

# How does management accounting affect entrepreneurial orientation in SMEs? A structural equation modelling

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## Abstract

Management accounting practices (MAP) appear to be a prerequisite for entrepreneurial orientation (EO) to positively influence profitability. In addition, critical capacities are a precondition to develop and maintain MAP. Studies revealed that small and medium enterprises use informal MAP and they generally lack managerial competences (MC) to develop and implement effective control systems to respond to environmental challenges. However, those who develop MC are more likely to implement MAP. The aim of the paper is to analyze the relationship between the use of MAP and the development of EO, where EO is measured through the independent dimensions of innovativeness, proactiveness and risk-taking. Further, the paper argues that the use of MAP is positively affected by the possession of MC. The paper adopts structural equation modelling to test the hypotheses, focusing on a sample of 339 Italian community pharmacies (response rate 54.6%). Findings support a positive relationship between MC and MAP and between MAP and EO, contributing to a field that is underexplored and providing suggestions for managers, practitioners and educators.

**Keywords:** management accounting practices, managerial competences, entrepreneurial orientation, SMEs, structural equation modelling, community pharmacies.

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## 1. Introduction

Literature has investigated the role of managerial competences (MC) in supporting the entrepreneurial orientation (EO) (Zacca and Dayan, 2018) and competitiveness (Garengo and Bernardi, 2007) of small and medium enterprises (SMEs). In this sense, MC can be defined as the task-oriented competences that are associated with effective managerial performance (Martin and Staines, 1994), while EO is considered to be the tendency to exert an entrepreneurial nature, based on factors such as innovativeness, proactiveness and risk-taking (Miller, 1983; Covin and Slevin, 1989).

In addition, the use of management accounting practices (MAP) in SMEs is a field of interest because the literature has recognized that those practices can positively affect firms' performance (Lavia López and Hiebl, 2015). MAP are related to the use of management control mechanisms and, in this sense, the adoption of performance measurement systems could support the managerial development of SMEs (Garengo and Bernardi, 2007). However, the literature has scarcely investigated the impact of the use of MAP on SMEs' EO, and how MAP can be fostered by the development of managerial capabilities. However, MAP have been found to affect dimensions (i.e. innovativeness) of EO, suggesting a positive relationship between the two. Studies on the relationship between MAP and EO are highly recommended (Andersén and Samuelsson, 2016).

Based on the above premises, an investigation of the determinants of EO in SMEs emerges as a field of interest. While both MC and MAP have been considered to affect EO, the relationship between MC and MAP still needs further exploration. In particular, this relationship appears challenging due to the scarcity of research on the topic, although the literature suggested that the development of MAP relies on the possession of MC.

Therefore, this paper aims at investigating the role of MC in EO, through the mediating role of MAP. In this sense, the impact of MC on MAP and of MAP on EO dimensions, in terms of innovativeness, proactiveness and risk-taking are tested through a structural equation modelling approach.

In more detail, the present paper aims at entering this debate by analyzing the relationship between the use of MAP and EO in SMEs in the context of community pharmacies. Community pharmacies appear to be a suitable setting of analysis because in the Italian context they have the peculiarities of SMEs; approximately 90% of the pharmacies are private firms and approximately 10% are owned by municipalities. Community pharmacies owned by municipalities are generally in the form of limited liability companies in which the aim of public service is balanced with profit orientation. Furthermore, considering the increas-

ing competition in the sector, these SMEs perceive the need to deploy entrepreneurial means to keep pursuing good performance. Studies have mainly focused on environmental and structural determinants of EO in the case of community pharmacies (Iyer and Doucette, 2003; Jambulingam and Doucette, 1999), whereas little attention has been paid to the use of MAP as an antecedent of EO in this setting (Vagnoni, 2013; Gregório *et al.*, 2016).

The paper is structured as follows: the next section provides the theoretical background on which the structural equation model is based and the hypotheses of the model. Section 3 presents the context of the study. Section 4 reports the methodology adopted, while Section 5 presents the findings and discusses whether the hypotheses are supported or not. The last section discusses the results of the model and outlines the contributions of the research, its implications, its limitations and directions for future research.

