**Time, Space and Accounting at Nonantola Abbey (1350-1449)**

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**Abstract**

Accounting historians have provided several accounts of monastic life and accounting’s role in it, considering important settings such as Montecassino and San Pietro abbeys in Italy and Durham Cathedral Priory in England. Research has shown how their governance arrangements and common values enabled the Benedictines to manage their monasteries in an efficient manner which was essential in tackling the misappropriation of resources by organisational actors, including abbots. Other studies have shed light on the use of practical and effective accounting practices by the Benedictines to manage their considerable wealth and pursue their spiritual and temporal goals. Nevertheless, this body of literature is yet to explicitly consider the dimensions of time and space and their relationship with accounting practices. This study begins to address this oversight by analysing the surviving accounting records of the Benedictine abbey of Nonantola in northern Italy from 1350 to 1449. In the accounting books of Nonantola Abbey linear and cyclical conceptions of time coexisted and had an impact on the way in which transactions were reflected in the accounts. At the same time, the abbey was at the centre of a complex network of accountabilities which included lay accountants, farmers and the lessees of the abbey’s properties. The main characteristic of this system was not the accuracy of the records in detailing the assets, liabilities, expenses and revenue of the abbey but the maintenance of a control system to administer an extensive agricultural network and the identification of the relationships between the abbey and the stakeholders inhabiting its space.

**Keywords**

Benedictine, Time, Space, Accounting, Abbey

**1. Introduction**

Carmona and Ezzamel (2006, p. 117) noted that research “on the relationship between accounting and religion or religious institutions is remarkably sparse”, despite these institutions’ influence in society. Nevertheless, Walker (2006, p. 114) noted an “increasing interest in the intersections between accounting and religion in historical contexts”. Such interest reflects the social and economic importance of religious organisations, particularly in contexts such as the Middle Ages when religion exerted decisive influence on both spiritual and institutional life. Accounting and accountability practices were fundamental for religious institutions in this era (Hong, 2014), as shown by Dobie’s (2008, 2011, 2015a, 2015b) analyses of financial accounting, controls and management accounting in medieval English monastic houses. As religious organisations developed, not only did social understandings of organisational practice and governance progress, but accounting and accountability practices evolved.

McPhail, Gorringe and Gray (2005, p. 188) state there is a “need for a broader, more sophisticated perspective” on religious institutions. Hardy and Ballis (2005, p. 251) suggest a need “to consider other ways of conceptualising the roles of accounting and accountability in religious organisations”, whilst Hopwood (1987, p. 207) points out that accounting history should give a more obvious presence to the social forces and processes which characterise the settings in which accounting operates. By analysing the 6th century *Rule of Saint Benedict* (Saint Benedict, 1492) and the accounting records of Nonantola Abbey (northern Italy) between 1350 and 1449, the study examines the concepts of “time” and “space” in a medieval religious organisation and how these impacted on, and were mirrored in, the accounts. The study adopts the view that accounting is a social practice that should be studied in the context in which it operates (Burchell, Clubb, Hopwood, Hughes & Nahapiet, 1980; Gomes, 2008; Morgan & Willmott, 1993) and as a practice that is identified with a particular space and time (Carnegie & Napier, 1996, p. 7) which embeds and solves the multiple rationalities insisting on its practice and development. It is contended that the concepts of “time” and “space” inform the use of accounting and accountability practices. We suggest that scholars should pay attention to how these concepts influence any interpretation of the life and accounts of organisations and their networks of accountabilities. Different understandings of time and space will have an impact on the purpose of accounting records and the way in which transactions are recorded.

Monasteries can be viewed as pioneers of governance and have had a major impact on the development of the economy in Europe (Zamagni, 2008). Benedictine abbeys are known to be highly stable organisations (Hiebl & Feldbauer-Durstmüller, 2014). The long-term existence of Benedictine abbeys may be due to a suitable understanding and use of management accounting. It can be argued that such practices were used to organise, network and balance a complex set of territorial interests or accountabilities, represented by individuals, communities, associations and resources in which the abbeys were embedded. Up until now, accounting history studies on Benedictine monasteries (e.g. Dobie, 2015; Prieto, Maté & Tua, 2006; Raftis, 1961) have shown the precision of the accounting systems in monastic orders in the Middle Ages and subsequently. They have also shed light on the complexity of balancing heterogeneous interests, including those of the monastic community, the Church, the aristocracy and the local population, but they have not explicitly considered the dimensions of time and space in the administration and recording of their large and mainly agricultural patrimony.[[1]](#footnote-1)

The remainder of this paper proceeds as follows. In Sections 2 and 3 the concepts of time and space and their relationships with accounting records and accountabilities are introduced. Section 4 outlines the method of analysis of the primary sources. Section 5 describes the context of this paper, namely the Benedictines and their abbeys. In Sections 6 and 7 the findings of the analysis in terms of time and space concepts informing accounting practices at Nonantola Abbey are presented. In Section 8 a discussion these findings and their implications and suggestions for future research are offered.

**2. Concept of time and accounting**

As this section will show, conceptions of time have differed throughout history, along with the relationship between time and accounting practices. The concept of time and the measurement of its passage have been studied since the early days of humankind. In the Roman era time was mostly seen as cyclical and governed by identical cycles of repetition through which the future might be seen to relentlessly perpetuate the past. The use of indiction-years in imperial Rome was one of the first attempts of time-reckoning that anticipated a linear understanding of time, although it was still based on cycles of 15 years (Cheney, 1945).[[2]](#footnote-2) With the advent of Christianity a new configuration arose, that of linear time (Roeckelein, 2008). In a theocratic society, time is seen as divinely created (Baldwin, 1901) and consists of a past, a present and a future. Nevertheless, the rise of the concept of linear time did not cause the immediate rejection of cyclical time, most especially in the Middle Ages when the two coexisted. Even if the social dominance of Christianity exerted decisive influence on the way in which time was conceptualised, in the Middle Ages everyday life was still influenced by the cycles of seasons, to which different activities related (Felloni, 1997). Time was not abstract, most especially in the context of labour activities, but strictly linked to human activities routinely performed (Thompson, 1967; Landes, 1983), such as sowing or harvesting, with the main means to measure it being the bell of a church which marked canonical hours (Le Goff, 2000).

