The role of resource practices for the value creation of SMEs

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Abstract

By expanding previous models of firm growth, we show that different categories of resource practices can predict firm growth and value creation better than the earlier models. Three important resource practices are identified, namely resource protection practices, resource upgrading practices, as well as innovation practices.

Introduction

Researchers and politicians alike share an interest in the creation of economic value. And, creating value appears to be an indicator of SME growth considered equally relevant by practitioners (Achtenhagen, Melin, and Naldi 2004). Yet, our knowledge about what internally facilitates value creation and growth is still very limited (Davidsson and Wiklund 2000). The resource-based view (RBV) investigates factors leading to performance advantages inside the firm. In recent years, some scholars have redirected the attention of the RBV also to the context of studying value creation and growth in entrepreneurship and SME research.[1] Resources are seen as the fundamental units of value creation (Mathews 2002: 31). Yet, the empirical investigation of the RBV is proving challenging, and "despite the renewed theoretical interest on the internal analysis of firm resources, relatively few empirical studies on this perspective exist" (Cool, Costa, and Dierickx 2002: 61). One shortcoming with current investigations lies in the inconsistency between the conceptualization of firm resources, on one hand, and their subsequent operationalization on the other hand (Hoopes, Madsen, and Walker 2003: 889). While unique combinations of resources are often emphasized as key internal factors in predicting firm growth, these are empirically measured in terms of static asset endowments and/or characteristics of the entrepreneur or CEO (Wiklund 1998), even though these change over time. Also, current studies largely marginalize the role Penrose (1959) attributed to the services that resources might render in enhancing growth. In other words, attention is devoted to resources *per se*, but not to their utilization. "Resources are the

[1] The origins of the RBV can be traced back to Penrose's (1959) seminal work 'The Theory of the Growth of the Firm', in which she actually discusses the relationship between resources and growth.

productive assets of firms, the means through which activities are accomplished" (Mathews 2002: 31-2). Thus, an activity-based perspective on resources is needed to consider the activities that intermediate between resources (as input) and value creation (as output). In this paper, we develop the notion of 'resource practices' for these activities.

In recent years, the notion of practices has been introduced into the field of strategic management (see Whittington and Melin 2002; Johnson, Melin, and Whittington, 2003). While the major concern of this discussion is to leave the macro-level in favor of a micro-level of investigation, it propagates also the necessity of understanding activities central to the organization. Practices can be defined as "approaches used by managers and workers with the goal of achieving certain types of performance" (Flynn et al., 1995: 1326). A practice-perspective can help us to move beyond a static view on resource endowments to better understand how value is created in firms. "[M]uch research from the resource-based view marginalizes the activities, managerial or otherwise, that go on in organizations. The question of how valuable resources are built and how they generate superior returns are left undisturbed in the 'black box of process' (Priem and Butler 2001). The value of a resource depends not on its existence but on its utilisation" (Johnson, Melin, and Whittington 2003: 7).

The present study aims at enhancing our knowledge of the predictors of growth by assessing how companies utilize resource practices to create value. We develop and test a model which integrates the determinants of firm growth already identified by previous studies with organizational practices and activities for the development and use of resources. Specifically, from the RBV and its more recent developments a set of three key resource practices are derived: practices that enhance the inimitability of firm resources; practices that upgrade existing resources; and practices that employ resources to create new market activities. Therefore, the role of these resource practices in predicting value creation is assessed by addressing the following research questions: Do practices that enhance the inimitability of firm resources and their use enhance firm growth? Do practices that upgrade existing resource activities enhance firm growth? And thirdly, do resource practices that support the creation of new market activities enhance firm growth?

In this paper, we conceptualize and measure growth as value creation. Growth has been conceptualized in a number of different ways (Davidsson and Wiklund 2000; Wiklund 1998). When it comes to empirically investigating growth, already Penrose acknowledged that "there is no way of measuring an amount of expansion or even the size of the firm, that is not open to serious conceptual objection" (1959: 199). This affirmation still holds. Penrose defines growth as an increase in value (1959). However, in SMEs value creation is very

difficult to measure, and therefore to operationalize in empirical studies. Similarly, Penrose argues that "the size of a firm is best gauged by some measure of the productive resources it employs" (1959: 24). For the purpose of this paper, we define growth as value creation and operationalize it by employing multiple indicators (see below).