## **2. Theoretical background and hypothesis development**

In this section, the following constructs used in the structural equation model are discussed: MC, MAP and EO. In addition, we investigate: a) the relationship between MC and the use of MAP for SMEs; b) the relationship between the use of MAP and EO, on which hypotheses were drawn. In the literature, it has been found that SMEs developing MC are more innovative, and innovation, in turn, positively affects firms' performance (Ng and Kee, 2018). Fast-growing firms are generally called gazelles (Birch, 1981) and in the context of SMEs they differ from other firms because of their innovation capacity which supports growth (Grundström *et al.*, 2012). This typology (gazelle vs non-gazelle firms) may help discuss what authors (Marchini, 2002; Del Baldo, 2008) have called "heterogeneity" of SMEs' environment. In the community pharmacies setting, the possession of managerial skills has been found to increase community pharmacies' performance (Hindle and Cutting, 2002; Ranghchian *et al.*, 2018), and the use of MAP can support decision-making towards innovation (Gregório *et al.*, 2016). However, to what extent the relation between MC and EO is mediated by MAP in community pharmacies' context has not yet been investigated representing an element of originality of this research.

## 2.1 MC and the use of MAP

Analyzing the notion of competence, Martin and Staines (1994) recalled the distinction between competency, which is the dimension of behavior that underlines job performance and refers to the input people bring with them, and competence, which describes the task oriented-outcomes associated with effective managerial performance. This second approach was developed in the UK through the emanation of occupational standards for all vocational areas that were based on functional analysis of occupations in several contexts (Le Deist and Winterton, 2005; Cheetham and Chivers, 1996). MC are particularly relevant for SMEs; for example, Barbero *et al.* (2011) showed that SMEs can grow fast if they possess high capabilities in functional areas characterizing the business. Barbero *et al.* (2011) considered that functional capabilities' importance is correlated with the strategy of the firm, in particular, marketing and financial capabilities (such as strategic planning, differentiation, cost control, cash flow management) are positively associated with market expansion and innovation as ways to growth. Our research contends that managerial functional competences affect the EO of community pharmacies by way of MAP. Ahmad and Zabri (2015), in their examination of the literature about SMEs, discussed how MC, such as accounting expertise and managerial attitude, can affect the use of MAP.

However, as stated by Garengo *et al.* (2005, p. 29) "Despite the recognized importance of PMSs [performance measurement systems] in SMEs, there seems to be a significant gap between the theory, which highlights the importance of performance measurement systems in supporting the development of managerial systems, and practice, where there are almost no models and tools that deal with the specific characteristics of SMEs." In addition, these firms were found to lack accounting training, IT training and financial resources, and the owners' tended to not allocate time to developing and implementing such tools (Lavia López and Hiebl, 2015; Chiucchi *et al.*, 2012; Sousa *et al.*, 2005). However, technology, organizational culture and top management's sensitivity to environmental turbulence and competitiveness can favor the use of MAP (Palazzi *et al.*, 2019).

Studies on the use of MAP in SMEs have showed mixed results. Some studies revealed that these tools help monitor technical aspects at the operational level and tend to focus on ex-post business performance (Aureli and Del Baldo, 2016); therefore, budgets are generally limited to the monitoring of sales and production departments (Aureli and Del Baldo, 2016). As a result, the size of small firms is generally correlated to: a) scarce resources and competences, and b) governance's incapacity to be aware of environmental changes and to make their management accounting systems evolve in order to face increasing complexity (Del Baldo *et al.*, 2019). Even when MAP are present, the owner's managerial skills

or the advice of an external accountant may enable small firms to use information from management control systems; however, in general, information from management control systems is only used when SMEs need to externally communicate financial information (Halabi *et al.*, 2010). In contrast, other studies have shown that management accounting competences represent a contingent factor enabling the use of MAP within SMEs (Ismail and King, 2007). SMEs that develop MAP tend to improve their internal and external performance (Sharma and Bhagwat, 2007; King *et al.*, 2010). Based on the above, we expected the following:

*H1: MC positively affect SMEs' use of MAP.*

## **2.2 MAP in SMEs and the relationship with EO**

The combined impact of MAP and EO on SMEs' performance was studied by Andersén and Samuelsson (2016). These authors found that the use of MAP, considered to be the capability to adopt managerial control mechanisms, is a prerequisite for EO to positively influence profitability; entrepreneurship and the use of information from MAP in decision-making process is needed for these firms to be profitable. In general, and with reference to the use of performance measurement systems, Barringer and Bluedorn (1999) found that strategic control increases firms' entrepreneurial intensity. Other authors, such as Henri (2006), showed that the interactive use of MAP increases firms' innovativeness, entrepreneurship, market orientation and organizational learning. Some of these latter have been theorized as dimensions of EO.

