



Sinergie SIMA
Management Conference



Rediscovering local roots and interactions in management

Conference Proceedings

Short papers

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Sinergie SIMA
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Rediscovering local roots and interactions in management

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Conference Proceedings

Short Papers

edited by

*Arabella Mocciaro Li Destri, Marta Ugolini,
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Investigating the interdependence of innovation and internationalization

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Framing of the research. *Innovation and internationalization are two key strategies for firms to achieve success and stable and sustainable long-term growth (e.g., Audretsch et al., 2014; Filipescu et al., 2009; Golovko and Valentini, 2011; Zona et al., 2022). According to some authors (e.g., Ruzzier et al., 2013), innovation and internationalization are “inseparable paths”.*

Innovation encompasses the investments and activities aimed at the implementation of a new product (good or service), or process, or firm organizational method, or relationships with stakeholders and is related to the firm’s ability to utilize its existing knowledge base and to acquire knowledge from external sources by means of imitation, licensing, partnerships or acquisitions (Baregheh et al., 2009). Instead, internationalization refers to decisions and operations through which a firm expands its business abroad or its involvement in international markets (Johanson and Vahlne, 1990).

Previous literature indicates that innovation is a driver for internationalization as well as internationalization is a driver for innovation.

Innovation as a driver for internationalisation. Innovation promotes firm internationalization and performance (Henley and Song, 2020; Kyläheiko et al., 2011).

Innovation is essential for competing abroad given the higher competitiveness in international markets (Bannò et al., 2011). In fact, innovation increases firms’ global competitiveness and facilitates foreign market penetration through higher proprietary advantages, the creation of new and superior products, and the development of useful skills (e.g., Filipescu et al., 2009).

At the same time, innovation favours internationalization: innovation provides firms with unique competitive and cost advantages, which can be exploited when internationalizing (Kafouros et al., 2008, Bagheri et al. 2019). Moreover, innovation also increases opportunities and competitiveness when internationalizing (e.g., Ciocanel and Pavelescu, 2015). Finally, successful product innovation increases a firm’s involvement in international markets (Cassiman and Golovko, 2011, Falahat et al., 2020).

Innovation may require inputs from abroad eventually through partnerships with foreign firms, which in turn may increase market information and encourage exports (Hessels, 2007, Moreno-Menéndez, 2018).

Internationalization as a driver for innovation. Internationalization enhances firm experience, innovation capacity and innovation performance since it enables firms to access a wide range of resources, knowledge, and ideas (e.g., Golovko and Valentini, 2011; Boermans et al. 2015). These inputs flow from several countries and a broader group of experts and can also be acquired from the cheapest available sources (e.g., Dabic et al., 2012, Kordos et al., 2016).

Internationalization helps firms to reduce business risks (e.g., risk of economic recession) as well as the risk associated with innovation (e.g., risk of unsuccessful outputs) since firms serve several markets and offer their products to a wider range of customers (Kafouros et al., 2008). Firms can also enhance their profits from innovation efforts and spread innovation costs as well as maximize the benefits derived from R&D investments (Kafouros et al., 2008, Si et al., 2020).

However, internationalization may negatively impact innovation by increasing the risk of knowledge leakage (i.e., the costs of outgoing spillovers may outweigh the benefits from incoming spillovers) and by increasing the costs of coordinating and controlling a global network (Álvarez et al., 2016).

Purpose of the paper. *The causal relationship between innovation and internationalization is controversial (Damijan et al., 2010, Li, 2020). According to some authors, these two strategies are mutually reinforcing in the sense that innovation eases internationalization as well as internationalisation induces innovation (e.g., Hagen et al., 2014; Halilem et al., 2014). Instead, other authors find an insignificant or even negative relationship between the two strategies (e.g., Hitt et al., 1997).*

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A clear and well-recognized causal relationship between innovation and internationalization has not been identified and there is not consensus on the direction of such association: these two strategies are important and determinant for each other and neither of the two seems to prevail on the other (Alarcón Osuna, 2014). Given that previous studies are inconclusive regarding the relationship between innovation and internationalization, further research is desirable.

