

Organizational resources, KM process capability and strategic flexibility: a dynamic resource-capability perspective

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Abstract

Purpose – Strategic flexibility is largely considered a source of competitive advantage, yet strategic flexibility in relation to organizational resources and knowledge management (KM) process capability is not well studied. To address this gap, this study aims to assess the relationship of organizational resources (technical and social resources) and strategic flexibility through KM process capability.

Design/methodology/approach – This paper is built on the assumptions of the resource-based view and the dynamic capability perspective of firm. Two types of organizational resources – technical and social – were identified from relevant literature. Data were collected from 23 small- and medium-sized firms (family owned firms) using a 37-item questionnaire. In addition to descriptive statistics, multiple hierarchical regressions and bootstrapping were used to test the study hypotheses.

Findings – Findings suggest that organizational resources are positively and significantly related with strategic flexibility, and KM process capability partially mediates these relationships.

Research limitations/implications – The paper adds to strategic flexibility literature by exploring and assessing the linkage of organizational resources with strategic flexibility through KM process capability.

Originality/value – Findings of this research may help organizations and practitioners in enhancing strategic flexibility of firm.

Keywords Knowledge management, Resource based view, Organizational resources, Strategic flexibility, Dynamic capability perspective, KM process capability

Paper type Research paper

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Introduction

Strategic management research that focuses on firm performance acknowledges strategic flexibility as a strong anchor of firm competitiveness (Guo and Cao, 2014; Chen *et al.*, 2017). Literature mentions strategic flexibility as an organizational ability to successfully navigate through the fluidic and turbulent business environment (Nadkarni and Herrmann, 2010; Brozovic, 2016). Strategic flexibility facilitates the adjustment of internal and external change drivers and is of critical importance to ensure organizational survival (Spieth and Schneider, 2016). Because of its multitude potential, researchers and practitioners have given strategic flexibility significant attention, and it has emerged as an important research theme (Fernández-Pérez *et al.*, 2013). Some of the frequent outcomes of strategic flexibility (as listed in a recent review of 156 strategic flexibility studies by Brozovic, 2016) are superior financial performance, competitive advantage, improved decision-making process, value creation, increased perceived service quality, successful international venturing, innovativeness, sustainability and so on.

While there has been a wide interest in studying strategic flexibility in relation to desired organizational outcomes (Zhou and Wu, 2010), very little is known (empirically) about “what”

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are the enablers of strategic flexibility (Nadkarni and Herrmann, 2010; Zahra *et al.*, 2008; Brozovic, 2016) and “how” these enablers augment strategic flexibility (Nadkarni and Herrmann, 2010; Brozovic, 2016). Few inquiries which tend to identify enablers of strategic flexibility list strategic variety (Hamlin *et al.*, 2012), strategic planning (Sanchez, 1995), IT capability (Chen *et al.*, 2015), CEO personality traits (Nadkarni and Herrmann, 2010), CEO’s social networks (Fernández-Pérez *et al.*, 2013), top management team (Wang *et al.*, 2015) and so on as potential enablers of strategic flexibility. While there is sizeable research on what enables strategic flexibility, it is fragmented, and, the research question – how firms embrace strategic flexibility – remains unanswered. These concerns are explained in the following section of the paper.

First, in most of the aforementioned research, strategic flexibility has been treated as a motivational mechanism between the criterion and outcome variables, for example, CEO’s personality and firm performance (Nadkarni and Herrmann, 2010), CEO’s social networks and organizational performance and organizational learning (Fernández-Pérez *et al.*, 2013), technological capability and product innovation (Zhou and Wu, 2010); information technology and firm performance (Chen *et al.*, 2015) and so on. Therefore, the direct interplay between organizational resources and strategic flexibility needs to be examined.

Second, extant research that lists the enablers of strategic flexibility largely ignores the process or underlying mechanism through which these enablers promote strategic flexibility (Brozovic, 2016). Rather, a number of scholarly examinations assess how strategic flexibility is executed, for example, choices of strategic options in a given situation (Combe *et al.*, 2012), archetypal of strategic options for specific occasions (Evans, 1991), coordination of flexible sources (Sanchez, 1995) and modularization of business models (Gärtner and Schön, 2016). Thus, the query “how firms embrace strategic flexibility” seems to remain unanswered in strategic flexibility research (Nadkarni and Herrmann, 2010) and warrants further study.

Third, strategic flexibility literature suggests that research on strategic flexibility is continuously evolving (Brozovic, 2016). Older literature (as categorized in Brozovic’s review) identified strategic variety, slack resources, organizational structure and information technology resources as enablers of strategic flexibility whereas newer literature recognizes organizational knowledge (Fernández-Pérez *et al.*, 2013; Lin and Wu, 2014) as a potential enabler of strategic flexibility. An organization’s capability of managing its knowledge has become increasingly important as effective use of knowledge assets and resources enables innovation and organizational success (Del Giudice and Della Peruta, 2016; Scuotto *et al.*, 2017; Shih and Tsai, 2016). Organizations capable of leveraging knowledge internally through knowledge expansion, dissemination and exploitation realize their strategic goals and enjoy competitive advantage (Del Giudice *et al.*, 2013a, 2013b). Literature (Denford, 2013) acknowledges knowledge management (KM) system as a dynamic capability of firm. Strategic flexibility is also considered an important dynamic capability (Zhou and Wu, 2010; Guo and Cao, 2014). However, an integrated understanding on how organizational resources and knowledge-based capabilities are linked to strategic flexibility needs a further assessment.

