Intrapreneurship: a comparative structural equation modeling study

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Abstract

Purpose – The purpose of this paper is to illustrate the intrapreneurship construct with its predictors and consequences via a model. Previous studies in intrapreneurship have been predominantly concerned with patterns of relationships (coefficients of the model) as opposed to the level of intrapreneurship and other constructs (latent means) in the intrapreneurship model. This study aims to examine both the patterns of relationships and the levels (means) across two countries (the USA and Slovenia) by testing two models (the zero-means model and the latent-means model).

Design/methodology/approach – Mailed structured questionnaire data for this cross-sectional study were collected from firms in the USA and Slovenia (192 usable responses). Structural equation modeling was used to estimate the models and compare coefficients and latent means.

Findings – The model hypotheses on the relationships among environment, organizational characteristics, intrapreneurship, and performance were mainly supported across both countries and by both models. However, results may differ upon the selection of the measurement model.

Research limitations/implications – The latent-means model may be considered superior to the zero-means model.

Practical implications – Intrapreneurship can have beneficial effects on the firm’s growth and profitability, in both absolute and relative terms.

Originality/value – This study proved a latent-means model of intrapreneurship.

Keywords Entrepreneurialism, Cross-cultural studies, Modelling, Slovenia, United States of America

Paper type Research paper

Introduction

Organizational and economic development is substantially dependent on entrepreneurship in existing organizations (intrapreneurship). The worth of intrapreneurship has been mostly revealed with respect to large corporations in developed economies. Intrapreneuship has been acknowledged in academia and practice as an important element in revitalization and performance of large companies (Schollhammer, 1981, 1982; Burgelman, 1983, 1985; Kanter, 1984; Pinchot, 1985; Rule and Irwin, 1988; McKinney and McKinney, 1989; Guth and Ginsberg, 1990; Zahra, 1991), small and medium sized enterprises (Carrier, 1994), and firms in general irrespective of their size (Antoncic and Hisrich, 2001, 2004). Researchers’ predominant concerns have been conceptual and empirical mainly with regard to patterns of relationships among constructs in the intrapreneurship model. Since, previous research has had a primarily American basis, cross-cultural comparisons of the intrapreneurship model have been minimal; for the same reason a research focus on

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levels (means) of intrapreneurship and other constructs in the intrapreneurship model as opposed to a focus on patterns of relationships (coefficients) between intrapreneurship and its antecedents and consequences has been lacking. Levels of constructs may differ across different economic contexts, therefore making consideration of the levels particularly critical in cross-cultural research.

The objective of this study was to examine both the patterns of relationships and the levels of constructs in the intrapreneurship model, compare intrapreneurship models with and without inclusion of latent means, and generalize the intrapreneurship model in a cross-national study. In the first section of the paper, theoretical bases of the intrapreneurship model are reviewed, hypotheses are developed, and two models (the zero-means model and the latent-means model) are discussed. Following the methods section, the results of the tests of the two intrapreneurship models across two countries (Slovenia and the USA) are presented. The paper concludes with a discussion of the findings.

Theory and hypotheses
Theoretical foundations of this study are discussed in terms of the intrapreneurship concept, antecedents and consequences of intrapreneurship, cross-cultural research and two alternative measurement models of intrapreneurship.

Intrapreneurship
The phenomenon of intrapreneurship has been described in various terms such as intrapreneuring (Pinchot, 1985), corporate entrepreneurship (Burgelman, 1983; Vesper, 1984; Guth and Ginsberg, 1990; Hornsby et al., 1993; Stopford and Baden-Fuller, 1994; Antoncic and Hisrich, 2004), internal corporate entrepreneurship (Schollhammer, 1981, 1982; Jones and Butler, 1992), and corporate venturing (MacMillan, 1986; Vesper, 1990). In broad terms, intrapreneurship is entrepreneurship within an existing organization. It can be seen as a process by which individuals inside organizations pursue opportunities without regard to the resources they currently control (Stevenson and Jarillo, 1990); as doing new things and departing from the customary to pursue opportunities (Vesper, 1990); as emergent behavioral intentions or behaviors deviating from the customary way of doing business (Antoncic and Hisrich, 2003, 2004); or simply as a spirit of entrepreneurship within the existing organization (Hisrich and Peters, 1995). Some other researchers have used narrower definitions, focusing on new venture formation (Kanter and Richardson, 1991; Badguerahanian and Abetti, 1995) or on large corporations (Schollhammer, 1982; Burgelman, 1983, 1985; Pinchot, 1985; Rule and Irwin, 1988; Kuratko et al., 1993).