This research aims to investigate the mutual relationship between innovation and internationalization by applying a structural equation modeling to a database of 20,509 Italian firms. Preliminary results show that innovation has a positive and significant effect on internationalization and vice versa.

Methodology. To examine the relationship between multiple dependent variables the Structural Equation Modeling (SEM) can be used (Ullman and Bentler, 2012). SEM is a type of statistical model that is made up of multiple equations. These equations involve different types of variables, such as random variables (like latent variables, observed variables, and disturbance variables), non-random variables, and structural parameters. In other words, SEM models are composed of a set of equations that describe the relationships among multiple variables, some of which are randomly determined and some of which are not (Bollen, 1989).

Our purpose is to assess how innovation and internationalization affect each other, and so they will be considered as both dependent and independent variables. The study could be complex, but through the SEM model it is possible to take into account the presence of latent variables (unobservable and unmeasurable variables) and carry out a bidirectional study (Maruyama, 1997).

To assess the mutual effect between innovation and internationalization, we decided to use cross sectional data containing the information of 20,509 firms in 2019 and 2020. The data concerning the degree of internationalization of Italian firms were taken from Reprint (Mariotti and Mutinelli, 2017) and the specific data of a firm (e.g., age, location, economic and financial data) were extracted from the Orbis Bureau van Dijk database (Orbis Intellectual Property for data regarding innovation). Table 1 shows the dependent and independent variables of the realized models with indication of the definition and source.

Tab. 1: Description and sources of variables used

Variable	Definition	Source
Dependent Variables		
Innovation <i>t</i>	Logarithm of the number of patents registered by an enterprise until time <i>t</i>	Orbis Intellectual Property
FDI <i>t</i>	Logarithm of the number of FDI made by an enterprise until time <i>t</i>	Reprint
FDI acquisition <i>t</i>	Logarithm of the number of FDI acquisition category made by an enterprise until time <i>t</i>	Reprint
FDI greenfield <i>t</i>	Logarithm of the number of FDI greenfield category made by an enterprise until time <i>t</i>	Reprint
Independent Variables		
Innovation <i>t-1</i>	Logarithm of the number of patents registered by an enterprise until time <i>t-1</i>	Orbis Intellectual Property
FDI <i>t-1</i>	Logarithm of the number of FDI made by an enterprise until time <i>t-1</i>	Reprint
FDI acquisition <i>t-1</i>	Logarithm of the number of FDI acquisition category made by an enterprise until time <i>t-1</i>	Reprint
FDI greenfield <i>t-1</i>	Logarithm of the number of FDI greenfield category made by an enterprise until time <i>t-1</i>	Reprint
Firm dimension	Logarithm of the revenue	Orbis
Firm age	Logarithm of number of years since firm foundation	Orbis
ROE	Return on equity, given by net income on equity	Orbis
Tangibility	Tangible fixed assets out of total	Orbis
Labour cost per employee	Logarithm of labour cost per employees	Orbis
North Italy	Dummy variable equal to 1 if the firm is located in North Italy, and 0 otherwise	Orbis
Pavitt science based	Dummy variable if the firm is in a science based industry, 0 otherwise	Orbis
Pavitt specialized supplier	Dummy variable if the firm is in a specialized supplier industry, 0 otherwise	Orbis
Pavitt scale and information intensive	Dummy variable if the firm is in a scale and information intensive industry, 0 otherwise	Orbis
Pavitt suppliers dominated	Dummy variable if the firm is in a supplier dominated industry, 0 otherwise	Orbis

Source: Our elaboration

As a dependent variable for the first equation, assessing the impact of internationalization on innovation (Model 1a, 1b and 1c), we considered Innovation, corresponding to the logarithm of the total patents registered by the firm until 2020 (De Beule et al., 2007). To measure the degree of Internationalization, we considered the logarithm of the total FDI performed by a firm until 2019 (Zona et al., 2022). In particular, we used the total FDI in Model 1a, the total FDI in the acquisition category in Model 1b, and the total FDI in the greenfield category in the Model 1c. We took into account the characteristics of the firms under study using the following variables: Firm dimension representing the logarithm of firm revenues in 2020 (Riahi-Belkaoui, 2001), Firm age representing the logarithm of the number of years since firm foundation (Hölzl, 2014), ROE (return on equity, given by net income on equity) in 2020 as an indicator of firm performance, Tangibility given by the ratio of tangible fixed assets to total fixed assets in 2020 (Albaity and Ho Sel Chuan, 2013). To consider the context where the firm is located, the variable North Italy (dummy variable equal to 1 if the firm is located in Central Italy, and 0 otherwise) was used in line with Wright et al. (2007). We also considered a dummy variable to indicate the affiliation of a particular industry sector by following the Pavitt Taxonomy (Bogliacino

