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Understanding the heterogeneity among agricultural cooperatives

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Abstract

This paper discusses the importance of acknowledging and understanding the heterogeneity among cooperatives. Many studies on agricultural cooperatives, particularly on the impact of membership, do not account for the large differences in organisational and functional characteristics across cooperatives. We identify and discuss five core differences that have implications for theoretical and empirical research. We propose a classification that can be used by scholars in their research on understanding the evolution, performance and impact of producer cooperatives, and that can be used by policy makers in better targeting their support policies.

Keywords: Cooperatives, agriculture, typology, transactions, governance, evolution, performance, impact

JEL Codes:

L2 – Firm Objectives, Organization, and Behavior

D23 – Organizational Behavior; Transaction Costs; Property Rights

Q13 – Agricultural Markets and Marketing; Cooperatives; Agribusiness

1. Introduction

The number of studies on agricultural producer cooperatives is rapidly increasing (Bijman, 2016; Grashuis and Su, 2019). The increase in the number of studies is a result of the renewed acknowledgement, over the past decade, of the importance of cooperatives for rural development. One of the first indications of this acknowledgement was the World Development Report 2008 (World Bank, 2007). Under the title *Agriculture for Development*, the World Bank not only brought agriculture back in the centre of the development debate, it also emphasized the important role of producer organisations in linking farmers to markets. While the World Bank report used the term producer organisation, in most countries such organisations are better known as cooperatives.

With renewed policy-maker attention for cooperatives, also academia rediscovered the special position of cooperatives in agricultural production and rural development. In 2009, the journal *Food Policy* featured a special issue on collective action in agriculture (Markelova et al., 2009). This issue has become a milestone in the rising academic interest in the role of cooperatives in agriculture, notably in their efficacy in strengthening the position of (smallholder) farmers in modern food markets.

However, with the new wave of studies on cooperatives also the need for a clear ontology has grown. While recent studies have extensively discussed the growing heterogeneity of the membership and the impact this has both on the relation between members and cooperative and on the efficiency of managing a cooperative (e.g., Höhler and Kühl, 2018; Iliopoulos and Valentinov, 2018), there has been little attention for the wide variation among agricultural cooperatives themselves. Many empirical studies on cooperatives, for instance on the impact of membership on farmer income, combine different types of cooperatives in one dataset, thereby ignoring the major differences in structures and strategies. Such differences have major impact on assessing the development and performance of cooperatives, because it may lead to choosing different theories, methods and data.

Ten years ago, we made an inventory of the various classifications of agricultural cooperatives (Bijman and Hanisch, 2012). This preliminary inventory was meant to result in a pragmatic definition to be used by the 27 national experts that collected data for the EU-funded Support for Farmers' Cooperatives project (Bijman et al., 2012). However, over the past decade we have become convinced that a new classification of agricultural cooperatives is needed to infuse order in the growing number of empirical studies and to facilitate the next generation of theoretical studies.

A lack of clearly conceptualizing cooperatives, particularly understanding the major differences in organisational and functional characteristics, is a barrier to good scientific research as well as an impediment for good policy-making. Without clear conceptual and operational definitions, the objects of study may be incomparable, leading to low internal validity. In addition, not paying attention to the key characteristics, and to the differences in characteristics across countries, sectors and regions, may lead to incorrect or at least irrelevant comparisons. Comparing 'apples and pears' becomes even more problematic when policy makers and NGOs that seek to support cooperatives use those incorrect conclusions as the foundation and justification for the development and implementation of enabling policies and interventions.

The main objective of this paper is to provide a discussion on the ontology of the agricultural cooperative as a member-based business organisation, as well as to develop a classification that can be used by researchers to more clearly define and select their research object. A thorough classification can help both empirical and theoretical research on agricultural cooperatives to be more consistent and insightful, thereby more convincing and impactful.

This paper is structured as follows. In section 2 we present the main strands of academic research on agricultural cooperatives. These are the bodies of theoretical and empirical research for which a clear definition of the key concept is essential. In section 3 we present and discuss previous classifications of agricultural cooperatives and conclude that these early classifications are only partially useful. In section 4 we present our own classification, which is both parsimonious and comprehensive. In section 5 we present ideas for further research.

