ideas generated by the creative stage are analyzed, grouped and selected (these procedures are particularly useful when traditional approaches are failing [15]. Hence, the elements of deliberative versus intuitive reasoning processes in making decisions need to be highlighted due to the lack of field research focusing on this theory. Leaptrott [25] suggests that from the dual process of reasoning (either rational or intuitive), it is assumed that the intuitive system of reasoning tends to appear in improvisational process while the rational system of reasoning tends to appear in the strategic planning process. A significant amount of experimental research has supported the utility of dual systems of reasoning theory in explaining decision making behaviour [25], however little field research has tested this theory on managerial decision-making towards organizational improvisation and it is crucial to study between those relationships.

H1: Strategic reasoning affects the execution of organizational improvisation.

H1a: Intuitive reasoning process affects the execution of organizational improvisation.

H1b: Rational reasoning process affects the execution of organizational improvisation.

B. Individual Managerial Factors and Organizational Improvisation

Antecedents of improvisation could be influenced from individual aspects such as a firm’s manager and organizational members (employees); and organizational characteristics aspects such as organizational structure and culture. Several past researches highlight the link between organizational members and improvisation, which specifically focus on team characteristics and very limited research provides empirical evidence on the influential factors of a firm’s manager to organizational improvisation. Hence, the personal characteristics of managers in organizations including attitudes, skills and culture [14] of the manager are crucially important to investigate whether it could have a significant effect on organizational improvisation.

The leadership style and attitude towards risk or level of self efficacy are some of the key factors that may drive the effectiveness of firm improvisation. For leadership style, Cunha et al. [26] note that leadership style may either hamper firm improvisation or give a meaningful positive impact on the quality of it. For example, authors drawing from the jazz metaphor argue that a ‘servant’, ‘rotating’ or ‘directive’ leadership styles moderates the effectiveness of firm

improvisation [26]. Parallel to this, the attitude towards risk or a level of self efficacy of the leader could effect improvisation. Leybourne and Sadler-Smith [24] claim that the use of intuition is often accompanied by a ‘confidence’ in their rightness and wrongness and it could directly relate to the actions from the manager. In this case, it reflects that the self efficacy level could influence firm improvisation. However, this remains speculative due to the absence of much research evidence [24].

Other significant elements that could influence organizational improvisation are experience, skills and expertise of the manager. The degree and type of experience, skills and expertise may vary in different settings and they could have a differential impact on improvisation. With regards to the approach from improvisational theatre, actors do not know when will be in the real time actions that they have to spontaneously respond, though they know that they need to improvise during the role play. But experienced actors make improvisation look easy and natural due to the vast skills and knowledge they have [18]. This means that the more expertise they develop in diverse fields of knowledge, the more options they will have when accepting a new role they have not played before [27], thus it enables managers to improvise.

In the business approach, experienced and skilled managers tend to apply improvisation in their business operation. According to Leybourne and Sadler-Smith [24], intuition is rooted in expertise which may drive improvisation. Intuition as distilled experience recognizes that the quality of intuitive response depends upon the expertise or patterns of experience in a particular domain [16]. In this case, the more experienced a manager is the more their intuitive reasoning and therefore the higher the tendency of the manager to apply improvisation.

Leybourne and Sadler-Smith [24] demonstrate that experienced project managers improvise more than those with less experience. In relation to the type of skills and expertise, Whittington [28] states that craftsman and bricoleur are the more important kind of expertise if compared to technical analytical expertise as both types (craftsman and bricoleur) consist of creative and innovative elements that enable the implementation of improvisational activities. However, previous empirical research demonstrates very limited evidence on the link between experience, skills and expertise of the manager and organizational improvisation; hence it is crucially significant to determine these relationships.

The proposed hypotheses are as follows:

H2a: The greater the manager’s level of confident, the higher the levels of firm’s strategic improvisation.

H2b: The greater the manager’s attitude towards risk, the greater the firm’s strategic improvisation.

H2c: The more the experience of the manager, the greater the firm’s strategic improvisation

H2d: The greater the manager’s expertise, the greater the firm’s strategic improvisation

C. Organizational Improvisation and Firm Performance

In theory, organizational improvisation varies in terms of positive and negative outcomes. According to Cunha et al. [9], the most attractive outcome is flexibility, which is then followed by learning, motivation and affective outcomes. Whereas, the negative outcomes of improvisation are biased learning, opportunity traps, amplification of emergent actions, addictiveness to improvisation and increased anxiety. Vera and Crossan [18] claim that improvisation *per se* is not associated with innovative outcomes. Previous studies identify that the relationship between improvisation and performance appears to be equivocal [29]. Further, very limited research proves empirical verification between these relationships. For instance, Vera and Crossan [18] show that there is an indirect correlation between improvisation and performance through some moderating factors but a direct relation is unproven. Most empirical studies examine the relationship between improvisation and performance by assessing new product success teams [18] and new product development ([18]; [24]; [30]; [31]; [32]) as the primary performance measures. No study has investigated direct relationships between organizational improvisation and firm performance as a whole. It is however suggested that an ability to adapt and move quickly to respond to changing conditions, as provided by improvisation, could entail positive benefits for performance. Therefore, it would be valuable to examine the direct impact of improvisation on firm performance.