The remainder of this paper is divided into four sections. The first section introduces a practice-perspective on the resource-based view, from which a number of hypotheses are derived. Then, the data, sample, and variables used in our model are described. Next, the hypotheses are tested and the results presented. In the last section, we discuss our results and conclusions.

Theory and Hypotheses

Following Penrose (1959), the RBV regards firms as bundles of resources and capabilities (Wernerfelt 1984), which are heterogeneous across firms. The growth of firms is based upon the exploitation of these heterogeneous endowments of resources (Peteraf 1993). Namely, if companies have resources that are valuable, rare, inimitable and non-substitutable, they can achieve a competitive advantage over their competitors (Barney 1991; Wernerfelt 1984). Valuable resources are defined by Barney (1991: 106) as those resources that "enable the firm to conceive of or implement strategies that improve its efficiency and effectiveness", and by Peteraf (1993) as those resources which allow firms to improve their position in the market. Thus, valuable resources are those resources "which clearly affect how much value an enterprise generates, but not in a deterministic way" (Peteraf and Barney 2003: 320). However, valuable resources *per se* do not lead to superior performance. Rather, resources also need to be rare. Rare resources are resources which are scarce in nature (Barney 1991), and thus resources not commonly employed. In addition, resources need to be also inimitable and non-substitutable to provide firms with a sustainable competitive advantage (Barney 1991). Hoopes, Madsen, and Walter (2003: 890) argue that competitive advantage rests ultimately on the fact that valuable resources cannot be imitated by competitors, "so concentrating on value and inimitability gets to the heart of the RBV". A crucial activity, then, is to protect the firm's resource base from imitation. Imitation has been discussed as a problem for companies in increasingly competitive markets (Grant 1991; Rivkin 2000). Resource practices provide a means of embedding the resources in the organization in a way that makes them less imitable. Collins (1994: 146) argues that organizational capabilities are inimitable as they represent resources accumulated over time that cannot be acquired on tradable factor markets. Because they are built, rather than bought, organizational capabilities can attribute to competitive advantage, and can be immune to the threat of imitation (cf.

Collins 1994). Therefore, we propose that resource practices that aim at protecting the company's resource base are positively related to value creation.

> Hypothesis 1: Practices which protect the firm's resource base from imitation are positively related to growth.

Penrose (1959) argued for what can be interpreted as the need to upgrade the existing resource and capability base: "There is no reason to assume that the new knowledge and services will be useful only in the production of a firm's existing products; on the contrary, they may be useless for that purpose but still provide a foundation which will give the firm an advantage in some entirely new area. A firm's opportunities are necessarily widened when it develops a specialized knowledge of a technology which is not in itself very specific to any particular kind of product, for example knowledge of different types of engineering or industrial chemistry" (1959: 114-5). Similarly, Grant (1991: 131-132) argues that "a resource based approach to strategy is concerned not only with the deployment of existing resources, but also with the development of the firm resource base" and calls for a "commitment to upgrading the firm's pool of resources and capabilities". Thus, investing in upgrading the existing resource base can be expected to be positively related to value creation.

> Hypothesis 2: Practices which upgrade the firm's existing resources are positively related to growth.

In Schumpeter's (1934) framework innovation is defined as the commercial or industrial application of something new, and it is carried out by combining existing resources in new ways (Elliot, 1983). Specifically, according to Schumpeter (1934: 66) the great innovations in the capitalist economy are those associated with "the carrying out of new combinations and differentiated five cases, namely 1) the introduction of a new (quality of a) good; 2) the introduction of a new method of production; 3) the opening of a new market; 4) the conquest of a new source of supply of materials or goods; and 5) the new organization of any industry". The importance of resource practices for the creation of new activities in the market and the sustainability of firms' competitive advantage is also illustrated by Mathews (2002), who argues that when entering a new market firms need to carefully think through and analyze the resources they need to support such shift. Following Schumpeter (1934) and Mathews (2002), we propose that resource practices that enhance innovation by new market activities will have a positive effect on value creation.