Intrapreneurship can also be defined by its content (for a more precise conceptual definition see Antoncic and Hisrich, 2003), which includes dimensions based on the Schumpeterian innovation concept, a building block of entrepreneurship. The pursuit of creative or new solutions to challenges confronting the firm, including the development or enhancement of old and new products and services, markets, administrative techniques and technologies for performing organizational functions, as well as changes in strategy, organizing, and dealing with competitors, may be seen as innovations in the broadest sense. Previous views of intrapreneurship can be for the purpose of this study classified into four dimensions:
Antecedents of intrapreneurship

The literature on intrapreneurship has identified two main sets of antecedents: one pertains to the external environment of the firm, the other to its organizational characteristics.

Environment. The external environment has been viewed as a determinant of entrepreneurial activity at the organizational level (Miller, 1983; Khandwalla, 1987; Covin and Slevin, 1991). Researchers building contingency models to explain and predict intrapreneurship and its outcomes tend to incorporate, in addition to internal variables, a set of variables on external environment (Zahra, 1991, 1993; Badgerahanian and Abetti, 1995; Antoncic and Hisrich, 2001, 2004). Some environmental characteristics (dynamism, technological opportunities, industry growth, and demand for new products) are viewed as favorable (munificent) for intrapreneurship, whereas other characteristics (unfavorable change and competitive rivalry) are viewed as unfavorable (hostile).

Environmental munificence has been conceptualized with four dimensions: dynamism, technological opportunities, industry growth, and the demand for new products (Zahra, 1993). These environmental characteristics can be conducive to intrapreneurship. Dynamism (i.e. perceived instability and continuing changes in the firm’s markets) can be considered favorable to the pursuit of intrapreneurship because it tends to create opportunities in a firm’s markets (Zahra, 1991). Dynamic or high-tech environments tend to lead organizations to adopt an entrepreneurial posture (Khandwalla, 1987) and intensify intrapreneurship (Guth and Ginsberg, 1990). Perceived industry growth can stimulate intrapreneurship. The perceived decline of an industry represents an important push for companies into increased renewal activities (Zahra, 1993), while the perception of growth markets potentially offering entrepreneurial opportunities can pull companies into increased intrapreneurial activities (for example, high market growth may be related to corporate start-up success, Hobson and Morrison, 1983). Demand for new products also encourages intrapreneurship presenting an important demand-pull (Zahra, 1993). Therefore, dynamism, technological opportunities, industry growth and the demand for
new products are expected to be positively related to intrapreneurship. Environmental hostility can also stimulate intrapreneurial activities. Environmental hostility tends to create threats for the organization stimulating the pursuit of corporate entrepreneurship (Zahra, 1991) and the adoption of an entrepreneurial posture (Covin and Slevin, 1989, 1991). Two hostile environmental conditions that may be positively related to intrapreneurship are unfavorability of change (refers to the extent to which the environment is perceived as unfavorable to a company’s goals and mission) and competitive rivalry (i.e. the intensity of competition) (Zahra, 1993). This research is the basis of the first hypothesis:

**H1.** Environmental characteristics (increased dynamism, increased technological opportunities, industry growth, increased demand for new products, unfavorability of change, and increased competitive rivalry) will be positively associated with intrapreneurship.

**Organization.** Previous research has focused on characteristics of intra-organizational environments that could represent stimulants or impediments for intrapreneurship development (Souder, 1981; Schollhammer, 1982; Kanter, 1984; Pinchot, 1985; Luchsinger and Bagby, 1987; Hornsby et al., 1993; Antoncic and Hisrich, 2001; Antoncic and Zorn, 2004). Organizational characteristics (communication openness, control mechanisms, environmental scanning intensity, organizational and management support, and organizational values) compose the second group of predictors of intrapreneurship.