H3: Organizational improvisation affects firm performance.

III. METHODOLOGY

The unit of analysis for this study is the top management of the firm (nominated subordinate such as CEO, COO, Executive Directors, Managing Directors and Senior Managers) who participate in the strategic management process and firm decision-making in technology-based companies in Malaysia.

A. Data Collection

Questionnaires were distributed to 1080 technology-based companies in Malaysia. Four waves of mailings were done in order to get a high respond rate (suggested by [33]). *Wave 1:* A notification letter was sent to 1080 respondents. *Wave 2:* A cover letter, questionnaire and returned envelope were mailed. *Wave 3:* A reminder letter was sent out to all respondents who have not responded to return the questionnaire as soon as possible. *Wave 4:* A cover letter and a questionnaire were sent out again to all respondents who still have not returned the questionnaire.

A total of all usable questionnaires were 128 responses from technology-based companies in Malaysia. Analyses of individual respondents revealed that the majority were Chief Executive Officers or Managing Directors (48.4%), followed by Senior Managers (31.2%), Chief Operation Officer (8.6%), General Managers (6.3%) and Project Managers (5.5%). All

respondent were mainly involved in strategic planning and familiar with their business and strategies.

B. Measures

The construction of items of each variable was developed based on a literature review and a mixture of prior empirical research. Seven-point Likert scales were used in the questionnaire. Alpha coefficients of all factors are greater than 0.7, which indicates good reliability as suggested by Nunally [34].

The measurement scale for improvisation was adapted from Vera and Crossan [18] study which consists of seven-item scale. The internal consistency of organizational improvisation was 0.810 (Cronbach α). Item constructs in assessing managers' system of reasoning (either rational or intuitive) was replicated from Leybourne and Sadler-Smith [24] study. They used Eipstein's Rational Experiential Inventory [35], a self reported questionnaire which consists of two separate scales: "need for cognition" and "faith in intuition". The internal consistency of the rationality scale was 0.897 (Cronbach α) and the intuitive reasoning scale was 0.923 (Cronbach α).

The manager's level of confidence was measured by asking four questions. The questions were originally developed by researcher's own constructs. The internal consistency of four items scale measuring manager's individual confident was 0.867 (Cronbach α). The measurement scale for manager's individual expertise was adapted from Vera and Crossan [18] and internal consistency was 0.711 (Cronbach α). The internal consistency of manager's attitude towards risk which was adapted from McKibbin et al. [36] was 0.777 (Cronbach α). Lastly, five items scale measuring firm performance was adapted from Souchan and Hughes [37]. Internal consistency was 0.888 (Cronbach α).

In order to summarise the structure of a set variables and to purify measures of items used, all scales were examined with exploratory factor analysis using SPSS 15.0. Principal components factor analysis was used in identifying and purifying the measurement items. KMO and Bartlett's test of sphericity of sampling adequacy of strategic reasoning was 0.846, individual factors of the manager were 0.917, organizational improvisation was 0.818; and firm performance was 0.845. These results show that the KMO measure of each variable is greater than 0.5, therefore the sampling is assumed to be adequate for further analysis.

IV. ANALYSES AND RESULTS

Regression analysis is used to assess the effect of strategic reasoning on organizational improvisation. The result of *Hypothesis 1a* shows that rational of reasoning is positively associated with organizational improvisation. Thus *H1a* is supported. However, intuitive reasoning was not significantly associated with organizational improvisation; thus *H1b* is not supported.

TABLE I
REGRESSION ANALYSIS FOR HYPOTHESIS H1

Rational, Intuitive and Improvisation	Variables	Hypothesis	Improvisation (β)
Independent Variable	Rational of reasoning	H1a	0.182*
	Intuitive reasoning	H1b	0.092
Summary statistics	R ²		0.037
	F		2.531
	P		0.084

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table II demonstrates the regression analyses on *Hypotheses 2a* through *2d* concerning the individual manager's factors contributing to effective organizational improvisation. A total of 36.3% of the variance in organizational improvisation was explained by the manager's self confident, attitude towards risk, manager's experience and manager's expertise, which is significant as indicated by the F-value. However, individually the result shows that only self confident and manager's attitude towards risk significantly affect organizational improvisation. The manager's experience and expertise does not influenced organizational improvisation, thus *H2c* and *H2d* are not supported.

