



Entrepreneurship

## Are similar ones different? Determinant characteristics of management tool usage within companies sharing the same institutional environment

*Os semelhantes se diferem? Características determinantes do uso de controles gerenciais em empresas que compartilham o mesmo ambiente institucional*

*¿Los semejantes se distinguen? Características que determinan el uso de controles de gestión en empresas que comparten el mismo entorno institucional*

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### Abstract

Technical literature describes local productive arrangements (LPAs) as an institution. It also states that existing interaction links within their members foster them to act quite similarly. However, entrepreneurs and their characteristic attributes tend to distinguish their decisions. Therefore, according to such, this research examined if entrepreneur psychological characteristics would be able to influence management practices and the performance of companies sharing the same institutional environment. This study follows such objectives via an epistemologically positivist approach – quantitative view – and data gathering through forms used in 121 firms from clothing industry LPA in Parana Northwest. The research model has been tested through structural equation modelling techniques. Amongst findings, it may be observed management control practices have a 46.42% positive effect on company performance. Characteristics of entrepreneurial orientation have been able to positively influence the usage of management controls in 38.38%, and company performance in 14.90%. However, no statistical inferences regarding the individual's metacognitive ability of predicting the variables of entrepreneurial orientation, management controls and company performance have been carried out.

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**Keywords:** Institutional environment; Entrepreneurial orientation; Metacognition; Management control

### Resumo

A literatura descreve que os arranjos produtivos locais são uma instituição e que os vínculos de interação existentes entre os membros os levam a agir de forma bastante semelhante. No entanto, entende-se que o empreendedor e a existência de alguns atributos característicos a ele tende a distinguir suas decisões. Diante desse contexto, essa pesquisa verificou se as características psicológicas do empreendedor seriam capazes de influenciar as práticas gerenciais e o desempenho de empresas que compartilham um mesmo ambiente institucional. O estudo adota um posicionamento epistemologicamente positivista, com abordagem quantitativa e coleta de dados operacionalizada por meio de um questionário aplicado em 121 empresas industriais do APL de confecção do noroeste do Paraná. O modelo da pesquisa foi testado por meio da técnica de Modelagem de

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Equações Estruturais. Dentre os achados, observou-se que as práticas de controle gerencial exercem efeito positivo de 46,42% sobre o desempenho empresarial. As características de orientação empreendedora foram capazes de influenciar positivamente o uso de controles gerenciais em 38,38%, e em 14,90% o desempenho das empresas. No entanto, não foram realizadas inferências estatísticas acerca do poder da capacidade metacognitiva do indivíduo prever as variáveis de orientação empreendedora, controles gerenciais e desempenho empresarial.

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*Palavras-chave:* Ambiente institucional; Orientação empreendedora; Metacognição; Controles gerenciais

## Resumen

En la literatura se defiende que los sistemas y arreglos productivos locales son una institución, y que los vínculos de interacción existentes entre sus miembros los conducen a actuar de una manera muy similar. Sin embargo, se entiende que algunos de los atributos característicos del emprendedor tienden a llevarlo a decisiones distintas. En este contexto, el presente estudio examina si las características psicológicas de los empresarios podrían influir en las prácticas de gestión y el desempeño de las empresas que comparten el mismo entorno institucional. Se ha adoptado un posicionamiento epistemológico positivista, con un enfoque cuantitativo y se han recogido los datos por medio de un cuestionario aplicado a 121 empresas industriales del APL de confección del noroeste del estado de Paraná. El modelo del estudio se ha puesto a prueba por medio de la técnica de modelos de ecuaciones estructurales. Entre los hallazgos, se observa que las prácticas de control de gestión tienen un efecto positivo del 46,42% en el rendimiento empresarial. Las características de orientación emprendedora han sido capaces de influir positivamente en el uso de los controles de gestión en el 38,38%, y en el 14,90% el rendimiento de las empresas. Sin embargo, no se han realizado inferencias estadísticas sobre el poder de la capacidad metacognitiva del individuo para predecir las variables de orientación emprendedora, controles de gestión y el rendimiento empresarial.

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*Palabras clave:* Entorno institucional; Orientación emprendedora; Metacognición; Control de gestión

## Introduction

The establishment of business conglomerates, also known as local productive arrangements (LPA), is a proposal considered as widely viable to organisations searching for render their operations within dynamic, unstable and highly competitive environments (Cassiolato & Szapiro, 2003). Such configuration promotes strengthening of local economies, the articulation, interaction, cooperation and learning among members, besides fostering the sharing of common elements – such as employees, suppliers and sponsors (Cassiolato, Lastres, & Szapiro, 2000). There are many factors which instigate studies regarding LPAs – specially the analysis of its highly innovative local profile and the tendency of their members to establish connections towards financial and operational growth (Cassiolato & Szapiro, 2003).

Moreover, as consequence of the interaction process within this environment, LPAs present characteristics which qualify them as institutions; and, members – within such environments – present behaviour based on models created or developed in interaction (Cassiolato et al., 2000). The New Institutional Sociology (NIS) supports such concept discussing formal and informal demands within institutions, leading local members towards parameterised actions (Dimaggio & Powell, 1983).

Furthermore, this scenario is adjoined by the suggestion that daily practices are adopted in management processes towards objectives, strategies, and, consequently, better performances; within such conditions, literature upholds management control usage may significantly improve daily operations and informational management requirements (Frezatti, Carter, & Barroso, 2014; Otlej & Berry, 1980). According to NIS, Oyadomari,

Cardoso, Mendonça Neto, and Lima (2008) affirm that, similarly to institutionalised behaviour patterns, the environment in which organisations work may also influence selection, adoption and usage of management tools; which initially suggests organisations would have a similar behaviour regarding management process tools within business conglomerates.

However, researches stress implementation of management tools in smaller companies is often flawed due to the incomprehension regarding usage and interpretation of available information, fostering alternative management practices, or even decision-making through business acumen (Dyte, 2005; Mehralizadeh & Sajady, 2006; Stroehrer & Freitas, 2008). Therefore, the institutional approach – centred on stressing rational structures which sculpt organisational behaviour – may, perhaps, ignore the fact that company management occurs through people (specially the entrepreneur.) Therefore, it makes sense to reason people have distinct profiles and their actions are provenient from cognitive processes such as relations with social groups or previous experiences (Estes, 1975).

