

Firm Problemistic Search: A Review and Agenda for Future Research

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ABSTRACT

It is argued that organizational performance below the aspiration level will trigger problemistic search that results in strategic actions designed to overcome performance shortfalls. A lot of interest in the differences of firm search behavior has emerged; however, the diversity of perspectives has resulted in fragmented theoretical arguments, as well as contradictory empirical findings. Therefore, the purpose of this paper is to review existing research on firm problemistic search. Based on this review, this article develops a descriptive model, and concludes with an agenda for future theoretical and empirical research on this valuable area.

Keywords: *performance; aspiration; problemistic search; search behavior; risk taking.*

INTRODUCTION

What happens in an organization when performance deviates from the aspiration level, especially below the aspiration level? This question has attracted considerable attention from many scholars in the area of organizational research. These scholars have tried to answer this question from multiple theoretical perspectives such as the behavioral theory of the firm (BTOF), agency theory, prospect theory, and threat rigidity theory. The studies on this question have emerged quickly especially after the proposition of shifting-focus-of-attention model by March and Shapira (1992). Based on this variable risk preferences model, scholars have conducted a number of studies on the dynamic relationship between performance-aspiration deviation and firm search behavior.

Organizational responsiveness to performance is an important mechanism of adaptation in the process of organizational learning. Performance below the aspiration level will trigger problemistic search behavior in organizations (Vissa, Greve, & Chen, 2010). The aspiration level is the minimum level of performance that can be satisfied decision makers, and is the borderline between perceived success and failure (Lehman, Hahn, Ramanujam, & Alge, 2011). It can be based on an organization's historical performance or on the performance of other organizations in the same

industry. Following the behavioral theory of the firm, decision makers would like to evaluate organizational performance by focusing on the aspiration level. The relative performance is the critical antecedent which affects organizational strategic action ensues (Cyert & March, 1963; March & Shapira, 1992). However, when performance is below the aspiration level, the research findings of how performance decline affects firm search behavior are not consistent.

Therefore, this paper attempts to review the relevant theories and empirical studies on the relationship between performance decline relative to aspiration level and firm search behavior. Based on the review, the paper develops a descriptive model, and concludes with an agenda for future theoretical and empirical research on this valuable area

PROBLEMISTIC SEARCH: LITERATURE REVIEW

The answers to the question "what happens in an organization when performance is below aspirations" have primarily converged on two positions, one suggesting that the negative deviation of performance is an impetus for risk taking and the other suggesting just the opposite- that performance decrease inhibits risk taking, that is, leads to organizational rigidity. Both positions are supported by case or empirical studies.

The first position is risk taking position, that is, performance decline stimulates risk taking. The two important theoretical frameworks supporting this position are prospect theory and the behavioral theory of the firm. Following the statements of these two theories, performance below the aspiration level will trigger decision makers to reconsider the applicability of current organizational routine. The performance shortfalls may prompt decision makers' dissatisfaction with the established ways of action and trigger dramatic changes in organizational practice (Ren & Guo, 2011). Thus, the organization will prefer the strategic actions which are riskier and more innovative to improve the performance (Cyert & March, 1963; Kahneman & Tversky, 1979).

The second position is the opposite which is rigidity. It is grounded in the theoretical logic of threat-rigidity (Staw, Sandelands, & Dutton, 1981). Following Staw et al. (1982), performance below the aspiration level will increase the psychological pressure of decision makers and trigger their anxiety. To offset these negative perceptions, decision makers are more likely to respond in domains over which they have greater control (Chattopadhyay, Glick, & Huber, 2001; Dutton & Jackson, 1987). For example, they prefer to focus their efforts on organizational search of efficiency, tighter budgets, cost cutting, and increased accountability, all of which increase rigidity.

Furthermore, as March and Shapira (1992) proposed the shifting-focus-of-attention model, the differentiation of the search behavior when performance is below the aspiration level has obtained a large amount of attention from the scholars. This model argues that when performance is below the aspiration level, the attention of decision makers may not be focused on the aspiration level all of the time. It may sometimes be focused on survival (March & Shapira, 1992), or more generally, the threat of "distress" (Iyer & Miller, 2008). It is the move of the reference point that leads to the

differentiation in organizational search. In specific, when firms focused on the aspiration level, the performance-risk relationship thus be negative such that risk taking increases as performance worsens. While when attention is focused on survival, the performance-risk relationship thus be positive such that risk taking decreases as performance worsens (March & Shapira, 1992). Therefore, factors influencing the focus of organizational attention constitute the boundary conditions of the two different positions in terms of risk taking and rigidity.