2. Strands of research on agricultural cooperatives

Research on agricultural cooperatives in developed and developing countries has traditionally focussed on three main topics: the development and organisational changes of the cooperative over time; the performance of the cooperative as a business; and the internal governance of the cooperative. Recently, a fourth category of cooperative research has become popular, particularly related to developing countries: the impact of cooperatives, more precisely the impact of cooperative membership.

The first group of studies investigates the establishment, **evolution**, durability, sustainability, viability or life cycle of cooperatives. For example, Cook (1995), Hind (1999), Cook (2018), Grashuis (2018) and Bijman (2018) present studies on the evolution of cooperatives in developed countries, while

Wanyama et al. (2009) and Tefera et al. (2017) present and discuss the evolution of cooperatives in developing countries. A subset of studies in this first category consists of research on ownership models of cooperatives, starting from the assumption that investment requirements change when market conditions for cooperatives change. Examples of ownership model studies are Nilsson (1999), Chaddad and Cook (2004), Van Bekkum and Bijman (2007) and Grashuis and Cook (2017).

The second category consists of studies on the **performance** of the cooperative as a (semi)independent business. Most of these studies have cooperatives in developed countries as object of study, while performance indicators include growth (Krogt et al., 2007), financial ratios (Soboh et al., 2011), and liquidity (Meliá et al., 2010). Most performance studies pay little attention to the differences among cooperatives (one of the few exceptions is Kyriakopoulos et al., 2004).

The third category of studies on agricultural cooperatives contains research on **internal governance** issues, including member-cooperative relationships. These studies focus on issues of trust, commitment, membership heterogeneity, representation, agency and board composition. Recent studies in this line of research deal with the governance of the member-cooperative relationship (e.g., Cechin et al., 2013), internal board structures (Bijman et al., 2014), member loyalty and side selling (e.g., Pascucci et al., 2011; Shumeta et al., 2017) the composition of governing bodies (e.g., Hakelius, 2018; Morfi et al., 2018), and managerial capacity (Francesconi and Wouterse, 2019).

Recently, a fourth body of literature on cooperatives has emerged. This rapidly growing field of studies focusses on the **impact** of membership on farm performance, such as on productivity and efficiency (e.g., Vandeplas et al., 2013; Abate et al., 2014), on market access (e.g., Bernard and Spielman, 2009; Mujawamariya et al., 2013) or on farmer income (Malvido Perez Carletti et al., 2020). Historically, there has been little research on the impact of cooperatives on farmer welfare in developed countries, exceptions being Sexton (1990) and Hanisch et al. (2013). However, recently this is the fastest growing category of studies on agricultural cooperatives (see Grashuis and Su (2019) for a recent review of these impact studies). A separate strand of studies within the field of impact studies deals with inclusiveness, notably the inclusion of women (e.g. Dohmwirth and Hanisch, 2019; Wijers, 2019).

In the field of impact evaluation, scholars have only recently started to acknowledge the importance of understanding organisational characteristics in explaining particular outcomes. Grashuis and Su (2019), in their review of the

empirical literature on the impact and performance of farmer cooperatives, conclude that "while the results are consistent across countries, methodologies, and product categories, the degree of generalizability is uncertain as there exists great variability in the functions of farmer cooperatives." Soboh et al. (2009) already indicated that performance measurement of cooperatives is a challenging effort due to the multiple objectives that most cooperatives pursue.

Exceptions to the lack of attention for organisational characteristics are scarce. Fischer and Qaim (2012), in a study on marketing groups in Kenya, found that older and more homogeneous cooperatives perform better in providing benefits to their members. Verhofstadt and Maertens (2014) have compared cooperatives in Rwanda in two different sectors (maize and vegetables) and with different remuneration schemes (individual versus collective reward schemes). They found that the impact of membership on farm performance is largest for those cooperatives where production and remuneration are individually based, even when marketing it done collectively.

3. Defining and classifying cooperatives

To support researchers in their understanding of the organisational and functional characteristics of agricultural cooperatives, conceptual and operational definitions of the object of study are needed. The globally recognized International Cooperative Alliance (ICA) defines a cooperative as "an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically-controlled enterprise".

