How to integrate organizational instruments? The mediation of HRM practices effect on organizational performance by SCM practices

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ABSTRACT
Doing business in an increasingly turbulent marketplace requires integrating strategically sound choices (to increase the ability to survive, adapt and prosper despite dynamic changes) that go beyond organizational boundaries. A perusal of the literature shows that a broad frame of references for organizational success is not adequately developed; it suffers from the absence of an integrative strategic model. Therefore, by taking an interdisciplinary approach with a relational perspective, this study takes an integrative and fresh approach toward illuminating the role of SCM practices in realizing the potential influence of HRM practices on organizational performance. Using the data obtained from 157 manufacturing organizations, this study tests, examines and develops the mediating role of SCM practices. The findings indicate a positive linkage between HRM practices, SCM practices and organizational performance. In addition, the findings also show that SCM practices mediate the relationship between HRM practices and organizational performance.

1. Introduction

The trend of the business environment is changing fast and current market solidity may suddenly turn to uncertainty in the near future. Organizations continuously try to increase their competitive power to beat their rivals in order to reap the benefits of gaining the title of the last survivor and market leader. To cope with this tremendous uncertainty, the highest in the history of mankind, organizations must always be prepared to act with appropriate resources and capabilities on hand for the next rounds of the fight. Traditional resources such as accessible capital sources, product technology and process, and so forth, which were hitherto critical to winning the match (Pfeffer, 1994), have failed to produce results to out rival competitors.

The ability to increase organizational performance extends within and beyond organizational boundaries. Therefore, the continuous efforts of researchers to answer the core question: why organizations succeed or fail can be summarized in two theories: resource-based view (RBV) and industrial organization (I/O) theories. RBV claims that internal factors must
be examined during the process of formulating a strategy for an organization to flourish (e.g. see, Barney, 2001; Islami & Mulolli, 2021; Mulolli et al., 2015; Neffke & Henning, 2013). It argues that achieving a competitive advantage and organizational success depends on the proper use of its human, physical and organizational resources, highlighting that business success stems from and is created inside organizational boundaries. Whereas, I/O theory proclaims that an appropriate analysis of industrial factors is vital to creating a strategy that leads to organizational success (e.g. see, Porter, 1991; Sampaio et al., 2019), which compared to resource-based theory displaces the merit for business success beyond organizational boundaries, in industry. The essential prerequisite for organizations to remain competitive in the global market and to increase their organizational performance is a clear understanding and proper application of any of two key strategic instruments: human resources management (Armstrong, 2006; Chen et al., 2003; H. W. Lee, 2019); and supply chain management (Aswini et al., 2019; Li et al., 2006; Tan et al., 2002; Yildiz Çankaya & Sezen, 2019).

This study makes an effort to integrate essential elements from both of these theories and builds an integrative model that facilitates the creation of a sustainable organizational performance. Despite the increased attention paid to Supply Chain Management (SCM) and the expectations managers have come to the realization that improving the efficiency of only one strategic instrument is not enough to make an organization a strong competitor in the long term. Researchers are currently focused on testing the relationship between several instruments and measuring the effect of an integrative strategic model on organizational performance, which has opened a new window for future investigations. But, ‘despite their prevalence and significance, competitive wars have received limited attention from the strategy literature. Our knowledge of how inter-organizational linkages influence competitive wars is particularly lacking’ (Yu et al., 2020, p. – in press). Because of a lack of a unifying conceptual framework, it can be said, with reason that much remains unknown about how and when Human Resource Management (HRM) practices resulting from inter-organizational relationships can provide an improvement to organizational performance. Thus, the presence of an integrated model, incorporating HRM practices, upstream and downstream sides of SCM practices and linking such activities to organizational performance, detracts from the usefulness of the application of previous results on management.

This study addresses the need to examine, understand and develop the relationship between two strategic instruments, i.e. HRM practices and SCM practices, as well as their direct and integrative effect on organizational performance. It presents three levels of management: firstly, it develops and clarifies HRM practices and their effect on organizational performance; secondly, it develops and clarifies SCM practices and their effect on organizational performance; thirdly, it finds the relationship between HRM practices and organizational performance, mediated by SCM practices.

2. Theoretical framework

2.1. HRM practices development

The general purpose of HRM is to provide and improve the organization’s success through people. Continuously, scholars have been preoccupied with defining the boundary of HRM practices. Most authors require organizations to use more than one HRM practice simultaneously, arguing that it may produce synergy as a result of their complementarity effects
(Islami & Mulolli, 2021). In this respect, Sun et al. (2007) used a relational perspective which examines the linkage process between high-performance HR practices and organizational performance. They used eight practices to describe high-performance HR: selective staffing, extensive training, internal mobility, employment security, clear job description, results-oriented appraisal, incentive reward and participation. Lee et al. (2010) shows HRM through seven practices: teamwork, HR planning, training and development, employment security, compensation/incentives and performance appraisal, which practices are considered to be positively related to product quality, firm performance, production flexibility, product delivery and production cost. Otoo (2019) presents HRM using five practices: recruitment and selection, training and development, career planning, employee participation and performance appraisal. Renwick et al. (2013) indicate that several traditional HRM practices, such as recruitment, selection, training, performance evaluation and rewards, constitute also the mainstream of green HRM.

In this study, based on the suitability of HRM practices with other variables that are treated, HRM is presented through five practices: recruitment and selection, training and development, teamwork and participation, performance appraisal and compensation/incentives (Islami, 2021).

Recruitment and selection aim to attract potential candidates and hire them as employees of an organization (Jabbour & Santos, 2008). An effective process of employee recruitment and selection may provide a competitive advantage and enhanced organizational performance (Chen & Cheng, 2012).

Training and development denote the extent of formal training given to the employees of an organization (Lee et al., 2010). Training and development have a substantial effect on increasing overall organizational performance (Khan et al., 2011). Also, they have a huge effect on realizing the SC successfully, where Hohenstein et al. (2014) highlight that managerial training shows a critical role in SC success. Therefore, employee training and development have been recognized as the most fundamental elements of strategic HRM (Dhamodharan et al., 2010).

Teamwork and participation’s role is an important factor in creating mutual trust and respect within an organization. Mutual trust and respect is the key to teamwork success and increases overall organizational performance (Adizes, 2004). Lee et al. (2010) describe teamwork as referring ‘[...] to a group of employees created on purpose to carry out a particular job or to solve problems’ (p. 1353). Whereas, Gulzar (2017) defines participation as ‘[...] a process which allows employees to exert some influence over their work and the conditions under which they work’ (p. 59). Organizations using teamwork may provide three advantages: teamwork depends on peer-based work rather than hierarchical leads to a more effective organizational achievement; teamwork facilitates the flow of ideas from team members and finally produces an innovative solution; and teamwork helps to save the administrative costs arising from paying specialists to oversee people (Pfeffer, 1998).

Performance appraisal, a formal performance appraisal system in HRM circles, is traditionally considered as the key means of managing employees’ performance. Performance appraisal results serve as a legal justification for HR managers to make the decisions to increase salary, promote, discipline or layoff their employees (Islami et al., 2018). According to them, performance appraisals are considered an efficient method used by organizations for their employees’ development, motivation and evaluation. It aims to enhance the process of setting goals and receiving feedback so as to direct,
correct and improve employees’ performance (Lee et al., 2010), to determine the existing status of the workforce’s skills (Shaout & Yousif, 2014), and to get information about how well each employee is performing in order to identify and reward the good performers, or to provide a written justification on why the poor performer should be disciplined (Noe et al., 2017).

Compensation/incentives, compensation consists of ‘all the extrinsic rewards that employees receive in exchange for their work’ such as benefits, wages and bonuses (Byars & Rue, 2006, p. 249). Compensation is not limited only to the financial aspect, but it may be found as financial and non-financial incentive categories (Lee et al., 2010), which enhances employee motivation and improves organizational efficiency (Gulzar, 2017). Therefore, compensation benefits can be monetary (i.e. health insurance and paid leave), or non-financial (i.e. flexible work arrangements and well-being programs) that increase employee morale, commitment and satisfaction (Nankervis et al., 2008).

2.2. SCM practices development

Organizations cannot operate efficiently if they are isolated from their suppliers and other SC units. Overall, SCM definitions, in essence, have the same meaning, i.e. they try to describe organizations as an integrated process that involves activities or operations in the distribution channels from suppliers to the final consumer. In literature, the effect of SCM has been analyzed through several practices. For instance, Chen and Paulraj (2004) identified a set of four reliable and valid practices in the development of SCM practices as significant for SCM: supplier base reduction, long-term relationship, cross-functional teams and supplier involvement. Li et al. (2006) used five distinctive practices to measure SCM: customer relationship, strategic supplier partnership, level of information sharing, postponement and quality of information sharing. Talib et al. (2011) identify six major SCM practices: strategic supplier partnership, material management, customer relationship, information and communication technologies, close supplier partnership and corporate culture. Bimha et al. (2019) reviewed the main SCM practices, such as: logistics, management of procurement, information and communications technology, inventory and customer service in tandem with other SCM associated notions, such as: SC integration, SC collaboration, customer relationship management, and supplier relationship management.