and Pianta, 2016; Pavitt, 1984): Pavitt suppliers dominated, Pavitt scale and information intensive, Pavitt specialized supplier and Pavitt science based.

In the second equation, we considered FDI (Model 2a), FDI acquisition (Model 2b) and FDI greenfield (Model 2c) as dependent variables. These three variables represent respectively, the logarithm of the total FDI performed by a firm until 2020, the logarithm of the total FDI performed in the category acquisition by a firm until 2020 and the logarithm of the total FDI performed in the category greenfield by a firm until 2020. To take into account the characteristics of the firms under study, the following variables were considered: Firm dimension, Firm age, ROE, Tangibility, measured as in equation one, and Labour cost per employee measured as the logarithm of the cost of a worker incurred by the firm in 2020. As in the first equation, we considered North Italy and Pavitt Taxonomy classification.

Formally, we use the following interaction models:

Model 1 Innovation = $f(\text{Internationalization } t-1, \text{ Firm dimension, Firm age, ROE, Tangibility, North Italy, Pavitt science based, Pavitt specialized supplier, Pavitt scale and information intensive, Pavitt suppliers dominated})$

Model 2 Internationalization = $f(\text{Innovation } t-1, \text{ Firm dimension, Firm age, ROE, Tangibility, Labour costs per employee, North Italy, Pavitt science based, Pavitt specialized supplier, Pavitt scale and information intensive, Pavitt suppliers dominated})$

Results. Table 2 shows the regression results of the preliminary analysis.

Tab. 2: Regression results

VARIABLES	Model 1a First equation Innovation t	Model 2a Second equation FDI t	Model 1b First equation Innovation t	Model 2b Second equation FDI acquisition t	Model 1c First equation Innovation t	Model 2c Second equation FDI greenfield t
Innovation t-1		0.049*** (0.003)		0.022*** (0.002)		0.045*** (0.002)
FDI t-1	0.367*** (0.018)					
FDI acquisition t-1			0.418*** (0.029)			
FDI greenfield t-1					0.415*** (0.02)	
Firm dimension	0.068*** (0.002)	0.027*** (0.001)	0.076*** (0.001)	0.010*** (0.000)	0.069*** (0.002)	0.022*** (0.001)
Firm age	0.041*** (0.003)	0.010*** (0.001)	0.046*** (0.003)	0.001 (0.001)	0.041*** (0.003)	0.009*** (0.001)
ROE	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.000*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Tangibility	-0.073*** (0.008)	-0.026*** (0.003)	-0.079*** (0.008)	-0.011*** (0.002)	-0.074*** (0.008)	-0.020*** (0.003)
Labour cost per employee		0.084*** (0.006)		0.024*** (0.004)		0.064*** (0.006)
North Italy	0.012* (0.007)	0.018*** (0.003)	0.018*** (0.007)	0.002 (0.002)	0.012* (0.007)	0.015*** (0.002)
Pavitt science based	0.338*** (0.014)	-0.006 (0.006)	0.337*** (0.014)	0.008** (0.003)	0.340*** (0.014)	-0.010** (0.005)
Pavitt specialized supplier	0.149*** (0.01)	0.023*** (0.004)	0.157*** (0.01)	0.005** (0.002)	0.149*** (0.01)	0.021*** (0.003)
Pavitt scale and information intensive	0.045*** (0.013)	0.027*** (0.005)	0.050*** (0.013)	0.012*** (0.003)	0.048*** (0.013)	0.017*** (0.005)
Pavitt suppliers dominated	-0.013 (0.009)	0.003 (0.003)	-0.012 (0.009)	-0.002 (0.002)	-0.014 (0.009)	0.004 (0.003)
Constant	-0.856*** (0.021)	-1.188*** (0.063)	-0.950*** (0.02)	-0.363*** (0.039)	-0.866*** (0.02)	-0.931*** (0.057)
var(y)	0.205*** (0.002)	0.031*** (0.000)	0.207*** (0.002)	0.012*** (0.000)	0.205*** (0.002)	0.025*** (0.000)
Observations	20,509	20,509	20,509	20,509	20,509	20,509