First, communication openness (the amount and quality of communication) is expected to be positively related to intrapreneurship. Information flows are important in organizations (Chadam and Pastuszak, 2005; Lesjak and Vehovar, 2005; Wong, 2005). Communication quality and quantity can be essential for successful intrapreneurial initiation and implementation (Peters and Waterman, 1982; Zahra, 1991), whereas open communication (as a means of information sharing and empowerment) can be considered a critical element for innovation (Kanter, 1984; Pinchot, 1985). Second, formal controls used to monitor intrapreneurial activities can be viewed as positive stimulants of intrapreneurship. While an overly excessive use of formal controls can inhibit intrapreneurship (MacMillan et al., 1984; Zahra, 1991), control and evaluation are important for intrapreneurship (Kuratko et al., 1993) with formal controls being integral to corporate entrepreneurship projects selection (Kanter, 1989). Third, intensive environmental scanning can be positively related to intrapreneurship. Scanning highlights industry trends and changes and environmental opportunities and threats and is important for intrapreneurial activities such as innovativeness and new business venturing (Zahra, 1991). Gathering feedback from customers as well as from employees is essential for an organization (Wei et al., 2006). Environmental scanning that is directed toward forecasting the industry environment can be particularly important for companies in hostile environments (Khandwalla, 1977). Fourth, organizational support can be predictive of intrapreneurship and may be considered the most important antecedent of intrapreneurship (Antoncic and Hisrich, 2001, 2004). Management systems and skills of employees can be considered important for providing superior services or reaching customers (Ruzzier et al., 2006). The team involved in changing an organization needs to be enabled to implement new business processes (McAdam and Galloway, 2005). The role of top management and employee
training can be essential for quality and performance of firms (Demirbag et al., 2006). The support from senior management can encourage employees for innovation (Lee and Tsai, 2005). The style of the top management may be important for innovation performance (Huang and Lin, 2006). Key contents and characteristics of intrapreneurship conducive organizational support from past research are: management involvement (Merrifield, 1993), top management support, commitment, style, and staffing and rewarding venture activities (MacMillan, 1986), training and trusting individuals within the firm to detect opportunities (Stevenson and Jarillo, 1990), work discretion, rewards, time availability, loose intra-organizational boundaries, and management support (Hornsby et al., 1990). Fifth, organizational values can be considered important drivers of intrapreneurship. A combination of emotional and value commitment tends to improve innovativeness in organizations (Kanter, 1984). Values are an important part of an innovative organizational culture, in which individuals are continuously encouraged to generate new ideas, knowledge and solutions (Wong, 2005). The values-related drivers of intrapreneurship are: the characteristics, values/beliefs, and visions of strategic leaders (Guth and Ginsberg, 1990), attitude of individuals within the firm (Stevenson and Jarillo, 1990), individual-centered corporate entrepreneurship and organizational values (focus on ways in which employees are treated in the organization) and competition-centered organizational values (focus on approaches that organizational members should follow when attempting to achieve organizational goals) (Zahra, 1991). The above research forms the basis of the following hypothesis:

H2. Organizational characteristics (communication amount and quality, formal controls, environmental scanning intensity, organizational support, and competition-related and person-related organizational values) will be positively related to intrapreneurship.

In addition, the two sets of antecedents of intrapreneurship (environment and organization) tend to be related (Antoncic and Hisrich, 2000). The environment can play a paramount role in the selection and adaptation of firms (population ecology theory, Hannan and Freeman, 1977) and tends to influence organizations to become more isomorphic (institutional theory, for example, DiMaggio and Powell, 1983). Therefore, the following hypothesis is postulated:

H3. Environmental characteristics will be positively related to organizational characteristics.

Consequences of intrapreneurship
Firm performance (usually in terms of growth and profitability, Covin and Slevin, 1991) can be considered the most important consequence of intrapreneurship. Intrapreneurship has been promoted as a characteristic of successful organizations (Peters and Waterman, 1982; Kanter, 1984; Pinchot, 1985). Intrapreneurship was found to be related to small-firm growth (Covin, 1991) and performance in hostile environments (Covin and Slevin, 1989). New product or service development can be considered a critical success factor that differentiates successful from unsuccessful companies (Auruskeviciene et al., 2006). Firm resources and capabilities in general can have significant performance implications (Tan et al., 2006). The relationship between intrapreneurship and growth and profitability has been confirmed in past
research on large firms (Covin and Slevin, 1986; Zahra, 1991, 1993; Zahra and Covin, 1995) and on existing firms regardless of their size (Antoncic and Hisrich, 2004). This research is the basis of the following hypothesis:

\[ H4. \] Intrapreneurship will be positively related to growth and profitability of an organization.