The current study represents the most important and applicable SCM practices, through five practices: strategic supplier partnership, customer relationship, information sharing, lean manufacturing and postponement strategy (Islami, 2021). These five practices cover four dimensions of the SC: upstream (strategic supplier partnership) and downstream (customer relationship) sides of the SC, information flow through the SC (information sharing), and internal SC processes (lean manufacturing and postponement strategy).

Strategic supplier partnership consists of: supplier relationship, supplier quality management, supplier involvement and collaboration between the leading organization and its supplier (Talib et al., 2011). It is about building better relationships with the selected strategic suppliers by which all members of the SC may benefit (Jacobs & Chase, 2014). It proactively manages the link between buyer and supplier, and it is beneficial for the supplier, buyer (manufacturer) and the ultimate user of products (Scott et al., 2018). Indeed, a strategic supplier partnership enables organizations to work more effectively with a few important suppliers who are willing to share responsibility for the success of products (Li et al., 2006).
Customer relationship, a close relationship between the manufacturer and customers provides the opportunity to improve the accuracy of demand information, reduce product design and production planning time, and avoid any inventory obsolescence of the manufacturer, which makes it more responsive to the needs of its customer (Flynn et al., 2010). Through its connection to product development and innovation (Song & Di Benedetto, 2008), the customer partnership is related directly and indirectly to customer satisfaction (Homburg & Stock, 2004), and it allows manufacturers to create greater value, cut costs and rapidly detect changes in demand (Flynn et al., 2010).

Information sharing designates the degree to which critical and proprietary information is shared with the SC partner, wherein the accuracy, adequacy, timeliness and reliability of the information shared refer to the quality of the information (Koh et al., 2007). It may become as a critical service strategy which establishes an enduring relationship with business customers (Tai & Ho, 2010), and other partners in the SC. Information sharing may vary from strategic to tactical in nature and from general market and customer information to information about logistics activities (Mentzer et al., 2000).

Lean manufacturing seeks to do away with any activities that do not add value through continuous incremental improvements (Abolhassani et al., 2016). It refers to the elimination of anything that does not add value to the production process, such as material flow, inventory and set up time (Gorane & Kant, 2015). Alefari et al. (2020) have reviewed the literature and realized a survey using structured questionnaires through a large number of United Arab Emirates SMEs in the manufacturing sector with aim to assess the understanding and diffusion of lean manufacturing principles in manufacturing companies. They revealed the level of understanding, the key barriers and drivers behind lean implementation success and offered new ways for developing a framework based on system dynamics for modeling the employee performance and assessing different scenarios for improving it (for more see Alefari et al., 2020).

In general, the meaning of the term ‘lean’ is ‘efficient’, with Li et al. (2005) explaining that the term lean is used to refer to a system that uses less input to produce at a mass production speed, while offering more variety to the end customers. Lean can be reflected in two perspectives: philosophical perspective, which is related to guiding principles or overarching goals, and practical perspective, which consist of a set of management practices, tools or techniques that can be observed directly (Shah & Ward, 2007). In general, lean intensification has two causes: waste elimination activities – eliminating wasteful activities such as worker delays waiting for maintenance men, set up men or inspectors, and setting production time standards – production interruptions from machine breakdowns or parts shortages (Angelis et al., 2011). There exists a wide range of lean tools to use during lean implementation, but in order to achieve a better performance some techniques should be implemented prior to others (Possik, 2019). In this study, lean management comprises elements from a variety of practices/tools: Total Quality Management (TQM), Just-In-Time (JIT), work teams, supplier management in an integrated system, cellular manufacturing (Angelis et al., 2011), and continuous improvement (Kaizen) (Alefari et al., 2020).

Postponement strategy aims to boost SC efficiency by moving product differentiation ‘at the decoupling point’ closer to the end user (Naylor et al., 1999). It is defined as a strategy that purposely delays the accomplishment of a task, instead of beginning it with inadequate or unreliable information (Yang et al., 2004). The basic principle of
postponement is to increase the supply chain’s flexibility in customer demand by possessing an SC that is able to keep materials undifferentiated for as long as possible until receiving orders from customers (H. L. Lee, 2004).

2.3. Organizational performance measurement

Performance is the difference between the cost of capital used by an organization to operate and its achieved results (Bridoux, 2004). Quite a lot of studies have measured organizational performance using a combination of financial and non-financial criteria, including market share, the growth of ROI, return on investment (ROI), growth of sales, profit margin on sales, overall competitive position and the growth of market share (e.g. see Huo et al., 2014; Li et al., 2006; Zhang, 2001). In this study, following Islami (2021) organizational performance is measured using two dimensions: operational performance and financial performance.

*Operational performance* is preoccupied with finding and measuring how well an organization has created value for their customers (Spencer et al., 2009). There is no standard list of non-financial criteria that should be used by all studies that measure operational performance, but it rather depends on the nature of the work. This study uses five criteria to represent our market/operational performance, namely: overall product quality, responsiveness to customers, customer service level, delivery speed and delivery dependability.

*Financial performance* in contrast to non-financial performance, which is focused on non-monetary terms (finding items that provide a competitive advantage), financial performance is focused on items that could be expressed in monetary terms, and that specifically or directly reflect financial value (Spencer et al., 2009). This study uses seven monetary items to measure financial performance, namely: return on investment (ROI), growth in return on investment, growth in sales, return on sales (ROS), growth in return on sales, growth in market share and growth in profit.

2.4. Hypotheses development

2.4.1. HRM practices, SCM practices and organizational performance

The role of HRM in SCM has become a top priority for organizations, since they have started to cope with expanding globalization and a corresponding rising demand for capable SC managers (Hobensteine et al., 2014). Sweeney (2013) specifies that the supply chain is a ‘human chain’ and SCM has to do with those managing the supply chains. Myers et al. (2004) highlight that the role of HRM has attracted much attention in SCM since the logistics process within an SC is essentially ‘human centric’ (p. 212). Thus, a close coordination between managers of HRM and SCM departments is required in order to recognize the main skills, knowledge gaps and training requirements to keep the organization competitive (Liboni et al., 2019). Hence, talented HR in SCM offers an extraordinary source of sustainable competitive advantage by improving SC performance (Ellinge & Ellinger, 2014). Lastly, Kitchot et al. (2020) reveal that SCM indirectly improves the performance of SME firms through HRM practices. They have found that HRM practices fully mediate the impact of SCM implementation on SME firm performance. Based on the review of the literature above, this study, therefore, proposes the hypothesis:

H1: An organization’s HRM practices have a positive influence on its SCM practices.
Sophisticated and integrated HRM practices by increasing knowledge, skills and abilities, improving motivation, increasing the retention of competent employees and reducing shirking and absenteeism will have a positive effect on employee performance (Zhu et al., 2005), and subsequently may increase organizational performance. Ottoo (2019) suggests that the creation of a ‘[…]’ competitive advantage through people requires careful attention to the practices that best leverage these assets’ (p. 949). Implementing various HRM practices may increase organizational performance. For example, recruitment and selection enhance organizational performance (Chen & Cheng, 2012). Training and development have a significant influence on increasing organizational performance (Khan et al., 2011). Teamwork and participation increase firm performance (Lee et al., 2010). Performance appraisal increases organizational performance through managing employees’ performance (Islami et al., 2018). HRM practices have a bearing on organizational performance through their influence on the competencies of employees (Otoo, 2019). This study, therefore, proposes the hypothesis:

H₂: An organization’s HRM practices have a positive influence on its organizational performance.

2.4.2. The mediating role of SCM practices
As organizational competition moves beyond individual organizations on the supply chains, it is not enough to focus only on improving intra-organizational quality management practices (Hong et al., 2019) in order to improve its whole SC. The literature provides studies that argue a positive relationship between divergent perspectives of SCM practices and organizational performance (e.g. see Quang et al., 2016; Truong et al., 2017). But, these studies viewed SCM practices as independent variables – thus focusing mainly on their direct effects (Duong et al., 2019). The divergence perspectives on SCM practices and their role in performance outcome motivate examining the potential role of SCM practices (a set of five SCM practices that are logically related between them) on organizational performance to better understand their value and relevance to the organization operating amid increased uncertainty and volatility in a dynamic and complex environment (Islami, 2021). Thus, in view of the theoretical arguments and pertinent empirical evidence (Gölgeci & Kuivalainen, 2020), SCM practices that are closely related could be expected to have a largely positive role in enhancing the organization’s performance and competitiveness. Following these arguments, this study, therefore, proposes the hypothesis:

H₃: An organization’s SCM practices have a positive influence on its organizational performance.