A definition commonly used among economists has been based on work at the US Department of Agriculture and introduced by Dunn (1988): a cooperative is an economic organisation of users, where the users have a three-fold relationship with the cooperative: user-benefit, user-control and user ownership. The user-benefit principle says that the cooperative's sole purpose is to provide and distribute benefits to its users on the basis of their use. The user-owner principle implies that those who own and finance the cooperative are those who use the cooperative. Finally, the user-control principle indicates that those who control the cooperative are those who use the cooperative. While the differences between the ICA and the Dunn definitions are small, the latter puts more emphasis on the cooperative as a business organisation. For Dunn a cooperative is a business jointly held by its users (which can be individuals or firms); for the ICA a cooperative is an association of people that jointly own a business.

Classifying is the act of arranging objects by group or class. Once classes have been defined, real life objects can be assigned to one or more of these classes. The purpose of classifying is to bring order in a population of objects. Classifications are not only helpful heuristics for academics, they are also particularly helpful for policy making. Murray (1983) claims that classifications of agricultural cooperatives are indispensable in situations where policy makers want to involve cooperatives in obtaining the objectives of public policy.

Earlier studies on classifications of agricultural cooperatives have focussed on the core functions that cooperatives perform, for instance distinguishing between supply cooperatives, marketing cooperatives and service cooperatives (Cropp and Ingalsbe, 1989); production-oriented versus market-oriented cooperatives (Kyriakopoulos et al., 2004); ownership structures (Nilsson, 1999; Chaddad and Cook, 2004; Grashuis and Cook, 2017); the geographical scope of the membership: local, regional or national (Cropp and Ingalsbe, 1989); open versus closed membership (Sykuta and Cook, 2001); the level and type of member capital investments: bargaining, marketing and new-generation cooperative (Cook, 1995); the type of marketing strategy followed (Van Bekkum, 2001); the type of members: farmers in primary cooperative, and primary cooperatives in federated cooperatives (Søgaard, 1994). More recent studies have developed classifications based on sustainability orientation (Groot Kormelinck et al., 2019) or on the shift from community orientation to business orientation (Bijman and Wijers, 2019; Tefera and Bijman, 2020).

In our 2012 report, we presented and discussed the following classifications of agricultural cooperatives (Bijman and Hanisch, 2012). These classifications were based on literature, on other overview papers (e.g., Krivokapic-Skoko, 2002) and our own experiences with cooperative practice. Table 1 is a summary of our 2012 report, complemented with several new classifications found in the literature published after 2012 and a few additional publications that have elaborated on existing classifications.

Table 1. Classifications of cooperatives

Concept	Dimensions	Main author(s)
Main function and activities	Supply, marketing, credit, irrigation, services, auctioning, production	Cropp and Ingalsbe, 1989; Helm, 1968; Cropp and Ingalsbe, 1989; Plunkett and Kingswell, 2001
Ownership / financial structure	Various distributions of control rights and income rights	Nilsson, 1999; Chaddad and Cook, 2004; Grashuis and Cook, 2017
Strategy	Production / producer orientation vs market / customer orientation	Van Bekkum and Nilsson, 2000; Van Bekkum, 2001; Kyriakopoulos et al., 2004; Bijman, 2010
Level of member investment needed	Bargaining, marketing, new generation cooperative	Cook, 1995
Admittance policy	Open versus closed coops	Sykuta and Cook, 2001
Geographical scope	Local, regional, national, transnational	Cropp and Ingalsbe, 1989; Bijman et al., 2014
Main stakeholders	Community or Members	Bijman and Wijers, 2019; Tefera and Bijman, 2019
Sustainability orientation	Conventional vs organic	Groot Kormelinck et al., 2019
Type of members	Autonomous farmers versus farm workers	Beckmann and Hagedorn, 1997
Type of members (2)	Farms in primary cooperatives; cooperatives in federated cooperatives	Søgaard, 1994; Bijman, Chaddad and Cook, 2004; Bijman and Hanisch, 2012
Main objectives	Social, political, economic	Thorp et al., 2005; Bijman and Wijers, 2019
Position in the food chain	Bargaining, marketing, retail	Nilsson, 2001; Höhler and Kühl, 2014
Internal governance model	Traditional, management, corporation	Bijman et al. 2014; Chaddad and Iliopoulos, 2013
Life Cycle	Stages in evolution	Cook, 2018; Hind, 1997, 1999; Helm, 1968; Cropp and Ingalsbe, 1989; Plunkett and Kingswell, 2001 Murray 1983