Recently, more and more scholars have conducted extended research based on the March and Shapira's (1992) model. The research found that there are many factors influence the focus of organizational attention, and then the variation in search behaviors. These factors are firm size (Audia & Greve, 2006; Greve, 2011), organizational slack (Chen & Miller, 2007; Iyer & Miller, 2008; Latham & Braun, 2009), firm experience, firm age and legitimacy (Desai, 2008), the performance momentum (Lehman & Hahn, 2013), and the competitive position of firm (leader/follower) (Boyle & Shapira, 2012).

Taking organizational slack for example, when performance is below the aspiration level, the high stock of resources in organization would help buffer the threat of declining performance to the organization. Meanwhile, firms are more likely to perceive that the gap between current performance and the aspiration level is repairable. Thus attention is still focused on the aspiration level which lead to firms' risk taking. On the contrary, the limited slack is associated with the poor ability to buffer the possible risks. The attention in the firms with limited slack is focused more on the survival level, thus lead to firms rigid strategic actions in order to maintain the current status. Table 1 summarizes the literatures and the main findings of research on the relationship between performance deviation and firm search behavior.

Table 1. *Studies on the relationship between performance deviation and firm search behavior*

Author	Year	Journal	Dependent Variable	Moderating Variable	Main Findings
Audia & Greve	2006	MS	factory expansion	firm size	Large firms increase risk taking as ROE declines. Performance decreases below the aspiration level lead to less risk taking. There is less risk taking for small firms and more risk taking for large firms below the aspiration level.
Greve	2011	SMJ	resource	firm size	Performance decreases lead to less risk

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			acquisition		taking among small firms and more risk taking among large firms. Low performance increases the similarity between the new resources acquired and the current stock of resources in small firms.
Chen & Miller	2007	SMJ	R&D search intensity	proximity to bankruptcy, slack	R&D search intensity increases with the distance of firms' past performance below aspirations, and with firms' slack resources. R&D search intensity decreases with firms' proximity to bankruptcy.
Vissa et al.	2010	OS	internal technology search or external market search	organizational form	Compared with unaffiliated firms, business group-affiliated firms are more externally oriented in setting aspiration levels and more likely to respond to low performance in the market domain.
Desai	2008	OS	expansion	experience, legitimacy, and age	Poor performance constrains risk taking at older organizations, and organizations which with limited operating experience or poor legitimacy.
Boyle & Shapira	2012	OS	risk taking	competition (leader/follower)	Leaders are prone to take excessive risks to maintain their leadership position.
Lehman et al.	2011	OS	risk taking	deadline proximity	For performance below the aspiration level, the inverted U-shaped relationship between performance and risk taking becomes stronger as deadlines approach. For performance above the aspiration level, the positive relationship between performance and risk taking becomes stronger as deadlines approach.
Lehman & Hahn	2013	MS	risk taking	performance momentum	For performance below (above) the aspiration level, the negative relationship between performance and risk taking is weaker (stronger) when the organization is experiencing negative within-period momentum than when it is experiencing positive within-period momentum.
Latham & Braun	2009	JOM	R&D investment	organizational slack, managerial equity	Higher levels of managerial equity decrease investment in R&D. High levels of organizational slack and managerial equity result in more significant decreases in R&D than lower levels of slack or managerial equity

Note: MS= Management science; SMJ= Strategic management journal; OS= Organization science; JOM= Journal of management.

RESEARCH GAPS AND FUTURE DIRECTIONS

As shown in Table 1, scholars have been tried to study the phenomenon of firm search behavior from various perspectives such as behavior theory, prospect theory and threat rigidity theory. Although valuable findings are concluded in existing research, there are still some important questions which are overlooked.

First, existing research are mostly focused on unaffiliated firms, but pay little attention to firms which are structured in other organizational forms such as business groups.

However, business groups are prevalent in both developed and emerging markets (Ghemawat & Khanna, 1998) and constitute the dominant organizational form in many emerging markets (Chung & Luo, 2008; Khanna & Rivkin, 2001). They play an important role in emerging economies by filling institutional voids and creating their own internal capital, labor and product markets (Khanna & Palepu, 2000). There are important differences between group affiliated and unaffiliated firms, in terms of their underlying resource base and embeddedness in the social fabric of the local market. Therefore,

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the search behavior of business groups and subsidiaries in them should be put on the research agenda in the future.

Second, as shown in Table 1, scholars are more concerned about the antecedents of differences in the degree of risk taking which is one important characteristic of firm search behavior. Furthermore, R&D intensity is often served as the proxy variable in available literatures to measure the degree of risk taking. But in fact, search behaviors occurred in organizations to overcome performance shortfalls are diversified. Specifically, the degree of risk taking is only one of the characteristics of firm search behavior, the search forms are also critical characteristics.