Miller (1983) and Covin and Slevin (1989) described EO as a unidimensional construct based on innovativeness, proactiveness and risk-taking, implying that a firm could be considered entrepreneurially oriented if it displayed high levels of all the three dimensions. Based on the literature, these dimensions can be conceptualized as follows (Rauch *et al.*, 2009, p. 763): "Innovativeness is the predisposition to engage in creativity and experimentation through the introduction of new products/services as well as technological leadership via R&D in new processes. Risk-taking involves taking bold actions by venturing into the unknown, borrowing heavily, and/or committing significant resources to ventures in uncertain environments. Proactiveness is an opportunity-seeking, forward-looking perspective characterized by the introduction of new products and services ahead of the competition and acting in anticipation of future demand." However, the conceptualization adopted by Miller (1983) was considered too limited to explain firms' entrepreneurial behavior as these dimensions of EO

“may vary independently of each other in a given context” (Lumpkin and Dess, 1996, p. 151). In their conceptualization of EO, Lumpkin and Dess (1996) also included competitive aggressiveness and autonomy. For purposes of analysis, we decided to focus on innovativeness, risk-taking and proactiveness, as these latter have been used in the majority of EO research (Bolton and Lane, 2012).

EO in community pharmacies SMEs has been addressed mainly with reference to: a) its antecedents, such as environmental munificence and hostility, the kind of pharmacy, the organicity of its structure, and adequacy of resources (e.g., Iyer and Doucette, 2003; Jambulingam and Doucette, 1999); and b) its relation with performance (Iyer and Doucette, 2003). Andersén and Samuelsson (2016) urged further research about the relationship between EO and MAP (and its role in profitability) in order to determine the importance of single dimensions of EO to firms. Indeed, a limited number of studies have investigated the use of MAP and EO in community pharmacies. For instance, Vagnoni’s (2013) research showed that community pharmacists often do not perform MAP, do not assess the effect of healthcare policies on firm’s performance and do not perceive the potential profitability of new services, so that innovativeness (which is a component of EO) risks being dampened. In other cases, MAP have been discussed as useful to inform pharmacies’ management about the introduction of new pharmaceutical services (Gregório *et al.*, 2016). We followed this latter approach and tested the following hypotheses *as a dimension of EO*:

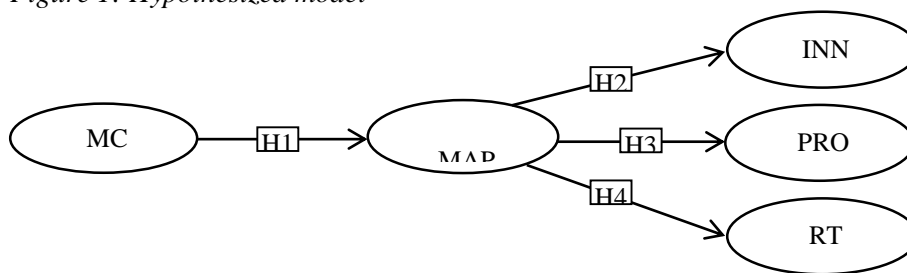
*H2: the use of MAP positively affects SMEs’ innovativeness (INN)*

*H3: the use of MAP positively affects SMEs’ proactiveness (PRO)*

*H4: the use of MAP positively affects SMEs’ risk-taking (RT)*

The hypothesized model is presented in Figure 1.

*Figure 1: Hypothesized model*



*INN innovativeness, MAP management accounting practices, MC managerial competences, PRO proactiveness, RT risk-taking*