Moreover, the entrepreneur is seen – in literature – as a different being, having the independent capability of defining and establishing mechanisms towards decision-making processes (Kets de Vries, 1977). Researches about behaviour state the human being is rationally able to understand his/her knowledge and opt for the best alternative towards problem solving, suggesting entrepreneurs may be less vulnerable to environment influences and more self steered towards their own will (Flavell, 1979; Lumpkin & Dess, 1996; Miller, 1983).

Accordingly, this research aims to verify if the entrepreneur decision psychological process elements would be able to

influence towards breaking the paradigms regarding action reproduction of companies within an institutional environment; hence producing effects on management practices in his/her enterprise. Literature supports two attributes are noteworthy in such person: (1) metacognition and (2) entrepreneurial orientation (Flavell, 1979; Lumpkin & Dess, 1996; Miller, 1983). The former states a human being is able to understand; become aware; and, control processes of evaluation and decision-making (Estes, 1975); whilst the latter regards noteworthy abilities within entrepreneurs (Lumpkin & Dess, 1996; Miller, 1983). *Ipsa facto*, the question this research aims to answer is: do entrepreneur psychological characteristics regarding entrepreneurial orientation and metacognition affect the usage of management control and the performance of companies sharing the same institutional environment?

Moreover, this investigation is supported by many motivations. Considering the concepts made known by the New Institutional Sociology, one may empirically assume companies located within clothing industry LPA in Parana State – target population range – adopt similar management practices, provenient from interaction, cooperation and internalisation of local knowledge (Dimaggio & Powell, 1983). However, the study of conditions which are likely to break/dismiss this isomorphic paradigm is still within its infancy; however able to distinguish significant theoretical contributions. Timely the thorough discussion regarding the complexity of interpretation and obsolescence of management reports was used to ponder about the existence of alternative and simplified internal controls with similar function to the ones supported by theory – designated within this study as management control proxies (Dyte, 2005; Frezatti et al., 2014). At last, the selected research environment is known as the largest national complex of clothing industry (MDIC, 2006), a condition which fosters new investigations due to the significant environment condition and due to the opportunity to connect practical reality adopted in decision-making situations to theoretical knowledge, thus fostering the advancement of knowledge.

In this context, this paper is structured within four sections in addition to this introduction. The next section presents the theoretical reference in which the research is based, as well as its hypothesis; the third one presents research procedures; the fourth one presents the description and analysis of results; and, at last, there are final considerations pointing out paper contributions towards knowledge, further study suggestions and limitation.

## Theoretical background

In this section there are previous studies regarding institutional environment management control usage and organisation entrepreneur profile aspects. Based on such literature, hypotheses have been suggested and, afterwards, verified.

### *Management control usage within institutional environments*

The usage of management controls within organisation management comprises wide support mechanisms to action plans,

information systematisation, sponsoring planning activity, monitoring and operation control, as well as management functions (Frezatti et al., 2014; Mehralizadeh & Sajady, 2006; Otley & Berry, 1980). However, empirically, evidences are presented showing low usage of formal management control within organisations – specially smaller ones (Dyte, 2005; Stroehrer & Freitas, 2008). Researches such as the ones from Kassai (1997) and Stroehrer and Freitas (2008) stress accounting reports are seen as difficult tools to interpret, causing aversion to their usage. Alternatively, it may be inferred simpler techniques appear in order to support organisation management (Frezatti et al., 2014). Within such conception, this study understands management control are practices theoretically spread or adapted to organisational environment – as long as they contribute, somehow, to foster operation management.

Relations between management instrument usage and company performance have been acknowledged for a long time (Ashton, 1974; Chenhall & Langfield-Smith, 1998; Chenhall & Morris, 1986; Mehralizadeh & Sajady, 2006). With its usage, useful information towards task improvement is made available to managers, who may decide the most adequate actions for better performance (Ashton, 1974). Moreover, management tools potentially and simply contribute to organisational performance follow-up (Chenhall & Langfield-Smith, 1998). Within small companies they become prompt tools for survival, mainly towards superior incomes (Mehralizadeh & Sajady, 2006). Thus, this study suggests the following hypothesis:

**H1.** The usage of management control proxies does influence the performance of companies located in the clothing industry LPA.

Furthermore, the fact that within organisational environment there are no regulations to standardise the usage and manipulation of management controls – noteworthy variation suggesting the influence of manager profile over its usage on organisations – is considered. Power attributed to such person and autonomy on coordination and deliberation of operations are factors already established as counterpoint to the traditional approach of institutional theory. Therefore, discussion as Kassai (1997), Stroehrer and Freitas (2008), and, Frezatti et al. (2014) suggest it is common entrepreneurs opt for the production of their own information, or, additionally, support their decision-making process on intuition. Then, informational backing within daily actions may be cognitively conditioned by knowledge and experience, even though whenever submitted to the strength of an institutional dimension.

### *The entrepreneur profile within organisations*

The increasing focus in investigations about strategic management has spread success of studies showing influence of entrepreneur characteristics over company performance (Cho & Jung, 2014; Lumpkin & Dess, 1996). Such people hold a high degree of ability towards control of their environment and they are able to explore their capacity of thinking and promptly acting under uncertain conditions (Ireland, Hitt, & Sirmon, 2003). It is also believed entrepreneurs present specific profiles in their

practices and decision styles (Miller, 1983). These and other characteristics within entrepreneurship actions are incorporated to the entrepreneurial orientation (Lumpkin & Dess, 1996).

Seminally, Miller (1983) empirically measures entrepreneurial orientation (EO) within three dimensions, (1) risk-taking, (2) proactiveness, (3) innovativeness. Afterwards, Lumpkin and Dess (1996) explored the theme and added two further ranges to such variables: competitive aggressiveness and autonomy. In such sense, EO has been intensely explored within organisational analysis and it has mapped as a significant tool towards better company operation performance in companies around the world (Cho & Jung, 2014; Rauch, Wiklund, Lumpkin, & Frese, 2009; Wiklund & Shepherd, 2003).