Significance levels * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Source: Our elaboration

Considering the first equation in Model 1a (impact on Innovation), it emerges that FDI t-1 has positive and significant coefficient ($b=0.367$ and $p < 0.01$), in Model 1b (impact on Innovation) FDI acquisition t-1 has positive and significant coefficient ($b=0.418$ and $p < 0.01$) and in Model 1c (impact on Innovation) FDI greenfield t-1 has positive and significant coefficient ($b=0.415$ and $p < 0.01$).

Considering the second equation in Model 2a (impact on FDI) it emerges that Innovation t-1 has positive and significant coefficient ($b=0.049$ and $p < 0.01$), in Model 2b (impact on FDI acquisition) has positive and significant coefficient ($b=0.022$ and $p < 0.01$) and in Model 2c (impact on FDI greenfield) has positive and significant coefficient ($b=0.045$ and $p < 0.01$).

Firm dimension has a positive and significant coefficient ($p < 0.01$) in Model 1a, 2a, 1b, 2b, 1c, 2c (respectively $b = 0.068$, $b = 0.027$, $b = 0.076$, $b = 0.010$, $b = 0.069$ and $b = 0.022$). Also Firm age has a positive and significant coefficient ($p < 0.01$) in Model 1a, 2a, 1b, 1c, 2c (respectively $b = 0.041$, $b = 0.010$, $b = 0.046$, $b = 0.041$ and $b = 0.009$) in Model 2b is non significant. ROE has a positive and significant coefficient in all the Models and Tangibility has a negative and significant coefficient in all the Models.

Labour cost per employee was considered only in the second equation and it has a positive and significant coefficient ($p < 0.01$) in Models 2a, 2b, 2c (respectively $b = 0.084$, $b = 0.024$ and $b = 0.064$).

As regards the other variables, North Italy has a positive and significant coefficient in Models 1a, 2a, 1b, 1c, 2b, while in Model 2b is positive and non-significant. The differences in terms of Pavitt Taxonomy classification have an effect on performance, Pavitt science based has a positive and significant coefficient in all the Models except for Model 2a where it is negative and non-significant. Pavitt specialized supplier and Pavitt scale and information intensive are positive and significant in all the Models. In the end, Pavitt suppliers dominated is non-significant in all the models.

Research limitations. This research has some limitations. First, our research relies on cross sectional data to examine the mutual relationship between innovation and internationalization. The use of this type of data does not allow to examine the relationship over time and thus understand the timing with which innovation and internationalisation promote and influence each other. Second, the database comprises only Italian firms and their subsidiaries. Therefore, our results may not be extendable to firms operating in other countries. These firms face a different institutional and economic context that may induce or hinder them to innovate and internationalize to a different extent than Italian firms. Second, the impact only on acquisition and greenfield FDI was analysed. Future studies might also consider the impact on majority and minority FDI.

Managerial implications. From a managerial perspective, innovation and internationalization are key strategies for the long-term growth and prosperity of firm. Firms are faced every day with making strategic decisions to expand their business, taking into account the positive and negative effects that internationalisation and innovation can have on business development. This research aims to support the manager in making strategic choices by studying the simultaneous interaction of these two phenomena and demonstrating that investing simultaneously in innovation and internationalization can bring concrete benefits in these two aspects that are fundamental to maintaining competitiveness in the market. In particular, this phenomenon is found in both acquisitions and greenfields, the main methods of internationalization found in the selected sample.