Fourth, strategic flexibility is a context-dependent variable and contingency-based perspective is preferred over other approaches while examining strategic flexibility (Nadkarni and Narayanan, 2007; Guo and Cao, 2014). Another asymmetry in the strategic flexibility knowledge domain is that majority of strategic flexibility research appears from a more developed and stable economic context, albeit with limited exceptions (Nadkarni and Herrmann, 2010; Zhou and Wu, 2010; Guo and Cao, 2014). This limits the theoretical legitimacy of strategic flexibility theories and models in terms of their application in an emerging economic context. Therefore, examining strategic flexibility from the perspective of knowledge-based capabilities in an Indian context offers a unique opportunity for the expansion of the theoretical legitimacy of these models and theories (Bruton and Lau, 2008).

Also, such an effort would enable Indian organizations to design knowledge-based practices to succeed in an unstable business environment. The present research is designed to address the above listed gaps in strategic flexibility literature and also to add new perspective in KM domain.

The objective of this study is to advance our understanding of the relationships among organizational resources, KM process capability and strategic flexibility. In particular, we examine the mediating effect of KM process capability on the relationships of social and technological resource of firm and strategic flexibility. Literature from strategic flexibility and knowledge-based view is integrated for the purpose of the study. By doing so, we try to understand how firm resources would relate from one dynamic capability to another.

Research context

For the purpose of the present research, family owned small and medium enterprises (SMEs) situated in the industrial corridor of one state of India were surveyed. Small- and medium-sized enterprises contribute significantly to the socio-economic development of a nation (Desouza and Awazu, 2006). According to the Strategic Action Plan (2015) of Ministry of MSMEs, Government of India, small and micro industries contribute 8 per cent in India's GDP, 45 per cent in national manufacturing output and 40 per cent in national export. The same report concluded that SMEs were as strategic asset of the Indian economy and termed them very important for achieving the national objectives of growth with equity and inclusion. However, these firms are also not insulated from the competitive landscape; threats from big domestic industries and imports, and competitive forces demand that these firms be innately competitive whether in terms of design, manufacturing competence or market access. Given these statistics and challenges of SMEs, scholars started examining various strategic management and KM phenomena in these firms (Baporikar, 2014, 2015).

These inquiries include, but are not limited to, entrepreneurship in networked economy (Baporikar, 2013), KM in SMEs (Desouza and Awazu, 2006), knowledge integration and dynamic of organizational adaption (Chirico and Salvato, 2008), knowledge sharing among leaders of small family firms (Cunningham *et al.*, 2017), knowledge sharing with banks and finance creditors (Rosaria Della Peruta *et al.*, 2014) and so on. However, a close review of relevant literature revealed that strategic flexibility which has otherwise been studied extensively in non-family owned businesses was not studied in the context of a family owned small and medium firm. We assume that an understating of how to achieve strategic flexibility via knowledge-based capability in the context of family owned small and medium firms will help such firms in succeeding in an uncertain business context.

Literature review

Theoretical underpinning

Resource-based view (RBV) and dynamic capability perspective are amongst the most discussed paradigm in contemporary strategic management literature. These two perspectives are termed economic rent yielding mechanism through which firm achieves competitiveness (Makadok, 2001). Resources-based view of firm (Barney, 1991) suggests that organizations can achieve competitive advantage and differentiate themselves on the basis of their rare, valuable and non-imitable resources. On the other hand, dynamic capability view (Teece *et al.*, 1997, p[0].516) suggests that the firm's ability to integrate, build and reconfigure internal and external competence yields firm competitiveness. RBV (resource picking) and dynamic capability perspective (capability building) are not mutually exclusive, but complementary (Makadok, 2001).

IT and social resources of firm are identified as potential sources of firm competitiveness (Gold and Malhotra, 2001; Chuang, 2004). Empirical evidence suggests a positive relationship between IT and social resources and business growth (Okunoye and Karsten, 2002). Similarly, dynamic capability perspective identifies KM process capability and strategic flexibility as firm's dynamic capability (Chen et al., 2017). Dynamic resource and capability view (Helfat and Peteraf, 2003) which can be seen as a hybrid view of RBV and dynamic capability perspective demarcate but integrate firm resources and dynamic capabilities. Firm resources refer to an asset or tangible/intangible factors of production possessed by a firm and have the potential to generate economic rent whereas firm's capability may be defined as an ability of an organization to perform a coordinated set of activities using firm resources to achieve designated outcomes. In other words, firm capabilities are the processes which activate and harness the potential of firm resources through combining, renewing and developing them (Helfat and Peteraf, 2003). Firm resources and capabilities if aligned, can achieve complementarities that facilitate each other.

