The action research cycle reloaded: Conducting action research across buyer-supplier relationships

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Buyer-supplier relationships in purchasing and supply chain management practice are instrumental and often "messy". Indeed, the buyer and the supplier generally interact while pursuing their own interest, which are often subject to change over time. The action research method can help address the com-plexity of buyer-supplier relationships, generating important theoretical insights and relevant manage-rial implications. First, action research helps the researcher to better understand the problem by in-tegrating diverse perspectives. Second, it allows the researcher to influence the buyer-supplier re-lationship directly, providing mutually beneficial solutions. This study proposes action research as a suitable interactive method that could complement other methodologies in the field of purchasing and supply chain management, as well as in other fields. An expanded action research framework – the "action research cycle reloaded" – is proposed and the role of the action researcher in the buyer-supplier context is discussed. The framework is applied to study the design and implementation of a supplier performance measurement system in the banking industry.

1. Introduction

Action research can be defined as an emergent inquiry process that integrates theory and action to couple scientific knowledge with existing organisational knowledge and to address real organisational problems together with the people of the system under inquiry (Coghlan, 2011; Shani and Pasmore, 1985; Rapaport, 1970; Lewin, 1947). It is a participatory and collaborative approach and is aimed at bringing change to organisations, developing competences, and contributing to scientific knowledge through a co-inquiry cyclical process (Coghlan and Shani, 2014; Reason and Bradbury, 2008; Shani and Pasmore, 1985).

The epistemological underpinnings of action research are grounded in so-called Mode 2 knowledge production, defined and discussed as being antithetic to the traditional Mode 1 approach (Bartunek, 2011; Hodgkinson, 2001; MacLean et al., 2002; Tran-field and Starkey, 1998; Gibbons et al., 1994). In the Mode 1 approach, knowledge production occurs mainly as a result of an academic agenda. In the Mode 2 approach, knowledge production requires collaboration among academics and practitioners across different academic disciplines; it is developed through a knowledge-in-action process aimed at solving real and context-embedded issues and entails different methodologies (e.g., intervention research, clinical inquiry, appreciative inquiry, collaborative management research, action science, action learning).

The two contrasting modes still animate a vibrant debate within the management research community that is centred on the rigour-relevance gap in managerial research (e.g., Kieser et al., 2015; Bartunek and Rynes, 2014; Hodgkinson and Rousseau, 2009; Shani et al., 2012; Kieser and Leiner, 2009; Bartunek and Rynes, 2006). On the one hand, some Mode 1 scholars claim that colla-borating with practitioners may bring a lack of rigour to the re-search process (e.g., Kieser and Leiner, 2009). On the other hand, Mode 2 scholars show how, in the last decade, much of the management research appearing in top-rated journals has been of little relevance for most practitioners (e.g., MacLean et al., 2002; Bartunek, 2011; Zhang et al., 2015).

In the last decade, authors within the Mode 2 research com-munity have supported the adoption of Mode 2 research meth-odologies and, more specifically, action research within disciplines such as operations management (e.g., Coughlan and Coghlan, 2002; Waring and Alexander, 2015; Avella and Alfaro, 2014; Hoss and Ten Caten, 2013; LaGanga, 2011) and supply chain manage-ment (e.g., Braz et al., 2011; Seuring, 2011; Ottmann et al., 2011; Näslund et al., 2010; Koplin et al., 2007; Schoenherr et al., 2008). These disciplines have historically been dominated by Mode

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1 empirical research.

The present study aims at investigating the potentialities of action research within purchasing and supply management (PSM) research, focusing in particular on buyer-supplier relationship issues, such as: mutual capability development (e.g., integration, collaboration, trust, visibility), supply chain (SC) process co-ordination (e.g., order cycle management, a supplier development program, transportation optimisation), strategic supply chain management (SCM), and purchasing practice implementation (e.g., an SC performance measurement system, vendor managed inventory, consignment stock, just-in-time supply, SC finance) (e.g. Flynn et al., 2010; Cousins, 2005; Eltantawy et al., 2015; González-Benito, 2007; Luzzini et al., 2014; Paulraj et al., 2006).

The main argument of this paper is that the traditional Mode 1 approach could be fruitfully integrated with Mode 2-oriented studies. The Mode 2 approach allows for the addressing of an increasing complexity derived from the joint presence of the buyer and supplier organisations. In particular, within the different methodologies belonging to the Mode 2 family, action research could successfully involve both parties (the buyer and the supplier), thus solving practical problems and proposing win-win solutions. As the main output, the paper proposes a revised version of the traditional action research cycle (see Coghlan (2011), Coughlan and Coghlan (2002)), tailored to face buyer-supplier relationship issues with three interacting parties: the scholars, the buyer organisation representatives, and the supplier organisation representatives. It is re-labelled "the action research cycle reloaded".

To properly contextualise the problem and address previous issues, the remainder of the paper is organised as follows: the next section discusses the Mode 1 vs. Mode 2 research approaches and their diffusion in PSM scientific literature in greater depth; a reflection on the suitability of Mode 2 for addressing buyer-supplier relationship issues is reported. Section three describes and extends the traditional action research cycle, proposing the action research cycle reloaded to manage buyer-supplier research projects. Section four presents a real instance of the implementation of a supplier performance measurement system (PMS) to exemplify the steps of the methodology. Final remarks end the paper, discussing the action research distinctive characteristics in respect to other case-based methods and identifying limitations, future research trajectories and contribution.

2. Action research in purchasing and supply management

This section describes the current methodological scenario in PSM (and, more generally, in SCM) literature, looking for possibilities of adoption for action research. The first paragraph introduces the distinctive features of Mode 1 and Mode 2. The second paragraph reports some data concerning the diffusion of various methodologies within the PSM field, addressing recent literature review studies. The third paragraph highlights how the Mode 2 approach can be a valuable complementary approach to Mode 1 when dealing with buyer-supplier relationship issues.