Originality of the paper. Previous studies show that the relationship between innovation and internationalization is not clear. Moreover, these two factors have always been studied unidirectionally. Given the growing importance of innovation and internationalisation as strategic factors for firm growth, it is important to understand their mutual interaction. This research started from these considerations to investigate the mutual relationship between innovation and internationalization by applying a structural equation modeling to a database of 20,509 Italian firms. We found that innovation has a positive and significant effect on all types of foreign direct investment and total investment, indicating how innovation is an important and competitive factor for growth in foreign markets. On the other hand, it can be seen that foreign direct investment also has positive and significant effects on innovation. This indicates the fact that new opportunities and new knowledge can be found abroad due perhaps to a different cultural.

This research is among the few that examine the mutual relationship between innovation and internationalization, an issue that deserves further investigation.

Key words: innovation; internationalization; mutual relationship; structural equation model

References

- ALARCÓN OSUNA M.A. (2014), "Innovation and internationalization as a single strategy of the firm: a unification of theories", *International Journal of Management and Marketing Research*, vol. 7, n. 1, pp. 73-84.
- ALBAITY M.S., HO SEL CHUAN A. (2013), "Internationalization and capital structure: evidence from Malaysian manufacturing firms", *Asian Journal of Finance & Accounting*, vol. 5, n. 2, p. 329.
- ÁLVAREZ I., MARÍN R., ARTEAGA F.J.S. (2016), "R&D internationalisation and the strategic relevance of the institutional framework in host locations", *International Journal of Management and Decision Making*, vol. 15, n. 3/4, p. 205.
- AUDRETSCH D.B., COAD A., SEGARRA A. (2014), "Firm growth and innovation", *Small Business Economics*, vol. 43, n. 4, pp. 743-749.
- BAGHERI M., MITCHELMORE S., BAMIATZI V., NIKOLOPOULOS K. (2019), "Internationalization orientation in SMEs: the mediating role of technological innovation", *Journal of International Management*, vol. 25, n. 1, pp. 121-139.
- BANNÒ M., VEZZOLI M., CARPITA M. (2011), "Disentangling the innovation-internationalization process through a structural equation model", *ERSA conference papers*. Presented at European Regional Science Association.
- BAREGHEH A., ROWLEY J., SAMBROOK S. (2009), "Towards a multidisciplinary definition of innovation", *Management Decision*, vol. 47, n. 8, pp. 1323-1339.
- BOERMANS M.A., ROELFSEMA H. (2016), "Small firm internationalization, innovation, and growth", *International Economics and Economic Policy*, vol. 13, n. 2, pp. 283-296.
- BOGLIACINO F., PIANTA M. (2016), "The Pavitt Taxonomy, revisited: patterns of innovation in manufacturing and services", *Economia Politica*, vol. 33, n. 2, pp. 153-180.
- BOLLEN K.A. (1989), *Structural Equations with latent variables*, John Wiley & Sons, Inc., Hoboken, NJ, USA.