### 3. The setting of the study

The paper investigates the effect of MC on the use of MAP, and the effect of MAP on EO in the setting of Italian community pharmacies. In Italy, there are approximately 19,331 community pharmacies of which a small number (1675 pharmacies) are owned by municipalities (Federfarma, 2019). Their average revenue is about 1.2 million euro and the average number of employees per pharmacy is 3.2 (Italian National Federation of Pharmacies, 2017); consequently, in Italy, they can be configured as small enterprises. For a decade, these firms faced increasing competition due to the liberalization of some product segments and to the entrance of new players in the market. Furthermore, since 2017, a change in the national regulation of the sector allowed big retailers to enter the drugs market. These types of changes had already been observed in the sector at an international level (Schmidt and Pioch, 2004; Philpott, 2014). The big retailers generally use cost-leadership strategies to sustain potential differentiation, such as service provision (Singleton and Nissen, 2014). Independent pharmacies often do not possess sufficient managerial skills and financial resources to challenge competitors. Furthermore, in Italy, the introduction of new distribution channels for drugs, such as the channel for hospital pharmacies for innovative high-cost drugs, has contributed to a decrease in community pharmacies' revenues (Vagnoni, 2017). In such a context, a shift toward a healthcare service-based business model was envisaged, as the traditional product-oriented business model of community pharmacies was no longer considered profitable (Gebauer, 2008). As a result of these institutional changes, pharmacy owners/managers need to develop managerial skills (Ottewill *et al.*, 2000; Ranghchian *et al.*, 2018); in particular, they need to develop performance measurement abilities through innovation, risk-taking and proactiveness, to face competition from new players that generally benefit from economies of scale. Indeed, competences and performance management tools are essential to face discontinuities from external and internal environments (Cardoni, 2018). In addition, changes in the economic, legal and technological environments require an evolution of performance measurement systems; these latter should support the growth of the firm and provide a new strategic orientation to meet environmental challenges (Mancini, 2018). However, many studies have shown that community pharmacies lack managerial abilities, especially performance measurement, and they mainly focus on controlling total financial results (Vagnoni and Heidari, 2011). To this end, the paper aims at analyzing whether the use of extensive management accounting tools can improve the performance of these firms, in terms of innovativeness, proactiveness and risk-taking. This is particularly relevant as EO can support practice change in community pharmacies (Doucette *et al.*, 2012)

#### 4. Methodology

This study employed a survey design to explore the impact of MC on the use of MAP and the role of MAP in pushing EO, in terms of innovativeness, proactiveness and risk-taking in community pharmacies.

This study employed a quantitative and survey design to test the hypothesized relationships between the variables. To achieve this aim, structural equation modelling was used. Structural equation modelling was selected because it allows factors to be combined and estimates of multiple causal relationships in a single analysis, thus, representing the causal processes that generate observations on multiple variables (Byrne, 2010).

Based on the literature, a questionnaire (provided in Appendix 1) was developed and submitted to 339 community pharmacies in Italy. The questionnaire was administered through email using the Qualtrics software package. The community pharmacies were selected through convenience sampling (Etikan *et al.*, 2016). The sample members were community pharmacies that had one or more employees who had participated in postgraduate managerial programs specifically directed to community pharmacists, which were organized by the researchers in the past 7 years. The invitation method did not allow tracking of whether the respondents were former participants of the managerial programs. Nevertheless, this choice was made as a previous relationship between researchers and the community pharmacy might enhance the response process. Of the 339 questionnaires emailed, 185 usable questionnaires were returned (a 54.6% response rate).

As Table 1 ([www.sidrea.it/management-accounting-entrepreneurial-orientation](http://www.sidrea.it/management-accounting-entrepreneurial-orientation)) shows, the majority of respondents were female ( $n = 112$ , 60.54%), were between 35 and 44 years of age ( $n = 54$ , 29.19%), and had more than 20 years of experience in the field ( $n = 68$ , 36.75%). Respondents were equally distributed between community pharmacies' employees and directors (this latter includes both those who are owners of the community pharmacies and those who were appointed by the owners to have a managerial role). Almost 70% of the community pharmacies had less than six employees.

##### 4.1 Measurement of variables

This study explores the relationships between MC, MAP, innovativeness, proactiveness and risk-taking. With regard to each item, the participants were asked to report their perceptions about their MC, their use of MAP, and their level of innovativeness, proactiveness and risk-taking.



All variables were designed using a multiple-item measure based on a 7-point Likert scale assessing the level of agreement of the respondents (1 = not at all to 7 = very much).

### **Managerial Competences (MC)**

MC were measured through a self-reported scale composed of five items, which was based on entrepreneurship and management literature focusing on pharmacies (Ranghchian *et al.*, 2018) and on the work by Scherer *et al.* (1989). The MC construct as a competence-based construct includes: business planning, customer orientation, the capability to align employees' goals with the firm's goals, knowledge of the value chain and distribution channels, and profit orientation. Respondents were asked to assess their strategic competences and to indicate the extent to which they agreed on each item (e.g. "I adopt strategies to increase the pharmacy's profitability"; "I am aware of the concept of value chain referred to the drugs sector"). Analysis of the reliability of the scale (Table 2) indicated the items are reliable ( $\alpha = .85$ ). Confirmatory factor analysis (CFA) was also performed to ensure the one-dimensionality of the scale. The results showed that all of the items loaded on one factor.