Cross-cultural research and two alternative models

The value of studying organizational phenomena cross-culturally and internationally is both theoretical and practical. Cross-cultural and international research has the potential to improve the understanding of theories, to pinpoint differences in doing things in different cultures or nations, and to improve the effectiveness of management (Earley and Singh, 1995). Cross-cultural research has the potential to expand concepts and theories developed in a single cultural setting (Brislin, 1980). It may even form a basis for assessment of universal laws on relationships between variables (Triandis, 1980). Intercultural and international management research is assessing “the generalizability and universality of a given organizational model across multiple, shared systems of meaning, belief, and action” leading to “a more fundamental understanding of organizational phenomena” (Earley and Singh, 1995, p. 330). One problem in cross-cultural organizational research seems to be the lack of universal organizational theories (Nasif et al., 1991). Implicitly universal theories exist, but they are rarely tested cross-culturally. The relationships among constructs in the intrapreneurship model, which were discussed above, are only implicitly universal because they are predominantly based upon research in the USA. In order to extend its generalizability, in this study I used data from two different nations: Slovenia and the USA.

The resulting theoretical model of intrapreneurship includes the hypothesized relationships (H1-H4). Its rationales are based upon studies that have focused primarily on patterns of relationships between intrapreneurship and its antecedents and consequences. A model with such a conceptual focus can be empirically examined in two ways. The first alternative is to test a model that includes structural equations without intercepts (latent means) and consequently obtain results that pertain exclusively to the patterns of relationships. In this approach it is implicitly assumed that all means are zero (Bentler, 1995).

The second alternative is to test a structural equation model with latent means. In cross-cultural studies, this approach may be more appropriate than the first because the assumption of zero or equal means may hardly hold across different economic contexts. In addition, the second approach is appropriate when the focus is on a comparison of the levels (means) of constructs across different groups or cultures. In this study, the hypotheses are tested by considering both alternatives.

Methods

The research design for this study was a cross-sectional, mailed questionnaire, administered in two countries. The methodology will be discussed in terms of research instrument, selection of samples, survey results, and statistical analysis.

Research instrument

Scale items that were previously employed by other researchers were used in this study for measuring the key concepts (intrapreneurship and its predictors and consequences).
Convergent and discriminant validity checks were performed for all scales, as well as analyses of cross-cultural comparability (cross-culturally comparable items were retained; scales were moderately good in terms of convergent and discriminant validity, but two modifications were made: first, the competitive rivalry scale was excluded from the analysis since it was neither internally consistent nor comparable between the two countries; second, the unfavorability of change was negatively correlated to munificence dimensions – this is contrary to the expectation – and was thus reversed and included in the environment construct as favorability of change; finally, the innovativeness dimension scale was limited mostly to product innovation items since items related to technological innovation did not hold together with product innovativeness items and did not hold together as a separate dimension, and were therefore excluded). Since the two countries in the study did not share a common language, two comparable versions of the questionnaire were developed and administered. The American version was developed first and consisted of the questions discussed below. The Slovenian version was obtained by translation and back-translation (Brislin, 1976) of the American version into the Slovenian language. The two surveys were then used to collect data (one in the USA and the other in Slovenia). In order to improve measurement equivalence across cultures (Sekaran and Martin, 1982; Sekaran, 1983) the same data collection procedure (mail survey) was used in both countries and performed by the same researcher. Each questionnaire was addressed to a top executive of the selected firm and with the assurance of anonymity of the respondent in reporting results of the study.

Measurement of intrapreneurship was performed across four dimensions (new business venturing, innovativeness, self-renewal and proactiveness) by combining two scales: corporate entrepreneurship scale and ENTRESCALE. New business venturing (five items), a part of innovativeness (11 items) and self-renewal (13 items) were measured by items on Likert-type scales from the corporate entrepreneurship scale (Zahra, 1993). The second part of innovativeness (three items) and proactiveness (five items) were assessed by items on semantic differential type scales from the ENTRESCALE (Khandwalla, 1977; Miller and Friesen, 1978; Covin and Slevin, 1989; Knight, 1997).