Source: Adapted from Bijman and Hanisch, 2012

4. Towards a new classification

Based on our 2012 report, as well as on additional literature and own research on how to classify cooperatives in various sectors and countries, we will now discuss what we think are the key elements that distinguish among agricultural

cooperatives. These distinctions relate to key objectives, type of transactions, scope of activities, and kind of members.

4.1. Type of objectives

While agricultural cooperatives have been set up for economic reasons, primarily to provide low cost access to input and output markets, many of them also have social objectives, such as providing employment, enhancing knowledge exchange in the farmer community, empowering farmers and farming families, and increasing food security (Hanisch, 2016). These social objectives have been one of the reasons for local public authorities to provide support to cooperatives (Iliopoulos, 2013). More recently, social and sustainability objectives have become more important in the discourse among members as well as between members and external stakeholders (Emery et al., 2017; Groot Kormelinck et al., 2019).

Studying the development, performance and impact of cooperatives requires a clear understanding of the (multiple) objectives of the cooperative. For instance, an efficient scale of operations is likely to be different for economic activities than for social activities, and therefore growth strategies will be different when economic or social objectives prevail (e.g. Ito et al., 2012). Objectives are also important for making the link to the role of public support. Social objectives are more likely to generate public support. Thus, the performance of cooperatives with social objectives may require other measurement criteria than performance measurement for cooperatives that do not receive any support from public agencies.

Related to the distinction between economic and social objectives is the distinction between community orientation and member orientation. Agricultural cooperatives are established within (often small) rural communities, with support from community leaders. These leaders evaluate 'their' cooperative not only on economic parameters, but also appreciate social goals. For instance, Bernard et al. (2008), in a study on cooperatives in Ethiopia, has shown that community-oriented organisations provide public goods to the community at large, such as maintaining a collective field, providing casual labour, and keeping a cereal bank for solidarity. Over time, however, cooperatives may develop into specialized firms that no longer provide goods and services to the community as a whole, but focus on economic benefits for the members only. For cooperatives that operate in competitive markets, a more focussed strategy is often needed to survive, with the effect that the cooperative will pay less attention to broad community interests (Bijman and Wijers, 2019).

This distinction between community-oriented and member-oriented organisations has also been found by Bauwens and Defourny (2017) among energy cooperatives. In a double case study of energy cooperatives in Belgium, the authors found that social capital differs across these two types of cooperatives. An orientation toward public benefit – when not only members but the whole community gains from the activities of the cooperative – is associated with a closed network structure and a stronger social identification to the organisation. Conversely, an orientation toward mutual benefit – thus only members benefit from the cooperative – is associated with an open network structure and a weaker social identification to the organisation.

As social capital and legitimacy are important for efficient governance of collective action (Bowles and Gintis, 2002; Ostrom, 2010), differences in orientation may affect the type and efficacy of participation and decision-making. Also, the support of and influence of government may be different. For instance, in dairy cooperative in Kenya local authorities have a position on the board (Mwambi et al., 2020). This presence has effect not only the investments decisions of the cooperative, but also on the trust of the members in the cooperative leadership.

To summarize, referring to the strands of literature mentioned in section 2, understanding the key objectives of the cooperative is important not only for impact studies, but also for research on the evolution, the performance, the member-relations, the legitimacy among stakeholders and finally the role of the local government.