Researches such as performed by Wiklund and Shepherd (2003) with Swedish companies, demonstrated the positive effect in the relation between EO and performance. Rauch et al. (2009), concluded – through a meta-analysis of 51 investigations – that there is a moderately large correlation among the results of studies which cover both discussion variables. Moreover, a survey carried out by Cho and Jung (2014) within 190 American businessmen has also shown the positive effect from these construct analysis. Based on such arguments, the second hypothesis is formulated:

**H2.** The entrepreneurial orientation of the entrepreneur–businessman does influence the performance of companies located in the clothing industry LPA.

Literature states rationality as a representative motivational factor towards searching for ideas considered interesting or worthy by entrepreneurs. Accordingly, Haynie, Shepherd, Mosakowski, and Earley (2010) state such people apply their cognitive strategy towards promoting new bonds with potential opportunities. Works regarding relations between entrepreneurial orientation and management control usage stress the relevance in investigating such subjects (Li, Liu, & Zhao, 2006; Spillecke & Brettel, 2013). Li et al. (2006), when conducting a research within product development and human resource sectors, have observed a positive effect towards company operations when entrepreneurial orientation characteristics were observed in activities. Accordingly, Spillecke and Brettel (2013) have conducted an analysis in the sales department of 268 organisations, also ascertain confirming EO usage over management control in such departments was representative towards better organisational performance. The described scenario suggests management control usage may be influenced by entrepreneurial orientation when business performance improvement is the objective. Due to theoretical and empirical evidence, the third hypothesis is suggested:

**H3.** Entrepreneurial orientation influences manager–entrepreneurs within companies located in the clothing industry LPA to use management control proxies.

In accordance with the discussion regarding the main function of managers – decision-making – studies such as Shane and Venkataraman's (2000) describe two main factors, intrinsic to human beings, which are able to interfere in opportunity discerning: (1) possession of necessary information to identify

an opportunity, and, (2) cognitive properties which allow information exploration. In view of this investigation scenario, it is understood the first condition may be met through management control usage, as already explained. Moreover, the study of psychological elements – hereby defined as metacognitive factors – seems to efficiently fulfil the analysis of cognitive factors. The conception of such term regards the comprehension process of cognitive capacity, awareness, and control over decision-making (Estes, 1975).

In view of this suggestion, it is believed that an individual's cognitive interpretation towards a specific scenario, that is, the presence of more or less refined metacognitive abilities, may generate distinct ways of acting within a specific situation – as in this case, occurring regarding management control proxies. Studies suggest metacognitive abilities may guide human beings towards being able to recall solutions, and, to choose the most adequate one (Haynie, 2005; Haynie et al., 2010). In view of such understanding, five ranges are supported by Flavell (1979) for evaluation: (1) goal orientation, (2) metacognitive knowledge, (3) metacognitive strategy, (4) metacognitive experience, and, (5) monitoring.

Accordingly, Nelson (1996) stresses human being monitoring abilities take also expressive functions as signalling for motivational re-evaluation for the target and/or for the other ranges, for, according to achieved performance towards a goal, strategies conceived for further actions may be altered. It is understood, hereinbefore, manager metacognitive abilities may influence management control practices, once its usage usefulness and relevance are cognitively diagnosed towards the improvement of management processes and better decision-making. Support within literature has not been found; however, this noteworthy option shall be explored through the following hypothesis:

**H4.** Manager–entrepreneur metacognition influences management control proxies usage in companies located in the clothing industry LPA.

In accordance to what has been discussed, metacognition may be perceived as potential element for individual adaptation towards company environment (Haynie et al., 2010). The nationwide study of Lima Filho and Bruni (2014), empirically supports this idea: findings demonstrate 42.79% of entrepreneurial characteristics may be explained by manager metacognitive perspectives; furthermore, there are international findings confirming metacognitive ability effects on entrepreneurial orientation (Cho & Jung, 2014; Haynie et al., 2010). Moreover, there are researches not suggesting direct relations among the variables; albeit/notwithstanding metacognition supporting role within entrepreneurial action (Shane & Venkataraman, 2000; Wiklund & Shepherd, 2003). Timely, the fifth hypothesis is constructed:

**H5.** Manager–entrepreneur metacognition influences his/her entrepreneurial orientation.

Literature suggests people with high metacognitive abilities are prone to conscientiously consider multiple available alternatives whenever facing situations; to decide upon the best one; to understand the feedback of one's decision; and, to

incorporate them within their next actions (Batha & Carroll, 2007; Melot, 1998; Schraw & Dennison, 1994). Schraw and Dennison (1994) perceive metacognitive awareness, that is, the way an action is performed and the interpretation of its consequences, as positively related to flexibility in decision-making. Melot (1998) adds this variable is able to influence the sensitivity and receptivity of environment feedback, improving further decisions. Batha and Carroll (2007) observe people with low metacognitive abilities often establish flawed strategies or present difficulties within unreliable environments. It may be hereupon explored if improved performances may be observed from mindful actions. Therefore, the last hypothesis is suggested:

**H6.** Manager–entrepreneur metacognition does influence the performance of companies located in the clothing industry LPA.

In the end of the section, the discussion is based on the assumption elements integrating the institutional environment of the LPA follow a parameterised behaviour model, essentially inasmuch as management practice usage, in accordance to the NIS isomorphic concept. Alternatively, it is understood the entrepreneur possesses distinctive characteristics, being able to uphold attitudes considered ideal, by himself. Thus, the adopted positioning determines metacognition and entrepreneurial orientation as attributes within ways of acting and reasoning; for these elements may oppose the formal structure of behaviour imitation if it exerts any effects on the usage of auxiliary management instruments: suggesting, then, some ‘rethinking’ regarding institutional environment generalisation.

## Methodology

### *Research structural model and data gathering procedures*

This study adopts Institutional Theory as subjacent to the analysed environment. The NIS isomorphic concept upholds organisations are configured under a large and inter-organisational relationship network, and, practices and routines would be legitimised by social actors (Dimaggio & Powell, 1983). However, differently, the object of this research – the entrepreneur – seems to possess some distinct characteristics: the entrepreneurial orientation and metacognitive abilities. This concept fosters more precise scenario exploration, verifying if his attributes are, somehow, able to affect local company management controls.