Organizational characteristics were measured across six dimensions. Scales used by Zahra (1991) were selected to assess the communication dimension and the formal control dimension. Items from Miller and Friesen (1984) were utilized for the environmental scanning dimension. The organizational support dimension was assessed by items from Hornsby et al. (1993). Competition-related values and person-related values were measured by the scales used by Zahra (1991). Environmental characteristics were all measured by items from the scales used by Zahra (1993) (dynamism, technological opportunities, perceived industry growth, demand for new products, unfavorability of change, and competitive rivalry).

The final dependent variables in the model – performance – were measured in terms of growth and profitability (absolute and relative). Absolute growth was assessed by using two items: the first item looked at the average annual growth in number of employees in the last three years, whereas the second item asked about the average annual growth in sales in the last three years. Relative growth was measured with the item of growth in market share (Chandler and Hanks, 1993) in the last three years. Three items were used as measures of absolute profitability: average annual
return on sales (ROS), average return on assets (ROA), and average annual return on equity (ROE) in the last three years. Two subjective measures of firm profitability relative to competitors (Chandler and Hanks, 1993) were used to assess relative profitability: the company’s profitability in comparison to all competitors and the company’s profitability in relation to competitors that are at about the same age and stage of development.

Control variables were also developed because they may represent important influences on the relationships in the model. Control variables are: organizational age and size, overall strategy, and industry. As past research (Kanter, 1984; Pinchot, 1985; Miles and Arnold, 1991) suggests, organizational age or size may be related to intrapreneurship. Overall strategy can influence intrapreneurship and performance (Zahra, 1991), especially growth strategies as opposed to stability strategies (Hitt et al., 1982). Hitt et al.’s (1982) measure of “grand” strategy was used for the assessment of overall strategy. The item is designed so that respondents choose a strategy that best describes their company’s grand strategy in the past three years in terms of stability, internal growth, external acquisitive growth, and retrenchment strategy. In addition to environmental characteristics of munificence and hostility, organizations may differ depending on the industry in which the firm competes (Shepherd, 1990) since the industry situation can be seen as a traditional indicator of the business environment (Ruzzier, 2006). Respondents checked appropriate boxes for the industry of their organization or added a description.

Selection of samples
Samples were composed of firms with 50 or more employees, since the focus of the study was on the existence of intrapreneurship in the firm. Five hundred firms from Ohio (USA) were randomly selected from the Dun & Bradstreet database of companies, and five hundred firms were randomly selected from the PASEF database of financial reports of Slovenian incorporated businesses (cross-checked also by using data from the Slovenian Chamber of Commerce). In order to assure better sample comparability, firms from some industries – health care organizations, financial institutions, and educational institutions – were not considered because these industries are not included in the Slovenian database. A variety of industries were included: manufacturers of consumer and industrial goods, the retail and wholesale trade, engineering, research and development, consumer and business services, construction, transportation and public utilities.

Survey results
Altogether, 201 responses were received: 145 from Slovenian firms (29 percent response rate), 56 from the USA (11 percent response rate). Analysis viable responses totaled 192 (141 from Slovenia, 51 from the USA) after performing missing data analyses. The comparison of the two samples showed the following:

- the two samples did not differ in terms of firm age, number of employees, and industry;
- firms in both samples had a median age of 21-50 years, and median size of 100-249 employees;
- some differences were found: a slight difference in terms of firm size (in the Slovenian sample a somewhat lower percentage of large firms of 1,000 or more
employees (8 percent) than in the USA sample (18 percent); median size in terms of total sales was $10-50 million for the USA sample, but only $5-10 million in the Slovenian sample (such differences are expected since Slovenia is a small economy with about half the GDP per capita of the USA; Slovenia also has very few multinational companies); and

- the two samples were well matched in terms of industry: manufacturing of industrial goods 37 and 35 percent; manufacturing of consumer goods 18 and 16 percent; consumer and business services 10 and 11 percent; trade 12 and 7 percent; and construction 6 and 6 percent in the USA and Slovenia, respectively.

**Statistical analysis**

The proposed intrapreneurship model was estimated as a path model (structural equations model) by using EQS software (Bentler and Wu, 1998). The ERLS estimation method was selected because it makes adjustments for skewness and kurtosis that were found in the data. Variables were standardized by combining the two samples in order to assure comparability across samples and to avoid problems with variance differences across samples (Reise et al., 1993). In order to increase the estimation model parsimony, each dimension was represented in the model with a variable calculated as an average of cross-culturally comparable dimension items for each sample separately (for example, for the formal control dimension of the organization construct, one item (parcel) was calculated as a mean of all six items). Patterns of relationships among constructs (coefficients of the model) and levels of constructs (latent means) were compared between the two samples by using multi-group path analysis in two alternatives: with and without structured means. Impacts of control variables were assessed by including variables in the model or splitting the sample across each control variable.