Even the *Rule of Saint Benedict*, written at the beginning of the 6th century and which exerted decisive influence on the development of western monasticism still reflected the main traits of a cyclical conception of time. A monk’s life was organised according to a highly detailed timetable, which prescribed the type of activities and their order in the winter and in the summer, with different tasks for weekdays and festivals.[[3]](#footnote-3) Consistently, on week days:

the first hour three psalms shall be sung, each along with the ‘Glory be to the Father’. Each [psalm] shall be introduced by the verse ‘Save me, O God’ and the hymn of the hour. Then a reading [of the Holy Scriptures], the verse, the ‘Kyrie eleison’ and the final prayers shall follow. The third, sixth and ninth hour shall follow the same order, that is first the verse ‘Save me, O God’, the hymn of the hour, three psalms, one reading, the verse, the ‘Kyrie eleison’ and the final prayers” (Saint Benedict, 1492, chapter 17, p. 10r, authors’ translation).

Chapter 18 of the *Rule* provided further detail on the religious duties of each monk by thoroughly explaining which psalms were to be sung at different points in the cycle of each day (Saint Benedict, 1492, chapter 18, p. 10v). The *Rule* was also insistent in detailing the other activities of the monks, including meals, rest breaks and, critically, work (Saint Benedict, 1492, chapter 48, p. 49r). The *Rule* therefore put the focus on the same cycle of activities that was to be repeated every day for the entire life of the monk. The extreme regulation of these cycles of repetition mirrored a cyclical understanding of time. In the *Rule of Saint Benedict* it was the repeated cycle of daily activities rather than its accurate measurement which made the passage of time “visible” and meaningful.

The advent of mechanical clocks (North, 2005) and the diffusion of clock towers in villages in the 14th century (Le Goff, 2000) brought a more uniform measure of time and the socialisation of the concept of linear time. A new understanding of time started to rise, one which was more certain and less influenced by the vagaries of nature; time began to be seen as independent of events (O’Driscoll & Rizzo, 1985). The clock made possible the attribution of a specific, fixed time of the day to labour activities and measure the time taken to perform these activities, which was essential to the development of production and commerce. Increasingly, linear time became “commodified” (Marx, 1981; Warf, 2008), seen by the rising merchant class as an essential resource that had an intrinsic value (Rämö, 2004).

Accounting practices are informed by time by way of different ‘periods’ of measurement and reporting. Different conceptions of time sustain the allocation of scarce time across different activities and influence the way in which time is perceived by organisational actors. Consistent with a cyclical view of time, research has shown how organisational activities follow different patterns, which influence time reckoning by organisational actors (Ezzamel & Robson, 1995). Cyclical phases of organisational practices, including those related to accounting practices such as budgeting and performance reporting, help to maintain stability within the organisation (Jones, McLean & Quattrone, 2004) and inform actors’ understanding of the present and future position of the organisation itself. Notwithstanding the clear patterns followed by many organisational activities, the modern conception of time is firmly grounded in linear time. According to Quattrone (2005, p. 203): “writing, as much as recording and accounting, is a means of giving form to the distinction between past, present and future by crystallizing histories or business activities in written facts”. The presence of a specific date is therefore an essential element for each transaction (Chambers, 1989). Moreover, the most obvious display of the way in which accounting mirrors a linear conception of time is provided by financial reporting when financial statements are published at regular intervals. This practice originated in the Middle Ages when the diffusion of a linear conception of time and the consciousness of its usage and relevance meant that accounting reports started to be prepared periodically (Adamo, Alexander & Fasiello, 2019). Temporal demarcations in the form of closing periods for financial statements set a benchmark in time and enabled a judgement on whether a company has progressed over time or not (Quattrone, 2005).

Accounting tools are also a means to sustain the definition of temporal priorities and the ordering of activities (Chandler, 1977; Ezzamel & Robson, 1995; Ezzamel, 1994). This in turn fuels the conception of time as a resource. The efficiency in the use of time is then made visible and understandable by means of accounting (Hopwood, 1990). Based on the existing conceptions of time and their potential relationship with accounting practices, the analysis of the accounting records of Nonantola Abbey identifies the conception of time reflected in the accounts. It also shows the ways in which this had an impact on the management of the wealth of the abbey in the last 100 years when Nonantola was an independent organisation.

**3. Concept of space and accounting**

The concept of space which will be explored in this study is influenced by the historical period of analysis (1350-1449) and intrinsically connected to the conceptualisation and perception of time in the late Middle Ages, through the *Rule of Saint Benedict*. Different centres of power populated the space of the late Middle Ages in Italy: the empire, the papacy, communes, maritime Republics, feudal properties, parishes and monasteries. Leaving aside a debate on the interconnections among these centres of power, we are interested in re-constructing the relationships between Nonantola Abbey and the agricultural lands and cities which were directly or indirectly accounted for in the abbey’s books. As shown by Grinnell (1946) and the *Rule of Saint Benedict* (specifically Chapters 4, 31, 32, 34, 48, 50, 57), the concept of space in the Middle Ages was influenced by the relationship of the human being with God’s creation and the ability of human beings to control (or not) that space. Whilst a delimited space represents an organised social order (e.g. urban spaces, cultivated lands, houses, monasteries), an open space may reflect potentially hostile natural forces (e.g. uncultivated lands, forests, the sea). Such forces convey a sense of distance between the human being and God and, subsequently, a risk of identity loss (Foucault & Miskowiec, 1986; Pearson & Richards, 2003).

Allen (2000) contends that before the 16th century, 80 per cent of the Italian population was involved in agricultural activities either in urban, rural non-agricultural and agricultural landscapes. Non-agricultural activities were performed by domestic servants, transporters, builders, bakers, millers, innkeepers, shoemakers, tailors, clergymen and shopkeepers although many people worked in both economies. Table 1 provides an estimate of the number of people in Italy who were engaged in agricultural activities between 1300 and 1400 in urban, rural non-agricultural and agricultural landscapes.