2.1. Mode 1 vs. Mode 2 research

Authors (e.g., Bartunek, 2011; Hodgkinson, 2001; MacLean, 2002; Tranfield and Starkey, 1998; Gibbons et al., 1994) distinguish between Mode 1 knowledge production and Mode 2 knowledge production. Mode 1 occurs mainly as a result of an academic agenda, and "Mode 1 problems are set and solved in a context governed by the largely academic interests of a specific community" (Gibbons et al., 1994, p. 3). In addition, Mode 1 aims at universal knowledge production, which should be context free. The

Table 1.
Mode 1 vs. Mode 2 knowledge production methods (from Coghlan (2011)).

	Mode 1	Mode 2
Aim of research	Universal knowledge Theory building and testing within a discipline	Cogenerated actionable knowledge produced in the context of application)
Type of knowledge acquired	Universal covering law Primarily cognitive	Particular, situational
Nature of data	Context free	Contextually embedded
Validation	Logic, measurement Consistency of prediction and control	Experiential, collaborative, transdisciplinary
Scholar's role	Observer	Actor, Agent of change Socially accountable
Scholar's relationship to setting	Detached, neutral	Immersed, reflexive

measurement of variables should follow a logical linear measurement procedure, and the scholar should be as detached as possible from the phenomenon under inquiry (Tranfield and Starkey, 1998; MacLean et al., 2002; Coghlan, 2011). By contrast, Mode 2 requires collaboration among academics and practitioners across different academic disciplines "rather than heroic individual endeavour" (Tranfield and Starkey, 1998, p. 347), and scientific knowledge is developed in the context of application. This mode assumes as a starting point the problem in practice, which leads to the development of a research team to address it (Starkey and Madan, 2001). Moreover, Mode 2 research is trans-disciplinary, heterogeneous, socially accountable, reflexive, and produced in the context of a particular application (MacLean et al., 2002; Gibbons et al., 1994). Both Mode 1 and Mode 2 can adopt research tools such as surveys, case studies, and other analytical processes to gather and analyse data. What differentiates Mode 1 from Mode 2 is the detachment of the scholars in the former and a tight collaboration with practitioners in the latter. Table 1 (Coghlan, 2011) illustrates how Mode 1 and Mode 2 may be juxtaposed.

On the one hand, Mode 2 is useful for practitioners because it starts with a problem or relevant phenomenon (e.g., Coghlan, 2011; MacLean et al., 2002; Gibbons et al., 1994). On the other hand, scholars can extract and abstract a massive amount of information about practitioners, praxis, and practice with the aim of generating knowledge (e.g., Zhang et al., 2015). In doing so, scholars can participate actively in organisational life and people from the system can participate actively in research (Pasmore et al., 2008).

Though Mode 1 is predominant, in management research, there is a healthy, animated debate on the appropriateness and usefulness of Mode 1 vs. Mode 2 research processes. A recurring concern that much management research is becoming more and more detached from management practitioners' realities, making it minimally relevant for them, has fostered the debate (e.g., Schein, 1987; Gopinath and Hoffman, 1995; Starkey and Madan, 2001; Fincham and Clark, 2009; Radaelli et al., 2014). To address this point, Mode 2 scholars claim that Mode 2 reflects the ontological status of management research more faithfully than Mode 1 does (Tranfield and Starkey, 1998). Nonetheless, the mainly positivist approach of the Anglo-Saxon academy is not confident with Mode 2 methodologies (Greenwood and Levin, 1998), denigrating forms of research that incorporate action and collaboration with practitioners as being at risk of subjectivism (e.g., Kieser and Leiner, 2009). In response to this, the Mode 2 community points out that Mode 2 research is misleadingly evaluated based on positivist Mode 1 standards (Cirella et al., 2012; Bartunek, 2011; Coghlan and Shani, 2014; Pasmore et al., 2008; Eden and Huxham, 2006), leading to the conclusion that Mode 2 lacks rigour. It is

worth noting that the epistemological and ontological assumptions of Mode 2 do not consider collaboration with practitioners to be a compromise on scientific rigour. The opposite is true; scholars' scientific rigour should be injected into everyday organisational life in order to couple practitioners' advanced experience with scholars' methods and properly address context (Gibbons, 2000). Indeed, scholars can successfully exploit a rigorous action research methodology (both in general and when dealing with buyer-supplier relationship issues). Thus, Mode 2 should be judged and discussed according to its own criteria for rigour (e.g., Pasmore et al., 2008; Coghlan and Shani, 2014; Eden and Huxham, 2006; Reason, 2006). Pasmore et al. (2008) in particular systematically address and explain various elements of rigour (the way the scholar records events and articulates and discusses interpretations and assumptions), reflectiveness (the constant development capabilities of the research), and relevance (quantifiable benefits related to the research output) associated with Mode 2.

An in-depth analysis of the dialectic between the epistemological underpinnings of Mode 1 and Mode 2 is beyond the scope of this paper. Moreover, this paper does not seek to support one mode against the other. It solely seeks to advance the argument that PSM literature may benefit from greater engagement in Mode 2 research studies that can complement Mode 1-predominant insights.

Mode 2 entails different research methodologies (e.g. intervention research, clinical inquiry, appreciative inquiry, collaborative management research, action science, action learning) that emphasise different aspects of the collaborative process (Raelin, 2009; Coghlan, 2011). Among them, action research is by far the best known and adopted in operations management literature (Coghlan, 2011). This study refers to action research as a research approach that focuses on action and research in a collaborative manner. Action research is aimed at producing "actionable knowledge", displaying the twin tasks of bringing about change and improvements in the organisations and in generating robust knowledge (Shani and Pasmore, 1985; Adler et al., 2004; Shani et al., 2012).