**Findings**

The two alternative path models (zero-means and latent-means) were estimated. Because the indices with which the fit of structural equation models has been measured have no single test of significance (Schumacker and Lomax, 1996), usually multiple indices are considered to assess the model fit. Four fit indices were considered: normed fit index (NFI), non-normed fit index (NNFI), comparative fit index (CFI), and root-mean-square error of approximation (RMSEA). NFI, NNFI, and CFI are not sensitive to sample size (Bentler, 1990) and their values close to 0.90 or over indicate a good model fit (Hair et al., 1995). Values of RMSEA that are less than 0.05 indicate a good model fit (Schumacker and Lomax, 1996). Since, the $\chi^2$ test is sensitive to sample size (Bentler and Bonett, 1980) it was not considered in this study, because the two samples were different in size. When the zero-means model was estimated with the Slovenian sample it showed a moderately good fit (model goodness-of-fit indices: NFI 0.88, NNFI 0.94, CFI 0.95, RMSEA 0.06), whereas it demonstrated a poorer fit in the USA sample (NFI 0.53, NNFI 0.79, CFI 0.82, RMSEA 0.08). Two main reasons for the poor fit of the model on the USA sample are as follows: first, the sample is small and the number of observations per estimated parameter is very low; and second, two main relationships in the model (environment-organization, and intrapreneurship-profitability) are not significant and close to zero (Table I). When the latent-means model was estimated, it showed a moderately good overall fit (NFI 0.79, NNFI 0.89, CFI 0.90, RMSEA 0.06).
Key results (coefficients and intercepts) of the analysis of the two alternative models in the two countries are shown in Table I. When the hypotheses were tested with the zero-means model, environmental characteristics (dynamism, technological opportunities, industry growth, demand for new products, and favorability of change) were found to be highly, positively, and significantly directly related to intrapreneurship in Slovenia (standardized coefficient 0.34) and in the USA (standardized coefficient 0.63), but the coefficient differed across the two samples. When \( H1 \) was tested with the latent-means model, the association between environment and intrapreneurship was similar (standardized coefficient 0.38) and did not differ across the samples; \( H1 \) was supported for both countries in both models.

Organizational characteristics (communication, formal controls, environmental scanning, organizational support, competition-related values, and person-related values) were found to be highly, positively, and significantly related to intrapreneurship in Slovenia (standardized coefficient 0.34) and in the USA (standardized coefficient 0.51) in the zero-means model, and similarly in the latent-means model (standardized coefficient 0.68). In both models the coefficient did not differ across the samples. Therefore, \( H2 \) was supported for both countries in both models.

In the zero-means model, environment was found to be highly, positively, and significantly related to organization in Slovenia (standardized coefficient 0.32), but not in the USA (standardized coefficient 0.05). The association in the latent-means model was strong (standardized coefficient 0.22). Therefore, \( H3 \) was partially supported (on Slovenian firms only) in the zero-means model and fully supported in the latent-means model.

Finally, intrapreneurship was expected to be positively associated with performance in terms of growth and profitability (\( H4 \)). In the zero-means model, intrapreneurship was found to be highly, positively, and significantly related to growth (standardized coefficient 0.53) and profitability (standardized coefficient 0.34) in

### Table I.
The zero-means and the latent-means model: structural equations with intercepts and standardized coefficients\(^a\) (Slovenia and the USA)

<table>
<thead>
<tr>
<th>Antecedents ( R^2 )</th>
<th>Organization Slovenia</th>
<th>Intercept 0</th>
<th>Environment 0 0.32*</th>
<th>Intrapreneurship Slovenia</th>
<th>Intercept 0 0.34* 0.63* 0.70*</th>
<th>Growth Slovenia</th>
<th>Intercept 0 0.53*</th>
<th>Profitability Slovenia</th>
<th>Intercept 0 0.34* 0.70*</th>
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<td>( R^2 )</td>
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Notes: *Coefficients or intercepts that statistically differ across samples are italicised (\( p < 0.05 \)); \( b \)intercepts for the Slovenian sample are in parenthesis; *\( p < 0.05 \)

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Slovenia, but only to growth (standardized coefficient 0.38) in the USA, while the intrapreneurship-profitability relationship in the USA was not significant and close to zero (standardized coefficient −0.01). In the latent-means model, both performance-intrapreneurship associations were found to be strong (standardized coefficient: growth 0.52, profitability 0.30) and did not differ across samples. Hence, $H_4$ was partially supported (for growth in both countries and for profitability only in Slovenia) in the zero-means model, while it was fully supported in the latent-means model.