**Insert Table 1 here**

If we leave aside the complex interactions between urban and rural (non-agricultural and agricultural) landscapes (Braudel, 1973, 1992, 1995; de Roover, 1974), between the 14th and the 15th centuries the typical rural landscape consisted of both the area occupied by the house and the area dedicated to exploiting and obtaining agricultural resources. This consisted of fields containing crops, livestock resources (hillsides) and timber resources (woods and forests), the network of paths and roads that joined the different spaces and the other infrastructures that formed a part of rural life. This included irrigation and drainage systems, quarries and spaces used for specialised production and transformation processes, such as water mills. The rural landscape was adapted to the conditions of the environment, as well as human action (Ballestros-Arias, Criado-Boado & Lima Oliveira, 2011). Moreover, there were areas of common wood and pasture, owned and used collectively and collectively administered, which were an integral part of the agricultural system. Late medieval Italy witnessed a return to a type of Roman farming in which the owner and their tenant shared a farm’s produce (“sharecropping”, Cato, 1933; White, 1970). The land was almost always unfenced, being simply inspected regularly during the growing season. Permanent enclosure was normally confined to plots of planted land (orchards, vineyards) near villages or towns (Postan, 1966).

Bellero (1985) outlines how the economy of Benedictine abbeys and convents was primarily based on land acquisition and cultivation and every abbey or convent established a specific pattern of economic dependence with their territory. Albini (2016) outlines the complexity of this space, not only in economic terms but also in demographic and social terms. The difficulty of evaluating the role of this productive space within the larger economic reality of a political unit enhances the relevance of studying the boundaries and the accounting of that space. To that purpose, we propose an exploration of the space of Nonantola Abbey in the late Middle Ages through the adoption of accountability lenses, which will be applied to the analysis of the patrimony of the abbey, its dissemination and related accounting treatment.

As accountability is constrained by the political and socio-economic factors of the institutional system in which it operates, accountability lenses can be analytically situated within the historical context of Nonantola Abbey. In this context, relationships were being enacted and stakeholders of the abbey (tenants, farmers, millers, monks, the Church) were made visible (Black, 2008; Bovens, 2010; Parker & Gould, 1999). Previous studies have examined the role of accountability and visibility in the construction and perception of the “self” in religious orders (Hoskin & Macve, 1986; Maclean, Walker & Matsuba, 2004). In contrast, the accountability lenses adopted in this paper relate to Bovens’ (2005) definition of accountability as “institutional arrangement”. Since stakeholders populating the institutional field (Dillard, Rigby & Goodman, 2004; Scott, 2008) of Nonantola Abbey may be involved in various relationships, we focussed on those stakeholders and relationships which emerged from the analysis of the accounting documents related to the abbey patrimony. In addition to providing an extensive examination of the abbey wealth through its properties, this analysis identified the key stakeholders of the abbey and their accountability relationships as “made visible” by means of the accounting tools at the time.

Black (2008) contends that accountability relationships are the “route” through which legitimacy claims are constructed, validated, and/or contested. Similarly, Harlow and Rawlings (2007, p. 545) speak of “legitimation through accountability” whilst Bovens (2005) proposes that obtaining, maintaining and enhancing legitimacy is one of the central functions of accountability. Bovens, Goodin and Shillemans (2014) link the idea of accountability to the acquisition and maintenance of organisational legitimacy. They contend that maintaining relationships that are consistent to the expectations of stakeholders is the basis of a socially responsive structure of accountability that delivers legitimacy. Through the accounting representation of accountability relationships between Nonantola Abbey and its stakeholders, the analysis will ultimately shed light on the legitimacy of the abbey. Black’s (2008, p. 138) argument is in principle applicable to “any organizations on which legitimacy and accountability demands are made, or which themselves seek to enhance their legitimacy and accountability”. We expect that the legitimacy of organisations like the Benedictine abbeys was defined by the accountability relationships (Scott 2008) in the territories in which they operated.

Accountability has multiple meanings (Bovens, 2010). In this paper, we consider accountability as a mechanism that entails a relationship between the actor (the accountee) and the forum (the accountor) (Pollitt, 2003); one that can be made visible through accounting. As indicated by Bovens (2010), an accountability relationship involves the possibility of debate among stakeholders and the requirement for the accountee to provide answers to the forum, which become visible from the structure and contents of the accounting documents utilised to manage an organisation’s patrimony (Aucoin & Jarvis, 2005; Bovens, 2010; Jarvis, 2014). Thus, in this study, the representation of stakeholders and stakeholders’ accountability relationships in the accounting documents about the patrimony of the abbey create and shape the relevant institutional arrangements or “space” of the abbey in the Middle Ages (Aucoin & Jarvis, 2005; Klein & Day, 1987; Mulgan, 2000; Pollitt, 2003).

**4. Method**

The paper is based on an extensive examination of primary sources located at the Archive of Nonantola Abbey (ANA). These sources have been accessed and analysed by the authors with the support of two professional medievalists with specific expertise in monastic history and archival research. The study began with a preliminary search for relevant bibliographic material on the Benedictine presence in Italy, which has enabled the authors to identify the existence of several abbeys and monasteries in the Italian territory dating back as far as the 6th century (Penco, 1983). We focused our attention on Nonantola since in the Middle Ages it was one of the most important and wealthy abbeys in Italy due to the remarkable scale of its land holdings and influence on other parishes and monasteries (Malagoli, Piccinini & Zambelli, 2004; Kher, 1911; Andreolli, 2004). Moreover, unlike other important Benedictine establishments, such as Montecassino (Palmaccio, Lardo, Cuozzo & Lombardi, 2017; Serra, 1989) or San Pietro (Montrone & Chirieleison, 2009), the accounting documents of Nonantola Abbey have not yet attracted the interest of accounting scholars.

As outlined in the following section, the remarkable early influence of the abbey was followed by a fast and dramatic downfall after its loss of power in 1261, when its territory formally became part of the Modenese dominion. The abbey came under the influence of the Este family in 1325, whilst in 1449 it became an abbey *in commendam*[[4]](#footnote-4) due to a reduced number of monks. As such, the accounting records related to its Benedictine period are limited and specific. Since these primary sources are not digitised and continue to form part of a religious archive, their availability and access are constrained by the need for approval and supervision of a religious archivist during the consultation. We have thus focused on secondary sources in the form of historiographic works which detailed the development of the abbey over time to gather relevant background information which could inform our analysis of the accounting documents.