For example, performance deviation will not only lead to search behavior in the firm market environment, but also urge the firm to adopt search behavior that is non-market oriented, such as political lobbying (Rudy & Johnson, 2013).

In addition, things are different in the subsidiaries which are embedded in business groups. Due to this involvement in the network of business groups, subsidiaries face closer and more comparative evaluation of their performance than unaffiliated firms do (Vissa et al., 2010).

There are comparison with other units in business group and also comparison with other firms in the same industry. This experience may drive subsidiaries search toward actions that can lead to quick improvement. Market rather than technology search may more likely to be seen as a quicker route to improve performance. However, the variations in search forms are not devoted enough attention in existing studies. Therefore, discussing the key factors which lead

to variations in the firm search forms is a valuable extension in the future research.

Third, in the process of constructing the boundary conditions of different theoretical positions, existing literatures pay little attention to the characteristics of top management which are critical subjective factors in organizations. As mentioned before, scholars are more concerned on the objective factors that have moderating effects on the relationship between performance deviation and firm search behavior, such as firm size, firm age, and organizational slack. However, little attention is paid to the characteristics of top management who are decision makers in organizations.

The only few related studies are fragmented. For example, some scholars examined the direct relationship between the managers' background characteristics and firm risk taking (Li & Tang, 2010), and others focused on the moderating role of managerial incentives in the relationship between performance deviation and firm risk taking from the perspective of agency theory (Alessandri & Pattit, 2014; Lim & McCann, 2014).

In summary, there are three limitations at least in previous firm search behavior research. And thus, as shown in Table 2, future research should be extended in five aspects. First, the previous research focus of search intensity should be extended to the variations in search forms which will help facilitate a deeper understanding on firm search behavior. When performance is below the aspiration level, performance decrease will not only strengthen the intensity of firm problemistic search, but also lead to variations in strategic actions which are prompted to be taken by firms to improve performance.

Table 2. Future research directions in performance and firm search behavior

Directions	Examples
Forms of search behavior: internal/external; market/political	Are there other forms of search occur in organizations except R&D investments? Which factors influence the forms of firm search behavior? How about their influence mechanisms?
Comparative studies	Does the relationship between performance and risk taking in subsidiaries differs from this in unaffiliated firms? Why and how cultural and institutional differences lead to variations in firm search behavior?
Upper Echelons Theory	How do top management characteristics moderate the relationship between performance and firm search behavior? Are top management characteristics the potential boundary conditions of the different findings of firm search behavior?
Aspirations	Is the average performance in their strategic groups rather than industrial performance more likely to be served as the aspiration level for organizations?

Feedback effect: turnaround/ downward	How differences in search intensity or search forms lead to variations in future performance?
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Indeed, the differences in firm search behavior are not only existed in the various degree of risk taking, but also in variations in search forms which are paid little attention to in previous studies. For example, response time may be an important factor affecting firm search forms. Firms' immediate responses aimed to overcome the performance decline are different from their future responses. Specifically, firms' immediate responses are associated with short-term performance improvement, such responses are usually conducted in market domain such as adding products to obtain a wider market position or adding customers to get a deeper market penetration. While firms' future responses are focus on the long-term performance improvement, such responses are usually conducted in technology domain, such as increasing R&D investment which has long lead times.

Therefore, although R&D investment is a critical form of organizational search, there are also other forms of search occur in organizations in response to changes in performance. The examination of differences in search forms which would facilitate researchers to obtain a more sophisticated understanding on firms' responsiveness to performance is a valuable extension in future research.

Second, comparative studies should be conducted to test and extend the generalizability of exiting findings on the relationship between performance and firm search behavior. On the one hand, future research should consider the impact of different organizational forms on the firm search behavior. As critical members in the network of business group, subsidiaries have many characteristics which are distinguished from unaffiliated firms. For example, as mentioned before, subsidiaries face more comparative performance evaluation. Thus, their aspirations are affected by more complex factors. Meanwhile, due to their deep involvement in group network, subsidiaries have complex relationships with parent company as well as other subsidiaries. For instance, the decision making processes of subsidiaries are supervised by parent company, but meanwhile the parent company is a very important resource supplier to subsidiaries. Therefore, future research should take some questions into considerations such that whether the factors influencing search behavior of unaffiliated firms

be still critical to search behavior of group-affiliated subsidiaries? And whether the mechanisms behind these relationships are different?