4.2. Type of transactions

Important functions of agricultural cooperatives are to provide efficient access to inputs and output markets. However, cooperative engagement in inputs markets is different from involvement in output markets. First, inputs are more likely to be bulky non-perishable products (which allows for storage and large quantity bargaining), while farm products are more likely to be perishable (e.g. milk and vegetables). Also output markets may be more volatile, as many agricultural products are seasonal products. Still, farmers must trust that the manager of the cooperative is doing its best to get the highest price for the farm product. Information asymmetry between farmers and manager leads to a classical agency problem. Second, farmers are generally more dependent for their income on a marketing cooperative than on a supply cooperative. This dependency relationship is explained by the value of the transaction between cooperative and farmer (as % of farmer income), as well as by the perishability of the farm product.

The different transactions between farmer and input supply versus farmer and output marketing cooperative has implications for the commitment relationship between farmer and cooperative (Bijman and Verhees, 2011). Research on the causes of and solutions for reduced member commitment should be explicit about the type of cooperative that is under study (e.g. Fulton, 1999; Cechin et al., 2013). Recommendations on improving member commitment will be different for supply cooperatives (where calculative commitment seems dominant) than for marketing cooperatives (where normative and affective commitment are important next to calculative commitment). Commitment issues also have an impact on the internal governance of the cooperative.

Also, for performance studies and for impact studies, it is important to make a distinction between the type of transaction between farmers and their cooperatives.

4.3. Multipurpose / multistakeholder versus single purpose / single stakeholder

Most agricultural cooperatives have started as a small, community-oriented organisation, providing multiple services to their members. Particularly for smallholder farmers in remote rural areas, the cooperative may be the only source of inputs (such as fertilizers, seeds, machinery), credit, technical assistance and output marketing. In addition, many cooperatives also organize temporary labour, offer warehouse facilities, do quality grading and packaging, perform bargaining in output markets, and may even carry out processing of farm products. Thus, such village cooperatives are typically multipurpose cooperatives.

In multipurpose cooperatives, members have diverse investment interests (Sykuta and Cook, 2001). They are prone to the portfolio problem, which means that investments from the common pool of reserves will benefit one group of members more than another group. Also, producers of one commodity may not fully understand the value and costs of investments in facilities for other products. Heterogeneity in member interests has implications for decision-making and willingness to invest (Cook, 1995).

Distinguishing between single-purpose and multipurpose cooperatives is important for research on the development and performance of cooperatives. Performance evaluation studies that do not consider cross-subsidization among different activities of the cooperative, may draw incorrect conclusions. As member commitment and satisfaction are influenced by specific cooperative

activities, studying member relations also needs to consider the diversity among member groups.

For instance, Bernard and Taffesse (2012) found that Ethiopian marketing cooperatives that had expanded their activities beyond the tradition marketing function, for instance by including social activities like the prevention of HIV and the provision of literacy training, had lower (marketing) performance than marketing cooperatives that focussed on their main sales function. Thus, knowing the scope of activities is crucial to understand the performance of cooperatives.

Next to multi-purpose cooperatives with one type of members (i.e., farmers), in recent years there has been the rise of multi-stakeholder cooperatives. Multi-stakeholder cooperatives have different types of members who, at first sight, may have opposing interests but still pursue a common cause (Leviten-Reid and Fairbairn, 2011). In the agrifood value chain, an example of a multi-stakeholder cooperative is one that unites both producers and consumers of a farm product, often a regional specialty (Ajates Gonzalez, 2017). In addition, also traders, supporting organisations and retailers could be member of the multi-stakeholder cooperative.

The distinction between multi- and single-stakeholder is important for understanding growth of the cooperative, as growth usually implies that not all stakeholder groups benefit equally. The distinction may also have implications for research on internal governance, particularly on decision-making and agency costs, as these costs may be higher in multi-stakeholder than in single-stakeholder cooperatives, as different stakeholders have different preferences for the strategy of the cooperative and may have different sources of power to influence the strategy of the cooperative.

4.4. Type of members

Two distinctions need to be made. One is between cooperatives with a membership of autonomous producers (who have their individual farm and jointly own the cooperative firm), and cooperatives whose membership consists of workers who provide their labour to the cooperative firm and jointly own the cooperative firm. The other distinction is between cooperatives that have farmers and farms as their members and cooperatives that have other cooperatives (and maybe other entities) as their members.