The Archive of Nonantola Abbey holds over 5,000 documents and registers relating to the spiritual and temporal life of the institution, some of which date back to the 8th century. Stored in the archive are even parchments signed by the Emperor Charlemagne (ANA, Karolus Magnus, Apographum vetus, Pergamene, 789). Particularly important for the current research has been the series *Libri d'amministrazione d'età medievale* (Medieval Administrative Books).[[5]](#footnote-5) The only inventory of the registers of the *Libri d'amministrazione d'età medievale* series is included in Fregni’s (1990) work *I libri di amministrazione dell’abbazia di Nonantola d’età medievale (secc. XIII-XV)*. The series is composed of 97 registers arising from the period between 1285 and 1449, when the appointment of Gurone d’Este, son of the Marquis of Ferrara, as the new abbot heralded the beginning of the *in commendam* period, with the abbey losing what remained of its independence. More specifically, there are only two registers dating back to the end of the 13th century, whilst there are 33 covering the 14th century and 62 for the 15th century. These documents can be grouped into two categories: 1) books of pensions and appraisals of farmland, which record the income from the properties of the abbey, most especially lands. The name of the lessee is often included, along with the amount of rent payable (the so-called “pension”), a description of the property and sometimes the details of the contract by which the property had been rented out; 2) other accounting books, including revenue and expenses books, lists of debtors and creditors and books relating to the “wheat cycle”.

The authors have focused on the 100 years before Nonantola became an abbey *in commendam* (1350-1449), for which a wealth of materials is available. The starting date (1350) of the period of analysis was chosen to exclude the historical vicissitudes of previous passages of power under different dominations and families and to ensure that the analysis related to a relatively stable period in the abbey’s history. Indeed, between the end of the 13th century and the beginning of the 14th century the control of the abbey territory passed from the Commune of Modena to the Commune of Bologna and it finally returned to Modena in 1325, until 1449 (Tiraboschi, 1785). By means of the inventory included in Fregni’s (1990) work, which also provides a description of each document, we initially selected a representative sample of registers for each category, namely registers n. 1, 21, 36, 52, 62, 66 (books of pensions and appraisals of farmland)[[6]](#footnote-6) and 14, 19, 23, 25, 27, 28, 37, 44, 55, 61 (other accounting books), in order to reasonably cover the whole period under analysis. It was decided to select more registers from the second category as its documents serve different purposes, ranging from tracing harvests to recording revenues and expenses or debtors and creditors. From an analysis of the books of pensions and appraisals of farmland, it was noted that their content and purpose did not change significantly over time.

Each of the chosen registers has been photographed and then transcribed to enable the authors to understand the form and content of each document, along with the organisational actors and stakeholders involved in the transactions recorded therein.[[7]](#footnote-7) The preliminary observations made by the authors on each document were then discussed with the medievalists who took part in the research to ensure accuracy. Key information drawn from the detailed transcriptions of original documents was then summarised by means of tables, which enabled the authors to appreciate the overall functioning of the accounting system of Nonantola Abbey and the links between different registers. This process, along with the discussion of preliminary findings, made the authors realise that further documents had to be accessed if a complete picture of the accounting documents in use at Nonantola was to be achieved. For example, the authors realised that one of the “other accounting books” (Register n. 37, a “book of bad debts”) referred specifically to a book of pensions (Register 31) which was not included in the original sample. As a result, Register n. 31 was added to the sample and cross-references were analysed, through which the authors appreciated the way in which the abbey sought to track “bad debts”. The process of analysis was iterative and incremental: the descriptive tables which recapped the details of the registers analysed were constructed progressively, based on the recurring information emerging from the reading and translation of the sampled registers. These elements are clarified in Sections 6 and 7, while the Appendixes provide some examples of the summary tables constructed for this study.

**5. The Benedictine order and Nonantola Abbey**

*5.1 The Benedictine order, its governance and accounting practices*

The history of western monasticism is “almost entirely pervaded by Saint Benedict’s charisma” (Dell’Omo, 2011, p. xix). Soon after the foundation of the order in the 6th century, the Benedictines’ presence started to spread in Europe. The *Rule of Saint Benedict* exerted significant influence over the development of new monastic houses when the Emperor Charlemagne made it compulsory for all monasteries in the Carolingian Empire (Kieser, 1987, p. 106). Benedictine abbeys such as Montecassino, Cluny and Cîteaux, the latter being heads of distinctive Cluniac and Cistercian orders, were major sources of spiritual and temporal power in the Middle Ages (Penco, 1983).

Following the foundation of the order, the number of monks and the extension of the land holdings of Benedictine monasteries grew enormously. This enabled the Benedictines to accumulate immense wealth, which in turn fuelled the need for an efficient governance system that would ensure the successful management of commercial exchanges and tackle misappropriation of the monasteries’ riches by abbots and others (Rost, Inauen, Osterloh & Frey, 2010). At the same time, the creation of an accounting system which would monitor the different activities (and their economic results) performed in monasteries and support the management of lands soon became essential (Dobie, 2008, 2015a). Each monastery was ruled by an abbot and his deputy, the prior. The presence of a common value system derived from the *Rule*, the careful selection and involvement of monks in the organisational life of monasteries and the internal monitoring processes have been critical in ensuring the success of the Benedictine order (Rost, Inauen, Osterloh & Frey, 2010; Inauen, Rost, Osterloh & Frey, 2010). The governance practices of Benedictine monasteries were also based on strong external discipline, exercised by means of visitations[[8]](#footnote-8) and the hierarchical structure of the order (Gorsuch, 1972; Dobie, 2015b), and on internal behavioural incentives.

Effective governance was supported by the use of accounting tools. Accounting practices form an essential part of the life of the monastery by their ability to provide information which could inform managerial decisions (Dobie 2008; 2015a; Montrone & Chirieleison, 2009; Harvey, 1999; Knowles, 1956). They were used to demonstrate the dedication of the monastery to pursuing its spiritual and temporal goals (Dobie, 2015b; Payer-Langthaler & Hiebl, 2013). The importance of accounting to the Benedictines was such that they developed early forms of process accounting when the granator’s accounts traced the transformation of cereals into bread and ale (Dobie, 2011). The function of these accounts was not therefore limited to the discharge of stewardship as in the medieval tradition but also represented one of the first measures of the efficiency of an organisation’s “production process” over time. Accounting tools continued to support the rational administration of the assets of Benedictine monasteries through to the end of the Middle Ages and into the 18th century. At this time they were used to preserve the privileges and properties of monasteries, enabling them to play an important part in the economic affairs of a country, most notably in Spain and Italy (Prieto, Maté & Tua, 2006; Palmaccio, Lardo, Cuozzo & Lombardi, 2017).