The work takes an epistemological positivist approach, with quantitative problem approach, strategies for data gathering and data analysis through structural equation modelling (SEM). These criteria have been adopted towards suggesting a new perspective regarding action imitating within institutional environment under the assumption psychological and behavioural entrepreneur characteristics (entrepreneur orientation and metacognitive characteristics) have an impact on the aforementioned person.

Testing of hypothesis H1–H6 has been carried out by a research instrument structured in four groups, being formed by 55 statements regarding the following constructs:

metacognition, entrepreneurial orientation, and, proxies of management control and performance. A range from 0 (zero) to 10 (ten) points measures the agreement level towards the entrepreneur ways of acting, thinking and deciding, with practices related to business management and business performance perception. Picture 1 shows the research defined structural model which generated the form.

A pre-test carried out with five professionals (from the following areas: accounting, finance, market and design), being two of them manager–entrepreneurs, granted valuable contributions and confirmed the validity of expression of the instrument. The suggestions obtained from this research stage were duly discussed among the participants and some terms have been modified (proxy constructs of management control and metacognition) for they were considered incomprehensible or with too complex a language for the target population. Besides, through this procedure the average necessary time for filling up the forms was estimated in 25 min. The instrument was also submitted to the scrutiny of area professors and researchers towards validating of question content (Hair, Black, Babin, & Anderson, 2010). It is convenient to clarify all questionnaires answered within this procedure have been considered invalid on SEM application. Furthermore, the constructs followed the criteria of identification validity according to Hair et al. (2010), which suggests variables measurement to be constituted by three or four indicators (statements/enquiries). The structure of the instrument used in data gathering is shown in Table 1.

Data gathering was carried out from 20th of October 2015 and 20th December 2015 from entrepreneur–managers within companies based in the clothing industry LPA in Parana Northwest (Cianorte and Maringá). The defined population was organisations ranged as industrial and registered within their category representative unions: SINVEST (Sindicato das Indústrias do Vestuário de Cianorte), SINDVEST (Sindicato da Indústria do Vestuário de Maringá); and associated to ACIM (Associação Comercial e Industrial de Maringá). In total, 136 companies registered in SINVEST and 116 companies related to SINDVEST and ACIM were chosen. Sample selection was done by accessibility, either telephone contacts or *in loco* visits have been carried out in order to, primarily, invite organisations to take part in the research. In case they accepted, appointments were scheduled to form filling. It is convenient to stress the founder manager and company capital investor was defined as the potential research respondent – and, therefore, considered as entrepreneur–manager within this research. Whenever such contact was not possible, due to succession reasons, the current manager (children, grandchildren, and family) was invited for the research. Final sampling covered 121 companies, 67 in Cianorte and 54 in Maringá.

Regarding range representativity, Triola (1999) and Levine, Berenson, and Stephan (2000) were adopted as parameters, reaching a desirable trust level of 95%, with maximum error margin of 10%. Results have reached these criteria, gathering, as minimum standard, 110 observations (in segments: 57 companies in Cianorte and 54 in Maringá). Sampling size was in accordance to conditions of number of model latent variables and return viability (Hair et al., 2010). Lastly, sample

Table 1  
Constructs applied in research design operationalization.

Constructs – 1st order	Constructs – 2nd order	Number of indicators <sup>a</sup>	Questions	Theoretical/empirical support
Management control proxies	Planning	3	1–3	Dyte (2005) Mehralizadeh and Sajady (2006) Stroeher and Freitas (2008)
	Financial and accounting	4	4–7	
	Market and clients	3	8–10	
	People	3	11–13	
	Process	3	14–16	
Entrepreneurial orientation	Proactiveness	4	17–20	Miller (1983) Lumpkin and Dess (1996)
	Risk-taking	3	21–23	
	Autonomy	3	24–26	
	Competitive aggressiveness	3	27–29	
	Innovativeness	4	30–33	
Metacognition	Goal orientation	4	34–37	Flavell (1979) Haynie and Shepherd (2009) Lumpkin and Dess (1996) Spillecke and Brettel (2013)
	Metacognitive knowledge	4	38–41	
	Metacognitive strategy	3	42–44	
	Metacognitive experience	4	45–48	
	Monitoring	4	49–52	
Organisational performance <sup>b</sup>	Environment organisation performance <sup>b</sup>	3	53–55	

<sup>a</sup> Number of indicators.

<sup>b</sup> Performance construct measurement approaches:

- (i) The objective financial return reached entrepreneur expectations;
- (ii) There was an increase in market share;
- (iii) Client satisfaction improvement towards company products.

size analysis towards validating statistical power within SEM estimation has occurred via G\*Power 3.1.9 software. The following parameters were considered: (1) test power = 0.95; (2) effect size ( $f^2$ ) = 0.15; and, (3) the largest number of predictor variable = 3 (performance variable) (Hair et al., 2014). After calculations, the software indicated 119 observations would meet analysis objectives, confirming the number of approaches would be enough to answer the suggested model.

#### Procedures adopted in structures of structural equation modelling (SEM)

The structural equation modelling (SEM) is a relevant test technique for theoretically estimated models. The current research uses partial least square (PLS) as adjustment method, as it is the most adequate within studies with non-standard normal distribution (it does not pre-consider distribution), and less demanding regarding sample sizing when compared to maximum-likelihood estimation (Hair et al., 2010).

In accordance to indications prior to SEM in SmartPLS (estimations towards measuring the “strength” of each indicator), a confirmatory factor analysis (CFA) was estimated via SPSS (Statistical Package for the Social Sciences) for questions regarding the constructs of 2nd order. It is important to note each construct of 2nd order (with exception of performance – see Fig. 1) was measured from three or four questions, totalising a 52-assertive model. CFA was, then, applied to each assertive group which measured their respective 2nd order construct within the questionnaire, grouping each question results within only one measurement unity – one factor for each 2nd order construct. The principal component extraction method was used and the

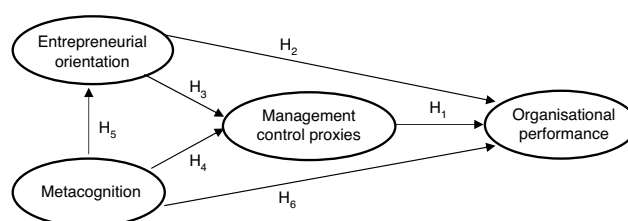


Fig. 1. Structural model/research outline.

variables have not been rotated (Hair et al., 2010). The fact CFA was not used in the performance variable was ratified, once it was measured by exactly three indicators (statements/questions).