The third theoretical paradigm considered in present research is knowledge-based/ KM system perspective (Grant, 1996; Del Giudice and Della Peruta, 2016). Knowledge is increasingly recognized as the most important and key differentiating intangible resource (Del Giudice and Maggioni, 2014). Firm knowledge, which is transferable, has a capacity for aggregation and has a high degree of appropriateness that creates value for a firm (Grant, 1996). In other words, it may be termed as "right knowledge" (Del Giudice et al., 2013a, 2013b) and right knowledge is a critical input to firm output (production of goods and services). KM processes that create right knowledge includes creating, acquiring, sharing, storing, protecting, deploying and applying knowledge. KM processes are found to further organizational goals through exploitation and development of firm's knowledge assets (Davenport et al., 1998).

We integrate three theoretical paradigms (RBV, dynamic capability perspective and knowledge-based view) and propose that organizational resources (IT and social) augment organization's KM process ability and subsequently promote another dynamic capability of firm – strategic flexibility. The next section describes the linkage between firm resources, KM process capability and strategic flexibility.

Hypotheses development

KM process capability and strategic flexibility. An organization's ability of knowledge acquisition, conversion, application and protection of right knowledge is seen as its KM process capability (Gold and Malhotra, 2001). Broadly, KM process capability focuses on creation, conversion, transfer and application of knowledge (Sandhwalia and Dalcher, 2011). Before the advent of dynamic capability perspective (Teece et al., 1997), KM process is seen as a set of organizational activities/initiatives aiming to improve organizational success (Sandhwalia and Dalcher, 2011). Certain preconditions are required to launch KM process successfully, and these preconditions are termed as organizational capabilities (Alavi and Leidner, 2001; Gold and Malhotra, 2001). KM process capability is among those capabilities and it enables an organization to capture, reconcile and transfer knowledge in an efficient manner (Zollo and Winter, 2002; Cepeda and Vera, 2007; Denford, 2013). KM process capability extends the scope of organization-specific knowledge by accumulating it internally and externally through creation, collaboration, feedback, sharing and benchmarking. Organization-specific knowledge/right knowledge helps an organization in designing need-specific innovations and adjustments. KM process capability helps an organization in organizing, combining and coordinating knowledge in a meaningful and structured manner which subsequently enhances the usability of knowledge for decision-making and strategy formulation (Grant, 1996; Gold and Malhotra, 2001).

Strategic flexibility, which is acknowledged as a dynamic capability of firm, enables a firm to pro-act or respond quickly to changing competitive conditions (Hitt *et al.*, 1998. p. 26). Simply, it may be seen as an ability to handle changes (Zhou and Wu, 2010) through creating options and choices (Combe *et al.*, 2012). KM process capability that creates right knowledge will enhance the portfolio of a firm's options and choices. Similarly, knowledge integration perspective (Grant, 1996) that focuses on three types of integration (i.e. efficiency, scope and flexibility of integration) has been found to broaden the firm's portfolio of strategic options and choices.

Cross-functional exchange of knowledge helps an organization in quickly understanding the changing environment and sponsors reengineering and customization of organizational priorities, actions and plans accordingly (Bharadwaj, 2000). Availability of "right knowledge" at the right time reduces error in decision-making; hence, the quality of options and decisions are largely dependent on how an organization stores and distributes its knowledge. In addition, an organization's ability to protect its knowledge from illegal theft, leakage and use is also positively related to its competitiveness. An organization should protect its knowledge when stocks and significance of knowledge are critical (Perria and Anderssonb, 2014). RBV of firm (Barney, 1991) also suggests the protection of this unique source of competitiveness. Collating all the above points together, it is pertinent to propose that KM process capability enhances the availability of right knowledge and enables an organization to react or act towards opportunities or threats (Roberts and Stockport, 2009). In addition, strategic management literature lists both KM process capability and strategic flexibility (Chen *et al.*, 2017) as dynamic capabilities of a firm, and dynamic capabilities are assumed to link synergistically. Hence, we propose that one type of dynamic capability, i.e. KM process capability will complement another type of dynamic capability, i.e. strategic flexibility. Therefore, it is hypothesized that:

H1. KM process capability is positively related to strategic flexibility of a firm.