*5.2 Nonantola Abbey in the 14th century*

Nonantola Abbey, dedicated to Saint Sylvester[[9]](#footnote-9) for some of his relics are held therein, was founded around 752 near the city of Modena in today’s region of Emilia-Romagna in northern Italy (Spinelli, 1980; Serrazanetti, 1991). The extension of its patrimony reached its climax in the 11th century, when Nonantola Abbey was the centre of a territory which stretched for 1,500 square kilometres from the Apennines to the city of Ferrara (Malagoli, Piccinini & Zambelli, 2004); other properties included lands in Lombardy, Piedmont, Veneto, Tuscany, Marche, Umbria and even a church in Constantinople (Spinelli, 1980; Carrara, 1998; Serrazanetti, 1991). As noted by the abbot of Farfa, another contemporary large Benedictine abbey in the 11th century, no monastery in Italy could match the power and wealth of Nonantola (Andreolli, 2004).

The 14th century was an epoch of decay for Nonantola Abbey, and the number of residing monks dramatically fell. The abbey, as in the Benedictine tradition, was still ruled by an abbot and his prior, but the accounting function and the management of lands were often entrusted to a layman with specific expertise, such as a notary or a *fattore* (chief farmer). In the 14th century the abbey was caught in the war between the communes of Bologna and Modena, with just 11 monks surviving the plundering of the city of Nonantola following a battle in 1325 (Tiraboschi, 1785). This added to the spread of plague in 1348 and the debilitating taxes imposed by the Pope, including a lump sum payable on the appointment of each new abbot (Malagoli, Piccinini & Zambelli, 2004), which meant that the financial situation of the abbey quickly deteriorated.[[10]](#footnote-10) The situation was worsened by the appointment of abbots who were more concerned with the accumulation of personal riches than with the wise administration the abbey (Tiraboschi, 1785). At the death of abbot Giangaleazzo Pepoli in 1449 the abbey comprised only six monks (Andreolli, 2004). Giangaleazzo was the last resident abbot; after his death Nonantola was administered by abbots *in commendam* who lived far from the abbey and often disregarded their duties, seeking the title merely to increase their social prestige.

**6. Time and accounting at Nonantola Abbey**

This section investigates how different conceptions of time were reflected in the accounting books of Nonantola Abbey between the mid-14th century and mid-15th century and influenced the way in which accounting practices were used in managing the resources of the abbey. The most striking example of the importance of a cyclical conception of time were the books which documented the “wheat cycle” (see Figure 1). These registers, which appear both in the 14th and 15th centuries, were normally kept by the *fattore*. In these books (ANA, Register n. 23, 1354; ANA, Register n. 25, 1357-1359; see also ANA, Register n. 61, 1435-1439) records followed the main phases of agricultural production. As in other contemporary monastic establishments the lands belonging to the abbey were leased out to farmers who enjoyed the right to manage them for several years (Harvey, 1999). Although different contracts were in force, normally farmers were required to pay a fee in kind, cash or unpaid labour (Debbia, 1990) and could retain part or all of the harvest. For most of these lands, the abbey provided farmers with the seeds to be used in the sowing season, most especially wheat, barley, spelt and broad beans (see Appendix III). After the harvest was reaped, farmers were expected to return an amount of seeds equal to that received at the beginning of the sowing season plus a share of the harvest which depended upon the agreements between them and the abbey.

**Insert Figure 1 here**

Accounting records followed this cycle closely and, although transactions were linked to the year in which they happened, in the 14th century there was no specific indication of the day or even the month when the said transactions took place. Dates for individual transactions were added in the 15th century, although this did not significantly modify the cyclical approach adopted by these registers (ANA, Register n. 61, 1435-1439). Moreover, the cycle embraced two years as the seeds were handed out in the autumn whereas the payments made by farmers after the harvest took place in the summer of the following year. The *fattore* would therefore record the amount and kind of seeds given to each farmer for the lands they managed and then calculate the total for each type of produce, which represented an outflow of resources for the abbey. After the harvest the *fattore* then recorded the amount of produce returned by each farmer to the abbey to repay the seeds received the year before and the share of harvest belonging to the abbey, which constituted an inflow of resources. The total amount of produce received was also calculated (ANA, Register n. 23, 1354). Out of this amount, the *fattore* would identify the quantities to be distributed to the abbot, to the monks and to be distributed as seeds for the next “production cycle”.[[11]](#footnote-11)

The accounting records relating to production mostly followed agricultural production processes and showed the stock of wheat and other products before and after each harvest. Other registers were concerned with providing information about how the share of produce belonging to the abbey was used (ANA, Register n. 25, 1357-1359). Wheat and other products could have been sold to earn cash to be used to pay for the needs of the monks. As was common practice in medieval rural communities, where bartering of surplus was still important, part of the harvest was exchanged for other goods or services needed by the abbey, including olive oil, salt, wine and animal feed. For each transaction, Register n. 25 (see Appendix IV) details the amount of wheat or other produce (and its value) which was sold to sustain the expense or directly given to the creditor as payment. Cereals could also be milled to produce flour and bread, although there were no specific accounts to document the processing of flour into bread and hence no attempt to measure the efficiency of this process, as happened in some Benedictine establishments, most notably Durham Cathedral Priory (Dobie, 2011). The register concerned with detailing the use of harvests recorded each transaction on the specific day in which it occurred. Totals were not calculated on a monthly or yearly basis, but simply at the end of each page. The period covered by these registers is that in which the accountant (probably the *fattore*) held his office. A specific section of this 14th century register was devoted to documenting the expenses paid by means of milled wheat relating to giving hospitality to pilgrims (ANA, Register n. 25, 1357-1359, 4r-6r).