The aforementioned procedure results generated 15 factors: five of them regarding management control proxies (planning, finance and accounting, market and clients, people, processes), five for entrepreneurial orientation (proactiveness, risk-taking, autonomy, competitive aggressiveness, innovativeness), and, five for metacognition (objective orientation, metacognitive knowledge, metacognitive strategy, metacognitive experience, monitoring). Obtained results have been saved within the software and, from then on, became defined as indicators for measurement for each respective latent variable (construct of 1st order) within the path diagram in SmartPLS.

#### Data analysis

Two main topics are presented in this section: the descriptive analysis of the range of analysed companies, and, the research findings from structural equation modelling usage.

Table 2  
Company demographic data.

Base city	Number	Percentage	Constitution time	
Cianorte	67	55.37%	Average	14 years
Maringá	54	44.63%	Min	3 months
			Max	50 years
Total	121	100%	Mode	15 years
Income			Number	Percentage
≤R\$ 2.4 million			84	69.42%
>R\$ 2.4 million and ≤R\$ 16 million			28	23.14%
>R\$ 16 million and ≤R\$ 90 million			9	7.44%
Total			121	100%

### Sample descriptive analysis

Information within this section describes respondent social and demographic characteristics and the configuration of researched companies. The sample covered 121 organisations, whereas 64 of them (52.89%) were managed by women, and, 57 (47.11%) by men. The interviewed have an average age of 41 years old, ranging from 21 to 67 years of age and 49 was the most frequent age. Regarding academic background, 27 participants (22.32%) are specialist/post-graduated, 44 (36.36%) have finished high school, and the total of 50 (41.32%) are graduated or are graduating. Additionally, Table 2 presents respondent characteristics.

The survey has verified, as in accordance to Table 2, that research samples range from 55.37% of organisations based in Cianorte and 44.63% in Maringá, with an average constitution time of 14 years (data range from 3 months to 50 years). Categories regarding annual gross income show respondent companies are mainly categorised as micro and small sized enterprises, with exception of 7.44% of cases – considered of medium size. It is important to stress the sample covers organisations with headquarters in Cianorte and shops in Maringá, and vice versa. The approach of these cases has considered, for description parameters, the local of administrative office.

### Structural equation modelling (SEM) analysis

After saving the results obtained from factors, as described in “Procedures adopted in structures of structural equation modelling (SEM)” section, validity of model adjustment conditions were tested within evaluations of measurement model and path modelling (Henseler, Ringle, & Sinkovics, 2009). Regarding the first criterion, the model meets the order condition, presenting more degrees of freedom (df) than paths to be considered, and, establishing the Gof (Goodness of Fit – Gof) rate higher than 0.36 ( $\chi^2$  average = 0.3842) (Hair et al., 2010; Wetzels, Odekerken-Schröder, & Van Open, 2009:187). Besides, the value found for the absolute fit indicator SRMR (Standardise Root Mean Residual) was of 0.075, in accordance with standards of a measurement model with good adjustment (values until 0.081) (Hair et al., 2010).

Table 3  
Convergent validity of the model.

Latent variables	AVE <sup>a</sup>	CR <sup>b</sup>	R <sup>2c</sup>	Cronbach's alpha
Performance	0.6831	0.8660	0.3665	0.7690
Metacognition	0.6005	0.8820	0.000	0.8332
Entrepreneurial orientation	0.5715	0.8679	0.2434	0.8187
Management control proxies	0.5364	0.8519	0.3783	0.7873

<sup>a</sup> Average variance extracted.

<sup>b</sup> Composite reliability.

<sup>c</sup> Coefficient of determination.

Hair et al. (2010) suggest measurement model validation to be carried out by analysis of an absolute fit index and of two incremental indicators or quality ones (Comparative Fit Index – CFI, Goodness of Fit Index – GFI, Normed Fit Index – NFI, among others). Due to data previously presented in the last paragraph, the absence of further indices is justified – for the adopted software used for SEM analysis does not supply enough data towards identifying further indices. Such lack of information stresses the writers, Hair et al. (2010) also state the exclusive analysis of these indicators is not enough to validate a good model adjustment; however, parameter estimates should be analysed – a step to be confirmed in the evaluation of the path modelling to follow.

The second condition to be investigated is the construct adequacy validity – measured through convergent validity and discriminant validity. In order to test the first item, the indicators of each latent variable (LV) of the model were verified to confirm they share standard variance through factor loading analysis of each indicator, through average variance extracted (AVE) from the latent variables and through composite reliability index (CR) (Hair et al., 2010). Table 3 presents the results.

Regarding factor loadings, all indicators appear as statistically meaningful in the model, that is, with values equal or higher than 0.50. Furthermore, most of indicators fulfilled ideal conditions to factor measurement (loadings above 0.70), and, as exception there are: proactiveness (entrepreneurial orientation LV), planning (management control proxy LV) and metacognitive strategy (metacognition LV) (Henseler et al., 2009). The model also fulfils AVE acceptable levels, with values equal or higher than 0.5 (Fornell & Larcker, 1981). CR also fulfils satisfactory standards (0.70–0.90), proving the “strength” which relates LV to their indicators is sufficiently able to measure it (Henseler et al., 2009).

Besides, values presented in coefficient of determination (R<sup>2</sup>) show the performance variable is explained in approximately 36.65% by the model, the entrepreneurial orientation in 24.34%, and the usage of proxies of management control in 37.83%. It is important to stress the coefficient R<sup>2</sup> = 0 presented for metacognition variable indicates the variable is independent in the model, that is, it comes before the others – differently then what occurs in the model with the other variables, where the effect of a variable over the other is tested (Ringle, Silva, & Bidu, 2014). Finally, test Cronbach's alpha test (CA) gathers values between 0.70 and 0.90 for LVs, and, conjunctionally to CR, states the sample

Table 4  
Discriminant validity test results – [Fornell and Larcker \(1981\)](#).

