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Activation Triggers as Endogenous and Exogenous Contingencies on Absorptive Capacity

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Abstract: The issue of absorptive capacity as a strategic and dynamic capability has been thoroughly investigated so far and the existing literature presents valuable outcomes concerning this construct, however, it still warrants further research-wise consideration as it a complex organizational phenomenon. Among the many determining variables that deserve further study are activation triggers as a contingent factor that moderate the impact of knowledge source on absorptive capacity. This study was, therefore, an attempt to re-read and review the existing literature about activation triggers to provide the model and the status of absorptive capacity. To this end, rather than the antecedents and consequences of this phenomenon, when and which events basically trigger absorptive capacity were undertaken in this study.

INTRODUCTION

Knowledge which has been and continues to be a strategic issue of controversy[1], is a critical factor affecting economic growth[2]. Businesses rely on the level of knowledge more than other factors[3-5]. Firms that are competent in acquiring and exploiting knowledge, are more successful in today's knowledge-intensive economy[6]. It is believed that new external knowledge is the crucial source to survive and compete in dynamic environments to which firms should adapt and thus improve the innovation of its products[7-10] and sustain competitive advantages[11-15]. Therefore, desired outcome requires a type and level of knowledge. Nonaka[8] defined knowledge as "Justified true belief" which promotes firms' successful actions. He posited that knowledge possesses many sides through having many different meaning. Nonaka also described information as a source which eventually improves knowledge. Firms acquire new knowledge via. previous knowledge and experiences externally[7].

Among many determining factors, Absorptive Capacity (AC) as a strategic[16, 12, 15, 17] and dynamic[12, 18, 15, 17] capability sensitivity to new knowledge and opportunities in the highly turbulent environments[7, 12].

Research trends suggest that the issue of knowledge recruitment capacity in an organization is still a vital topic that deserves further investigation as it contributes to achieving innovation[19, 12, 20], performance[21, 12, 22, 23, 24] and competitive advantage[12, 22, 23] in an organization. Zahra and George[12] reconceptualizing AC in theoretical model recognizes AC as a mediator with antecedents (knowledge source and complementarity and experiences), moderators (activation triggers, social integration mechanisms and regimes of appropriability) and outcomes (competitive advantage including strategic flexibility, innovation and performance). After Zahra and George, many different papers on capability of AC and its abilities as acquisition, assimilation, transformation and exploitation have been published by researchers so far.

Zahra and George[12] briefed internal and external activation triggers as endogenous and exogenous contingency factors which have an influence on investment on AC. There is still little research on this issue; the factors and variables that moderate the effect of knowledge resource on AC as activation triggers is untouched. Moreover, most AC studies apply this capability as a whole and a process of knowledge absorption on acquisition, assimilation, transformation and exploitation of external knowledge and ignore other significant moderators and mechanisms that may play a significant role. As there is a comprehensive literature on the construct of adsorption capacity, for practical usage of AC, re-reading of the previous research is felt necessary. Hence, this study is an attempt to review the related literature on activation triggers and the variables which may exert either positive or negative effects on this construct.

The current study touches upon the review of the literature on knowledge, AC, activation triggers and their definitions in order to provide the foundations on activation triggers. Conclusions encompassing researcher's main concluding remarks, implications and recommendations for future studies are provided at the end.

Literature review

Knowledge and innovation: Over the past few decades, the rapid development of business information and the growing quantity of accessible information along with technological knowledge has gained considerable momentum through the progress of information and knowledge. Technological knowledge is a crucial asset that needs to be adapted in turbulent environments[7, 12, 14, 15]. This phenomenon allows firms to interact with the surroundings through the market, exhibitions, the internet, conferences and other communication methods to realize new knowledge. In brief, the acquisition of new technological knowledge allows firms to introduce new product/s and to respond to market threats[20]. This process seems relatively effortless but it actually requires effective management to identify practical values besides the capacity to absorb new knowledge and respond to the challenges of the business market.