Accounting books dedicated to recording revenues and expenses for the abbey represent a significant part of the surviving records at Nonantola and seem to adopt a linear conception of time (ANA, Register n. 14, 1349-1353: ANA, Register n. 19, 1351-1354; ANA, Register n. 27, 1365; ANA, Register n. 28, 1365-1366; ANA, Register n. 44, 1409-1416; ANA, Register n. 61, 1435-1439). The books are normally kept by a *fattore*. However, Registers n. 27 and 28 are kept by a *vicario* (vicar) who reported to the prior. This seems to be the result of the removal of the abbot by the Pope in 1365, after which a prior and a vicar took over the management of the abbey (Tiraboschi, 1785, p. 160).[[12]](#footnote-12) As a result, the vicar himself was entrusted with the duty to keep the abbey’s accounts, thus ensuring a reliable picture of the financial situation of the abbey could be provided to the prior. Revenues and expenses were recorded in separate sections of the register. Nevertheless, there was no attempt to calculate totals for revenues and expenses for a year and document any surplus or deficit arising. As for most of the registers at Nonantola, the timeframe adopted in the book is the period which embraces the entire office of the accountant, often a number of years (see for example ANA, Register n. 44, 1409-1416). In these books it is clear that the main sources of revenue for the abbey were proceeds from rented lands. Records grouped lands around the main areas in which the abbey’s properties were located, and payments were recorded in chronological order. Expenses, mostly made up of purchases of food, tools or services, were recorded in chronological order but without an indication of any totals at regular intervals.

At Nonantola Abbey, especially in the 15th century, specific registers relating to debts and credits started to be used to keep track of payments to be made or received (ANA, Register n. 37, 1400; ANA, Register n. 55, 1423-1427). Register n. 55 offers an example of how debts and credits arising from the overall activities performed at the abbey were recorded (see Appendix II). Two pages were used for each debtor; on the left-hand side the amount owed was noted, whilst on the right-hand side any payments made were recorded. The date in which the debt/credit arose were often indicated, whilst the dates in which payments were received or made were always recorded. Nevertheless, this kind of accounting record did not specify the date when any payments would be due, which generated significant control issues, to the point that some debtors did not pay their dues even for many years: one of the lessees accumulated a debt equal to 12 years’ rent (ANA, Register n. 55, 1423-1427, 2v). Other registers were specifically dedicated to recording past due amounts owed by those who rented the lands of the abbey. Register n. 37 (ANA, Register n. 37, 1400), which takes the name of “book of bad debts”, offers one of the few examples of records which are specifically linked to another register, a book of pensions (ANA, Register n. 31, 1373). Entries were organised around the territories to which the debts referred; the amount of yearly rent was indicated along with the overall debt accrued.

Interestingly, many of the accounting books used at Nonantola Abbey are heterogeneous in their content. Although most of the entries in a register refer to the same “accounting object”, such as the “wheat cycle” or revenues and expenses in cash or in kind, sections which are not related to the previous entries in any way may be present. An example of this is the last section of the register devoted to highlighting how the harvest for the year had been used (ANA, Register n. 25, 1357-1359, 12r). In this register, the last section presented miscellaneous expenses, including purchases of ropes, candles and travel expenses which were readily paid in cash and did not seem to be related to sales of wheat or other products. At the same time, one of the sections of the register documenting revenues and expenses for the activities performed at Nonantola (ANA, Register n. 61, 1435-1439) was dedicated to the “wheat cycle”. This heterogeneity could be explained considering that paper was in short supply and extremely expensive, so it was not infrequent at the time that a bookkeeper included in the same register different kinds of transactions occurring during the time he held his office to save money (Montrone & Chirieleison, 2009).

Cyclical and linear conceptions of time seem to have been represented in the accounting records of Nonantola Abbey. Christian time is predominantly linear and accounting records, most especially those devoted to the recording of revenues and expenses, reinforce an understanding of time which constantly flowed and was characterised by an irreversible sequence of events (Gould, 1987; North, 2005). Nevertheless, time in the accounting books of Nonantola was not the neutral, objective, easily divisible and clearly demarcated linear time. No artificial segmentation of time was present as events were recorded as an ongoing flow through which the abbey flowed metaphorically towards God (Le Goff, 2000). As Saint Benedict reminded his followers “He gives us the days of our mortal life as the time to correct our shortcomings” (Saint Benedict, 1492, p. 2r); as a result, what really mattered to a monk was not time *per se* or its passage, but rather its fruitful use. Human activities were therefore pivotal as they were the only means through which the merits of a Christian should be evaluated. How these were recorded and related to a specific time was less important.

In striking contrast to modern accounting practices, which impart concreteness and objective reality to past and present activities (Ezzamel & Robson, 1995), at Nonantola no clear boundaries were created between a “past” and a “present” for all time belonged to God and the determination of totals which would clearly demarcate different time periods was not a priority. The only breaks in this flow were represented by the periods of office of the accountants which marked the end of an accounting period and the beginning of the next. Nevertheless, the flow of activities was not impacted and no attempts at summarising the position of the abbey at a certain point in time were present, even when a new accountant started their office. The scarce attention in setting clear temporal limits to organisational activities was also mirrored in the scarce effectiveness of accounting records in sustaining the collection of debts when debtors could skip payments for years without being called to account for the missed payment. Accounting practices were therefore only partially effective in enabling the synchronisation of organisational activities at Nonantola Abbey.

The absence of temporal standards or temporal benchmarks, the setting of which is believed to represent one of the key functions of accounting practices when a linear conception of time is adopted (Quattrone, 2005; Adamo, Alexander & Fasiello, 2019), meant that there was no possibility of evaluating the economic progress made by the abbey over time. At the same time, the presence of conflicting views of time within the same accounting document (ANA, Register n. 25, 1357-1359; ANA, Register n. 61, 1435-1439) whereby chronological and cyclical events co-existed further hindered the possibility of a use of accounting practices as a means to measure the efficient use of time in the generation of money or production yield (Dobie, 2011). As a result, unlike modern accounting tools, the registers used at Nonantola Abbey were not a means for the commodification of time.

The registers of Nonantola highlighted how in the context of agricultural activities a cyclical view of time was still dominating, as exemplified by the “wheat cycle”. The identification of specific dates for transactions, which is critical to modern accounting (Chambers, 1989), tended to lose meaning in favour of an event-based time reckoning (Ezzamel & Robson, 1995) which was largely dominated by human activities. The repetition of these activities, from sowing to harvesting to selling/exchanging produce, the effects of which were given visibility by means of accounting, helped the reproduction of order and stability within the organisation (Jones, McLean & Quattrone, 2004) and were constitutive of individuals’ temporal visioning. As a result, since accounting is believed to diffuse a shared vision of time (Quattrone, 2005), at Nonantola this seems to have been mainly cyclical for time was still not completely independent of events (O’Driscoll and Rizzo, 1985) nor was a unity of value (Rämö, 1999, 2004).