Two intercepts differed across the two samples in the latent-means model (see the second part of Table I). Levels of performance elements (growth and profitability) were found to be substantially lower in Slovenia than in the USA. Other levels did not significantly differ across the two samples.

A control model was developed in order to assess influences of control variables. Organizational age and size were included in the final model as predictors of the organizational characteristics. No meaningful influences on the model were found for age and size. The impacts of two other control variables (overall strategy and industry) were tested. The two samples were combined because of the small size of the USA sample. In order to check the impact of strategy, the combined sample was split into the growth strategy group (internal and acquisitive growth, $n = 83$) vs non-growth strategy group (stability and retrenchment strategy, $n = 101$). Multi-group path analysis was used to compare the coefficients among the constructs between the two groups. No statistical differences in coefficients were detected between the two strategy groups. In order to assess the impact of industry the same procedure was used; the combined sample was split into the manufacturing/construction group ($n = 122$) and the services/trade group ($n = 59$). No statistical differences in coefficients were found between the two industry groups, with one exception (the relationship between environment and organization was found positive and significant for the manufacturing/construction group, but around zero for the services/trade group).

**Conclusions and implications**

The intrapreneurship model that was tested in this study can be seen as relatively robust. The hypothesized relationships were mainly supported across the two countries (Slovenia and the USA) and the two models (the zero-means model and the latent-means model). Results of this study can be generalized to some extent for two key reasons. First, two different economic contexts were included. The two samples are from two very diverse and contrasting economies: the USA is a representative of a leading developed economy while Slovenia is a representative of a transition economy from Central and Eastern Europe and a new member of the European Union (since 2004). Second, a variety of industries were included in both samples.

The two samples were comparable in terms of firm size, age, and industry. Generalizability of findings in this study is not limited only to large corporations – as is the case with majority of past intrapreneurship research studies – but is also relevant for smaller firms. This study dealt with intrapreneurship in established organizations and did not incorporate either very small firms with less than 50 employees or newer firms; it also excluded some industries (financial institutions, educational institutions, and health care organizations). The results of this study should be considered with caution because of the sample sizes. Structural equation
modeling usually requires sample sizes from 100 to 200. The USA sample that was used for the analysis was smaller. For such small samples there is usually a problem of power or a problem of high errors in terms of RMSEA (MacCallum et al., 1996). Therefore, the results based on the USA sample should be interpreted with caution. On the other hand, the results based on Slovenian sample firms provide a strong evidence of cross-cultural comparability of the intrapreneurship model. Future research in diverse countries, preferably including several different countries in a comparative study, is needed to further generalize the model.

This study made the key contribution by proving a latent-means model of intrapreneurship. An important issue for researchers is the selection of an appropriate measurement model. As found in this study, results may somewhat differ according to the selection of the zero-means or the latent-means model. Differences can be expected especially when the means significantly differ across samples. The assumption of zero means can be rarely met. Even if the purpose of a particular study is to explore the patterns of relationships without concern for the levels of variables or constructs, I believe that the latent-means model is a superior model. Future research should explore the usefulness of the latent-means model of intrapreneurship.

In practice, intrapreneurship can have beneficial effects on the firm’s growth and profitability, both in absolute and relative terms. Firms that nurture organizational structures and values conducive to intrapreneurial activities, and which have intrapreneurial orientations, are more likely to have higher growth and profitability than organizations that are lacking such characteristics. Open and quality communication, existence of formal controls, intensive environmental scanning, management support, organizational support and values will all help an organization become more intrapreneurial. Intrapreneurial organizations are those that engage in new business venturing, are innovative, continuously renew themselves, and are proactive. Finally, intrapreneurship can be particularly critical for the firm’s survival and development in Slovenia and other economies that are being modeled after more developed economies’ standards of doing business and where firms have significantly lower levels of performance in comparison to firms in the most developed countries.

References


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