Latent variables	Performance	Metacognition	Entrepren_orientation <sup>a</sup>	MC_proxies <sup>b</sup>
Performance	0.8265			
Metacognition	0.3944	0.7749		
Entrepren_orientation	0.4360	0.4934	0.7560	
MC_proxies	0.5850	0.5166	0.5452	0.7324

Correlations to level  $\alpha = 0.05$ .

<sup>a</sup> Entrepreneurial orientation.

<sup>b</sup> Management control proxies.

Table 5  
Matrix cross loadings of discriminant validity – [Chin \(1998\)](#).

Indicators	Performance	Metacognition	Entrepren_orientation	MC_proxies
PE_1	0.8044	0.2514	0.3333	0.4465
PE_2	0.8670	0.3292	0.3288	0.4563
PE_3	0.8066	0.3826	0.4076	0.5346
Goal orientation	0.2744	0.7247	0.4142	0.3371
Metacognitive knowledge	0.3610	0.8512	0.4830	0.4335
Metacognitive strategy	0.1810	0.6960	0.2388	0.3341
Metacognitive experience	0.3075	0.8301	0.3916	0.4300
Monitoring	0.3642	0.7612	0.3421	0.4493
Proactiveness	0.4627	0.5231	0.8549	0.5761
Risk-taking	0.2386	0.2737	0.7134	0.2760
Autonomy	0.2340	0.3742	0.8103	0.3301
Competitive aggressiveness	0.1561	0.1788	0.5926	0.1754
Innovativeness	0.4037	0.3737	0.7810	0.5019
Planning	0.2659	0.3767	0.3100	0.6366
Financial and accounting	0.5655	0.4334	0.4998	0.7877
Market and clients	0.4141	0.3455	0.4811	0.7575
People	0.3046	0.2477	0.2706	0.7052
Processes	0.4952	0.4479	0.3697	0.7648

is free from bias, and the data gathering instrument is reliable ([Hair, Hult, Ringle, & Sarstedt, 2014](#)).

Besides convergent validity, there is a procedure which also guarantees the construct suitability validity: this second procedure is the discriminant validity. Thus, the fulfilment to this condition guarantees the model presents a construct which is distinct from others, that is, each LV does measure different “things” ([Hair et al., 2014](#)). Within such procedure, the criteria suggested by [Fornell and Larcker \(1981\)](#) and by [Chin \(1998\)](#) are checked. The first of them is presented in [Table 4](#).

According to [Fornell and Larcker \(1981\)](#), [Table 4](#) shows square roots of AVEs values (shaded figures) are higher than the correlation between the LV of the model (lower portion of table). Such inferences demonstrate such model is effective towards fulfilling the parameters, and, so far, there is no evidence of problems regarding discriminant validity. Additionally, [Table 5](#) shows variable matrix cross loadings result, as suggested by [Chin \(1998\)](#).

In accordance to [Chin \(1998\)](#), [Table 5](#) shows factor loadings of respective indicators of each construct (shaded figures) are higher than their factor loadings distributed among further ones, indicating the inexistence of any cross loadings among measured variables or among terms of errors. Therefore, this ascertainment verified through [Tables 3 and 4](#) ensure the discriminant validity within the construct suitability model.

Bootstrapping analysis, next used validation technique, permits the testing of relation significance among constructs – identifying the existence of further variables (not measured within the model), which may significantly interfere towards deeper relations of the theoretical proposition ([Henseler et al., 2009](#)). Therefore, from Z values, two relations were verified as maybe partially compromised (Z test with values lower than 1.96): (1) metacognition – performance ( $Z = 1.1969$ ) and (2) entrepreneurial orientation – performance (1.6028). However, even if values lower than 1.96 present evidences so that the null hypothesis is not rejected, and, that other variables with further relations within the model may exist, it is believed this scenario is also derived from the lower correlation among LVs – respectively 0.3944 and 0.4360 (as in [Table 4](#)). Once no other evidence invalidating the model has been obtained, suggested relations have been kept.

Additionally, predictive validity test ( $Q^2$ ) and effect size test ( $f^2$ ) of these model relations were verified. The first one guarantees model accuracy, that is, how much it is adjusted to ideal targets; within such perspective, values above zero for  $Q^2$  satisfactorily fulfil as reference ([Ringle et al., 2014](#)). Similarly, through  $f^2$  each construct usefulness is evaluated towards model adjustment, and, therefore, results obtained show LVs metacognition, entrepreneurial orientation and performance exert high influence on adjustment ( $f^2 > 0.35$ ), while management control