On the other hand, future research should focus on the possible moderating effects of institutional and cultural differences on firm search behavior. Based on the research of Japanese firms, Greve (2011) suggested that cultural and institutional differences may cause differences in the relationship of performance and organizational search, and encouraged the investigation of such issues in the future. Similarly, in the study of Indian business groups, Vissa et al. (2010) also called for the examination on whether firm search behavior is affected by how the focal organization is embedded in an organizational and environmental context. Building on these suggestions, scholars made their efforts to propose and test a theory that explains why and how the cultural and institutional differences in Japan modify the behavioral theory of the firm perspective on R&D search (O'Brien & David, 2014). In addition, due to the international background of business groups, the extension to the group-affiliated subsidiaries also provides good opportunities for the comparative studies among different institutions or cultures.

Third, the perspective of Upper Echelons Theory should be highlighted in the future research on performance and firm search behavior. This perspective helps integrate the fragmented studies on the effects of top management characteristics on firm search behavior, and also contributes to provide additional insights into this field. For example, subsidiaries managers' background such as whether they are come from parent company, their tenure, options and other characteristics are critical to subsidiaries' search behavior. The rationales may be the great influence of these characteristics of subsidiary managers on the internal legitimacy of the focal subsidiary in the business group network. The internal legitimacy is highly associated with the resource acquisition ability and management autonomy of subsidiaries, which will further affect the subsidiaries' threat perception of performance decline, as well as the reference point for decision making (i.e. aspiration or survival level). These variations in threat perception or reference point are the important antecedents of

the differences in organizational search. Such extension from the perspective of Upper Echelons Theory also provide a powerful supplement for the discussion on boundary conditions of the existing findings.

Fourth, the differences in aspirations also lead to variations in firms search behavior. Existing literatures usually assume aspiration as historical or industrial performance. But in fact, things may be dependent. For instance, it's argued that the leader's position is more likely to be served as the aspiration level for followers who occupied in a higher rank in a contest(Boyle & Shapira, 2012). In addition, in the process of strategic decision making, firms are more likely to focus their attention on the average performance in their strategic groups

rather than industrial performance. Finally, the purpose of problemistic search in organization is to overcome performance decline. However, few studies examined the feedback effects of search behavior on future organizational performance. The organization may turnaround or downward through these search behaviors occurred in response to organizational decline (McKinley, Latham, & Braun, 2014; Trahms, Ndofor, & Sirmon, 2013). Although it may be a little difficult, the organizational performance-search-performance feedback loop should be analyzed as an integrated whole in the future.

Summarizing our discussion, Figure 1 presents a graphic representation of our review and future recommendations on the research of performance and firm search behavior.

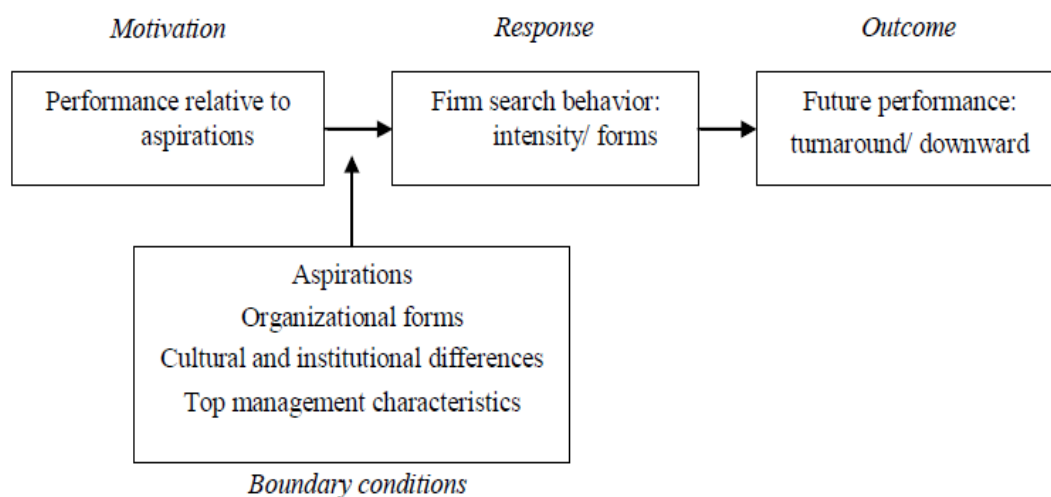


Figure 1. A descriptive model of research on performance and firm search behavior

CONCLUSION

The studies on firm problemistic search have expanded quickly, especially beyond the proposition of March and Shapira's (1992) shifting-focus-of-attention model. While the prior research of this field contributes to our understanding on this phenomenon, much of the search domain remains uninvestigated. There remains much to learn about the antecedents and consequences of firm problemistic search, how problemistic search differs in subsidiaries which operated in a more complex context, how subjective factors relevant top managers influence firm problemistic search. We hope this review and our descriptive model helps to facilitate additional theory-driven research into this valuable and impactful area of research.

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