While most agricultural cooperatives around the world are owned by independent farmers who have their own farm, in some countries agricultural cooperatives are of a different breed. They are like a collective farm: the farmers who own the cooperative are also the workers on the jointly-owned farm. Sometimes farmers both have their own small farm and are farm-workers on the jointly-owned farm. These worker-owned agricultural cooperatives are also called production cooperatives (e.g. Beckmann and Hagedorn, 1997). [3] Production cooperatives still exist in the Eastern part of Germany and in some countries in Central and Eastern Europe (Hagedorn, 2014).

Understanding the type of members is important because the member-cooperative relationship is quite different across these types of cooperatives. Differences can be found in investment options, in the dependency relationship and in the type of services that the cooperative provides to its members.

The second distinction refers to the federated structure many agricultural cooperatives are part of. Cooperatives are often members of a second-level organisation: the union or federated cooperative. Primary cooperatives and union usually have a clear division of labour. Primary cooperatives work at the village level and are responsible for collecting farm products, while unions work at the regional level and take care of processing and marketing the farm products. Studies on the effectiveness and performance of cooperatives need to make a distinction between these two types, because objectives, efficient scale, growth strategies, member relations and manager capacities all differ (see e.g. Uzea and Fulton, 2014).

The type of members – farmers as members of the primary cooperative and cooperatives as members of the union – also has implications for social capital and decision-making. While in primary cooperatives one-member-one-vote is dominant, for the union proportional voting is more common (Bijman et al., 2014). As unions usually have smaller but more heterogeneous memberships, they are more prone to disequilibrium problems (Søgaard, 1994; Fulton and Hueth, 2009).

Table 2 summarizes the above described distinctions among cooperatives. In this table, the differences are presented as a dichotomy, although in reality they are more likely to be on a continuum.

[3] In the past, production cooperatives have also been called producer cooperatives (e.g. Bonin et al., 1993).

Table 2. Key distinctions among cooperatives

	Characteristic	From	To
1	Type of objectives	Social / community	Economic / members
2	Type of transactions	Sales (members are suppliers of farm products)	Purchase (members are buyers of inputs and services)
3	Scope of activities and members	Single purpose / single stakeholder	Multi-purpose / multi-stakeholder
4	Type of members (1)	Autonomous farmers	Workers
5	Type of members (2)	Farmers, in the primary cooperative	Cooperatives, in the federated cooperative

Source: authors

5. Discussion and Conclusion

Studying the evolution and impact of cooperatives has become popular since the turn of the century, particularly in the field of agricultural and development economics. This popularity is the result of increased policy focus, both in developing countries and in the EU, on reinforcing the bargaining power of farmers and at the same time supporting farmers in their capabilities to supply the quality products that processors, supermarkets and consumers demand (Ciliberti et al. 2020).

There is, however, great diversity among agricultural cooperatives, both in organisational characteristics, such as the type of members, and in functional characteristics, such as the main objectives, strategies and activities of the cooperative. Studies on the development and performance of cooperatives that do not account for this diversity are at risk of being irrelevant. Currently, most research on cooperatives treats them as a black box, which leads to problems in the comparative analysis as well as in drawing correct policy and management recommendations. From a scientific point of view, there are serious methodological issues when incomparable entities are compared. From a policy-making perspective the problem may be even more severe, as recommendations may be ill-founded.

Characterizing cooperatives is important for scientific research on understanding and measuring the performance, the strategy or business model, and the development of the cooperative. It is also important for understanding effective and efficient internal governance, member relations and management structure.

Finally, it is important for understanding the type of state support that may be needed and the effect of state interference.

We developed a classification that is relevant for all streams of academic research on agricultural cooperative, whether studies focus on measuring performance and impact, analysing member relations and internal governance, or exploring the development and evolution of these organisations. The classification is both simple and comprehensive, as it includes only those key characteristics that make a difference in theoretical and empirical research.

Only when researchers obtain a good understanding of the organizational and functional characteristics of the cooperatives they are studying, their research will generate unambiguous insights. In addition, being explicit about the key organisational and functional characteristics allows researchers to further deepen the understanding of how cooperatives can support their members, and how governments and NGOs can support cooperatives. Only when we understand (the differences among) the key characteristics, as well as the mechanisms how these characteristics affect organisational performance, we will be able to move ahead in our ambition to fully grasp the potential and actual contribution of cooperatives to rural development.