Traditionally, existing research has highlighted the benefits of relationships (Dyer & Singh, 1998), but new research admits that there can be both positive and negative consequences for inter-organizational relationships (Mitrega & Zolkiewski, 2012). HRM practices do not inevitably result in desired performance outcomes; they may necessitate the mediating means of SCM practices to channel its probable influence on organizational performance. HRM practices have emerged as a top strategic priority in SCM and in efforts made by organizations to attain sustainable growth by leveraging human capital
(A. E. Ellinger et al., 2005). However, they need to go through processes supported by SCM practices to develop into external partnerships that foster organizational performance. Hence, organizations invest in HR capital to boost competitiveness (Myers et al., 2004), since HR interactions are involved in the SC, and a superior SC performance is facilitated by interpersonal skills and relationships (Ketchen & Hult, 2007).

We expect that SCM practices mediate the relationship between HRM practices and organizational performance in the following way: HR managers have a clear image of what the organization is going to be and what it is going to accomplish in the future. SCM activities play a vital role in implementing the manager’s blueprint aimed at achieving a sustainable competitive advantage and increasing organizational performance. Without cross-border cooperations, such as strategic supplier and customer partnerships, information sharing, lean manufacturing and postponement strategy, the blueprint of HR managers is not effectively transmitted in the competitive advantage. For the blueprint to become a reality, the HR activities have to rely on SC partners to help the organization become competitive in a competitive market (Islami, 2021).

The organization must be able to meaningfully link its knowledge to its operations (Najafi et al., 2013), if it hopes to overcome the challenges it continually faces (Gölgeci & Kuivalainen, 2020). Thus, it is argued that HRM practices are linked to SCM practices, which in turn are linked to organizational performance. Based on these arguments, it can be reasoned that SCM practices play a mediating role in the relationship between the HRM practices and organizational performance, because HRM professionals holding a more strategic role create conducive conditions (Mitchell et al., 2013) to adopt SCM practices within organizations. Such adoption of SC practices leads, in turn, to enhanced organizational performance. Indeed, organizations need not only the opportunity to have the knowledgeable human resources provided by training or other formal education, but also the possibility of utilizing them through the complementary capability of SCM practices. This study, therefore, proposes the hypothesis:

**H₄**: An organization’s SCM practices mediate the link between HRM practices and organizational performance.

### 3. Research methodology

The quantitative method, employing a positivist approach, is used for this study, where a cross-sectional research design linked with large-scale surveys via questionnaires helps to identify the possible cause-and-effect relations between research variables. Based on the characteristics of the current study, IBM SPSS AMOS Statistics program as a powerful structural equation modeling software were used to analyze the data. The research strategy used is ‘evaluation strategy’. Since the explaining variable is continuous, it is also used classical linear regression – OLS regression as a standard mathematical-statistic method. The process of conducting the proposed study is presented graphically in Figure A1 (see Appendix A).
3.1. Conceptual framework and measures

A visualization of the relationships between variables is shown in Figure 1, i.e. the research framework, which shows the structure of research hypotheses that, as an image, present the path of the proposed relationship between variables. It is based on the mediation of the direct model, explained by Hayes (2018).

Taking an interdisciplinary approach from a relational perspective, questionnaires were designed including three strategic instruments such as HRM practices, SCM practices and organizational performance. When the existing literature could not provide consistent and valid measures, new measures were developed, based on the author’s understanding of the constructs, observations during company visits, and interviews with several high-level managers and academics. The constructs and measures used in this study are shown in Appendix B. Constructs development methods for HRM practices, SCM practices and organizational performance include three phases: item generation, pre-pilot study and pilot study. Finally, a 70-item survey questionnaire was developed for managers in the Kosovan manufacturing industry about their views on various research variables.

Since the scales drawn from the existing literature were in English, to ensure the questionnaire’s reliability, the English version was developed first, reviewed and then translated into Albanian by an English language expert and controlled by a knowledgeable Kosovan professor of management. The Albanian version was then translated back into English by a different professor of English and a professor of strategy fluent in the English language. The back-translated version was then checked against the original English version for inconsistencies. Some questions in Albanian were reworded to better mirror the original meaning of the questions in English. The constructs used in this study were measured by a subset of perceptual items in the HRM and SCM databases.

We used the existing validated scales for measuring HRM practices (Ahmad & Schroeder, 2002; Amin et al., 2014; Lee et al., 2010; Otoo, 2019; Singh, 2004), SCM practices (Chen & Paulraj, 2004; Jayaram et al., 2014; Li et al., 2006; Shah & Ward, 2002; Tan et al., 2002; Wu et al., 2014), operational performance (Huo et al., 2014) and financial performance (Flynn et al., 2010; Gölgeci & Kuivalainen, 2020; Huo et al., 2014; Qi et al., 2011), items were modified for the purposes of the current study. Respondents indicated this on a seven-point Likert-type scale ranging from 1 to 7.

![Figure 1. Conceptual framework of this study for testing variables. Source: author](image-url)
3.2. Pre-pilot study and pilot study

In the pre-pilot study, research items were reviewed by fifteen doctoral and master’s students of the management department, three professors one HRM professor, one operational management professor and one financial management professor, and re-evaluated through structured interviews with two practitioners who were asked to remark on the appropriateness of the research constructs. Based on their feedback, the wording of some questions and unclear items were either revised or removed, in order to ensure that the items were understandable and relevant to practices in Kosovo. Next, the first version of the questionnaire was pre-tested in ten manufacturing organizations from Kosovo, which involved face-to-face discussions.

In the pilot study stage the Q-sort method was used to pre-assess the convergent and discriminant validity of the scales. HR managers, purchasing/production managers and financial managers were asked to act as judges and place the items into the constructs, based on similarities and differences among them. To evaluate the reliability of the sorting conducted by the judges, two different measures were used, such as: the inter-judge raw agreement scores and Cohen’s Kappa. In the first round, the inter-judge raw agreement scores averaged (0.86), whereas the Cohen’s Kappa score averaged (0.82). In the second round, the inter-judge raw agreement scores averaged (0.93), and the Cohen’s Kappa score averaged (0.91), which value according to McHugh (2012), was considered an almost perfect level of agreement (beyond chance) for the judges. At this stage, the statistics suggested an excellent level of inter-judge agreement indicating a high level of reliability and construct validity.

3.3. Large-scale method

The sampling frame used for the purposes of this study was based on the registry of the Kosovo Agency of Statistics. Where, 600 organizations that met our selection criteria were randomly selected among a total of 10,190 organizations registered within KAS. Of the 600 manufacturing organizations randomly selected from the database, only 447 companies had updated contact information. It was made sure that firms that were contacted had a minimum of ten full-time employees, whereas the maximum number was not limited. The respondents sought in these organizations were those high and mid-level managers that have inclusive responsibilities enabling them to have a clear understanding and a complete view of the organization’s functioning and financial managers that oversee financial aspects of the organizations.

The data were collected during the period July-September 2020. Two stages of data collection were employed with a two month time lag. Gathering data from respondents passed through two waves. In the first wave, dual respondents from each participant organization were required, where high and mid-level managers of 447 organizations were approached in person with an online questionnaire to obtain information on HRM practices, SCM practices and operational measures. The questionnaires were mailed, along with a cover letter clarifying the study’s objectives, ethical issues, confidentiality of using their data and potential contributions. Follow-up telephone calls and mailings were used to improve the response rate, as is suggested by Frohlich (2002). A total of 346 responses were obtained from 173 organizations, with an effective response rate of 29% of the total sample, which was deemed adequate for our study. After screening, two of the
questionnaires were found to be incomplete, and six organizations returned surveys with a single response. These questionnaires were rejected, leaving 165 usable responses. In order to assess consistency and equivalence, the responses of two key managers in each organization were merged to create an average and arrive at an organization-level unit of analysis (Gölgeci & Kuivalainen, 2020).

The second wave of the survey was carried out two months after the first. At this stage, only the finance managers of the 165 organizations were contacted in person to tap financial performance measures. A total of 161 questionnaires were obtained from the finance managers, four of which had not been filled in and were discarded. Finally, 157 samples were used in our subsequent analyses, with an effective response rate of 26% of the total sample, which was deemed adequate for our study. Data used in this study were collected for my doctoral dissertation, where they were tested in a different wider model.