Social resources of firm and strategic flexibility. Social resources of a firm focus on its policies, processes, systems, people and their relationships (Gold and Malhotra, 2001). It is the net sum of potential and actual resources available and derived from people relationships in a social unit (Nahapiet and Ghoshal, 1998). Specifically, organization structure, culture, leadership and human resources are identified as the critical dimensions of firm social resources and found to enable knowledge-based capabilities of a firm (Chuan, 2004). Leadership has been identified as one among the three meta-capabilities (strategic sensitivity, leadership unity and resource fluidity) that make an organization more agile and flexible (Doz and Kosonen, 2010). Leadership sets the overall concept and implementation plan for the KM initiative and obtains commitment from individuals to achieve organizational goals (Sandhawalia and Dalcher, 2011). Leadership enables a firm's strategic fit with changing business conditions through promoting problem-solving, dynamic learning, strategic planning and decision-making (Carmelia *et al.*, 2010). Leaders create the appropriate culture and the structure that encourage the flow and collaboration of knowledge in an organization (Sandhawalia and Dalcher, 2011). Collaboration and knowledge sharing boosts knowledge creation and gives the firm the flexibility to adapt to fluidic business conditions. Firm policies coupled with incentive systems also promote KM initiatives of firm and, subsequently, its strategic flexibility. For example, if the reward system compensates knowledge sharing behavior, it positively stimulates the specific required behavior. Social resources of a firm encourage and motivate people to not only share/collaborate but also generate knowledge by converting their implicit experience into explicit learnings (tacit knowledge). A culture that values employees for their expertise, promotes learning and encourages exploration and experimentation is able to promote strategic flexibility through exchange and combination of knowledge (Gold and Malhotra, 2001; Chuang, 2004). Therefore, it is pertinent to propose that:

H2. Social resources of a firm will be positively related to its strategic flexibility.

IT resources of firm and strategic flexibility. Viewed from resource-based perspective, IT resources have been described as major business resources, as they determine stock and flow of information and knowledge in an organization (Ravichandran *et al.*, 2005). IT resources of a firm include hardware, software, information systems, databases, computing systems, IT enabled interactive platforms and communication technologies (Chuang, 2004). Firm's IT resources are sometimes referred to as technological business intelligence and IT infrastructure, and are termed strategic resource (Ravichandran *et al.*, 2005) which helps a firm in attaining long-term competitiveness (Gold and Malhotra, 2001). IT resources remove communication barriers, facilitate information sharing and promote knowledge integration across teams and departments (Holsapple and Joshi, 2001; Sandhawalia and Dalcher 2011; Pandey and Dutta, 2013). A firm's IT resource also helps a firm in mobilizing its social capital and creation of new knowledge (Gold and Malhotra, 2001).

IT-enabled interactive platforms empower customers to give just-in-time feedback and suggestions. This helps a firm in capturing the essence of customer needs and collaborating with its customers for new product development (Bhatt and Grover, 2005; Tanriverdi, 2005). XIAOMI displayed successfully how to gain an edge over the competition through creating a community of fans. Access to information relevant to product, customer, market and manager helps a firm in anticipating the business environment (Tanriverdi, 2005) and configuring its business modularity and strategies accordingly (Chen *et al.*, 2017). The technological intelligence system of a firm helps it in handling large amount of data with ease and speed, and this empowers a firm by offering timely and accurate information at low cost across departments and geographical locations (Gold and Malhotra, 2001). This enhances a firm's portfolio of strategic choices and options.

Research examining the relationship of IT resources with various types of organizational flexibility (marketing flexibility in Lu and Ramamurthy, 2011; process flexibility in Chen *et al.*, 2014) also supports our proposition. IT resources when aligned appropriately with strategic purpose of the firm (Chan *et al.*, 1997) have been found to enhance firms' core competency (Ravichandran *et al.*, 2005). Building on this argument, we propose that IT resources will promote firms' strategic priorities – strategic flexibility – in the present case:

H3. IT resources of a firm positively relate to strategic flexibility of a firm.

Mediating effect of knowledge management process capability. Strategic management literature identifies firm-specific knowledge/right knowledge as a strategic resource (Grant, 1996; Denford, 2013). Firm-specific knowledge (i.e. product knowledge, customer knowledge and managerial knowledge) makes a firm capable of anticipating business needs and facilitates the appropriateness of a firm's strategic and tactical actions (Wiklund and Shepherd, 2003; Del Giudice *et al.*, 2013a, 2013b). KM process capability enables an organization to create important business knowledge, organize it and make it timely available (O'Brien and Marakas, 2006). However, if firm knowledge lacks complementarities and relevance, it rarely yields any economic rent (Tanriverdi, 2005).

For example, certain knowledge inconsistencies (inconsistency between the knowledge actually required to achieve competitiveness and management and employees' perception of required knowledge; inconsistency in knowledge implementation plan; inconsistency in how knowledge execution should happen and how it is actually implemented; inconsistency between outcome of KM strategy and outcomes) occurred very frequently (independent or concurrently) and limited the potential of an organizations' KM capability and KM strategy, consequently (Lin and Tseng, 2005). These inconsistencies can be controlled significantly through IT resources (i.e. business intelligence system, interactive platforms, distributed learning technologies), as IT resources increase ease of collaboration within organizational communities and help in the integration of fragmented knowledge repository and knowledge sources (Ardito *et al.*,