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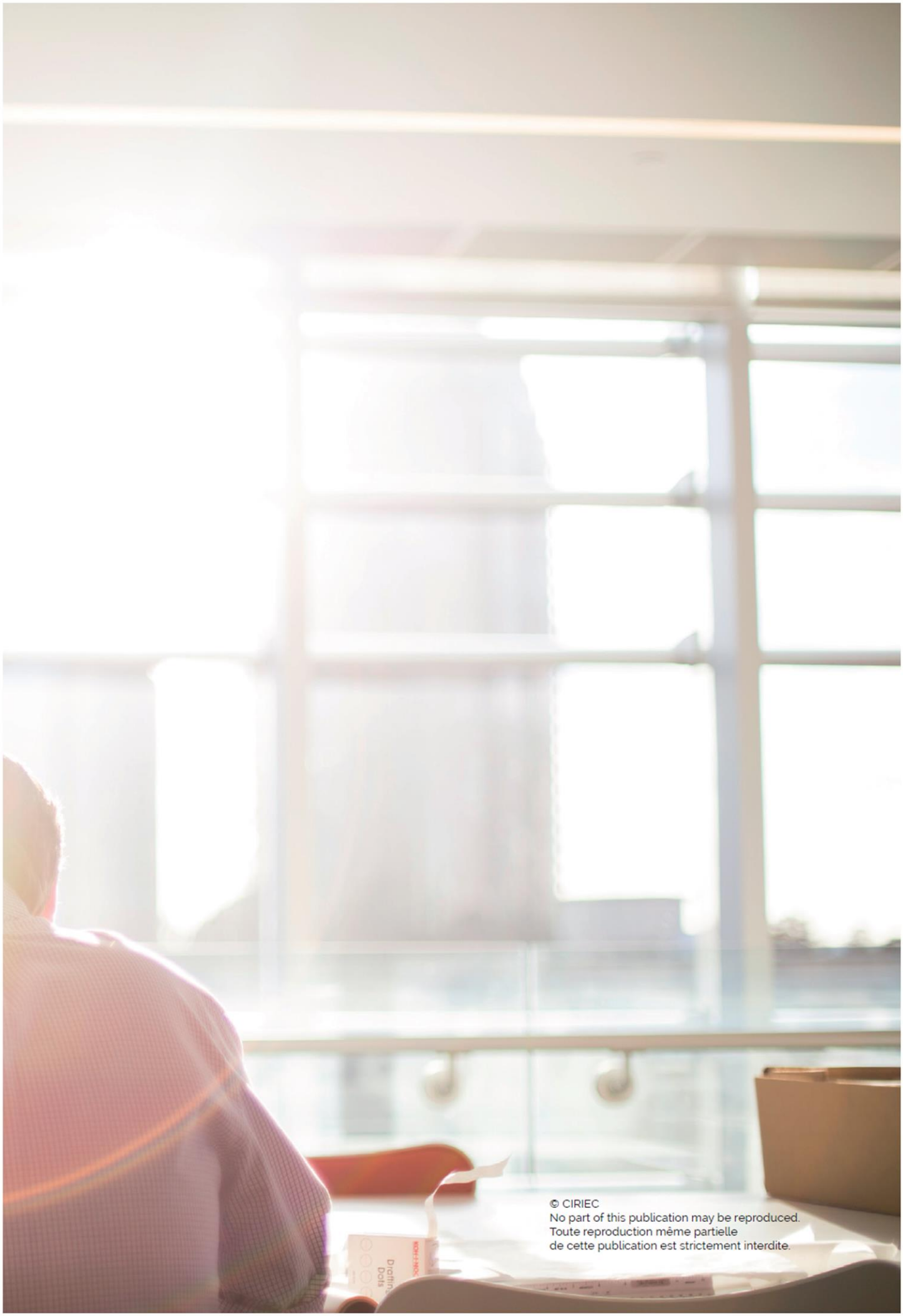

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