Key characteristics of the sample organizations are summarized in Table 1. The results show that a large percentage of our respondents are from the construction and food sectors. Over half of the responding organizations had less than 49 employees, and about 43 percent had over 20 years of work experience. Our analysis shows that the responding organizations had adopted at least one international quality standard, such as: ISO 9001: 2000, ISO 9001: 2015, ISO/TS 16949: 2002, and other quality management standards.

| Table 1. Characteristics of sample organizations  
(N = 157). |
|-----------------|--------|--------|
| Characteristics                          | Number | Percent (%) |
| **Industry sector**                     |        |          |
| (a) Food                                  | 31     | 19.7 %   |
| (a) Textile                               | 7      | 4.6 %    |
| (a) Construction                          | 63     | 40.2 %   |
| (a) Wood                                  | 15     | 9.8 %    |
| (a) Metal                                 | 11     | 7.1 %    |
| (a) Plastic                               | 6      | 3.9 %    |
| (a) Chemical                              | 5      | 2.6 %    |
| (a) Other                                 | 19     | 12.1 %   |
| **Number of employees**                   |        |          |
| 10–49                                      | 96     | 61.2 %   |
| 50–249                                     | 57     | 36.3 %   |
| ≥250                                       | 4      | 2.5 %    |
| **Firm age**                              |        |          |
| ≤10                                        | 49     | 31.2 %   |
| 11–20                                      | 41     | 26.1 %   |
| >20                                        | 67     | 42.7 %   |
| **Annual revenue (2019 value)**           |        |          |
| ≤ €1 million                              | 71     | 45.5 %   |
| €1 million–10 million                      | 80     | 51.3 %   |
| >€10 million                              | 5      | 3.2 %    |
| **ISO – (Quality management systems)**     |        |          |
| ISO 9001: 2000                            | 87     | 55.4 %   |
| ISO 9001: 2015                            | 16     | 10.2 %   |
| ISO/TS 16949: 2002                        | 7      | 4.5 %    |
| Other standards                            | 47     | 29.9 %   |

Source: author
3.4. Non-response bias, common-method bias and research variables

The current study addressed potential non-response bias during the data collection process through several means. Firstly, a comparatively high response rate, 26% of the total sample indicated that respondents were likely to make up a reasonable level of representativeness of the total sample base used in this research and remedy potential non-response bias (Podsakoff et al., 2003).

Secondly, to mitigate the possibility of common method bias (Podsakoff et al., 2003), dual respondents from each participant organization were required to be included in the final analysis for all variables except financial performance (Gölgeci & Kuivalainen, 2020). The issue of common source bias is a critical one, and can arise when the same respondent provides the measure of predictor and criterion variables (Podsakoff et al., 2003), who stressed that such issues may be expected to be minimized by taking two responses from two different respondents of the same organization.

Thirdly, in addition to procedural remedies, Harman’s single-factor test is used as a statistical remedy, which is the most popular in identifying common-method bias (Podsakoff et al., 2003). Thus, a single-common-method factor was applied to examine common-method bias, using EFA, comparing a single-factor model with the original measurement model. The results showed that no single factor is found to explain more than fifty percent (>50%) of the variance. Consequently, there was no serious common-method bias in this study.

Table 2 shows a clear image for research variables and their constructs that are used in the present study. It makes clear to readers the role and order of variables in this model.

Table 2. Summary constructs of the current study.

| Constructs order | Measure(s) of performance | HRM practices variables | Mediation variables | Country         |
|------------------|---------------------------|-------------------------|---------------------|-----------------|
| Second order/ latent | A composite average perceptual measure of: | HRM practices | SCM practices | Kosovo         |
|                 | ● Organizational performance | | | |
| First order/ latent | ● Operational performance | ● Recruitment selection and | Strategic supplier partnership | |
|                   | ● Financial performance  | ● Training development and | Customer relationship | |
|                   |                           | ● Teamwork participation and | Information sharing | |
|                   |                           | ● Performance appraisal | Lean manufacturing | |
|                   |                           | ● Compensation incentives. | Postponement strategy | |

Items/ observe: ● Items of each dimension that are presented in Appendix A

Source: author

4. Results for the measurement model

The cutoff criteria for fit indexes in covariance structure analysis that are used in this study were adopted from Hu and Bentler (1999) and Hair et al. (2019). To measure the model fit are used five criteria: chi-square divided by degree of freedom ($\chi^2$/df) – threshold for a good model fit is from 1 to 3 (<3 is good); IFI – threshold for a good model fit is close to .95 (> .95 is
great); NNFI – threshold for a good model fit is close to .95 (.95 is great); CFI – threshold for a good model fit is close to .95 (.95 is great; > .90 is traditional; > .80 sometimes permissible); and SRMR – threshold for a good model fit is close to .08 (< .08 is good).

Data screening – two kinds of screening data were used to arrange the variables observed: case screening and variable screening. There were no ‘missing data in row’ and ‘missing data in columns’ observed in the dataset since the questions used in the online survey were made mandatory. Additionally, in the data observed for Skewness & Kurtosis – fairly normal distributions were observed for indicators of latent constructs in terms of skewness. The skewness values varied between (−2.9) to (0.3), which are more relaxed values than threshold (−3) to (+3) (Kline, 2015). While the kurtosis values varied from (−1.1) to (+11). Since these values violate strict rules of normality (Hair et al., 2019), a two-step approach was applied for transforming continuous variables to normal according to Templeton (2011).

4.1. Convergent and discriminant validity of the first-order constructs

An exploratory factor analysis (EFA) of the constructs was performed to ensure the unidimensionality of the scales. Specifically, to detect the underlying dimensions a maximum likelihood factor analysis with promax rotation was used. For simplicity, only loadings above .45 (> .45) (Hair et al., 2019) are displayed in Tables 3–Tables 5. Additionally, latent roots (eigenvalues), screen test and other criteria were used to determine the number of dimensions to be extracted from the maximum likelihood factor analysis.

Table 3. Measurement items (with factor loadings) for first-order constructs of HRM practices.

| HRM practices               | KMO test | Approx. χ² | Factor loadings | t-value | Eigenvalue | % of variance | Cumulative % of variance |
|-----------------------------|----------|------------|-----------------|---------|------------|---------------|--------------------------|
| Recruitment and selection   | .957     | 2126.035   | .597            | 9.427   | 1.140      | 5.699         | 56.401                   |
| RecSel_1                    | .943     | 190        | .707            | 10.160  |            |               |                          |
| RecSel_2                    | .925     |            | .525            | 6.191   |            |               |                          |
| Training and development    |          |            | .679            | 10.617  | 1.558      | 7.792         | 50.702                   |
| TraDev_2                    | .942     |            | .568            | 11.416  |            |               |                          |
| TraDev_3                    | .954     |            | .754            | 13.179  |            |               |                          |
| Teamwork and participation  |          |            | .574            | 9.610   | .681       | 3.407         | 64.716                   |
| TeaPar_1                    | .836     |            | .927            | 13.919  |            |               |                          |
| Performance appraisal       | .641     |            |                |         | 8.582      | 42.910        | 42.910                   |
| PerApp_1                    | .968     |            |                |         |            |               |                          |
| PerApp_2                    | .583     |            |                |         |            |               |                          |
| PerApp_3                    | .676     |            |                |         |            |               |                          |
| Compensation/incentives     | .712     |            |                |         |            |               |                          |
| ComInc_2                    | .787     |            |                |         | .982       | 4.908         | 61.309                   |
| ComInc_3                    | .609     |            |                |         |            |               |                          |
| ComInc_4                    | .705     |            |                |         |            |               |                          |
| ComInc_5                    | .711     |            |                |         |            |               |                          |

Source: author

*The cutoff values suggested by Hair et al. (2019).

All loadings are significant at p < .001(**).
Table 4. Measurement items (with factor loadings) for first-order constructs of SCM practices.

| SCM practices                      | Factor Loadings a | t-value | Approx. χ² df Sig. | Bartlett test | KMO test | Bartlett test | Eigenvalue | % of variance | Cumulative % of variance |
|-----------------------------------|-------------------|---------|--------------------|---------------|----------|---------------|------------|---------------|-------------------------|
| Strategic supplier partnership    |                   |         | 0.867 1898.882 .000|               | >0.80    | <0.05         | 1.254      | 6.602         | 60.351                  |
| SupPar_2                          | .883              | 11.762  |                     |               |          |               |            |               |                         |
| SupPar_3                          | .757              | 10.319  |                     |               |          |               |            |               |                         |
| SupPar_4                          | .682              | 10.752  |                     |               |          |               |            |               |                         |
| SupPar_5                          | .588              | 7.654   |                     |               |          |               |            |               |                         |
| Customer relationship             |                   |         | 6.457              | 33.986        |          |               |            |               |                         |
| CusRel_2                          | .970              | 10.759  |                     |               |          |               |            |               |                         |
| CusRel_3                          | .782              | 12.085  |                     |               |          |               |            |               |                         |
| CusRel_4                          | .519              | 12.713  |                     |               |          |               |            |               |                         |
| CusRel_5                          | .921              | 13.164  |                     |               |          |               |            |               |                         |
| Information sharing               |                   |         | 2.625              | 13.817        |          |               |            |               |                         |
| InfShar_1                         | .611              | 12.482  |                     |               |          |               |            |               |                         |
| InfShar_2                         | .928              | 14.604  |                     |               |          |               |            |               |                         |
| InfShar_3                         | .846              | 11.517  |                     |               |          |               |            |               |                         |
| InfShar_4                         | .760              | 10.062  |                     |               |          |               |            |               |                         |
| InfShar_5                         | .780              | 8.982   |                     |               |          |               |            |               |                         |
| Lean manufacturing               |                   |         | 1.130              | 5.945         |          |               |            |               |                         |
| LeaMan_2                          | .886              | 11.970  |                     |               |          |               |            |               |                         |
| LeaMan_3                          | .910              | 13.139  |                     |               |          |               |            |               |                         |
| LeaMan_4                          | .536              | 8.452   |                     |               |          |               |            |               |                         |
| LeaMan_5                          | .495              | 6.812   |                     |               |          |               |            |               |                         |
| Postponement strategy             |                   |         | .891               | 4.691         |          |               |            |               |                         |
| PosStr_1                          | .764              | 8.454   |                     |               |          |               |            |               |                         |
| PosStr_2                          | .992              | 10.251  |                     |               |          |               |            |               |                         |

aAll loadings are significant at p < .001 (**).  
Source: author

Table 5. Measurement items (with factor loadings) for first-order constructs of organizational performance.