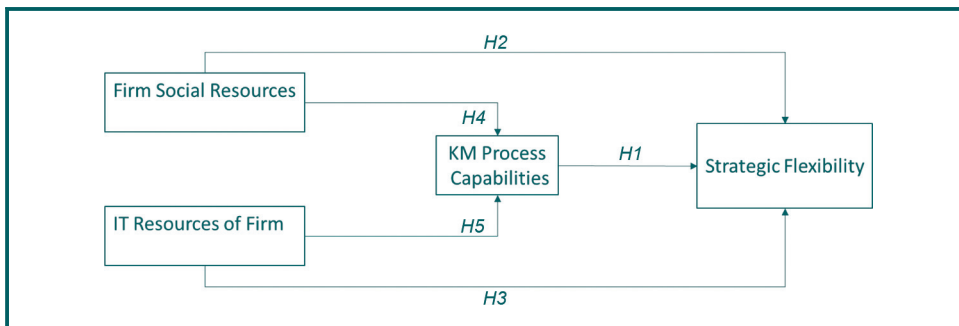
2015; Tseng, 2014). IT resources augment KM process capability of a firm by extending its ability to tap external sources of knowledge (Ferraris *et al.*, 2017). Also, it is evident that infinite potential (computational and cloud storage) of information and communication technology has helped organization in promoting a culture of knowledge sharing (Del Giudice and Straub, 2011). Similarly, internet based communication channels facilitate continuous interaction between source of knowledge (people/knowledge repository) and its users (Del Giudice *et al.*, 2015). Conclusively, it will offer an impetus to KM process capability of a firm.

Similarly, social resources of a firm are found to be positively linked with the success of the firm's KM initiatives (Lee and Choi, 2003). It is empirically established that in the absence of support from organizational social resources, even the best KM initiatives may end disastrously (Peachey, 2006). An organization's social resources enable a firm to leverage its existing knowledge and create new knowledge and position the organization competitively in a chosen market (Gold and Malhotra, 2001; Liu *et al.*, 2004). Social resources encourage successful implementation of KM initiatives through creating an environment of collaboration, and incentivizing learning and experimentation. It has been found that an organization's social resources augment its KM process capability through integrating the KM and business planning processes, developing reliable and innovative applications that complement organizational needs and predicting future business needs of firm (Lee and Choi, 2003).

Organizations' capability to process knowledge effectively reduces the impact of environmental uncertainty and leads to the development of effective business plans. Therefore, we propose that firm's IT resources that allow collaboration internally and externally facilitate the engagement of distributed team networks and increase in the ease of knowledge transfer will facilitate the KM capabilities of a firm, which subsequently will promote the firm's strategic flexibility. Similarly, social resources of a firm motivate its human capital (potential source of firm knowledge) to convert their expertise and experience into firm-specific knowledge and promote the KM process capability of the firm. KM process capability of the firm is expected to predict strategic flexibility positively. This proposition is also supported by the theoretical linkage of firm resources and firm capability. Thus, we propose KM process capability of a firm as a motivational mechanism between firm's social resources and strategic flexibility (Figure 1).

- H4. KM process capability will mediate the relationship of social resources and strategic flexibility of firm.
- H5. KM process capability will mediate the relationship of IT resources and strategic flexibility of firm.

Figure 1 Organizational resources, KM capabilities and strategic flexibility



Research methodology

Population and sample

In total, 93 family owned small- and medium-scale manufacturing enterprises situated in the industrial cluster of one of the central region states of India were surveyed. These organizations and 47 large organizations collectively generate approximately 23,000 employments (managerial and labor including daily wage workers). All surveyed organizations were family managed businesses and had an aggregate annual turnover of US\$1.23bn. These enterprises were involved in the manufacturing of ferrous alloys, ductile, steel moulding, food processing, metal and concrete casting, sponge and extraction, plywood and industrial chemical and gases. Financial figures/data were not accessible for surveyed enterprises.

Given the small number of the enterprises, all organizations were considered for data collection. Link to structured Web-based questionnaire with invitation letter explaining the objectives of the research and study variables was sent to the senior managers of these organizations. We requested participant organizations to share the survey link with at least four randomly selected participants (owner/senior managers). We received 109 responses from owners and key managers. After screening for missing data and incomplete responses, a sample of 87 participants from 23 organizations was deemed fit for final analysis.

Study measures

IT resources. A questionnaire constituted of five questions was drawn from earlier research (Gold and Malhotra, 2001; Chuang, 2004). This scale captures the degree to which IT resources of a firm facilitate information and KM process. The scale was anchored on five-point Likert distribution where 1 stands for strongly disagree and 5 denotes strongly agree. Sample item included: my organization uses technology that allows employees to collaborate with other people within the organizations.

Social resources. To measure the social resources of an organization, a questionnaire constituted of nine items was taken from earlier research of similar nature (Gold and Malhotra, 2001; Chuang, 2004). This scale was also anchored on a five-point Likert scale (1= strongly disagree, 5= strongly agree). Sample items for social resources included: in my organization employees understand the importance of knowledge to success.

Knowledge management process capability. A 14-item inventory originally developed by Gold and Malhotra (2001) and subsequently considered by scholars (Shih and Tsai, 2016) was used to measure the KM process capability of a firm. Sample items included: my organization has processes for integrating different types of knowledge. Responses were captured on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

Strategic flexibility Strategic flexibility scale was drawn from the work of Grewal and Tansuhaj (2001). This scale was also anchored on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree) and the sample items included: our strategy emphasizes exploiting new opportunities arising from environmental variability.