- CASSIMAN B., GOLOVKO E. (2011), "Innovation and internationalization through exports", *Journal of International Business Studies*, vol. 42, n. 1, pp. 56-75.
- CIOCANEL A.B., PAVELESCU F.M. (2015), "Innovation and Competitiveness in European Context", *Procedia Economics and Finance*, vol. 32, pp. 728-737.
- DABIĆ M., DAIM T.U., ARALICA Z., BAYRAKTAROGLU A.E. (2012), "Exploring relationships among internationalization, choice for research and development approach and technology source and resulting innovation intensity: case of a transition country Croatia", *The Journal of High Technology Management Research*, vol. 23, n. 1, pp. 15-25.
- DAMIJAN J.P., KOSTEVC Č., POLANEC S. (2010), "From innovation to exporting or vice versa?", *World Economy*, vol. 33, n. 3, pp. 374-398.
- FALAHAT M., RAMAYAH T., SOTO-ACOSTA P., LEE Y.Y. (2020), "SMEs internationalization: the role of product innovation, market intelligence, pricing and marketing communication capabilities as drivers of SMEs' international performance", *Technological Forecasting and Social Change*, vol. 152, p. 119908.
- FILIPESCU D.A., RIALP A., RIALP J. (2009), "Internationalisation and technological innovation: empirical evidence on their mutual relationship", in Sinkovics R.R., Ghauri P.N. (Eds). *Advances in International Marketing*, vol. 20, pp. 125-154.
- GOLOVKO E., VALENTINI G. (2011), "Exploring the complementarity between innovation and export for SMEs' growth", *Journal of International Business Studies*, vol. 42, n. 3, pp. 362-380.
- HAGEN B., DENICOLAI S., ZUCHELLA A. (2014), "International entrepreneurship at the crossroads between innovation and internationalization", *Journal of International Entrepreneurship*, vol. 12, n. 2, pp. 111-114.
- HALILEM N., AMARA N., LANDRY R. (2014), "Exploring the relationships between innovation and internationalization of small and medium-sized enterprises: A nonrecursive structural equation model", *Canadian Journal of Administrative Sciences / Revue Canadienne des Sciences de l'Administration*, vol. 31, n. 1, pp. 18-34.
- HENLEY A., SONG M. (2020), "Innovation, internationalisation and the performance of microbusinesses", *International Small Business Journal: Researching Entrepreneurship*, vol. 38, n. 4, pp. 337-364.
- HESSELS S.J.A. (2007), "Innovation and international involvement of Dutch SMEs", *International Journal of Entrepreneurship and Small Business*, vol. 4, n. 3, p. 234.
- HITT M.A., HOSKISSON R.E., KIM H. (1997), "International diversification: effects on innovation and firm performance in product diversified firms", *Academy of Management Journal*, vol. 40, n. 4, pp. 767-798.
- JOHANSON J., VAHLNE J. (1990), "The Mechanism of Internationalisation", *International Marketing Review*, vol. 7, n. 4.
- KAFOUROS M.I., BUCKLEY P.J., SHARP J.A., WANG C. (2008), "The role of internationalization in explaining innovation performance", *Technovation*, vol. 28, n. 1-2, pp. 63-74.
- KORDOS M., VOJTOVIC S. (2016), "Transnational corporations in the global world economic environment", *Procedia - Social and Behavioral Sciences*, vol. 230, pp. 150-158.
- KYLÄHEIKO K., JANTUNEN A., PUUMALAINEN K., SAARENKETO S., TUPPURA A. (2011), "Innovation and internationalization as growth strategies: the role of technological capabilities and appropriability", *International Business Review*, vol. 20, n. 5, pp. 508-520.
- LI G. (2020), "A review of the literature of the relationship between innovation and internationalization of smes and future prospects", *American Journal of Industrial and Business Management*, vol. 10, n. 03, pp. 619-636.
- MARUYAMA G. (1997), *Basics of structural equation modeling*, Sage.
- MORENO-MENÉNDEZ A.M. (2018), "Co-evolution of innovation cooperation activities and internationalisation through exports", *Innovation*, vol. 20, n. 4, pp. 353-376.
- PAVITT K. (1984), "Sectoral patterns of technical change: towards a taxonomy and a theory", *Research Policy*, vol. 13, n. 6, pp. 343-373.
- RIAHI-BELKAOUI A. (2001), "Level of multinationality, growth opportunities, and size as determinants of analyst ratings of corporate disclosures", *American Business Review*, vol. 19.2, pp. 115-120.
- RUZZIER M., HOJNIK J., LIPNIK A. (2013), "Relationship between innovation and internationalization of slovenian internationalized companies", *Industry, Science and Policy Markets for Sustainable Future*. Presented at 14th Management International Conference, Koper, Slovenia, p. 579-595.
- SI Y., LIU W., ZHANG Y. (2021), "Which forms of R&D internationalisation behaviours promote firm's innovation performance? An empirical study from the China International Industry Fair 2016-2018", *Technology Analysis & Strategic Management*, vol. 33, n. 8, pp. 857-870.
- ULLMAN J.B., BENTLER P.M. (2012), "Structural equation modeling", in Weiner I. (Ed). *Handbook of Psychology, Second Edition*, p. hop202023.
- WRIGHT M., WESTHEAD P., UCBASARAN D. (2007), "Internationalization of small and medium-sized enterprises (SMEs) and international entrepreneurship: a critique and policy implications", *Regional Studies*, vol. 41, n. 7, pp. 1013-1030.
- ZONA F., BANNÒ M., COLLIER G. (2022), "International expansion and firm growth in domestic markets: family versus non-family firms", *Family Business Review*, vol. 35, n. 2, pp. 159-183.