| Organizational performance        | Factor Loadings a | t-value | Approx. χ² df Sig. | Bartlett test | KMO test | Bartlett test | Eigenvalue | % of variance | Cumulative % of variance |
|-----------------------------------|-------------------|---------|--------------------|---------------|----------|---------------|------------|---------------|-------------------------|
| Operational performance           |                   |         | 0.852 1080.784 .000|               | >0.80    | <0.05         | 1.482      | 13.473        | 58.750                  |
| OpePer_1                          | .684              | 9.820   |                     |               |          |               |            |               |                         |
| OpePer_2                          | .743              | 11.321  |                     |               |          |               |            |               |                         |
| OpePer_4                          | .870              | 12.665  |                     |               |          |               |            |               |                         |
| OpePer_5                          | .995              | 14.231  |                     |               |          |               |            |               |                         |
| Financial performance             |                   |         | 4.980              | 45.277        |          |               |            |               |                         |
| FinPer_1                          | .689              | 8.765   |                     |               |          |               |            |               |                         |
| FinPer_2                          | .837              | 9.186   |                     |               |          |               |            |               |                         |
| FinPer_3                          | .658              | 12.695  |                     |               |          |               |            |               |                         |
| FinPer_4                          | .701              | 7.877   |                     |               |          |               |            |               |                         |
| FinPer_5                          | .680              | 6.391   |                     |               |          |               |            |               |                         |
| FinPer_6                          | .607              | 11.261  |                     |               |          |               |            |               |                         |
| FinPer_7                          | .722              | 8.542   |                     |               |          |               |            |               |                         |

aAll loadings are significant at p < .001 (**).  
Source: author
For HRM practices a factor analysis was initially conducted using the 25 items that measure the five factors (first-order constructs). An initial factor analysis indicated that items: RecSel_5, TraDev_1, TeaPar_4, and TeaPar_5 had a low-loading on their respective factors, whereas item ComInc_1 had a cross-loading of .69 with PerApp factor. After removing these five items, the twenty remaining items were factor analyzed and the results indicated that all items loaded on their respective factors with loadings above the recommended cut-off value of .45, all of the t-values were greater than 2.0 (Huo et al., 2015), and none of the items cross-loaded on other factors, as shown in Table 3. Where, the cumulative variance explained by the five factors is 64.72%.

The SCM practices construct was also initially represented by five dimensions and 25 items. An initial factor analysis indicated that six items: SupPar_1, CusRel_1, LeaMan_1, PosStr_3, PosStr_4, and PosStr_5 had a low-loading on their respective factors. After removing these six items, the nineteen remaining items were factor analyzed and the results indicated that all items loaded on their respective factors with loadings above the recommended cut-off value of .45, all of the t-values were greater than 2.0, and none of the items cross-loaded on other factors. The KMO and the Bartlett test results indicated that the data acceptable, such as KMO is .867 and Bartlett test is 1898.882. Also, eigenvalue, percentage of variance, and cumulative percentage of variance of each construct is displayed in Table 4, showing that the cumulative variance explained by the five factors is 65.04%.

When organizational performance was factor analyzed, two factors emerged with one over-loading item (OpePer_3 overloaded its factor). OpePer_3 was removed and factor analysis was performed on the remaining items, and the results are shown in Table 5. It can be seen that all items loaded on their respective factors, with most loadings above .60 and all of the t-values were greater than 2.0. Additionally, eigenvalue, percentage of variance, and cumulative percentage of variance of each construct are displayed in Table 5.

Then, the reliability test for each construct was calculated. To discuss assessing the reliabilities of HRM practices, SCM practices and organizational performance were assessed with Cronbach’s alpha. Table 6 report the number of items and reliability values

| Table 6. Means, standard deviations and reliability of the first-order constructs of (a) HRM practices, (b) SCM practices and (c) organizational performance. |
|---------------------------------------------------------------|
| Construct                                      | # Items | Cronbach’s alpha (reliability) | Mean   | St. Dev. |
| (a) HRM practices                                   |         |                                |        |          |
| (1) Recruitment and selection (RS)                  | 4       | .784                           | 5.076  | .932     |
| (1) Training and development (TD)                   | 4       | .873                           | 3.938  | .974     |
| (1) Teamwork and participation (TP)                 | 3       | .870                           | 4.325  | .961     |
| (1) Performance appraisal (PA)                      | 5       | .897                           | 5.387  | .961     |
| (1) Compensation/incentives (CI)                    | 4       | .855                           | 5.771  | .971     |
| (b) SCM practices                                   |         |                                |        |          |
| (1) Strategic supplier partnership (SSP)            | 4       | .820                           | 4.678  | 1.012    |
| (1) Customer relationship (CR)                      | 4       | .905                           | 5.069  | .596     |
| (1) Information sharing (IS)                        | 5       | .892                           | 4.552  | .632     |
| (1) Lean manufacturing (LM)                         | 4       | .804                           | 5.240  | .794     |
| (1) Postponement strategy (PS)                      | 2       | .865                           | 5.120  | 1.575    |
| (c) Organizational performance                      |         |                                |        |          |
| (1) Operational performance (OP)                    | 4       | .878                           | 5.943  | .653     |
| (1) Financial performance (FP)                      | 7       | .878                           | 5.130  | .736     |

Source: author
for each of the constructs, means and standard deviations. The reliability values for all constructs were higher than the suggested threshold of 0.7 (>0.70), which are considered acceptable (Hair et al., 2019) and further confirms the reliability of the measurement items.

Then, the confirmatory factor analysis (CFA) measurement models (Gölgeci & Kuivalainen, 2020) were run to estimate first-order construct validity. The results indicated that for all constructs, the composite reliability and average variance extracted estimates were above the recommended thresholds of 0.7 and 0.5, respectively, which indicates convergent validity (Bagozzi & Yi, 2012). Then, discriminant validity was evaluated and showed that the square roots of AVE on diagonal were greater than correlations in all cases Table 7, as a result discriminant validity was confirmed.

### 4.2. Validation of second-order constructs

To analyze the validity and reliability of the second-order construct this study has followed Peng et al. (2007) and Huo et al. (2015). The CFA results presented in Tables 8–Tables 10 show that the second-order factor loadings were greater than .45 (most of loadings were greater than .70), and all of the t-values were greater than 2.0, demonstrating convergent validity. The reliability values for all constructs were higher than the suggested threshold of .70, which confirms the reliability of the measurement items. Additionally, it is measured the credibility for each second-order construct, using target coefficient index that compares first-order and second-order models (Li et al., 2006).

**HRM practices** – the fit statistics for the second-order construct are shown in Table 8, where ($X^2$/df, IFI, NNFI, CFI and SRMR) represent a reasonable (moderate) model-data fit (Hair et al., 2019; Hu & Bentler, 1999). The coefficients were all significant at p < .001.
Also, the target coefficient is calculated, which indicates that the chi-square of the first model was 359.816 and for the second model was 362.128. The target coefficient index is 99.3%, which is strong evidence of the existence of a higher-order HRM practices construct. Ninety-nine percent of the variation in the five first-order factors (Table 8) is explained by the HRM practices construct.

For SCM practices (Table 9), the fit indexes for the second-order model were $x^2/df = 1.545$; IFI = .958; NNFI = .949; CFI = .957; SRMR = .0586, indicating a good model-data fit. The coefficients were all significant at $p < .001$. Chi-square of the first model was 208.637 and of the second model was 220.994. The target coefficient index is 94.4% indicating the existence of a second-order SCM practices construct.

Finally, organizational performance (Table 10), the fit indexes for the second-order model were $x^2/df = 1.921$; IFI = .966; NNFI = .952; CFI = .965; SRMR = .0541, indicating a good model-data fit. The coefficients were all significant at $p < .001$. The target coefficient index is 100%, indicating the existence of a second-order competitive advantage construct.

### Table 8. CFA results of second-order constructs of HRM practices.

| Second-order construct | First-order constructs | Loading | $t$-value<sup>a</sup> | Reliability |
|------------------------|-----------------------|---------|-----------------------|-------------|
| HRM practices          |                       |         |                       | .893        |
|                        | Recruitment and selection | .719    | 5.389                 |             |
|                        | Training and development | .615    | 7.196                 |             |
|                        | Teamwork and participation | .779    | 9.084                 |             |
|                        | Performance appraisal   | .886    | 10.529                |             |
|                        | Compensation/incentives  | .814    | 9.649                 |             |
| **Chi-square ($x^2$)** | **362.128.**          |         |                       |             |

The model fit indexes for second-order constructs are: $x^2/df = 2.249$; IFI = .903; NNFI = .884; CFI = .902; SRMR = .0652.