**7. Space and accounting at Nonantola Abbey**

This section utilises the accounting records to examine the sphere of influence of Nonantola Abbey and trace the boundaries of its territory in the period under analysis. In doing so, the section considers the following elements: characteristics of the properties and lands of Nonantola Abbey, type of stakeholders involved and their relationships with the abbey. Although this section focuses on the analysis of the books of pensions and appraisals of farmland, some links to the other accounting books help to appreciate the variety of the relationships maintained within the space of the abbey.

In re-constructing the concept of space at Nonantola Abbey in the late Middle Ages we need to consider the geographical spread of its patrimony (Hopwood, 1987) and the main elements considered in the accounting documents dealing with the immovable assets of the abbey. Figure 2 illustrates the development of the city of Nonantola from the 11th to the 15th century around the original abbey (*castrum monasterii*) which is indicated as quadrant 1. This figure locates the abbey within the walls of the city of Nonantola and as a core element of the city space. This shows the existence of a relevant religious connection between the urban non-rural population and the abbey. At the same time, the abbey may have been the intermediary of the relationships between the rural areas and communities and the non-rural population, allowing the development of a series of non-agricultural activities which were related to the usage of agricultural products and other services such as shoemaking and metal working.

**Insert Figure 2 here**

Figure 3 provides an example of the set of human works that characterise the rural territory of Nonantola Abbey. Irrigation and drainage structures are clearly visible: they run through extensively cultivated lands. Two major mills are located along the river, farm housing is spread across the land, common woodland and pastures are located on the upper portion of this Figure. Although the abbey is located within the walls of the city of Nonantola, this representation allows an appreciation of how its intended space of reference is larger and more agricultural than its enclosed location may suggest.

**Insert Figure 3 here**

Figure 4 gives a full understanding of the spread of the abbey of Nonantola and its sphere of influence in the 12th century. Although in the late Middle Ages the abbey had lost most of its lands, the map in Figure 4 locates the main properties of the abbey in northern and central Italy, far beyond the boundaries of the city and the surrounding lands. Most of the large properties (*curtes*), and fortified villages (*castra*) in northern and central Italy (indicated in grey) were donated by noble families.

**Insert Figure 4 here**

Several exchanges of real estate allowed the abbey to concentrate its properties around the city of Nonantola and the neighbouring areas of Modena and Bologna by the late Middle Ages (Barbolini, 1984). Agricultural workers and their families often sold their small properties (*mansi*) to the abbey in exchange for permission to continue living there and cultivating them while facing economic hardship. This is supported by the types of farmland contracts encountered in the registers analysed, such as the *precaria[[13]](#footnote-13)* (see ANA, Register n. 55, 1423-1427, and Appendix II), and the relationship between the *fattore* and other stakeholders (mainly small farmers and their families). The abbey created also a network of spiritual dependencies, such as churches, parishes and chapels that in turn managed land properties, under the indirect influence of the abbey (Barbolini, 1984). Most of them appear in the accounting books as debtors or creditors of Nonantola abbey, as was the case of the parish church of Nonantola recalled as a debtor in ANA, Register n. 55, 1426-1427 (see Appendix II).

Although all the accounting books help to recollect and quantify the economic relationships between the abbey and its stakeholders in the territory, in tracing the characteristics of the space of Nonantola Abbey we focused on the books of pensions and the appraisals of farmland. The two appraisals of farmland analysed (ANA, Register n. 36, 14th century; ANA, Register n. 66, 1454) related exclusively to territories located around Nonantola, Bologna and Modena, which emphasises the conspicuous concentration of the abbey’s landholding by the late Middle Ages. They have some similarities, such as the use of local measurements (e.g. *biolca*, approximately equal to a third of a hectare, and its sub-units: *quartario* and *tavola*) and local currency (e.g. *lira* and *soldo*). The local measurements reflected the prevalent agricultural vocation of the area, for example the *biolca* referred to the estimated area of land ploughed in a day with a plough pulled by two oxen and its sub-unit, the *tavola*, came from a Roman agricultural unit of measure. The use of these measures reflected the tight link between the abbey and its agricultural activity and between space and the use of time, which was strictly related to human work.

Despite the 1454 appraisal of farmland being more formally formatted and presented than its 14th century predecessor, appraisals in both the 14th and 15th centuries included the localisation of the land, its size, typology and estimate (value of the rent). The 14th century appraisal of farmland (see Appendix I) added to the above-mentioned elements the names of the tenants, who would often inherit the tenancy from their deceased family members. The size of these holdings was small, they were often micro-properties and their records were not limited to the type of cultivation (e.g. woodland, pasture, land to be ploughed, housing, enclosed or not enclosed land, vineyard, etc.) but also included was the type of house, if any, and the material of which it was made (wood or bricks), its furniture, the number of young and adult farm animals (cows, pigs, goats, oxen, sheep), the quantity of wheat, hay, fodder and agricultural tools, such as ploughs, iron or wooden carts stored therein. An estimate of the value of each of these items constituted the rental value of the property. An example of these records is shown in Figure 5 and tabled in Appendix I.

**Insert Figure 5 here**

In contrast to the 14th century appraisal, the appraisal of farmland in 1454 recorded the boundaries of the lands more precisely, often represented by roads, canals and other properties. Although it detailed the type of property, it did not contain indications about the contents of those properties (such as animals, agricultural tools or buildings). With respect to the appraisal of farmland of 14th century, the number of properties which were owned by the abbey and cultivated by the tenants on behalf of the abbey is higher in the Nonantola area in 1454. Moreover, there was an attempt in September 1454 by the *massaro* Guido Ansaloni (manager or administrator of the lands on behalf of the abbey) to revise or make an appropriate estimate of the properties in the area of Nonantola. There was no indication about his revision criteria but, in most cases, the revision arrived at a lower estimated rental value as opposed to its earlier counterpart. This probably shows that the abbey was going through a period of decay.