2.2. Overview of methodology adopted in purchasing and supply chain management

As the result of an extensive literature review on PSM that brings together 1055 articles from 20 peer-reviewed journals, Spina et al. (2013) conclude that Mode 2 knowledge production is definitely marginal compared to Mode 1 knowledge production and is pursued through surveys (which clearly dominate, with 427 papers), conceptual studies (318), and case studies (249). Wynstra (2010) finds that most of the studies from a sample of 351 articles published in the "Journal of Purchasing and Supply Management" are Mode 1 surveys and multiple case study papers with minimum incidence of collaboration and collaborative approaches in the inquiry process. In the analysis of 1113 articles published from 1994 to 2010 in "Supply Chain Management: An International Journal", "Journal of Supply Chain Management", and "Journal of Purchasing and Supply Management", Chicksand et al. (2012) do not even explicitly refer to any Mode 2 methodologies when classifying the articles. Näslund et al. (2010) propose a unique contribution that links the broader area of SCM with action research. Considering 15 highly ranked academic journals spanning logistics (e.g., "International Journal of Physical Distribution and Logistics Management"), management (e.g., "Management Science", "Omega"), and operations management (e.g., "Journal of Operations Management", "International Journal of Production Economics"), the authors produce a final sample of only 26 articles that implement action research. Among these, 23 articles fail to magnify and reflect on the added value of engaging in Mode

2 research processes, discussing the rigour and quality of the research solely according to Mode 1 standards. In most cases, the robustness standards that the Mode 2 research community suggested (see, for example, Pasmore et al. (2008)), are somehow neglected.

From this effort to scan the most recent and valuable literature review papers in PSM (and, more generally, in SCM), it is possible to draw three main conclusions: (1) in PSM literature there is a paucity of action research-based works. (2) Very few Mode 2 and action research papers reflect on the added value of engaging in Mode 2 studies in association with the collaborative nature of the process; therefore, action research may often overlap with other qualitative methodologies (e.g. longitudinal case studies) that do not necessarily involve collaboration and action during the process. (3) The small number of Mode 2 studies do not discuss quality using Mode 2 criteria but according to Mode 1 positivist criteria.

2.3. Action research: a valuable alternative when dealing with buyer-supplier relationship issues

The Mode 1 knowledge production paradigm dominates the methodological scenario in PSM literature. Still, in the words of Coughlan and Coghlan (2002), buyer-supplier relationships offer many "live cases in real time" of both research and managerial significance. Indeed, research questions often relate to the outcomes over time of joint buyer and supplier efforts, aiming to understand how the behaviours of each party can improve the results of a process or system in which they both play a role. Some examples include the launch of a supplier development program, the adoption of a supply chain performance measurement system, an inter-organisation business process re-engineering, and an early supplier involvement in an innovation project. Action research is deemed to be appropriate for such matters, as prescribed by Coghlan and Brannick (2001). Nevertheless, three main characteristics of the Mode 2 approach and action research seem particularly suitable for addressing buyer-supplier relationship issues.

First, action research is about change (Lewin, 1947; Coghlan, 2011; Dickens and Watkins, 1999). Sometimes the need for change is not always perceived within an organisation. This complicates the scholar's task or – at least – requires the initial unfreezing of the situation. In a business-to-business context, however, change happens every day. Over time, an increasing outsourcing trend has been witnessed. It makes the relationship between buyer and supplier much more critical than it was in the past as suppliers have become a primary source of value creation for organisations. Accordingly, whenever the business context changes, the entire supply chain needs to adapt and organisations are required to re-align their supply bases. The fact that organisations buy differently by category further complicates this issue, i.e., the acquisition of different sets of goods or services from suppliers requires different purchasing strategies (Luzzini et al., 2012; Hesping and Schiele, 2015). Therefore, the need to define and redefine the category purchasing strategy over time and coherently manage buyer-supplier relationships, makes common PSM practices highly dynamic (Eggert et al., 2006; Terpend et al., 2008).

Second, action research is based on an interactive dialogic mind-set (Bushe and Marshak, 2014; Cooke and Wolfram-Cox, 2005). This attribute is even empowered when facing buyer-supplier relationship dynamics. In this setting, action research does not only require the scholar to closely interact with organisation employees, but it also requires him/her to carefully consider the perspectives of the two parties involved. In other words, the scholar must be able to distinguish between different types of business-to-business interaction and tailor his/her behaviour

accordingly. Action research could allow this flexibility and adaptability over time.

Third, action research is particularly fitting when tackling messy problems (Gibbons et al., 1994; MacLean et al., 2002). Achieving an unbiased perspective on buyer-supplier relationship issues requires the collection of data from both parties. The result is increasing complexity that requires management due to the fact that buyers' and suppliers' opinions are often at odds with each other. The few past dyadic empirical studies highlight this: by means of a dyadic survey, Ambrose et al. (2010) find significant differences between buyers' and suppliers' perceptions of mutual commitment and trust. Carter (2000) highlights a clear discrepancy between buyers' and suppliers' perceptions of unethical behaviour within the same relationship. Similarly, Oosterhuis et al. (2013) report significant misalignments of the perceived performance by comparing (for both the buyers and the suppliers) the self-evaluation and counterpart evaluation. Kim et al. (2010) register different antecedents to mutual collaboration for buyers and suppliers: the former identify switching costs and inter-organisational trust, while the latter indicate technological uncertainty and relationship reciprocity. Through two dyadic longitudinal case studies on the development and use of supplier PMSs, Hald and Ellegaard (2011) strongly highlight the dichotomy between the opinions of the two parties regarding the measurement tool. Not only could the Mode 2 approach within buyer-supplier action research detect these misalignments, but it could also manage the related complexity and try to provide a win-win solution.