Hypothesis 3: Practices which support the creation of new market activities are positively related to growth.

Method

Data and Sample

The sample was initially obtained from SCB (Statistics Sweden). It was framed and selected on behalf of Jönköping International Business School (JIBS). The sample is a stratified probability sample and consists of 2,455 firms. It was designed to be representative of privately-owned SMEs in Sweden. The stratification of the sample provides analyzable sub-groups. It was conducted according to the following criteria:

- *employment size class* divided into two groups: 10-49, 50-249;
- *corporate governance* divided into three groups: independent firms, member of company groups with 250 employees (small company group), and members of company groups with 250 or more employees (large company group);
- *industrial sector* divided into four groups: manufacturing, professional service, wholesales/retail and other services.

The data collection was carried out by JIBS during two survey rounds over a period of three years. Each round consisted of an initial questionnaire administrated over the phone followed by a mail questionnaire. The target respondent was the CEO. During the first round in 1997, 2,034 respondents out of the initial 2,455 were interviewed by phone, yielding a response rate of 82.9 percent. A few months later, the mail questionnaire follow-up was returned by 1,283 people, which gave a response rate of 63.1 percent. Consequently, the overall response rate for the first round added up to 52.2 percent. During the second round 2,020 respondents were contacted by phone and out of these 1,633 participated in the interview, which resulted in an overall response rate of 66.5 percent. 827 of these also completed the following mail questionnaire. This study relies on data from the first round as well as information on practices and growth indicators from the second round. Non-response bias has been checked for.

Variables

Dependent Variables. For measuring *growth* we used Wiklund and Shepherd's (2004) scale. This instrument measures growth by asking respondents to compare the growth of their firm with the growth exhibited by their two main competitors in terms of ten different dimensions of growth (see appendix 1, α=0.81).

Independent Variables. The measures for the three resource practices, *protection practices*, *upgrade practices* and *innovation practices*, were obtained by factor analyzing a 14-item, five-point scale, which investigates the respondents' use of resources over the previous three years in comparison with the common practices in their industry (see appendix 2). Factor analysis was run with all 14 items, using principal component extraction and varimax rotation. By accepting an eigenvalue slightly lower than one, we obtained a three factors solution. In this way, each item had its highest loading on the factor it conceptually belongs to and no item had a loading of 0.40 or more on any other factor. The vast majority of the loadings were in the high 0.60 or more. The results of the factor analysis are displayed in table 1 below.

Table 1: Results of the factor analysis

	Factor 1 (21.348)	**Factor 2 (16.623)**	**Factor 3 (15.87)**
Protection practices 1	0.774		
Protection practices 2	0.740		
Protection practices 3	0.700		
Upgrade practices 1		0.541	
Upgrade practices 2		0.751	
Upgrade practices 3		0.537	
Upgrade practices 4		0.447	
Upgrade practices 5		0.692	
Innovation practices 1			0.408
Innovation practices 2			0.660
Innovation practices 3			0.689
Innovation practices 4			0.684
Innovation practices 5			0.822
Innovation practices 6			0.650

Three summed indices were created on the basis of the factor pattern. To further assess the reliability of the indices Cronbach's Alpha was computed (see table 2 below).

Table 2: Descriptive statistics and measurement reliability

	Mean	**Std. Deviation**	**N**	**alpha**
Protection practices				0.73
Item 1	3,5346	,71478	765	
Item 2	3,4817	,72833	764	
Item 3	3,1717	,55947	763	
Upgrade practices				0.70
Item 1	3,3792	,61755	770	
Item 2	3,5216	,61733	763	
Item 3	3,5046	,64843	765	
Item 4	3,4509	,62421	763	
Item 5	3,5626	,66656	759	
Innovation practices				0.81

Item 1	3,3607	,70488	768
Item 2	3,2701	,67526	759
Item 3	3,3259	,77049	761
Item 4	3,2385	,69091	759
Item 5	3,1704	,65970	757
Item 6	3,4856	,71619	762

Control Variables. *Past growth* is measured by asking about the company's growth between 1994 and 1997 relative to their two most important competitors. These items were profit, sales growth, cash flow, and growth of net value. The scale for measuring the perceived *environmental dynamism* was adapted from Miller (1987) and consisted of a four-item, five-point Likert scale, which measured the respondent's perception of industry growth rate (α=0.69). For measuring *knowledge resources* we used Wiklund and Shepherd's (2004) scale. Following Gupta and Govindarajan (2000), the authors constructed an instrument consisting of 11 items pertaining to market and technological knowledge (see appendix 3; α=0.69).