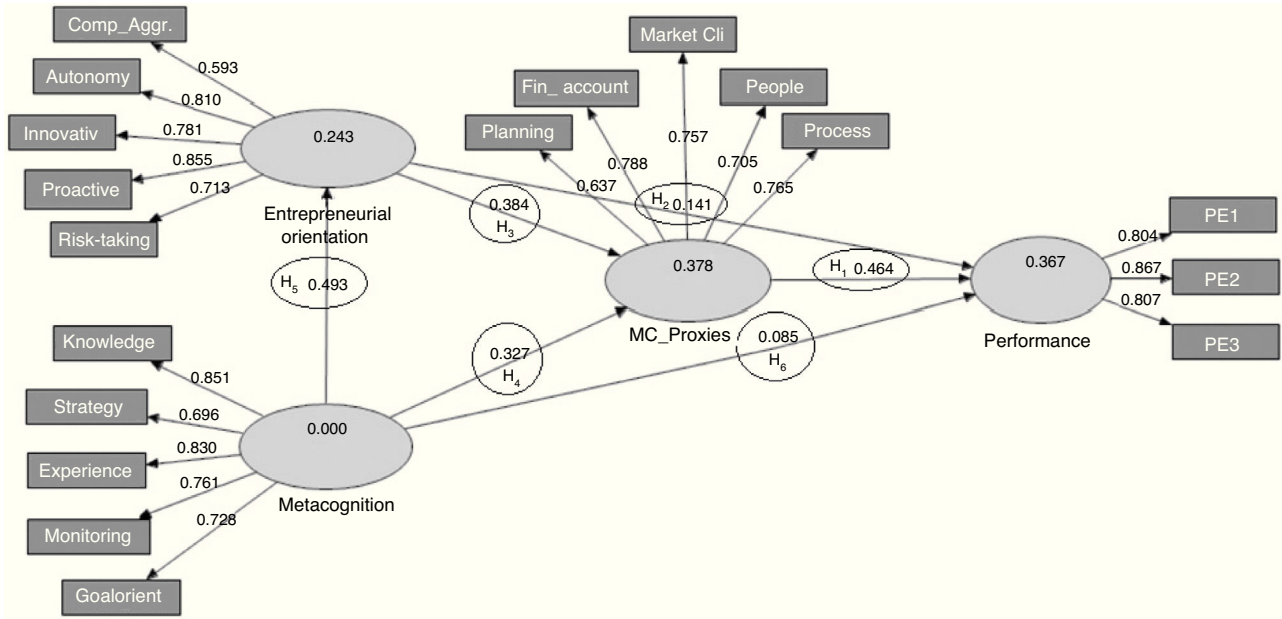


Fig. 2. Relations presented on research structural model.

Table 6  
Predictive validity ( $Q^2$ ) and effect size ( $f^2$ ).

Latent variables	Predictive validity ( $Q^2$ )	Effect size ( $f^2$ )
Metacognition	0.4040	0.4040
Entrepreneurial orientation	0.1190	0.3520
Management control proxies	0.1720	0.3040
Performance	0.2280	0.3510

proxy fulfil average parameters ( $0.15 < f^2 < 0.35$ ) (Ringle et al., 2014). Table 6 presents such indices.

After validation confirmation of the model and the constructs, the next step was the path coefficient analysis, identifying the level where LV is forecast by other. The hypotheses formulated within this study have been tested through Student’s *t*-test, defining  $\alpha = 0.05$  for type 1 error occurrence. Therefore hypothesis with Z value of 1.96 or higher has been considered not rejected, indicating the alternative hypothesis within this research has been confirmed. Meaningful effects within relations are presented and evidenced (shaded figures) in Table 7.

Findings posterior to aforementioned analysis have permitted some inferences: among them, it was verified personal entrepreneurial characteristics are able to forecast 8.38% of interviewed management control. Besides, the variable is able

to influence in 14.09% towards organisational performance. Regarding management control usage and its effect over business performance, the relations were noteworthy and positively forecast in 46.42%. Fig. 2 represents structural relations among model variables and the explanatory power of each LV.

Due to obtained results, the verification of hypothesis formulated to this study will be discussed. The first hypothesis, strongly upheld by literature, defends the influence of management control usage over organisational performance (Frezatti et al., 2014). It is understood these assist through information made available to decision-making personnel, fostering wider knowledge regarding operation and leading them to choose more suitable, objective-driven alternatives (Ashton, 1974). In accordance to such scenario, H1 test results allow inferring managers using operation management practices present better business performance (within financial, operational and procedural concepts). Besides, it is important to stress that, although the research adopted strategy covers informal management tool usage, this adopted form seems to collaborate effectively with decision-making processes. Such scenario proves to be favourable towards reflections regarding actual conceptual parameters usefulness theoretically disseminated, and, a great opportunity for new practically simplifiable propositions. From presented considerations, results infer H1 has been validated.

Table 7  
Path coefficients: direct, indirect and total effects among constructs.

Suggested relation among latent variables	Hypothesis	Direct effect	Indirect effect	Total effect
MC_proxies → performance	H1	0.4642*	0.0000	0.4642*
Entrepreneurial orientation → performance	H2	0.1410*	0.1781*	0.3191*
Entrepreneurial orientation → MC_proxies	H3	0.3838*	0.0000	0.3838*
Metacognition → MC_proxies	H4	0.3273	0.1893	0.5166
Metacognition → entrepreneurial orientation	H5	0.4934	0.0000	0.4934
Metacognition → performance	H6	0.0851	0.3093	0.3944

\* Significance to 5% level.

Considering the existence of an institutionalised environment and the characteristic profile of an entrepreneurial being, it is proposed isomorphic pressures may be faulty over such being and, that, his/her behavioural elements enumerate his/her decisions within management processes – hereto, **H2** was tested. Results state managers who have EO intrinsic characteristics are prone to forecast, around 14.10%, better performance within operations they manage. Such scenario suggests entrepreneurs, whenever searching for better results, choose methods and practices which distinguish them from their competitors, adopt innovative strategies and bold postures within their actions. Such findings ratify previous researches, as [Rauch et al. \(2009\)](#) and [Cho and Jung \(2014\)](#). Hence, it is possible to infer the entrepreneurial orientation positive effect over organisation performance, and, within a significance level of 5%, **H2** was also confirmed in the model.

Under the concept entrepreneurs have cognitive abilities connecting them to better result compromises, it is believed they adopt management practices as informational support in decisions. The test performed from **H3**, assumes such assumptions, and, verifies if the manager–entrepreneur orientation influences management control proxies usage in companies located in clothing industry LPA. Findings show a positive effect of 38.38% from EO over business management control. It is understood study results agree with investigations applying EO in organisation sectors, as [Li et al. \(2006\)](#), [Rauch et al. \(2009\)](#) and [Spillecke and Brettel \(2013\)](#). Thus, although within isomorphic pressure environment, the entrepreneurial profile is able to associate risk-taking prone behaviour (EO) to the usage of tools able to follow action plans and operation monitoring; consequently, its meaningful effect over organisational performance is noticed. Hence, findings allow the inferring **H3** was confirmed at a significance level of 5%.

The last construct incorporated to model discussion refers to the manager–entrepreneur metacognitive abilities. Metacognition, as exposed by [Flavell \(1979\)](#), is understood as the person's capacity to be aware of decisions taken ([Haynie, 2005](#)). Insofar, scholars uphold the notion human beings are rationally able to understand their own thinking whenever interacting with the environment and people around them ([Estes, 1975](#); [Shane & Venkataraman, 2000](#)). Thus, it is conceivable that people are aware of their actions, and, that they recognise their own strengths, weaknesses, suppositions and motivations. The theoretical background of this investigation presented some researches which support the effect – or proposition – that, this variable influences towards usage of management practices, towards entrepreneurial orientation and towards business performance ([Cho & Jung, 2014](#); [Haynie et al., 2010](#); [Melot, 1998](#); [Shane & Venkataraman, 2000](#)).