### Table 9. CFA results of second-order constructs of SCM practices.

| Second-order construct | First-order constructs | Loading | $t$-value<sup>a</sup> | Reliability |
|------------------------|-----------------------|---------|-----------------------|-------------|
| SCM practices          |                       |         |                       | .748        |
|                        | Strategic supplier partnership | .613    | 5.558                 |             |
|                        | Customer relationship  | .913    | 10.834                |             |
|                        | Information sharing    | .811    | 7.548                 |             |
|                        | Lean manufacturing     | .711    | 5.653                 |             |
|                        | Postponement strategy  | .360    | 4.182                 |             |
| **Chi-square ($x^2$)** | **220.994.**          |         |                       |             |

The model fit indexes for second-order constructs are: $x^2/df = 1.545$; IFI = .958; NNFI = .949; CFI = .957; SRMR = .0586.

### Table 10. CFA results of second-order constructs of organizational performance.

| Second-order constructs | First-order constructs | Loading<sup>a</sup> | Reliability |
|-------------------------|-----------------------|---------------------|-------------|
| Organizational performance |                       | .821                |             |
| Operational performance   |                       | .856                |             |
| Financial performance     |                       | .749                |             |
| **Chi-square ($x^2$)**    | **76.842.**           |                     |             |

The model fit indexes for second-order constructs are: $x^2/df = 1.921$; IFI = .966; NNFI = .952; CFI = .965; SRMR = .0541.

<sup>a</sup> All of the $t$-values are significant at the 0.001 level (***)

*Source: author*
5. Results for the structural model

The theoretical framework and statistical diagram illustrated in Figure 1 have four hypothesized relationships among the variables HRM practices, SCM practices and organizational performance. Figure 2(a) displays the path diagram resulting from the structural modeling analysis using AMOS. The results exhibit that all the measurements have significant loadings to their corresponding second-order construct. Overall, the model has a satisfactory fit with \((x^2/df) = 2.70\); \(IFI = .93\); \(NNFI = .90\); \(CFI = .92\); and \(SRMR = .055\), which is very good. It is worth mentioning that even though all the \(t\)-values of the measurements are significant at .001 level (except the indirect relationship between HRM practices and organizational performance which is not significant), their loadings \((y\text{-value})\) to the corresponding second-order construct are different. For example, postponement strategy has a low \(y\) of .37, showing that postponement strategy may not be a strong indicator of SCM practices compared to the other four dimensions. According to Li et al. (2006) this can be true since ‘[…] the implementation of postponement is dependent on a firm’s market characteristics and the type of the products and therefore may not be applicable in all the situations’ (p. 115).

To determine whether the model in Figure 2(a) has the best fit, alternate models were evaluated by dropping one of the links between the constructs at one time (see Figure 2(b–d)). In Figure 2(b), HRM practices and SCM practices were treated as independent constructs. The AMOS path coefficients for HRM practice on organizational performance is no significant indicating that on this mixture HRM practices have no independent effect on organizational performance, while SCM on organizational performance is significant, which has independent affects on organizational performance. In Figure 2(c), the direct link between HRM practice and organizational performance was dropped. The AMOS path coefficient between SCM practices and organizational performance became much stronger. In Figure 2(d), the link between SCM practices and organizational performance was removed, the AMOS path coefficient for HRM practices on SCM practices and HRM practices on organizational performance are both significant, indicating that HRM practices have a direct impact on both SCM practices and organizational performance. The fit statistics for the model in Figure 2(b) was not as good fit as the fit statistics for the model 2d, whereas the fit statistics for the model in Figure 2(d) was not as good as the fit statistics for the model in Figure 2(a,c), which had almost the same fit indices.

To further test whether the proposed model in Figure 2(a) should be accepted compared to the three alternative models, sequential Chi-square difference tests (SCDTs) were conducted by calculating the difference between Chi-square statistic values

| Model                        | Chi-square | DF | Chi-square difference | DF Difference | SCDTs \((a = .05)\) |
|------------------------------|------------|----|-----------------------|---------------|---------------------|
| Figure 2(a): Proposed model  | 137.888    | 51 |                       |               |                     |
| Figure 2(b): Remove the link HRMp → SCMp | 238.044 | 52 | 100.156               | 1             | Non-Significant     |
| Figure 2(c): Remove the link HRMp → OP | 138.100 | 52 | .212                  | 1             | Significant         |
| Figure 2(d): Remove the link SCMp → OP | 149.743 | 52 | 11.855                | 1             | Significant         |

Source: author
for the proposed model (Figure 2(a)) and each of the alternate models (Figure 2(b–d)), with degrees of freedom equal to the difference in degrees of freedom for the two selected models (Li et al., 2006). The outcomes are presented in Table 11. A significant result would indicate that the additional estimated link in the proposed model incrementally contributes to the explanation given by the alternative model, the proposed model will be accepted. Otherwise, the alternative model will be accepted with parsimony preferred.
when given no difference in explanation of the construct covariances. Table 11 shows that the proposed model in Figure 2(a) is accepted compared to the alternative model in Figure 2(b–d) at a significant level of .001.

5.1. Hypotheses testing

Making the interactions of testing hypotheses less complicated, the first- and second-order factors were reduced to factor scores. Table 12 provides the means, standard deviations, and correlations among the main variables.
Table 12. Descriptive statistics and correlation matrix of the main variables (N = 157).

| Variables          | Mean | St. Dev. | HRMp | SCMp | OrgPer |
|--------------------|------|----------|------|------|--------|
| HRM practice (HRMp) | 5.786 | .941     | 1    |      |        |
| SCM practice (SCMp) | 8.275 | .974     | .678** | 1    |        |
| Organizational performance | 4.555 | .506     | .346** | .440** | 1      |

*p < 0.05; *p < 0.01.

Source: author

Table 13. Results for proposed structural equation model

| Hypothesis | Relationship | Total Effects | Direct Effects | Indirect Effects | Hypothesis |
|------------|--------------|---------------|----------------|------------------|------------|
| H1         | HRMp → SCMp  | .68*** (11.48)| .68*** (11.48) |                  | Supported  |
| H2         | HRMp → OP    | .35*** (4.59) | .35*** (4.59)  |                  | Supported  |
| H3         | SCMp → OP    | .44*** (6.10) | .44*** (6.10)  |                  | Supported  |
| H4         | HRMp x SCMp → OP | .35** (>2.58) | .09 (<1.65)   | .26** (>2.58)   | Supported  |

*aSignificant at <.05,** significant at <.01,*** significant at <.001(two-tailed test). t-values are in parentheses.

The results of the proposed structural equation model analysis are also presented in Table 13 indicating support for all the hypotheses. Indeed, the variance inflation factors (VIFs) of the HRM practices and SCM practices variables were all less than 10 (ranging between 1.0 and 3.6), indicating that there is no cause for concern regarding multicollinearity (Acquaah, 2007; Kutner et al., 2005). Firstly, was measured the direct effects of: HRM practices on SCM practices, HRM practices on organizational performance and SCM practices on organizational performance.

The results support Hypothesis 1 (H1↑), which states an organization’s HRM practices have a positive influence on its SCM practices. The standardized coefficient is .678 which is statistically significant at p < .001 (t = 11.485). The statistical significance of Hypothesis 1 confirms that HRM practices can have a bottom-line effect on the SCM practices. A proper implementation of HRM practices may directly improve an organization’s SCM practices in the long run. The results indicated that employing various HRM practices, such as recruitment and selection, training and development, teamwork and participation, performance appraisal, and compensation/incentives, may provide the organization with a good implementation of SCM practices on strategic supplier partnership, customer relationship, information sharing, lean manufacturing and postponement strategy.

Hypothesis 2 is also supported (H2↑) which indicates that an organization’s HRM practices have a positive influence on its organizational performance. The standardized coefficient is .346 which is statistically significant at p < .001 (t = 4.594). The implementation of various HRM practices, such as recruitment and selection, training and development, teamwork and participation, performance appraisal and compensation/incentives, may improve the organization’s marketing and financial performance in the long run.

The results also indicate that higher levels of SCM practices may lead to enhanced organizational performance, thus confirming Hypothesis 3 (H3↑). The standardized coefficient is .440 which is statistically significant at p < .001 (t = 6.101). By a fine-grained analysis of the results, it may be indicated that an adequate application of various
SCM practices, such as creating a strategic supplier partnership, building a credible customer relationship, using appropriate information sharing system, trying to realize lean manufacturing and involving postponement strategy on the production process, may provide an improvement for the organization on operational performance indicators, such as on product quality, responsiveness to customers, delivery speed, delivery dependability, and on financial performance indicators, growth in return on investment, growth in sales, growth in return on sales, growth in market share, and growth in profit.