Statistical Analyses

Multiple regression analysis was used for testing the hypotheses. This analysis enables to determine whether and how much of the variation in growth (dependent variables) can be explained with the help of the information about the variation in explanatory variables. It also helps to determine the direction and strengths of the relationships, which of the explanatory variables are most important in predicting growth as well as the statistical significance of the regression model and the individual variables.

Analysis

In table 3 below the correlations of the variables used in the regression and their descriptive statistics are presented.[2]

Table 3: Means, standard deviations and correlations for quantitative variables predicting growth

		Mean	Std. Deviation	1	2	3	4	5	6
1	Past growth	3,5251	,67038	1					
2	Environmental dynamism	4,7939	1,09000	,402(**)	1				
3	Knowledge resources	4,6264	,67818	,297(**)	,271(**)	1			
4	Protection	3,3977	,54190	134(**)	,085(*)	,186(**)	1		

[2] An assumption when conducting a multiple regression is that no simple or multiple correlation coefficient among the independent variables is higher than 0.8. From the results it is clear that multicollinearity is not a serious problem since the statistically significant correlation coefficients among the independent variables ranged from 0.08 to 0.57.

	practices								
5	Upgrading practices	3,4861	,42780	,134(**)	,153	,203(**)	,553(**)	1	
6	Innovation practices	3,8378	,59733	,149(**)	,084(*)	,166(**)	,538(**)	,572(**)	1

Note: *=p<0.05; **=p<0.01; ***=p<0.001 N=753

Regarding growth previous to 1997 the mean reveals that firms have grown slightly more than their competitors in terms of profit, sales and company value. In average the firms report to compete in environments with high dynamism.

The results from the multiple regressions can be found in table 4 below. The variables were entered in two steps. The first step only included the control variables, and in the second step the independent variables were entered.

Table 4: Multiple regression results, practice variables as predictors of growth

Step	*Variables*	*Growth*	
1	Past growth	,131**	,094*
	Environmental dynamism	,090*	,090*
	Knowledge resources	,238***	,121**
2	Protection practices		,142**
	Upgrading practices		,228***
	Innovation practices		,293***
	F	25,700	62,210
	Df	536	533
	Adjusted R^2	,121***	,405***
	Change in R^2	,126***	,286***
	F Change	25,700***	86,430***

Note: *=p<0.05; **=p<0.01; ***=p<0.001

As can be seen in table 4 above, both models are significant. The model fit for the first model is moderate, with an adjusted R^2 of 0.121. When including the independent variables we obtain a statistically significant change of 0.286 in R^2 and consequently the adjusted R^2 rises to 0.405. Thus, this model explains a statistically significant change share of the variance in firm growth over and above the base model.

In the first step all control variables were statistically significant. Access to knowledge resources is the most influential variable and has a positive impact on growth. Also environmental dynamism and past performance are positively associated with growth.

When considering the independent variables, entered in the second step, their statistically significant and positive coefficients suggest that growth was higher for those firms that performed protection practices, upgrading practices and innovation practices. Thus, support is found for all the three hypotheses. Based on the regression coefficients provided by

the analysis, innovation practices are the most influential, while protection practices are the least influential of the resource practices.

Discussion and Conclusions

Value creation of SMEs is based on the use of resources. Yet, the resource-based view of the firm, as the major theoretical attempt of understanding the role of resources in the value creation process, has been criticized for its lack of empirical grounding as well as for being conceptually vague and tautological (Priem and Butler 2001). Our study contributes to the empirical grounding of the RBV by demonstrating the role of resource practices in enhancing value creation. By introducing the concept of resource practices, we also contribute to the conceptualization of the RBV; and the activity-focus of the resource practices attempts to overcome the static view of resource endowments as the important factor for value creation.