All in all, from a managerial perspective, action research represents a viable methodology for addressing a problematic buyer-supplier situation (and possibly turning it into an opportunity for improvement) or even promoting proactive changes.

3. The action research cycle reloaded: how to solve buyer-supplier relationship issues

For the implementation of action research, data should be interpreted and validated according to the conscious enactment of the action research cycle. Various frameworks have been developed to practically support scholars in developing action research (e.g., Coghlan and Brannick, 2011; Stringer, 2007). They are grounded in the seminal work of Lewin (1947), who describes the action research implementation process as a spiral of steps. Each of the steps constitutes a circle of planning, action, and fact-finding (evaluation) concerning the result of the action.

For this paper, Coughlan and Coghlan's (2002) framework has been selected as a starting point since it specifically addresses action research in management studies. It has been revised taking into account the presence of three interacting parties (the scholars, the buyer organisation representatives, and the supplier organisation representatives). This revision does not involve substantial changes in the procedural steps but leads to rethink, enrich and expand the scholars' role. In addition, it should preserve the robustness and rigour standards that the Mode 2 research community sets.

The first paragraph reports Coughlan and Coghlan's (2002) action research cycle. The second paragraph reports the action research cycle reloaded. The relevant steps to follow and the scholars' role are highlighted.

3.1. The action research cycle

3.1.1. Action research cycle: phases

The action research cycle that Coughlan and Coghlan (2002) propose is articulated in some pre-steps and some main steps. The following figure is its graphical representation (Fig. 1). Pre-steps
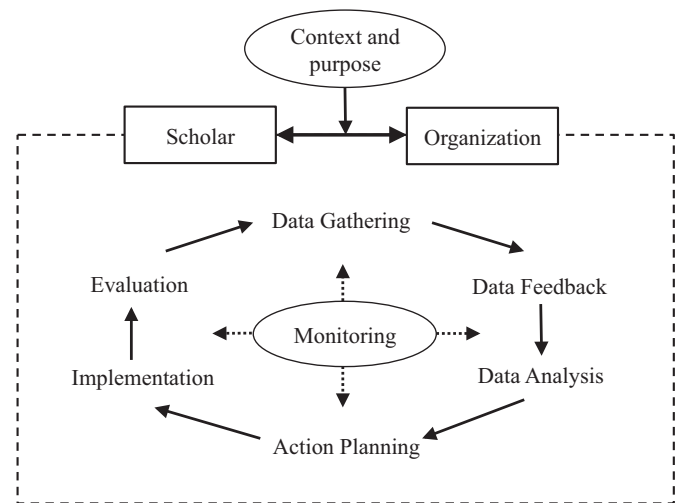

Fig. 1. Action research cycle.

are aimed at understanding context and purpose, thus highlighting the rationale for action (why is this process necessary/desirable?) and research and considering how the research should contribute to existing knowledge on a certain issue.

Six main steps serve as the operational steps that lead the action research. The first three steps are related to data management, that is to say, data collection and reflection on it. An additional meta-step (namely monitoring) is transversal across the other steps. The first three main steps are:

1. *Data gathering* involves the collection of data through interviews of organisational members, internal accounting reports, and observation. This collection is shaped by collaborative protocols and agreements that allow the scholars to access in-depth information about the organisation and potentially achieve the high engagement of organisational people.
2. *Data feedback* involves the reporting of the information collected to the management of the organisation. In this step, which is a preparatory step for the next one, the scholar preliminarily organises the main evidence arising from the data.
3. *Data analysis* is performed collaboratively with managers to jointly guide the team's decision-making. This step is crucial since the collaboration with management allows the proper contextualisation and interpretation of the findings and, thus, the effective planning of action.

The next three main steps involve the action plan and its execution:

4. *Action planning* activities are scheduled and roles and responsibilities are assigned to organisational members.
5. *Implementation* takes place, with managers implementing the planned actions. The action scholar should provide support for the effective implementation of the designed action, facilitating change and promoting commitment through reflective mechanisms within the organisation.
6. *Evaluation* involves measuring the impact of the actions implemented and stimulating continuous learning through different learning mechanisms (cognitive, structural, and procedural).

Monitoring is considered a meta-step in the sense that it occurs throughout the cycle. Indeed, each action research cycle often leads to another cycle, and, so, continuous planning, implementation, and evaluation take place over time across the entire project. Here, the essence of action research as an emergent process is captured (Coghlan, 2011). The process is iteratively

shaped according to the changing situations faced. In other words, the enactment of the cycles of planning, the taking of action, and the evaluation can be anticipated but cannot be designed or planned in great detail ahead of time. The philosophy underlying action research is that the stated aims of the project lead to the planning of the first action and then to its evaluation. So the second action cannot be planned until the evaluation of the first stage has taken place.

3.1.2. The role of the scholar: facilitator of ongoing reflection and change

In order to start with and sustain an action research project, it is necessary to have an interesting issue of both research and managerial significance and a group of people within the organisation who are willing to subject the issue to rigorous inquiry, particularly considering the analysis and implementation of action. Strictly speaking, the action scholar has to gain access and to be contracted as an action scholar (Schein, 1987, 1995, 1999; Gummesson, 2000). This means that the key members of the organisation should recognise the value of the action research approach and should be willing to let the action scholar work with them in a process consultation mode (Pasmore et al., 2008). Indeed, the role of the scholar is critical: he/she is immersed in the setting and acts as an agent of change for the system; by contrast, the positivist scientist is a detached observer of reality. In other words, the scholar has to be a facilitator of an ongoing reflection and dialogue within the organisation (Bushe and Marshak, 2014; Cooke and Wolfram-Cox, 2005). This facilitation effort results in high commitment to the research effort on the parts of the people from the organisation, eventually resulting in rigorous and relevant outcomes for theory and practice (Radaelli et al., 2014; Pasmore et al., 2008).