Reliability and validity of the measures used

To ascertain the psychometric properties of measures used, reliability and validity scores were calculated. The reliability coefficients (Cronbach's alpha) for social resources (0.73), IT resources (0.85), KM process capability (0.89) and strategic flexibility (0.81) ascertained good reliability of measures used.

Construct validity was examined by calculating measurement model using structural equation modeling. The results of full measurement model (four factor structure) demonstrated good psychometric properties. The model fit indices for full measurement model were higher than minimum cut off values. CMIN/df: 2.7, Goodness of Fit Statistic (GFI) = 0.95, Adjusted Goodness of Fit Statistic (AGF1) = 0.94 Tucker–Lewis Index (TLI) = 0.90, Root Mean Square Residuals (RMR) = 0.06 and Normed Fit Index (NFI) = 0.94 (Hair *et al.*, 2010). To test the discriminant validity of the constructs, we compared four factor models with possible competing models. The obtained fit statistics (Table I) demonstrated the fit superiority of the hypothesized model over competing models (Alfes *et al.*, 2013). We also calculated the variance inflation factor (VIF) to ascertain the non-existence of multicollinearity. The VIF values for social resources (1.25), IT resources (1.21) and KM process capability (1.19) and role linkage (1.13) negate the existence of multicollinearity (Hair *et al.*, 2010).

Analysis and results

Descriptive and predictive statistical techniques have been used to analyze collected data. For descriptive statistics, mean score, standard deviation and correlation score have been calculated (Table II). A multiple hierarchical regression analysis was used to test the study hypotheses. Age of the firm, product category and education of the respondent were entered as control variables.

The results (Table III) show that KM process capability ($\beta = 0.76$, $t = 10.14$, $p < 0.001$) has a significant positive association with strategic flexibility ($H1$). Similarly, social resources ($\beta = 0.37$, $t = 3.75$, $p < 0.001$) and IT resources ($\beta = 0.45$, $t = 4.40$, $p < 0.001$) of a firm are found to be positively related with strategic flexibility ($H2$ and $H3$, respectively). Effect size was also calculated for $H1$ (1.04), $H2$ (0.69) and $H3$ (1.08), and we found a large effect size for all three relationships.

Table I Measurement model and competing model fit statistics

Models	χ^2/df	GFI	AGFI	TLI	RMR	NFI
Full model	2.7	0.95	0.94	0.90	0.060	0.94
Competing model 1	3.94	0.66	0.55	0.53	0.067	0.54
Competing model 2	3.84	0.65	0.56	0.52	0.083	0.51
Competing model 3	3.91	0.64	0.54	0.51	0.076	0.51
Competing model 4	3.90	0.65	0.56	0.51	0.075	0.50
Harman single-factor test	3.92	0.63	0.51	0.50	0.087	0.48

Notes: source primary data, $n = 87$; $p = 0.000$; df = degree of freedom; GFI: Goodness of fit statistics; AGF1: Adjusted Goodness of Fit Statistic; TLI: Tucker–Lewis index; RMR: root mean square residuals; Nested model 1: IT resources and social resources are combined in a single factor. Nested model 2: IT resources and KM capabilities are combined in a single factor. Nested model 3: Social resources and knowledge process capabilities are combined in a single factor model. Nested model 4: IT sources and Strategic flexibility are combined in a single factor model

Table II Descriptive statistics

Variables	IT resources	Social resources	KM process capabilities	Strategic flexibility	VIF
IT resources		0.61**	0.63**	0.65**	1.25
Social resources			0.64**	0.66**	1.21
KM process capabilities				0.68**	1.19
Mean	3.89	3.92	3.66	3.58	1.13
SD	0.70	0.51	0.53	0.52	

Sources: Primary data, $n = 87$; ** $p < 0.01$, SD: standard deviation, VIF: variance inflation factor

Table III Hierarchical regression results

Variables	SF				KMPC		
	Step 1	Step 2	Step 3	Step 4	Step 1	Step 2	Step 3
Firm age	-0.076	-0.006	0.005	0.024	-0.027	-0.011	-0.009
Education qualification	-0.080	-0.012	0.076	0.023	-0.042	0.030	0.120
Product category	-0.049	-0.010	-0.059	0.041	-0.047	-0.038	-0.049
SR		0.65**	0.37**	0.21**		0.66**	0.39**
ITR			0.45**	0.25**			0.43**
KMPC				0.46**			
KMPC with SF independently	$\beta = 0.76^{**}, p < 0.001$ adjusted $R^2 = 0.51$						
F change	0.55	61.23	19.40**	18.24**	2.25	70.34**	20.59**
Ad. R^2	-0.016	0.411**	0.519**	0.604**	0.042	0.478**	0.579**

Sources: Primary data, SR: Social resources, ITR: IT resources, KMPC: Knowledge Management Process Capability, SF: Strategic Flexibility; **: significant at $p < 0.01$

H4 states that KM process capability mediates the relationship between social resources and strategic flexibility. Likewise, *H5* states that KM process capability mediates the relationship between IT resources of a firm and strategic flexibility. Literature (Frazier *et al.*, 2004) outlines the following four necessary conditions to establish mediating effect:

1. a significant relationship between the independent and dependent variables;
2. a significant relationship between the independent and mediating variables;
3. a significant relationship between the mediating and dependent variable independently; and
4. the strength of relationship between independent and dependent variable should decrease significantly when mediator is added in the equation.