Aforementioned conditions suggest, albeit not empirically supported, the possibility entrepreneur metacognitive abilities may influence management tool usage within management processes would be able to be tested in **H4**. Thus, a person would be able to use reports and internal controls for operations as decision-making support material. Furthermore, metacognition effect as EO predictor is a relation empirically evidenced through researches as [Haynie et al. \(2010\)](#), [Cho and Jung \(2014\)](#), and, [Lima Filho and Bruni \(2014\)](#). Such theoretical background

fostered **H5** to be verified under the assumption that human being judgments (evaluations and decisions) would be able to guide adopted entrepreneurial attitude. At last, by suggesting people who have higher metacognitive abilities are also more prone to consider multiple available alternatives and to more easily recognise the best ones, **H6** was formulated.

However, due to the sample scenario, it was observed the metacognition variable did not affect the model; although its validation fulfilled the literature criteria, coefficients of **H4**, **H5** and **H6** did not appear meaningful within the model, indicating that the suggested effect relation was not confirmed by these hypotheses. Statistically, it is considered that, possibly – correlations of  $\rho = 0.3944$ ,  $\rho = 0.4934$  and  $\rho = 0.5166$  ( $p$ -value  $< 0.05$ ) for, respectively, performance, entrepreneurial orientation, and, management control proxies (see [Table 3](#)) – may compromise relation analysis due to multicollinearity effects albeit within low degree ([Cohen, Cohen, West, & Aiken, 2002](#)). Besides, it is taken into consideration that the LPA alternative may condition, within some level, people's ways of thinking – that is – the rational process is somehow adapted to reality where the entrepreneur is, inhibiting people's metacognitive ability over environment pressure.

## Final considerations

Literature describes business associations as an accessible alternative to organisations within unsure environments. The establishment of LPAs, for example, is able to strengthen regional economies; increase competitive abilities; constitute relations within their members; and, to enable information sharing ([Cassiolo & Szapiro, 2003](#)). Furthermore, the creation of such bonds is believed to induce the applicability of implicit social and economical mechanisms which are essentially isomorphic – which, hence, stimulates companies to adopt similar postures and practices ([Dimaggio & Powell, 1983](#)). Under such perspective, this study is based on support from Institutional Theory which states the existing interaction among companies within the same environment would foster similar actions and behaviours.

However, discussions regarding human behaviour support entrepreneurs have abilities distinct from others; also being more prone to present competitive aggressiveness, autonomy, innovativeness, and, risk-taking abilities ([Lumpkin & Dess, 1996](#); [Miller, 1983](#)): it is important to stress within small businesses, they often are the ones who administrate the companies.

Additionally, it is known human actions are guided by metacognitive process, also known as, knowledge of cognition and control of cognition. Literature describes entrepreneurial orientation as intrinsically supported by metacognitive processes, a condition which suggests the ability of a person to cognitively understand his/her own objectives, actions and motivations, possibly, forecasts his behaviour as an *agent of change* ([Haynie et al., 2010](#)).

Hereupon, this research suggests verifying if the entrepreneur profile is able to define his/her actions. Regardless of his/her environment pressures: thus, people's behaviour was delimited by two variables: entrepreneurial orientation ([Lumpkin & Dess,](#)

1996; Miller, 1983) and metacognition (Flavell, 1979). Practices related to action analysis refer to usage of management control – tools meaningfully acting as decision-making support (Chenhall & Morris, 1986). Hence, the distinct and committed entrepreneurial behaviour would be resistant to environment pressures, able to unbalance institution prototypes.

Amongst findings, it has been verified manager entrepreneurial orientation was able to affect over two model variables, management practices (management control proxies) and company performance. The first relation showed entrepreneurial orientation predicts approximately 38.38% of the internal management controls. According to such, literature is quite persuasive regarding management tool usefulness, and, it is believed their usage is an efficient informational alternative for decision-making within challenging environments. Furthermore, although intuitive elements may occur in actions, it is suggested such tool usage may behave as a way to managers support their intuition when facing problems, as when projecting situational scenarios.

It was observed entrepreneurial orientation was able to directly forecast organisational performance in approximately 14.10%. However, findings presented within such interaction show that – although a competitive, innovative and opportunity-driven behaviour may be necessary, it becomes less influent regarding business results when compared to effects from management practices. It is understood that to undertake an enterprise, and – specially – to manage the investment, includes analysis and viability procedures, forecasting and monitoring activities – these possibly carried out through management proxies. Thus, testing with EO variables have shown even persons with characteristics such as autonomy, competitiveness, and prone to risk-taking, have been able to discern auxiliary management tools act as fostering company success.

As observed, when entrepreneurs embrace uncertainty, the risk related to his decision, and, the management information made available, they consequently notice improvements in organisational performance. The 46.42% effect from proxy variables of management control over company performance confirms this concept.

Thus, it is conceivable research findings foster further discussions regarding the level institutional forces are actually able to steer the behaviour of inserted elements, inasmuch as – for such scenario – entrepreneurial orientation was able to direct actions while metacognition had no response power. Therefore, it is believed the structural model here suggested may be tested by isolating the construct entrepreneurial orientation, and verifying its individual effect over proxy variables of management proxy and performance, which may result in a more adjusted model.

Besides, found evidences are understood as behaving as questioning isomorphic behaviour; for only entrepreneurial orientation characteristics are able to interfere somehow within institutional structures, sculpting a behaviour prone to imitate LPA practices. However, it is believed there are variables endogenous to the ones adopted in this research that may have some influence on management practices. Therefore, it is suggested future researches investigate for further behavioural

characteristics which may be representative in the mimetic behavioural digression within an environment.

It is convenient to stress the sample was configured by accessibility, which may jeopardise some kind of generalisation for other sectors. This study was also concerned in presuming, as supported by literature, that APL members take an isomorphic behaviour within such situations, which may be further confirmed more precisely in future researches. The approach is presented as a introductory suggestion, breaking paradigms regarding characterisation of company groups as an institution. Empirical validation of intervention from individual entrepreneur characteristics over the usage of internal practices of management in environments “theoretically” defined as institutionalised may be a sign of this conjecture.

### Conflicts of interest

The authors declare no conflicts of interest.

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