Protection Practices and Value Creation

The empirical results show that resource practices directed at protecting the firm's resource base from imitation are positively associated with firm growth. Support is thus found for the core idea of the RBV that firms differ with respect to the resources they control, and that their success significantly depends upon the protection of these resources from imitation. Our results also extend the existing literature by showing that protection practices are less influential for firm growth than the upgrading and innovation practices, which focus on the more dynamic aspect of further developing of the firm's unique resource base. Still, as one important resource practice managers should devote attention to protecting the firm's 'crown jewels' to keep valuable and rare resources from being copied or imitated by competitors, as already pointed out by Grant (1991).

Upgrading Practice and Value Creation

The empirical results clearly show that resource practices directed at upgrading the firm's resource base are positively related to growth. The results suggest that resource heterogeneity among firms is related to the unique ways resources are internally re-combined and incrementally upgraded (Dierickx and Cool 1989) and that such upgrading practices are highly relevant when explaining the value creation of firms. The results are also consistent with the dynamic capabilities perspective (Teece, Pisano, and Shuen 1997) as they support a positive relationship between practices for building, integrating and reconfiguring resources and firm growth. In addition, the results are in line with Penrose's theory of the growth of the firm in showing that growth does not depend on the stock of resources a firm possesses, but on the actual and potential services that those resources can render. This leads to the

important implication for managers that the upgrading of the company's resource base in a worthwhile activity which supports company growth.

Innovation Practices and Value Creation

Our results also illustrate that resource practices directed at innovation, namely at introducing new products or services into the market, contribute to value creation. This extends the RBV literature by showing how innovation practices are actually the most influential resource practices in explaining firm growth.

In summary, the results from our study reveal that a set of three resource practices are highly relevant for explaining firm growth and value creation, namely protection practices, upgrading practices and innovation practices.

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Appendix

1) Growth

Rate your company's performance compared to your two major competitors concerning:

- Sales growth
- Revenue growth
- Growth in the number of employees
- Net profit margin
- Product/service innovation
- Process innovation
- Adoption of new technology
- Product/service quality
- Product/service variety
- Customer satisfaction

2) Protection practices

Rate you company's emphasis on using different resources, compared to the common practices in your industry, concerning:

- accumulating resources that are difficult for competitors to imitate;
- accumulating unique resources for future use;
- developing ways to protect existing resources;

Upgrading practices

Rate you company's emphasis on using different resources, compared to the common practices in your industry, concerning:

- using new resources in current operations;
- combining existing resources to upgrade exiting products;
- using intangible resources to support its strategy;
- implementing new methods to exploit existing resources;
- upgrading existing processes to manufacturing systems.

Innovation practices

Rate you company's emphasis on using different resources, compared to the common practices in your industry, concerning:

- using new resources, not previously known in the industry, to pursue new strategic initiatives such as entering a new market;
- developing new resources for use in new operations;
- acquiring new resources for future expansion;
- using existing resources for future expiation
- using new resources to create radically new product (services)
- product/service innovation and introduction.

3) Knowledge resources

- Does your company have a weak or strong position in terms of staff with a positive commitment to the company's development compared to other companies in your industry?
- Does your company have a weak or strong position in terms of technical expertise compared to other companies in your industry?
- Does your company have a weak or strong position in terms of expertise regarding development of products or services compared to other companies in your industry?
- Does your company have a weak or strong position in terms of highly productive staff compared to other companies in your industry?
- Does your company have a weak or strong position in terms of expertise in marketing

compared to other companies in your industry?

- Does your company have a weak or strong position in terms of special expertise regarding customer service compared to other companies in your industry?
- Does your company have a weak or strong position in terms of special expertise regarding management compared to other companies in your industry?
- Does your company have a weak or strong position in terms of innovative markets compared to other companies in your industry?
- Does your company have a weak or strong position in terms of staff educated in giving superior customer service compared to other companies in your industry?
- Does your company have a weak or strong position in terms of staff who like to contribute with ideas for new products/services compared to other companies in your industry?
- Does your company have a weak or strong position in terms of staff capable of marketing your products/services well compared to other companies in your industry?