To further analyze the mediating effect, the IBM SPSS AMOS 26 and PROCESS v3.4 (Andrew F. Hayes, 2018) tests were conducted in order to examine the indirect effect of the HRM practices on organizational performance. Where, the bootstrapping method was used. The indirect effect was analyzed by setting the number of sampling iterations (N) to 5000 (Hayes, 2018). When testing the mediating effect of SCM practices, the direct effect of HRM practices on organizational performance was found to be non-significant. Additionally, the bootstrapping method showed that the indirect effect of HRM practices on organizational performance through SCM practices was significant at (p < .01). The standardized coefficient of the indirect effect of HRM practices on organizational performance is .258 (p = .002), which is significant at .01 level. Our analysis from Table 13 thus shows that HRM practices can have a direct, positive influence on organizational performance as well as an indirect one through SCM practices. Accordingly, the standardized indirect effect of HRM practices on organizational performance is significantly different from zero at the .01 level (p = .002 two-tailed). This result points to a full mediation and provides compelling support for H₄, (H₄↑), as shown in Table 13. Thus, based on the standardized coefficients organizational performance is more influenced by SCM practices (β = .440) than by HRM practices (β = .346). This indicates that HRM practices a better implementation of SCM practices in the first place, and SCM practices will, in turn, lead to enhanced organizational performance. In literature, HRM practices, mostly, have been linked directly to organizational performance. The findings of this study indicate the presence of an intermediate measure of SCM practices between HRM practice and organizational performance. Thus, HRM practices require the mediating means of SCM practices to channel their potential impact on organizational performance. Since HR interactions are involved in the SC, their interaction may advance operational and financial performance. A possible explanation for this relationship may be that, if the organization does not possess adequate SCM practices, it may not reap the benefits of HRM practices to a fuller extent. Thus, an appropriate implement of HRM practices may provide adequate employees with appropriate knowledge which implements properly SCM practices, supporting the organization to achieve a competitive advantage in the market and providing a better organizational performance.

6. Research implications

By inspecting the influence of HRM practices on organizational performance, which relationship is mediated by SCM practices, this study replicates and broadens the previous research in different areas, such as: HRM, SCM, and organizational performance. Thus, the results of this study lead organizations to succeed and enrich the management literature with useful results obtained from aspects of HRM and SCM which will be used by academics and practitioners for further examination. Improving
the opinion on organizational management by integrating the role of strategic instruments on organizational success, points out the theoretical significance of the research. The managerial implications lay the groundwork for creating an integrative model based on the process of integrating strategic instruments with the aim of developing the organization through the appropriate use of HRM practices and SCM practices, which may provide a synergistic effect.

Theoretical implications – in response to calls for further study into the HRM/SCM interface by Hohenstein et al. (2014) and Huo et al. (2015), and the relationship between HRM practices and organizational performance mediated by SCM practices, the current study advances the field in three ways.

First, it validates the strategic integration between second-order constructs of HRM practices, SCM practices and organizational performance, which have generally been poorly defined and there has been a high degree of variability in people’s understanding of them. It has been shown that HRM practices form a second-order construct composed of the five first-order constructs, such as recruitment and selection, training and development, teamwork and participation, performance appraisal and compensation/incentives. Similarly, SCM practices form a second-order construct composed also of five first-order constructs, such as strategic supplier partnership, customer relationship, information sharing, lean manufacturing and postponement strategy – the five major components.

Second, Hohenstein et al. (2014) claimed that the best practices of HRM and SCM need yet to be developed, where a few studies have investigated the effect of a bundle of HRM practices on another bundle of SCM practices. This study fills this gap by providing empirical evidence of the link between a set of HRM practices that aim to improve the performance of SCM practices. The strategic fit between HRM practices and SCM practices is explored, expanding knowledge about the HRM, SCM boundary.

Third, in response to the call made by Tan et al. (2002) and Hohenstein et al. (2014) for further research to explore the impact of SCM practices on organizational performance by including other areas of the organization and their perspective, this study investigates the antecedents of HRM practices from the perspective of SCM practices. It found that an improvement on the different dimensions of SCM practices requires an early development of HRM practices in order to provide employees who support realizing SCM practices. In this way, the results open the ‘black box’ of the link between HRM practices – SCM practices – organizational performance.

Managerial implications – while some organizations have understood the value of implementing HRM and SCM practices, they are often unsure of exactly what to implement, due to a lack of understanding of what constitutes a comprehensive set of HRM and SCM practices. By proposing, developing and validating a multi-dimensional operational measure of the construct of HRM and SCM practices, and by demonstrating their efficacy in improving organizational performance, this study provides HR managers and SC managers with a useful tool for evaluating the comprehensiveness of their current HRM and SCM practices. The study’s findings also have significant managerial implications providing recommendations for managers in adopting HRM and SCM practices. Therefore, it helps practitioners in two ways.
First, HRM practices and SCM practices can directly enhance organizational performance. Thus, a proper implementation of both HRM and SCM practices are helpful to organizational performance. Although the positive effects of HRM practices on organizational performance became insignificant when SCM practices were added in the measurement model, it does not mean that HRM practices should be discarded. SCM practices can significantly enhance organizational performance, suggesting that when designing and implementing SCM practices, manufacturers should have a strategic plan beforehand for increasing the quality and knowledge of employees through HRM practices. Findings contribute to the knowledge of both HR and SC managers by showing that SCM can be enhanced by leveraging HRM that is designed for the entire organization. This means that SCM issues can be approached from an HRM perspective and that HR managers should accept more responsibilities for the success of operational practices such as SCM (Huo et al., 2015). Hence, this study claim for a close coordination between managers of HRM and SCM departments in order to understand and develop the main skills and training necessities of their employees to keep the organization competitive.

Second, the emergence of a global marketplace has presented great challenges for organizations to successfully manage globe-spanning supply chains. The results of this study shed light on the organizations that operate in Kosovo and beyond, and help managers to identify more effective HRM practices on promoting SCM practices in their organizations. These findings indicate that the manufacturers’ operational routines are internally and externally oriented. Therefore, two things are important to increase the SCM practices efficiency of manufacturers: internal environment of the organization must be improved, in terms of HRM practices (employing right employees – following appropriate criteria to hire and develop employees), and they need to change their internally oriented view to an externally oriented view, especially for the supplier and customer relationship.

7. Conclusion

This study takes a much-needed interdisciplinary approach that systematically examines the effect of HRM practices on SCM practices, the direct effect of HRM and SCM practices on organizational performance, and the mediated effect of SCM practices on the relationship between HRM practices and organizational performance. It answers in three research questions: (1) do organizations with high levels of HRM practices have high levels of SCM practices; (2) do organizations with high levels of HRM and SCM practices have high levels of organizational performance; (3) do organizations with high level of HRM practices mediated by SCM practices have high levels of organizational performance? For the purpose of examining these issues, a comprehensive, valid and reliable instrument for assessing HRM and SCM practices was developed. The instrument was tested using rigorous statistical tests including convergent validity, discriminant validity, reliability and the validation of first- and second-order constructs.

This study also provides empirical evidence that HRM practices have positive and direct effects on SCM practices, that HRM practices and SCM practices have positive and direct effects on organizational performance, that HRM practices mediated by SCM practices have positive effects on organizational performance. These results advance
the existing knowledge about the HRM practices and SCM practices interface and provide significant managerial guidelines for organizational managers and specifically for HR and SC managers. Additionally, it represents a significant contribution to the scientific and academic value, to the relationship between HRM practices and SCM practices as strategic indicators and their impact on organizational performance in the manufacturing industry in Kosovo, in the region and beyond.

8. Limitation and future research

Although this research study contributes to both academic and practice circles, it has several limitations. The limitations have opened up avenues for future research studies.

First, subjective measures of HRM practices, SCM practices and organizational performance were used. In terms of measuring HRM and SCM practices, the perceptual measures prohibited the use of sophisticated quantitative methods of determining network formation. Instead of choosing perceptual measures of organizational performance and other variables, future studies can examine this relationship using objective measures at least for organizational performance. An objective assessment of organizational performance can be achieved by using secondary data, such as organization records or financial statements.

Second, information on HRM practices and SCM practices was solicited from March 2017 to March 2020, and organizational performance from March 2019 to March 2020 to establish causality. Since, this study used a cross-sectional design to measure organizational performance, it cannot reflect the lag time or long-term effects of HRM and SCM practices on organizational performance. However, it is possible that the organizations experiencing better performance may be attracted by the relationship formations from many internal factors e.g. innovations, quality, organization ownership and organization governance (Yunis et al., 2017) and external factors e.g. environment uncertainty (Bastian & Muchlish, 2012). Thus, organizational performance is a global concept that incorporates numerous internal and external factors, so not only HRM practices and SCM practices have an impact on it. Therefore, future studies could include any reasonable additional internal or external factor in the model and could carry out longitudinal studies to examine the relationship between variables.