### **Management Accounting Practices (MAP)**

Data on respondents' use of MAP were collected through a six-item scale developed from entrepreneurship literature (Scherer *et al.*, 1989) and management accounting literature that suggested that management control needs to be inserted in a logic of strategic management, integrating both political/strategic and operational/tactic aspects (Marchi, 2011). Respondents were asked to rate their own level of use of management accounting instruments (e.g. "I control the trend of fixed and variable costs in the pharmacy"; "I use KPIs [key performance indicators] to monitor the pharmacy's performance"). Cronbach's alpha for the scale confirms the high reliability of the instrument ( $\alpha = .95$ ) and CFA the unidimensionality of the construct.

### **Innovativeness, proactiveness and risk-taking**

Scales referring to EO were designed based on seminal literature (Hughes and Morgan, 2007; Covin and Wales, 2012). EO was investigated considering the three separate constructs of innovativeness, proactiveness and risk-taking, following Covin and Wales (2012): "As suggested, assessment of the separate dimensions of EO via a Hughes and Morgan-type (2007, p. 22) approach well aligns with the nature of the EO construct as proposed by Lumpkin and Dess (1996)." Then, the three constructs were considered separately and the scales

were drawn starting from Hughes and Morgan (2007), but widening the number of items for each of the constructs.

Innovativeness was assessed using a scale composed of six items; respondents provided their level of agreement with the items which related to their perceived innovativeness (e.g. “I usually look for new ways to reach my goals”; “I believe I am a good source of innovative ideas”). Results indicated that the scale is reliable ( $\alpha = .87$ ) and that the items loaded to a single factor.

Respondents’ proactiveness was measured through a seven-item scale (e.g. “I prefer to propose new ideas than routine work”; “When I reach a goal, I always think of the next step”). Reliability analysis through Cronbach’s alpha confirmed the scale is reliable ( $\alpha = .85$ ) and CFA assessed its unidimensionality.

Last, risk-taking was evaluated through six items directed at investigating respondents’ perceptions of their own propensity to risk-taking. The respondents were asked to rate the extent to which they agreed with sentences such as “I tend to act daringly in situations which require taking risks” or “Taking risks is part of my strategy to be successful in my job.” The items were reliable ( $\alpha = .87$ ) and loaded to a single factor.

### **Control variables**

The analysis controlled for the personal characteristics of the respondents, such as their gender, age, role in the community pharmacy and work experience, as the literature provided evidence that personal characteristics and job characteristics may affect their EO (Goktan and Gupta, 2013; Lim and Envick, 2011), as well as the number of employees in an organization (Koop *et al.*, 2000).

## **5. Findings**

Structural equation modelling was performed using IBM SPSS Amos software package. The analysis was based on Anderson and Gerbing’s (1988) two-step approach. First, through CFA, the structure and loadings of the items to the related factors were tested. To test the discriminant validity of the variables, the factor loadings of each measure were analyzed to check for unidimensionality, and items were deleted if necessary. The results indicated that all of the item loadings were higher than the .50 threshold (Hair *et al.*, 2010) and that the items referring to EO referred to the three separated constructs (i.e. innovativeness, proactiveness and risk-taking), supporting Lumpkin and Dess (1996). Then we assessed the reliability of constructs based on the Cronbach’s (1951) alpha coefficients. The results of Cronbach alpha analysis indicated reliability for the constructs. Also, we calculated variance-extracted estimates to measure the amount

of variance captured, checking for the desirable result of estimates higher than .50 (Fornell and Larcker, 1981).

Table 2 ([www.sidrea.it/management-accounting-entrepreneurial-orientation](http://www.sidrea.it/management-accounting-entrepreneurial-orientation)) shows the means, standard deviations and the internal consistency of the study.

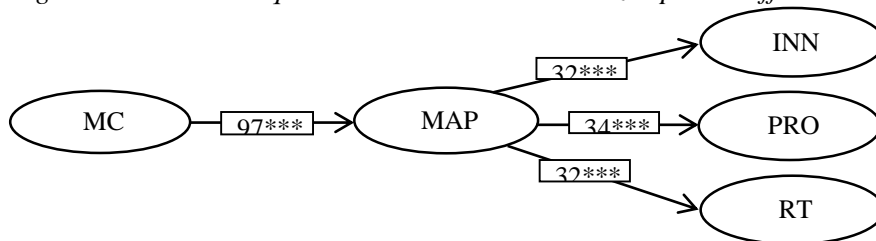
The constructs in the measurement model were incorporated into a full structural model and the maximum likelihood technique was used to perform the analysis (Schreiber *et al.*, 2006).