3.2. The action research cycle reloaded

The presence of an additional actor to deal with (i.e., the supplier organisation) actually changes the contingent context in which the action research project takes place. As a consequence, though constituent phases remain mostly similar to those of Coughlan and Coghlan (2002), activities within each phase should be re-designed taking into account the dyadic dynamic faced. In parallel, the role of the scholar in this scenario should be re-considered as well.

3.2.1. Action research cycle reloaded: phases

Fig. 2 shows the phases of the action research cycle reloaded. As in Coughlan and Coghlan (2002), two main phases are identifiable. In the preliminary phase, some pre-steps have to be implemented to ensure the presence of all the contextual conditions necessary for launching the project; in the main phase, the cyclical steps of the action research have to be followed.

To evaluate the suitability for action research to investigate a specific buyer-supplier situation, we suggest to get through the following pre-steps:

- *Context and purpose.* Here, the rationale for action and that for research should be considered. Regarding the former, the scholar should clarify why the action is needed or desirable from the perspectives of all the parties involved and what the driving forces are; very often, the drivers for a buyer differ from those that the supplier perceives. Regarding the latter, the scholar should reflect upon his/her research question and the likelihood that the action research will actually lead to a compelling answer, contributing to knowledge.
- *Feasibility.* Though the situation under scrutiny might seem interesting and insightful at first sight, business-to-business
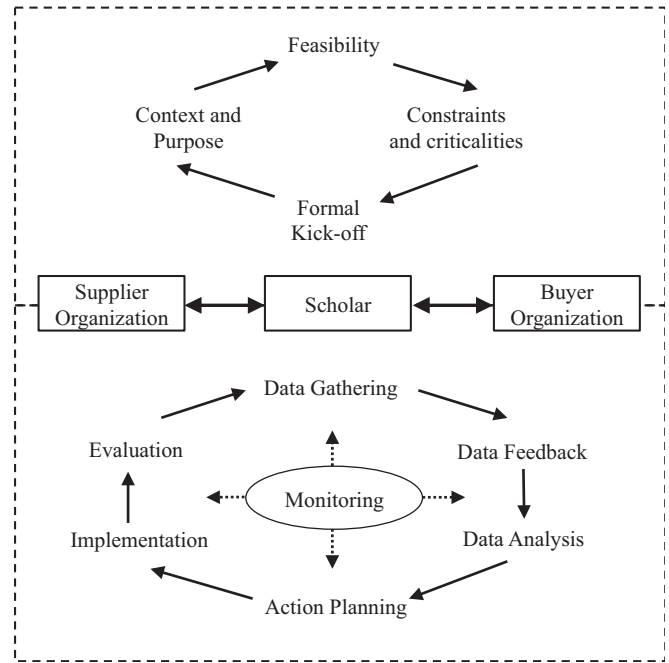

Fig. 2. : Action research cycle reloaded.

relationships often hide obstacles that might not be clear to a newcomer. Therefore, the scholar should try to collect hard and soft data on the past and present states of the buyer-supplier relationship in order to reduce the risk of project failure. To this end, he/she should:
a. Evaluate the previous experience of the buyer with the supplier and vice versa, always considering the two points of view;
b. Evaluate the current state of the relationship to acknowledge common transactions and shared information, as well as special ongoing projects, and to discover unresolved conflicts or issues;
c. Assess trust and power to learn whether actual commitment or unbalanced bargaining power among the parties determines participation in the project.

The simple discovery of a problem does not have necessary to end the project, but it certainly requires the designing of proper countermeasures and the carefully monitoring of criticalities throughout the project (see the next step).

- *Constraints and limitations.* Concerns/risks identified in the previous step should be addressed or simply monitored during project development. Moreover, multiple elements can affect the participation in the project after the scoping performed in the first two steps. For example, the buyer and/or the supplier might have time or budget limitations or different interests from the scholar. All of this might lead to the reshaping of the project's scope.
- *Formal kick-off with partners.* Once an issue with practical and academic relevance has been identified, the action research project seems feasible. When all the constraints and criticalities are under control, we suggest to formally kick off the project, clarifying the duration, the main activities, the milestones, the expected results, and the roles of each team member. This step is important as it ensures the formal involvement and commitment of all parties and until this moment, interaction with the scholar is often informal. The buyer and supplier should formally commit to the project and acknowledge what is expected from them before the actual start.

The issues raised above are important for any kind of action research project, yet the presence of two companies to address further complicates the preliminary work of the action researcher. Similarly, the main steps within the action research cycle are the same of Coughlan's and Coghlan's (2002), though complicated by the need to interact with both a buyer and a supplier. Each step is described, highlighting the special needs arising in dyadic studies.

1. *Data gathering.* Both the buyer and the supplier should be considered, taking into both hard data (e.g., financial accounts, internal reporting, performance indicators) and soft data through direct observation. Some data could be collected jointly from open meetings involving the two parties. Other data may be sensitive, and, therefore, best collected separately.
2. *Data feedback.* Data collected are organised and rationalised by the action scholar and reported to the two parties involved in order to identify the elements under scrutiny and the issues that should be faced. The scholar should respect the disclosure agreements with each actor but still be able to present all the relevant variables of the problems to both actors.
3. *Data analysis.* The action scholar and the practitioners' team collaborate in data analysis for action research. In the action research cycle reloaded, this phase is even more complex since both the buyer and supplier representatives must be involved.
4. *Action planning.* The joint presence of all the parties involved is necessary. This collaborative approach is based on the assumption that each organisation's representatives know it best and, in particular, know who is going to implement the actions planned. A checklist of the expected outcomes regarding both the buyer and the supplier should be designed for the future control of actual results against expectations.
5. *Implementation.* Both the buyer and the supplier implement the planned changes. The action scholar should provide his/her support and control for the effective implementation of that which has been designed.
6. *Evaluation.* The outcomes of the actions implemented are analysed and evaluated against expectations (as stated in the checklist developed in the planning phase). It is important that both the buyer and the supplier openly express both their positive achievements and the unexpected problems they faced.
7. *Monitoring.* As in the traditional cycle, this is a meta-step, ensuring knowledge production in the field. Thus, it should be noted that, while the buyer and supplier teams are focusing on the practical outcomes, the scholar is not only concerned with how the project is working but is also monitoring the learning process and synthesising theoretical advancements.