TABLE II
REGRESSION ANALYSIS FOR HYPOTHESIS H2

Individual Manager's Factors and Improvisation	Variables	Hypothesis	Improvisation (β)
Independent Variables	Self Confident	H2a	0.322***
	Attitude towards Risk	H2b	0.233**
	Manager's Experience	H2c	-0.004
	Manager's Expertise	H2d	0.175
Summary statistics	R ²		0.363
	F		17.540
	P		<0.001

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Analysis on the effect of organizational improvisation on firm performance reveals significant relationship between these factors (as illustrated in Table III). Hence, the result supports *H3*.

TABLE III
REGRESSION ANALYSIS FOR HYPOTHESIS H3

Improvisation and Firm Performance	Variable	Hypothesis	Firm Performance (β)
Independent Variables	Improvisation	H3	0.297*
Summary statistics	R ²		0.088
	F		12.075
	P		<0.001

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

V. DISCUSSIONS AND IMPLICATIONS

Intuitive and rational thinking processes should be used together in improvisational practice [15]. The study hypothesized that both rational and intuitive reasoning have a significant effect on organizational improvisation. Our findings confirm that prior research into the reasoning and

improvisation relationship had produced contradictory results. The results found no relationship between intuitive reasoning and organizational improvisation but there is a link between rational reasoning and organizational improvisation.

Past theories and one empirical study by Leybourne and Sadler-Smith [24] suggest a positive link between an intuitive reasoning and improvisation. Their study was specifically focused on intuition and team improvisation on new project development in UK technology-based companies. With regards to rational reasoning and organizational improvisation, empirically, past research suggests that there was significant relationship between rational of reasoning and planning [25], but not with organizational improvisation. The practice and adaptation of corporate culture and norms which reflect the way the manager think may be one of the factors why the results vary between past and current research. Further, different sample of respondent and different sectors, industries and country are among the reasons why the results distinguish from previous research.

The findings here imply that improvisation is not an accident or an outcome of recklessness but rather a rational and deliberate decision to undertake; suggesting that improvising is a deliberate choice by management. This perhaps indicates that intuition is not actually the primary underpinning factor in improvisation as it suggests an element of recklessness. These findings suggest improvisation is rather a deliberate, information-based process undertaken by design and not by accident or for the sake of convenience based on intuition or 'gut-instinct'.

The results of individual managerial factors and organizational improvisation demonstrates that confidence level, attitude towards risk taking, level of skills, expertise and experience as a whole affect organizational improvisation. However, manager's experience and expertise, if they stand alone, do not drive to organizational improvisation. Expert and experienced managers tend to use current business practices which they feel comfortable with and resist change to new business tools and approaches. Therefore, further research should investigate in greater detail the characteristics of skilled and experienced managers to the effectiveness of organizational improvisation. Other influential factors such as the culture of the manager [14] may also be important to examine in relation to improvisation. Apart from experienced and skilled managers, the members of the firm (employees) are also a key determinant that contributes to the effectiveness of firm improvisation [26]. Skilled employees normally put their expertise in practice in a real time basis [26] and mostly create successful firm outcomes. Adding skilled employees as new influential factors for future research could determine the effectiveness of organizational improvisation and firm performance. Further, it is essential for managerial practice to detect factors that associate with the effectiveness of improvisation as it could benefit managers in making quicker and better decisions. With key antecedents of improvisation, it is potentially hoped for the manager to be able to save time and energy in organizing and dealing with improvisational

practice. At the same time the manager could be more responsive and achieve faster adaptation to changes in highly turbulent markets.

A relationship between organizational improvisation and firm performance is demonstrated as a direct relation between these variables is found. By applying organizational improvisation as a form of learning, it could enable managers to be able to immediately access creativity in the moment or in a spontaneous way and under pressure conditions. It may also help them to handle crucial business situations when dealing with uncertainties and rapid changes in the environment. At the same time, managers might creatively and spontaneously achieve critical decision-making and problem solving when executing improvisation activities. All of this may provide the necessary increase in responsiveness and creativity needed to outmanoeuvre competitors and hence increase firm performance.

By looking at the contribution to knowledge, previous theory shows that managers follow a step by step process of planning in strategic management. However in reality, the process between strategic formulation and execution could be done simultaneously ([2]; [38]) and most managers will generate real time action as it unfolds. The ability to build solutions from available resources [9] as well as to understand and adapt to real-time scenarios (of turbulent environments) is highly required from the firm's manager. At this point, it involves the reasoning system in the manager's mind whether to make intuitive or rational reasoning in dealing with solutions. This study explores these conceptual understandings and it provides critical empirical evidence and a practical source of information to stimulate better decision-making processes, performance outcomes and ultimately competitive advantage.

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