The results of fit indices for the model including the independent and dependent variables showed a satisfactory model fit:  $\chi^2/df$  was less than 3, the fit indexes were above .80 and some reached .90, which is considered an indication of acceptable fitting (Bentler, 1992). Root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR) were less than the .08 threshold, supporting an acceptable model fit (Byrne, 2010; Hu and Bentler, 1999):  $\chi^2/df = 2.12$ ,  $p < .001$ , comparative fit index (CFI) = .90, normed fit index (NFI) = .83, Tucker–Lewis index (TLI) = .88, RMSEA = .078, and SRMR = .073.

Then, regression was performed between the variables to test the hypothesized relationships between MC and MAP and between MAP and innovative-ness, proactiveness and risk-taking as dimensions of EO. As presented in Figure 2, a significant positive relationship emerged between the MC held by the sample members and the use of MAP ( $\beta = .97$ ,  $p < 0.001$ ). Thus, the first hypothesis is confirmed (H1).

There is a significant positive relationship between the use of MAP and EO factors. In particular, MAP significantly affects innovativeness ( $\beta = .32$ ,  $p < 0.001$ ), proactiveness ( $\beta = .34$ ,  $p < 0.001$ ) and risk-taking ( $\beta = .32$ ,  $p < 0.001$ ), thus H2, H3 and H4 are supported. In addition, the analysis showed that the control variables did not have a significant effect on MC, MAP, innovativeness, proactiveness and risk-taking.

Figure 2: Structural equation model with standardized path coefficients



MC managerial competences, MAP management accounting practices, INN innovativeness, PRO proactiveness, RT risk-taking. \*\*\*  $p < .001$

## 6. Discussion and conclusions

The paper enters the debate about the impact of MC on MAP and the impact of MAP on EO, which are scarcely investigated in the literature. Being one of the first attempts to relate MC, MAP and EO, it contributes to the investigation of the contingency factors that push the use of MAP in SMEs (as called for by Garengo *et al.*, 2005). Focusing in particular on the role of MC, MC drive the patterns that push innovation in firms (Ng and Kee, 2018). Indeed, MC were found necessary to spur the use of MAP in these firms. This is particularly noteworthy as managerial development through performance measurement systems has been discussed as a supportive factor of SMEs' competitiveness (Garengo and Bernardi, 2007) and MC as an enabling factor of EO (Zacca and Dayan, 2018).

Further, the research addresses Andersén and Samuelsson's (2016) call for an in-depth analysis of the use of MAP as an antecedent to EO. This paper argues that where managerial skills are developed, they can encourage the use of control systems, which in turn increase the EO of SMEs. Managerial skills and MAP mutually reinforce each other; the literature has already shown that performance measurement is an enabler of SMEs' managerial growth (Garengo and Bernardi, 2007). This also aligns with Del Baldo *et al.*'s (2019) view of the significance of MAP for small businesses facing complex environments.

In addition, the paper contributes to the stream of literature focusing on the peculiarities of community pharmacies, which are under investigated with reference to MC, MAP and EO. In particular, with reference to the impact of MC on MAP, the paper also presents a first attempt to explore the positive relationship between the two and the mediating role of MAP in supporting EO. Further, this paper adds knowledge about MAP as an EO antecedent, as the results support the role of MAP in enhancing innovation.

The paper therefore presents some implications for practitioners. The tested model shows the importance of developing MC to allow SMEs to respond to the pressure of increasing competition. MC indirectly and positively influence these firms' innovativeness, proactiveness and risk-taking through the use of MAP. In the context of community pharmacies, managerial skills can help the owner/manager to monitor strategic and operational aspects of the firm, so that performance measurement can propel innovation and entrepreneurial activities enabling a better response to the environmental challenges faced. The study also has some implications for education and training; community pharmacists are trained by higher education institutions whose curricula do not consider managerial and accounting competences. As training programs to develop the managerial skills of

pharmacy professions are limited, there is a major need for a revision of programs in order to prepare the future owner/manager of the community pharmacy to act as an entrepreneur and face current institutional challenges.

The limitations of the study are related to convenience sampling and to the sample size, as well as to the incapacity to cluster the respondents according to their participation in managerial courses and their MC level. Thus, further research is needed to extend the paper's findings in different fields of investigation, or to broaden the sample in the setting of community pharmacies. Research is also required to test whether people participating in managerial education projects make different use of management accounting compared to individuals who have not participated in these courses, and to find if there is any difference between groups with reference to EO.

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