3.2.2. The role of the scholar in a buyer-supplier action research project: facilitator and mediator between parties

In a buyer-supplier action research project, the evolution of the role of the scholar cannot be neglected. He/she is still a facilitator of the inquiry process and an active element of change, actively proposing solutions based on his/her experience and knowledge. Yet, as an independent actor (not involved in the commercial relationship), he/she should act as a mediator between the buyer and the supplier, ensuring that mutual needs are respected. His/her final aim should be to provide actionable science, finding win-win solutions that both parties welcome positively while establishing a trustworthy and collaborative climate. In this way, he/she can leverage some governance mechanisms to strengthen the team spirit and the motivation of each actor:

1. *Building trust.* The absence of trust between parties might even prevent the action research project from starting. Therefore, it is vital to maintain trust during project development. The scholar could use various means to achieve this:

   a. protection mechanisms for the parties involved (through informal agreements or contract governance);
   b. information sharing, involvement, and resource sharing;
   c. a neutral attitude (from time to time, it is worthwhile emphasising the scholar's mission, which is not to provide consulting services but to simultaneously contribute to knowledge and to both organisations' growth).

2. *Promoting ethical behaviour.* Ethical behaviour by all parties involved has to be fostered. First, the use of the information and knowledge that the scholar develops should always be consistent with the agreements and willingness of his/her counterparts. Second, the scholar should bear in mind that each party will have objectives that are not necessarily aligned with the other's; therefore, the scholar should take care that these misalignments will not lead to opportunistic moves against the counterpart, preventing the achievement of mutual benefits.

4. Supplier-buyer case illustration

An exemplar application of the proposed framework follows focusing on the action research process rather than on its content. The project concerns the design and implementation of a supplier PMS in one organisation operating in the banking industry. The authors have been involved as part of a research project aimed at supporting the buyer and supplier to develop a viable way of measuring and managing this supplier's performance.

We can summarize the research context from the managerial as well as the research perspective. On the one hand, the buyer considers supplier PMSs as crucial for controlling, orchestrating, and improving the supply base performance. In addition, the Chief Purchasing Officer (CPO) aims at increasing the maturity level of its purchasing department by leveraging the supplier PMS as one key cornerstones of the purchasing strategic plan. On the other hand, the project offers potentially interesting insights from the research standpoint. Indeed, studies about supplier PMSs in the last two decades mostly focus on the system design stage (specifically targeting the definition of performance metrics and weighting algorithms for key performance indicators) (Caniato et al., 2014; Luzzini et al., 2014). Few studies actually explain how the systems should be designed and implemented (Hald and Ellegaard, 2011; Cousins et al., 2005; Cousins et al., 2008; Mahama, 2006). Furthermore, recent evidence suggests that an important facilitator of the supplier PMSs' success is the active involvement of suppliers, which should not be considered passive actors in the performance measurement process (Luzzini et al., 2014). All in all, the case offered a good basis for an action research project.

In order to collect preliminary information and fully evaluate the project purpose and feasibility the research team engaged with the buyer in a series of meetings with different employees. An important enabler for project success was the buyer strong interest towards a university-firm collaboration and – accordingly – the action research method. The buyer preferred action research to traditional outsourcing or consulting projects. They ruled out outsourcing from the beginning given that the supplier PMS was considered a core activity for purchasing to be maintained under the firm's direct control. The buyer did not believe management consulting to be a viable alternative either, mainly because previous experiences with consulting firms were focused on finding short-term solutions to operational problems and involved full time consultants who had a constant presence in the company. Instead, the CPO's intention was to involve all the purchasing employees in a strategic process that would improve the department's effectiveness in serving the organisation. He considered the researchers' role as fundamental to exchange knowledge with the employees and jointly carry on the project rather

than passively applying principles imposed from outside. Moreover, the buyer perceived consulting firms as more expensive and profit-oriented than the university, which was not only used to work collaboratively with companies but also to provide guidance and training.

The research team was able to collaboratively establish the project purpose with the buyer. In particular, it was decided to support the organisation throughout the process of operationalising the purchasing strategy into a supplier PMS (designing the PMS) and the procedures involved in putting the system into action (implementing the PMS). Moreover, grounded on evidence deriving from previous studies, it was decided to involve one of the most important suppliers from the beginning. This was the decision that triggered the necessity to revise the traditional action research cycle (Coughlan and Coghlan, 2002). Indeed, while

action research's epistemological underpinnings perfectly fitted the situation, the presence of two parties posed some challenges concerning the main activities to be performed within the action research cycle and the researchers' role. As a consequence, the action research cycle was reframed and the scholars' role in the project was redesigned as discussed above. Table 2 reports the list of critical issues and action research project-related activities from the dual perspective of the buyer and the supplier.

The first phase of the project required the definition of the project's scope and the setting of all the constraints. Therefore, the research team carefully evaluated both the buyer's and the supplier's perspectives and elaborated a proposal, clearly highlighting the expected outcomes from the action research project for both parties. On the one hand, the buyer needed to monitor its supply base and promote continuous improvement focusing on a limited

Table 2
Action research cycle reloaded applied to the design and implementation of a supplier PMS.