Innovation obviously is a critical capability which is significant in sustaining the competitive advantage[12] and the economic growth[25]. Knowledge based innovation is the "super-star" of entrepreneurship; it benefits the firms in terms of promotion and finance performance[3]. It also enables firms to come out with innovations[26, 5]. Competitiveness of firms depends on how much the firms successfully absorb knowledge. Porter[27] stated that innovation briefs firms in the market. Fostering external knowledge, in the meantime, improves innovation capability[28]. Escribano *et al*.[29] posited that firms in challenging in market environment need to reconstruct the knowledge body to achieve worthy position. Information is embedded in the many transformations that occur in firms[30]. Firms also require several types of innovation to survive in the market and realize higher incomes, achieve maximum customer satisfaction and ensure the effective use of all of the firm's capacities such as open, radical and incremental innovation[31]. Indeed, each type of innovation needs different levels and types of knowledge and technological processes[32]. Researchers propose that the information and knowledge already used by a firm are stored in the firm[30]. Svetina and Prodan[28] claimed that new external knowledge can be found in universities, among firms, in research firms and at science parks which are active and connected to commercialization. Zahra *et al*.[33], in the same vein, mentioned that new knowledge could appear through discussions among the managers on the environment, business and customers in terms of AC.

Absorptive capacity: Firms cannot rely exclusively on internal research and doing innovative activities; they need to absorb external knowledge to respond to environmental threats[7]. Otherwise stated, firms necessitate access to new external knowledge from in and out of their respective boundaries[34]. Many industries and incumbents are faced with the difficulty of insufficient opportunities and external knowledge[35], however, they are encumbered by the ability to maximize their respective benefits[36, 37]. Firms that do not focus on AC processes and the importance of novel, external knowledge will be "locked out" of the market, since, AC is not simply a swiftly accessible process[7].

AC is an internal capability with an external function of absorbing new external knowledge[7, 38, 12, 18]. The greater availability of this dynamic capability enables firms to target, absorb and deploy external knowledge that is crucial for the innovation process. AC plays two roles, namely, protecting the shareholder and creating wealth and reducing potential strategic mistakes[33].

The importance of AC has kept on growing, since, Cohen and Levinthal's first paper was published. Zahra and George[12] theorized the construct, its dimensions and contributions. Many researchers stated that AC may be derived from different antecedents which might be contributory in determining AC[38-42]. Other scholars, in addition, mentioned that a firm's AC is associated with different outcomes[31, 34, 32]. However, the firm determines when opportunities arise which outputs are needed and which antecedents should be employed or reinforced.

AC is a function of a firm to manage abilities based on its last experiment on prior related knowledge and how well can new knowledge be used to realize innovation

outcomes[7]. AC is the dynamic capability that allows firms to create value and gain; and sustain a competitive advantage via managing external knowledge[12, 18, 15]. The capability of AC is the sum of abilities that enables firms to conduct acquisition, absorption, transformation and utilize new external knowledge[43]. Therefore, AC is a firm's capability to deal with external knowledge. In other words, it is a routine and strategic process which a firm reconstructs, owns knowledge building and applies it to sustain competitive advantage[12]. Briefly stated, AC is described as a dynamic capability which allows firms to innovate and manage new external knowledge[12, 18]. Researchers maintained that the concept of AC shows sufficient flexibility to be applied to different units of analysis and to a variety of research fields including organizational learning, industrial organization, strategic management and innovation management[12, 18].

Activation triggers: "Triggers are events that encourage or compel a firm to respond to specific internal or external stimuli" while, some of the variables are away from the firm's control[30, 12]. As Zahra and George[12] suggested, activation triggers moderate the impact of knowledge source and experience on AC. Walesh and Ungson[30] and Zahra and George[12], on other hand, believed that internal triggers could appear in different types as organizational crises is failure, important events or performance issue/s which may force a firm to apply new strategies. Although, these variables can have negative effects. As Kim[44] illustrated, a crisis even though with negative effects can increase a firm's efforts to realize and absorb new skills and develop new knowledge. Crises threaten a firm's existence, probably encouraging learning and realizing external knowledge[12]. External triggers are actions that possibly exert effects on the future of a firm and its operation[12]. Therefore, internal and external triggers prompt or strengthen a firm's efforts to search new external knowledge. While triggers are wide-ranging within a firm and its environment, they can impact a firm's search for new external knowledge[12]. On the other hand, some triggers possibly require a different type of knowledge that a firm never considers or sometimes it may be so difficult to absorb. Zahra and George[12] proposed that the strength of triggers increases investment on construction of AC; the more strength of triggers rises, the more firms intend to allocate further resources to improve the competences and develop capability of AC and gain new external knowledge[12]. The basis of triggers probably exerts influence on technological shifts. Moreover, it may boost investment on relevant knowledge absorption in specific areas. Therefore, the intensity of the triggers may affect a firm's investment in capability of AC. Besides, it increases the intention to improve performance of a firm and avoid technological lockout[12]. Figure 1 shows the theoretical model on activation triggers on this paper.