Results of *H2* and *H3* that social resources ($\beta = 0.37, t = 3.75, p < 0.001$) and IT resources ($\beta = 0.45, t = 4.40, p < 0.001$) are positively associated with strategic flexibility fulfils the first condition of mediation. Social resources ($\beta = 0.39, t = 4.10, p < 0.001$) and IT resources ($\beta = 0.43, t = 4.50, p < 0.001$) are also found to be positively linked with KM process capability and hence fulfil the second condition of the mediation. Results of *H3* ($\beta = 0.76, t = 10.14, p < 0.001$) satisfy the third condition of mediation, i.e. KM process capability is positively related with strategic flexibility. Further, results (Table III, step four column) show that when KM process capability is considered, the relationship strengths of social resources ($\beta = 0.21, t = 1.9, p < 0.01$) and interpersonal relationships ($\beta = 0.25, t = 2.4, p < 0.01$) with strategic flexibility weaken but remain significant; hence, partial mediation is suggested. Results satisfied all four necessary conditions and established that KM process capability significantly mediates the relationships between social resources and IT resources of a firm and its strategic flexibility.

To ascertain the size of indirect effect, we also used bootstrapping using SPSS process of Hayes and Preacher (2014). Bootstrapping is usually suggested to check whether the true indirect effect would be zero (no mediation). For social resources (Table IV), the estimated indirect effect was 0.381 (Sobel $z = 4.74, p < 0.001$) which was 95 per cent likely to vary between 0.224-0.540. For IT resources (Table IV), the estimated indirect effect was 0.285 (Sobel $z = 4.71, p < 0.001$) and was 95 per cent likely to vary between 0.164-0.361. Thus, all of the statistical tests supported KM process capability as mediating variable between social and IT resources and strategic flexibility. Multiple regression analysis results support *H1* to *H3*. Conclusively, all study hypotheses were supported by statistical results.

Table IV Bootstrapping results for mediation (indirect effect)

Paths	Indirect effect	SE	CI (lower bound-upper bound)	Sobel z score	p-value
SR-SF	0.381	0.080	0.224-0.540	4.74	***
ITR-SF	0.285	0.051	0.164-0.361	4.71	***

Sources: Primary data, SR: Social Resources; ITR: IT Resources; SF: Strategic Flexibility; SE: Bootstrap Standard Error; CI: Confidence Interval percentile method, ***significant at $p < 0 = 0.001$, SF is dependent variable, Knowledge processing capability is mediator variable, bootstrap was employed at 95 per cent confidence level

Discussion and implications

Drawing from RBV, dynamic capability perspective and knowledge-based view of firm, present study broadly tries to establish the linkage between organizational resources (social and IT resources), KM process capability and strategic flexibility of firm. This empirical examination of SMEs finds that the relationships between social and IT resources of firm (Chuang, 2004), its KM process capability (Cepeda and Vera, 2007) and strategic flexibility (Brozovic, 2016) are positive and significant.

The findings suggest that KM process capability is positively and significantly related to strategic flexibility of firm ($H1$). This finding confirms the existence of synergistic dynamics between the two types of dynamic capabilities and highlights the beneficial effect of KM process capability in developing strategic flexibility of a firm. These findings corroborate extant research which views KM process as an organizational capability and highlights its importance in developing other organizational capabilities (Chuang, 2004). KM process capability is found to be intertwined with other dynamic capabilities as knowledge assets of a firm help in creating and developing other dynamic capabilities (Zollo and Winter, 2002). Organizations which are capable of generating new and relevant knowledge, able to diffuse, share and apply it and able to curtail the inappropriate use of their knowledge assets (inside and outside organization), have an advantage in terms of expanding their strategic portfolios. Also, an organization's ability to create and share relevant knowledge prepares and enables it to exploit new opportunities generated by environmental variability. Results also suggest that KM process capability promotes versatility in resource allocation and enhances firm responsiveness to market conditions.

Next, by establishing the relationships between organizational resources ($H2$ and $H3$) and strategic flexibility, this study verifies the existence of complementarities between resource picking and capability creation (hypotheses two and three respectively). Firms create specific capabilities (firm specific) over a period through multifarious combinations of their resources, and these unique capabilities act as intermediaries between firm resources and firm success (Amit and Schoemaker, 1993). For example, an organizational culture (a type of firm social resource) that promotes exploration and experimentation, values employees for their expertise and appreciates the role of learning and knowledge furthers the creation of KM capability of a firm. Similarly, IT resources of a firm that facilitate collaboration and learning across functions, divisions and locations contribute to the creation of firm-specific capabilities.