	Step	Buyer perspective and action research activities	Supplier perspective and action research activities
Pre-steps	Context and purpose	• The supplier PMS is a strategic project: it must ensure supply base control and orchestration and serve as a stimulus for continuous performance improvement	• The supplier is believed to be a key stakeholder in the project. The supplier PMS is considered a potentially effective tool for regulating the relationship through objective data, ensuring trust and fair treatment
	Feasibility	• The buyer typically has good relationships with suppliers though some complain about the number of documents and amount of information required • Budget and commitment are available. Dedicated people will manage the supplier PMS	• The supplier is generally doubtful about the reliability of measures and afraid the supplier PMSs will be used against him/her • The supplier claims to be overwhelmed by certifications and information required by many customers
	Constraints	• Time, budget, people to manage the supplier PMS • Need to involve suppliers and reassure them about the design and use of the supplier PMS	• No major effort should be required • Need to check data collection process and KPI calculation in order to control for system reliability
	Kick-off	• Meeting with the project team, aimed at sharing the project plan and responsibilities	• Meeting with the project team to acknowledge their commitment and feedback
Main steps	Data gathering	• Collecting data about the purchase classification method (i.e., category tree) and the corresponding supply base • Understanding the buyer strategy at several levels: business strategy, purchasing strategy, and category strategy	• Collecting data about internal performance measurement systems as well as other experiences with supplier PMSs from other customers
	Data feedback	• Checking data with the buyer and establishing common ground (relying on objective data rather than opinions that might reflect conscious or unconscious biases). Validating the category tree and formalising the purchasing and category strategy	• Checking data with the supplier (in particular, regarding current performance measures and evaluation procedures) • Listing the main pitfalls (such as metrics meaning, targets defined, ICT system infrastructure specifics etc.) arising with buyer performance measurement and management processes
	Data analysis	• Meeting with the buyer to agree the final strategy for implementation and related goals. • Identification of the key information needed from the supplier	• Meeting with the supplier to report the buyer strategy and the goals of the specific relationship • Discussion of information disclosure with the buyer
	Action planning	• Definition of key tasks and milestones of the project • Identification of the stages of supplier PMS design and implementation	• Definition of tasks in which the supplier will be directly involved (e.g., validation of performance dimensions addressed and specific KPIs requested by the buyer, validation of the procedure to be followed, validation of the implementation process)
	Implementation	• Definition – through repeated interaction with the buyer – of the overall supplier performance measurement and management process • Definition of the supplier PMS • Implementation of process and KPIs through the ICT structure • Pilot test of the supplier PMS	• Validating all key steps (after agreeing with the buyer) • ICT system integration • Pilot test of the supplier PMS
	Evaluation	• Meeting with the buyer to review the pilot test results and agree on any change. Goes on until closure	• Meeting with the supplier to review the pilot results and agree on any change. Goes on until closure
	Monitoring	• Collecting all relevant information during project advancement and updating the statement of work so that each party can recover the latest data at any time	• Collecting all relevant information during project advancement and updating the statement of work so that each party can recover the latest data at any time
Governance	Building trust	• Assuring supplier commitment, by giving importance to its feedback on the system (e.g., data collection procedure, better indicators)	• Explaining the strategic purpose of the system • Involving suppliers in the PMS design • Flexibility in managing contract agreements (when contracts are present)
	Promoting ethical behaviour	• Not disclosing personal opinions of buyer's employees about suppliers or the overall project but – at the same time - promoting transparency and open attitudes • Ensuring contract symmetry – entailing mutual protection mechanisms (when contracts are present)	• Not disclosing sensitive information to the buyer or to other suppliers • Ensuring contract symmetry – entailing mutual protection mechanisms (when contracts are present)

set of key performance indicators (KPIs). On the other hand, a reliable supplier PMS ensures transparency and the fair treatment of suppliers. After initial inertia due to the project's novelty and the fear of opportunistic behaviours, even the supplier welcomed the PMS as a way of improving its performance and its relationship with the buyer. As a consequence, the action research project seemed feasible even though some issues had to be tackled. For example, the supplier wanted to be involved in the definition of KPIs and reassured about the customer's use of the supplier PMS. Moreover, it asked for the minimisation of the additional workload involved in providing all the information required.

The project formally started with the research team collecting all relevant data regarding the supply base and the category management policies in place in the buyer company. This information was crucial for determining the general design of the supplier PMS. Next, detailed design of the platform started in close interaction with the buyer. The process entailed leveraging external benchmarks and scholar experience to first divide the supplier PMS into different stages (i.e., preliminary qualification and evaluation) and subsequently divide it into performance dimensions evaluated at each stage. Finally, specific KPIs were designed according to customer strategy and supplier feedback. The system was then implemented through a software module that had been integrated with the buyer's ERP system, then it was tested with the supplier. The results were useful for solving some technical issues and ensuring the reliability of the system before its final release.

Throughout the project, the research team leveraged several governance mechanisms to maintain a good climate and foster the commitment on the project. This meant that all participants were always committed, up to date and acting proactively to achieve the project goal. For example, any possible conflict of interest was carefully managed. All sensitive information was protected by informal agreements and – where needed – formal nondisclosure agreements. The research team constantly evaluated the interests of both parties and suggested the adoption of corresponding protection mechanisms.

Overall, the project can be considered a success. The buyer was highly satisfied with the resulting platform as it met most expectations. As a consequence, the buyer immediately started to extend the supplier PMS adoption to other suppliers and received positive feedback. After the system had been used for some time, several of the benefits reported in the literature (e.g., Luzzini et al., 2014) were achieved. For example, the buyer-supplier relationships were in good shape, and the cases of conflicts leading to fines or juridical disputes were rare. Moreover, supplier performance was under control and the stage was set for continuous improvement. The buyer is satisfied with the new knowledge base and is making good use of it by planning supplier development initiatives, defining incentive schemes for suppliers, and ensuring buyer-supplier relationship to be founded on objective data.