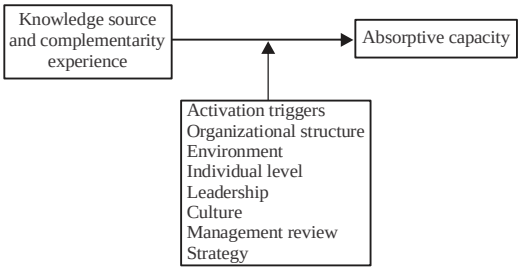

Fig. 1: Theoretical model on activation triggers

Organizational structure: Fiol and Lyle[21] described organizational structure as a critical variable which determines the process of learning. Structure is defined as "stable role definitions which are less precise about change but can clarify who is to perform and duties"[30]. According to Turi *et al*.[45], organizational structure is a "formal system of task and authority relationships that controls how people cooperate and use resources to achieve organization's goals". Fiol and Lyle[21] added another dimension to dynamic organizational structure. They posited that it is an organization's design that may encourage learning. Providing opportunities to seek knowledge, dynamic organization with low level centralization and formalization, plays a more efficient role in learning[45]. Such dynamic organizations, by moving away from mechanistic structure can have reflective action-taking[21]. In a dynamic organization, knowledge integrates and combines with different sources to promote the objectives of the organization[45]. This indicates that the objectives of the organization and its strategies determine organizational structure[45].

Fiol and Lyle[21] sustained that the type of organizational structure determines the needed actions. More decentralized dynamic structures tend to allow shifts of beliefs and actions, whereas in centralized and mechanistic structures past behaviors are reinforced. When knowledge absorption increases, decentralized structures increase the cognitive capacity in individual level and firms facilitate to assimilate new outlines[21]. Low level formalization with democratic values encourage learning with the change in structure and form[45]. In organizations with centralized structure, however, decision making is made in high managerial level adequately where control over departments and divisions are tight[45].

Walesh and Ungson[30] suggested that organizational memory is possibly affected by the structure because organizational structure is created with managerial choices. Organizational structure has to systematically trace changes[30]. They posited that organizational memory retains and recalls past experiments. Walesh and Ungson[30] stated that there are links between individual and organizational level, therefore, organizational structure plays this role to store knowledge about the

organization's activities and environment. Functional organizations may end up satisfactory results but adaptability with environment issues is different[30]. Researchers provide evidence that learning enriched with diffused decision influence learning phenomena[30].

Environment: Fiol and Lyle[21] explained about the environmental condition and learning process. They mentioned that with complexity and dynamicity in external or internal environment an overload may occur and learning may not happen. The process of learning necessitates both change and stability between learners and external environments[21]. They described that, too much stability in an organization can be inefficient, as there is little incentive to learn and change.

Although, established behaviors never change, too much change and turbulent environments, too, make learning difficult[21]. An efficient learning process requires the creation and utilization of this tension between stability and change. Therefore, a certain amount of pressure is necessity if learning is to take place[21]. The level of pressure and the amount of uncertainty about past experiments bears an effect on the efficiency of learning and show how the environment is perceived and interpreted[21].

Walesh and Ungson[30] postulated that organizational structure and internal environment translates and therefore, reveals a good deal of knowledge about the organization. The internal environment preserves knowledge about an organization and its membership[30]. Since, change in environment comprises uncertainty, complexity and rapid enormous interruptions, organizations seeking to adapt, are required to search for specific and new external knowledge[30].

Individual level: Walesh and Ungson[30] suggested that there is a link between individual and organizational levels. Individuals preserve information and knowledge based on their direct observations and experiences[30]. This evidence can be stored in their capacity or more obviously in their beliefs[30]. Within this capacity and cognitive development, organization possibly identifies new knowledge based on the level of perception and experiments of individuals[21].