The next set of findings suggests that KM process capability mediates the relationships between social resources, IT resources and strategic flexibility of a firm ($H4$ and $H5$). KM process capability encompassing four components (acquisition, creation, storage and application of knowledge) increase efficacy of firm knowledge. KM process capability offers a firm knowledge about environmental changes (socio-cultural, technological, consumer preferences and so on) and boosts firm's adaptability capability (De Long and Fahey, 2000). The extent to which firms use knowledge as per their stated goals and strategies (in present case strategic flexibility) is contingent upon their resources (technological,

structural and organization culture) and KM process capability (Aujirapongpan *et al.*, 2010). Therefore, organizational resources (IT and social) enhance the strategic flexibility of firm by increasing KM effectiveness, and KM process capability of a firm offers a motivational mechanism between firm resources and its strategic flexibility.

Implications for research

Findings of the present study make significant contributions to RBV and dynamic capability perspective and add to the body of knowledge which links these two rent-yielding mechanisms (Makadok, 2001; Villasalero, 2017). Particularly, this study examined strategic flexibility as a dependent variable which was otherwise considered a mediating variable (traditionally) and answered the question – how to augment a firm's strategic flexibility. Our results confirm the existence of synergistic and integrative dynamics between resource picking and capability development mechanism and, hence, corroborate Makadok, (2001). These results imply that the question should be examined further to identify and establish various organizational resources as predictors of strategic flexibility.

Another interesting contribution of this study is that it demonstrated KM process capability as a motivational mechanism between organizational resources and strategic flexibility. These findings provide an understanding of how organizational resources enable a firm to develop its dynamic capability (i.e. strategic flexibility in present case) through another dynamic capability (i.e. KM process capability). This finding adds to the organizational perspective literature of KM theory of firm (Gold and Malhotra, 2001). Organizational perspective of KM is a level of analysis in KM research and emphasizes knowledge creation, firm memory and use of knowledge within a firm. Further empirical examinations could be carried out to substantiate the linkage between knowledge-based capabilities and value creation potential of firm.

Our findings also make significant contribution in terms of statistical validation of *a priori* model on an Indian data set. Coefficients of reliability, validity and series of measurement model analyses exhibit good statistical qualities, enhancing the theoretical legitimacy of study constructs. These instruments and theoretical assumptions can be used with a certain degree of confidence to examine resource-capability perspective in different settings.

Implications for practice

The major practical contribution of this study is that it advises family owned SMEs how to enhance their strategic flexibility. Strategic flexibility enables organizations to neutralize and exploit various contingencies through creation and performance of strategic options (Combe *et al.*, 2012). Results of this research suggest that IT resources and social resources may help a firm in developing various strategic options. For example, technological infrastructure which facilitates collaboration within and outside the organization and makes stored knowledge accessible to organization members would increase the strategic flexibility of the firm. Thus, these firms are advised to equip themselves with such type of IT resources. We also advise that these firms organize training programs for key people to boost their readiness for and interest towards such technologies. Similarly, leadership and culture of an organization that values continuous learning, encourages experimentation and appreciates the role of knowledge would increase the portfolio of strategic options. Therefore, these firms should embrace a culture and leadership that encourages knowledge sharing, protection and so on. Findings also suggest KM process capability as a motivational mechanism between firm resources and strategic flexibility. Therefore, these firms should augment KM process capability.

In addition, our findings offer some recommendations for policymakers (Ministry of MSMEs, Govt. of India). First, financial and technical support for installing newer information and communication technologies should be offered to SMEs. Though the strategic action plan of

Govt. of India includes technology improvisation in SMEs as a major thrust area, the efforts seem to be contained to manufacturing technologies and process. Second, a major difference between family owned small businesses and non-family owned businesses is lack of managerial professionalism. While the State has taken certain skill development initiatives, majority of these initiatives are limited to technical skill development. Therefore, we recommend that leadership development module be initiated for the owners and the senior executives of family owned SMEs.

Limitations. Findings of this study should be generalized with a degree of caution, as there are certain limitations. One limitation is the design of study; it is cross-sectional. Therefore, causal inferences that firm resources and KM process capability causes strategic flexibility cannot be made. Although existing theories and empirical findings support study hypotheses, causality and direction of causality cannot be ascertained with a correlational study. Future inquiry can be made to answer this question. Second, both KM process capability and strategic flexibility are acknowledged as dynamic capability of firm and are measured at the same time point; this may lead to high artificial correlation. Though we conducted all statistical tests to verify discriminant validity and ensure non-existence of multi-collinearity, future research measuring these two variables at different time points may be designed. We also encourage future research to identify other antecedents of strategic flexibility. Similarly, conditional effect of certain variables, for example, economic status of nation, market competition and national culture needs to be investigated in conjunction with currently studied variables.

Conclusion

In conclusion, findings of this study suggest that social and IT resources of a firm could facilitate its strategic flexibility. Findings also suggest KM process capability as a motivational mechanism between firm resources (both social and IT) and strategic flexibility. As strategic flexibility is listed as a dynamic capability and found to be linked with firm competitiveness, our findings suggest ways for a firm to exemplify its strategic flexibility. In sum, this study validates the theoretical assumptions of RBV and dynamic capability view and contributes to the theoretical legitimacy of these perspectives by examining them in the context of a developing economy.

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