5. Conclusions

5.1. Action research compared to other case-based methods

Within this section, strengths and peculiarities of action research are discussed in relation to other case-based methods. First of all, an action research project always starts from a real organisational problem (Pasmore et al., 2008). Pre-steps within the action research cycle reloaded (see Section 3.2.1) ensures alignment with this condition. In the case described above, both the buyer and the supplier acknowledge the importance of the supplier PMS from the beginning, though showing different concerns and requirements. The buyer wanted the system to be smart, easy to use, and harmoniously embedded within the existing ICT architecture. The supplier wanted the system to be reliable and objective and to foster collaboration, rather than simply evaluation. Once these elements had been highlighted, the project goals were refined and the project started with a formal kick-off.

Second, action research leads to tangible changes within organisations addressed along the project (Coghlan, 2011; Tranfield and Starkey, 1998), leading not only to proposing managerial implications, but also to their implementation. By contrast, other case-based methods may end with a list of managerial implications determined by scholars, which may never be put in place. The action researcher acts directly as an agent of change, instead of being an external observer. In the project reported, the researchers have co-designed the supplier PMS together with practitioners and the tool has been actually implemented afterwards. The researchers' theoretical knowledge and methodological rigour has been exploited to develop a tangible output for the organisations involved, while addressing a relevant issue for academic research.

Third, the interactive nature of action research tends to establish a positive and trustworthy climate between scholars and practitioners (Bushe and Marshak, 2014). In addition to that, the AR cycle reloaded with researcher as mediator, helps to build trust and promote an open and sincere discussion between the buyer and the supplier organisations themselves. This enables the researcher to dig deeper into the relationship issue under scrutiny, with the final aim of providing a mutually-satisfactory solution. Other dyadic case-based methods generally address the buyer and the supplier separately, with limited information disclosures between parties; thus they may be particularly effective in highlighting differences of opinions but not bridging them.

Finally, a specific benefit of applying the action research cycle reloaded to buyer-supplier relationships is related to the relationship governance and in particular to the researcher's facilitating and mediating role introduced above and exemplified in the case. Compared to other case-base methods, the governance stage introduces entirely new imperatives for the action researcher (i.e., building trust and promoting ethical behaviours), who becomes an essential relationship catalyst. Action research literature has debated drivers that may push partner organisations to join an action research project: get deeper insights on a new phenomenon from a third independent perspective; sharing knowledge with academia; sharing costs and risks related to the project outcomes (Canterino et al., 2016; Cirella et al., 2012; Mirvis, 2008; Eden and Huxham, 2006; Starkey and Madan, 2001; Wenger and Snyder, 2000; March 1991). But we can add another important function of action research, which is the improvement of the buyer-supplier relationship quality (thanks to building trust and ethical behaviour) and consequently relationship performance. This requires specific skills and precautions for the action researcher. As Mirvis (2008) claims, when two companies are engaged in a commercial relationship, the researcher is responsible of sensitive information disclosure management, without preventing the achievement of a positive outcome. In doing so, he/she acts both as a relationship broker and an agent of change, since the involved companies are interested in gaining insights about a phenomenon and reaching intangible and tacit knowledge. They are interested in collaborating since they share a professional identity and therefore look for mutual support. The researcher can be considered as a facilitator for reaching a mutual pay-off, such as the possibility to generate (and consequently apply) new ideas. The action research cycle reloaded proposed in this paper adds something new to this considerations, because it focuses on a business-to-business commercial relationship where goals and interests are not always aligned, and it offers specific insights on promoting ethical behaviours and building trust between the two parties.

5.2. Limitations and future research

Limitations of this paper provide venues for future research. The main purpose of this paper is to propose a process for conducting action research in the context of buyer-supplier relationships. The reported case has mainly an explanatory function in respect to the action research cycle. Further empirical studies could apply the action research cycle reloaded to buyer-supplier relationship issues, thus allowing to refine the theoretical framework and add "actionable results" to a specific research domain.

Second, referring to the broader concept of Mode 2 knowledge production, this paper only tackles action research. The potential added value of other research methodologies within the Mode 2 arena (e.g. intervention research, clinical research, collaborative management research) might provide additional insights into the field of PSM and facilitate a deeper understanding of complex dynamics within a buyer-supplier relationship.

Finally, this study focuses on the buyer-supplier relationship as the elementary dyad of the extended supply chain or network environment. Even though most of the arguments raised can be considered valid at a broader level, future research might address the particular challenges arising in a more complex research setting, which takes into account more than two organisations at the same time. To this end, it might be useful adopting theoretical lenses that allow modelling a complex set of relationships (such as network theory, orchestration theory, complex adaptive systems, or service-dominant logic).

5.3. Methodological and managerial contribution

This paper displays several methodological contributions, demonstrating the suitability of Mode 2 knowledge production and, more specifically, action research in the field of PSM. In a scientific domain dominated by Mode 1 knowledge production, action research is presented as a valuable alternative, suitable for dealing with buyer-supplier relationship issues. The phases of the traditional action research cycle are revised considering the presence of three specific parties (buyer organisation representatives, supplier organisation representatives, action research scholars), thus providing a reloaded version of the traditional action research cycle (Coughlan and Coghlan, 2002). The action research cycle reloaded is discussed, addressing in depth the activities to be performed at each stage as well as the role of the action research scholar: not just a facilitator of the learning process but also a critical mediator between the buyer and the supplier, responsible for relationship management, allowing for trust building and for the achievement of win-win solutions to the problem under scrutiny.

Although primarily oriented towards an academic audience, the present study could be of interest for managers too. Indeed, it proposes an alternative paradigm of collaborative research between practitioners and scholars within the PSM field, aimed at conducting methodologically rigorous projects that should solve real organisational problems.

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