Knowledge workers or individual level modification, considered as a mainstay asset and capital in an organization, play a vital role in organizational cognition[45]. "Knowledge workers remain motivated, agile and strive to move towards self-actualization"[45]. Existence of knowledge worker keeps the internal environment motivated and dynamic[45]. Knowledge-based organizations usually spend a big percentage of their budget on individual level development and more on their individual capacity[45]. It seems, thus, warranted that organizations should identify the value of knowledge as learning in organizations is always affected by individual level knowledge[45].

Leadership: Leadership with effects on learning[45]. Organization leadership provides new guidelines, new viewpoints and new emotions to the followers in individual level and makes them ready to face all the unexpected challenges in environmental change[45]. Leadership in knowledge-based organizations encourages and raises spirits of learning and facilitates internal environments[45]. Leaders through appropriate leadership styles can promote motivation to enforce learning. Moreover, leadership gives essential practical learning skills such empowerment, decision making power and support in individual level[45].

Culture: Cultural cognitivism theory stated that individual level is the primary focus in face of learning in an organization[45]. Cultural cognitivism theorists suggested that organizations with significant culture can reach to high performance[45]. This performance is primarily about culture and knowledge workers who promote learning in an organization with the data and technology[45]. An organization's culture is established in the patterns of behavior in individual level[21]. "Culture is the sum of shared vision, assumptions, values, beliefs and norms which govern organizational policies and people"[45]. It is a type of thinking and understanding, as a learned way of perceiving and feeling about problems that is transferred to individual level[45]. Some organizational cultures are planned and organized, overriding individual behavior through procedures and operating processes. Other cultures are considered by creativity in individual level and encourage high levels of risk-taking[45]. Finally, it can be stated that culture contains 'the shared beliefs, the ideologies and the norms that influence organizational action-taking[21].

Management review: According to Walesh and Ungson[30], organizational memory is possibly affected by its structure because organizational structure is created with managerial choices. Zahra and George[12] views managerial role as a contingent factor. Contrary to the traditional view of AC that explained managerial roles restricted to environmental scanning and R&D investment. Zahra and George[12] stated that broader managerial roles exert influence on knowledge seeking patterns, activation triggers and transformation of knowledge. Management review also can enhance knowledge sharing by providing cues to how members of the project should interact and implement the project. They posited that management review increases the sense of interdependence and group process which in turn, improve learning in an organization.

Strategy: The objectives and strategy of an organization determine organizational structure, function[45] and learning capacity[21]. An organization's strategy introduces its targets and objectives and the scope of activities for carrying out the strategy[21]. Moreover, it clarifies a map of learning by providing a boundary and a context for the perception and understanding of the environment[21]. They stated that learning capacity in an organization is determined by its strategic option. Fiol and Lyle[21] mentioned to the momentum to organizational learning is determined by strategic design. The strategy affects the organizational learning that allows both innovativeness and new insights[21, 46].

Mechanistic structure has more efficient and mixed results as regards learning phenomena and knowledge absorption[45]. Strategic cognition that plays a role in the cognitive organizational structure, is an organizational practice to apply and play role in the cognitive organizational structure[45]. Learning is a prominent aspect of organizational strategy wherein, in order to bring about changes in the external environment, an organization learns from past experiments by assessing the outcomes and adjusting their objectives or actions to realize the targets[45]. Moreover, strategy of learning in itself is an important aspect where organizations learn from their past or existing strategies by evaluating the outcomes. They adjust their objectives or activities to achieve their goals depending upon changes in the external environment[45]. Consequently, it is thought that "strategy is strongly linked with organizational learning and development and is a topic for further exploration"[45].

CONCLUSION

Twenty years after Zahra and Gorge[12], there is still a big gap in the literature regarding research and evidence about complex capability of AC. Research output concerning the capability of AC and its abilities as acquisition, assimilation, transformation and exploitation is not comprehensive. The whole model as endogenous and exogenous contingencies warrant further exploration. This is due to the fact that the process and capability require mechanisms. This article was limited to activation triggers, however, the subject is very broad and comprehensive which thus, requires detailed literature review about each variable.

RECOMMENDATION

In addition, to activation triggers, there are many other variables that can affect AC. More information is recommended to be collected about these moderating variables from the very rich literature. Information technology, stakeholders, professional behavior, research and development unit could be listed as other activation triggers that need further review.

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