Third, this study is conducted using Kosovan samples and thus the findings are more meaningful in the Kosovan context. Whereas, leveraging of organizational practices may vary across countries. Thus, by focusing on one industry, different organization sizes and ages, this study has developed a broad picture of the relationship among HRM practices, SCM practices and organizational performance. Hence, this study does not clarify how HRM practices and SCM practices are used to improve organizational performance in different contexts and countries, as this instruments integration may not be the same for all industries, organization sizes and ages. Future studies can examine this integration by conducting it using different contextual factors (e.g. different industries), in different contexts, and conducting cross-cultural studies. Especially, the difference between different countries and the reasons for these differences may be investigated. A good point of comparing might be Western cultures and those of emerging and transitional economies.
Fourth, although this study uses five constructs to represent HRM practices, they do not cover all of the aspects of HRM, which is a mature discipline with many concepts. Similarly, with SCM practices where it is presented by five constructs, as the concept of SCM practices is complex and involves a network of organizations in the effort of producing and delivering a final product, its entire domain cannot be covered in a single study. Future research can expand the domain of HRM practices by exploring additional dimensions, such as: health and safety, human resource planning, employment security, clear job description, results-oriented appraisal and career planning, which have been overlooked in this study. Moreover, additional constructs related to SCM practices that may be considered are: JIT/lean capability, geographical proximity, logistics integration, cross-functional coordination, which have been overlooked in this study.

Fifth, this study uses a sample containing organizations with at least 10 employees, whereas on measuring SCM practices Li et al. (2005) and Huo et al. (2014) highlighted that organizations with less than 100 employees are seldom involved in sophisticated SCM activities. Nevertheless, this research study has found that organizations that have more than 10 employees implement SCM practices as an alternative and flexible decision to cope with global competition. Future studies can investigate this integration by considering only organizations with more than 100 employees, and contend with the results of this study in order to demonstrate the existence of any possible inconsistencies.

Sixth, this study has only measured the upright relationship between HRM practices, SCM practices and organizational performance. Future studies using an integrative holistic approach can examine the reverse causality to identify if organizational performance has an impact on implementing HRM or SCM practices since organizational performance may influence the way of obtaining HRM or SCM practices and blurry the cause-effect link revealed in this study.

Notes

1. Teamwork refers.
2. Participation is
3. Creating
4. The frequency analysis of the data is available from the author upon request.

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Statement
I confirm that this work is original and has not been published elsewhere nor it is currently under consideration for publication elsewhere. I wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

I confirm that I have given due consideration to the protection of intellectual property associated with this work and that there are no impediments to publication, including the timing of publication, with respect to intellectual property. In so doing I confirm that I have followed the regulations of our institutions concerning intellectual property.

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Appendix A

1) Examining the prior literature regarding HRM practices, SCM practices and organizational performance.

2) Discovering and analyzing existing literature for constructing an integrative conceptual model that fits with the research typology used in this study.

3) Searching for elements that each testable variable should contain.

4) Preparing questionnaires finding practices that each instrument and items that each practice should contain.

5) Pre-pilot study

6) Pilot study

7) Large-scale data analysis

Non-response bias and common-method bias

Data screening

Convergent and discriminant validity of the first-order constructs

Validation of second-order constructs

Proposed alternative models (using SEM)

Comparison of alternative models

Results for proposed structural equation model

8) Research implications and conclusions

Figure A1. The process of conducting the proposed study (graphical presentation).
Source: author
Appendix B

Instruments for HRM practices, SCM practices and organizational performance. Note: Items marked by an asterisk (*) were removed in the final instruments.

| Instrument                                      | Description                                                                 |
|-------------------------------------------------|-----------------------------------------------------------------------------|
| **Recruitment and selection (RecSel)**          |                                                                             |
| (RecSel_1)                                      | Attitude/desire to work in a team as a criterion in employee selection.     |
| (RecSel_2)                                      | Problem-solving aptitude as a criterion in employee selection.               |
| (RecSel_3)                                      | Work values and behavioral attitudes as a criterion in employee selection.   |
| (RecSel_4)                                      | Selecting employees who can provide ideas to improve the manufacturing process.|
| (RecSel_5)*                                     | Selecting employees who are able to work well in small groups.              |
| **Training and development (TraDev)**           |                                                                             |
| (TraDev_1)*                                     | Providing extensive training programs for individuals in their jobs.        |
| (TraDev_2)                                      | Activities of the training program provided meet the needs of the employees.|
| (TraDev_3)                                      | Formal training programs are offered to employees in order to increase their promotability. |
| (TraDev_4)                                      | Identifying realistic and useful training needs based on the competitive strategy of the organization. |
| (TraDev_5)                                      | Providing formal training programs to teach new hires the skills they need to perform their jobs. |
| **Teamwork and participation (TeaPar)**         |                                                                             |
| (TeaPar_1)                                      | During problem solving sessions, an effort to get all team members’ opinions and ideas is given before making a decision. |
| (TeaPar_2)                                      | Forming teams to solve problems and in the past 3 years many problems have been solved through small group sessions. |
| (TeaPar_3)                                      | Problem solving teams have helped improve manufacturing processes.           |
| (TeaPar_4)*                                     | Employee teams are encouraged to try to solve their problems as much as possible |
| (TeaPar_5)*                                     | Allowing employees to make decisions related to cost and quality matters.    |
| **Performance appraisal (PerApp)**              |                                                                             |
| (PerApp_1)                                      | Appraisal system is growth and development oriented.                        |
| (PerApp_2)                                      | Employees have faith in the performance appraisal system.                   |
| (PerApp_3)                                      | Appraisal system has influence on individual and team behavior.             |
| (PerApp_4)                                      | The appraisal data is used for making decisions like job rotation, training, and compensation. |
| (PerApp_5)                                      | The objectives of the appraisal system are clear to all employees.          |
| **Compensation/incentives (ComInc)**            |                                                                             |
| (ComInc_1)*                                     | Compensation is decided on the basis of competence or ability of the employee. |
| (ComInc_2)                                      | Job performance is an important factor in determining the incentive compensation of employees. |
| (ComInc_3)                                      | The compensation for all employees is directly linked to his/her performance.|
| (ComInc_4)                                      | Incentive system is fair at rewarding people who accomplish an organization objective. |
| (ComInc_5)                                      | Incentive system encourages people to reach organization goals.             |

To what extent did your organization use the following practices in last three years 2017 March – 2020 March, (evaluate from 1 – “not at all” to 7 – “to an extreme extent”).
To what extent did your company use the following practices in last three years 2017 March – 2020 March, (evaluate from 1 – “not at all” to 7 – “to an extreme extent”).

**Strategic supplier partnership (SupPar)**
1. (SupPar_1)* Considering quality as a criterion in selecting our suppliers.
2. (SupPar_2) Involving suppliers in the design of new products.
3. (SupPar_3) Solving problems jointly with our suppliers.
4. (SupPar_4) Using continuous improvement programs that include our key suppliers.
5. (SupPar_5) Involving our key suppliers in business and strategy planning.

**Customer relationship (CusRel)**
1. (CusRel_1)* Interacting with customers to set reliability, responsiveness, and other standards for us.
2. (CusRel_2) Measuring and evaluating customer satisfaction.
3. (CusRel_3) Determining future customer expectations.
4. (CusRel_4) Facilitating customers’ ability to seek assistance from us.
5. (CusRel_5) Evaluating the importance of our relationship with our customers.

**Information sharing (InfShar)**
1. (InfShar_1) Informing trading partners in advance of changing needs.
2. (InfShar_2) We and our trading partners keep each other informed about events or changes that may affect the other partners.
3. (InfShar_3) Our trading partners share proprietary information with us.
4. (InfShar_4) Our trading partners keep us fully informed about issues that affect our business.
5. (InfShar_5) Information exchange between our trading partners and us is timely, accurate, complete, adequate, and reliable.

**Lean manufacturing (LeaMan)**
1. (LeaMan_1)* Reducing inventory to expose manufacturing/ scheduling problems.
2. (LeaMan_2) Using new process equipment or technologies.
3. (LeaMan_3) Pursuing a continuous quality improvement program.
4. (LeaMan_4) Reducing set-up time.
5. (LeaMan_5) Re-engineering the production processes.

**Postponement strategy (PosStr)**
1. (PosStr_1) Delaying final product assembly activities until customer orders have actually been received.
2. (PosStr_2) Delaying final product assembly activities until the last possible position (or nearest to customers) in the supply chain.
3. (PosStr_3)* Designing our products for modular assembly.
4. (PosStr_4)* Storing our products at appropriate distribution points close to the customers in the supply chain.
5. (PosStr_5)* Re-arranging our production process modules in order that customization can be carried out later at distribution centers.

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Please evaluate your organization’s performance for the last year (2019 March – 2020 March) in the following areas relative to your primary/major industrial competitors, (evaluate from 1 – “much worse” to 7 – “much better”).

**Market/operational performance (OpePer)**
1. (OpePer_1) Overall product quality.
2. (OpePer_2) Responsiveness to customers.
3. (OpePer_3)* Customer service level.
4. (OpePer_4) Delivery speed.
5. (OpePer_5) Delivery dependability.

**Financial performance (FinPer)**
1. (FinPer_1) Return on investment (ROI).
2. (FinPer_2) Growth in return on investment.
3. (FinPer_3) Growth in sales.
4. (FinPer_4) Return on sales (ROS).
5. (FinPer_5) Growth in return on sales.
6. (FinPer_6) Growth in market share.
7. (FinPer_7) Growth in profit.