Both appraisals of farmland showed a strong relationship between the abbey and agricultural properties and activities, which was mediated by the figure of the *massaro*. Given the small and micro-sizes of these properties, the stakeholders of the abbey were fragmented, and represented a complex but lively social tissue of farmers and their families, who were tied to the land through the inheritance of the underlying relationship of the former generations with the abbey (see, for example, the reference to the sons of the deceased Giovanni Serafino in ANA, Register n. 36, 14th century as shown in Appendix I). The appraisals of farmland were therefore a crucial means for the abbey to “bring home” the complex space under its influence. This territory was made visible in intimate detail by means of thorough descriptions of each property and the clear identification of its boundaries. At the same time, the different stakeholders inhabiting the space of Nonantola and their relationship with the abbey were made visible (Black, 2008; Bovens, 2010), which enabled the latter to ensure that these stakeholders could have been called to account for the way in which they had managed the properties of the abbey. These books also enabled the abbey to appreciate whether the concentration of land around the abbey itself, where it could be more easily controlled, was successfully achieved.

The books of pensions referred to specific local contracts of the abbey with the farmers whereby the farmer sold the land to the abbey in exchange for remaining in the property to cultivate it. The books of pensions covered extensive periods of time, such as from 1414 to 1421 and from 1444 to 1446 (ANA, Register n. 62, 1414-1421, 1444-1446), they also recorded the deeds, drawn up by notaries, and the trade/exchange of *precarie* and other similar rental contracts (*livello*) to aggregate the properties. The details concerned the amount of rent (known as “pension”) that the tenant had already paid and the amount of rent to be paid. There was a variety of different timings attached to the amount of each rent, as this followed the duration of the underlying contract and the type of property. Other accounting books, such as the books of debtors and creditors (see ANA, Register n. 55, 1423-1427 presented in Appendix II), also refer to the amounts of rent due or paid by the tenants as they represent a relevant source of revenue for Nonantola Abbey, but these records offer limited possibilities of reconciliation with the books of pensions due to the paucity of cross-references.

The books of pensions did not make direct reference to the appraisals of farmland or other books of estimate. There were only a few attempts in a 1445 book of pensions (ANA, Register n. 62, 1414-1421, 1444-1446, pp. 23r-32v) by notary Giacomo Ferrari to link the specific land details (location, size, type of property), which were presumably dependences of the abbey, to the amount of the annual rent that the owner needed to pay to the abbey. The discrepancies between the total rent and the sums which were paid from time to time by the tenants may be explained not only by the different moments of the recording (as shown by the different handwriting and colour of the ink used) but also by a lack of interest in reconciling all the sums paid. This was obviously detrimental to the abbey’s financial health for tenants managed not to pay the amounts due for many months or even years. The amounts were in Roman numerals and although the sums were not reconciled, the records showed an attempt by the abbey to keep under control its properties, either directly or indirectly owned, and to maintain fair relationships with the farmers. These books were therefore essential in maintaining the relationships linking the abbey and its main stakeholders through the *fattore* or the *massaro*. This in turn promoted the legitimacy of the abbey in the space it managed by aligning the expectations of the abbey and its stakeholders (Bovens, Goodin & Shillemans, 2014). In particular, the abbey ensured that its lands would be tilled and the amount due to the landowner paid, whilst the farmers could benefit from the parcels of land they had rented without being overburdened by debilitating rents.

The books of pensions highlighted the role of more stakeholders (cf Jacobs & Jones, 2009; Black, 2008; Scott, 2008): the vicar, who oversaw specific areas for the abbey, the notary who formally registered the contracts regarding land trading and rental agreements, and the several tenants or owners who were connected to the abbey through their agricultural activity and the payment of rent. These roles are vividly detailed in the accounting books presented, such as ANA, Register n. 23, 1354 (Appendix III), which refers to the cereals allocated from the house of the abbot to the notary in the presence of the vicar. We argue that the lack of a unique temporal unit of recording for both the appraisals of farmland and the books of pensions demonstrates the long-term nature of the underlying assets and the relevant link between these accounting records and the abbey managers and accountants: vicar, *fattore*, *massaro* and notary. The analysis of these books highlights how the conception of space, like that of time, is articulated by natural cycles, either death and birth of family members, who inherit the underlying relationship with the abbey, and the ability to pay rent or duties in consideration of the agricultural cycles (soil preparation, sowing, harvesting, storing, selling or working the farm products). What emerges from these books is also that the economy of the abbey is vital and strictly interconnected to several stakeholders whose fragmented property is a characteristic of the space analysed.

**8. Conclusion**

This study aimed at disclosing the concepts of time and space as represented in the accounting practices and accountabilities of Benedictine abbeys in the late Middle Ages. The significance of these concepts lies on the relevance of viewing accounting as a social practice, which is localised in both time and space (Carnegie & Napier, 1996).

In the accounting books of Nonantola Abbey, most especially those documenting the “wheat cycle” and those recording revenues and expenses, different conceptions of time coexisted. Although Christian beliefs were firmly grounded in a linear understanding of time (North, 2005), the dominance of agricultural activities meant that a cyclical view of time was still present, one which did not create hard boundaries between the “present” and the “past” but which gave prominence to the flow of seasons. Time was a socially constructed concept which was given meaning through the human activities needed for agricultural production. The uncertain recording of events over a timeline and the absence of well-defined accounting periods meant that time was not commodified at Nonantola as it belonged to God and that understanding the evolution of the performance of the abbey over time was often problematic. This study has also focussed on the accounting and accountability practices of Nonantola Abbey towards its territory, which involved the mediation of managerial figures such as the *fattore*, the vicar, the *massaro*, the notary. This space involved the administration of the patrimony, mainly farmland, which in the 14th and 15th centuries was based on the use of accounting documents such as appraisals of farmland and books of pensions, which show the use of ancient forms of agricultural contracts, with local specifications.

Our analysis demonstrated that the contractual relationship which established the economic dependence of farmlands often allowed the abbey to achieve mutually favourable arrangements with the farmers (e.g. *precaria*), which extended to their families and inheritances. The level of control over the various possessions is also connected to the cyclical nature of accounting and time at Nonantola. This reflects a kinder relationship with tenants and farmers rather than a strictly profit seeking account which the linear approach to time seems to be connected with (Adamo, Alexander & Fasiello, 2019). The concept of space is also strictly related to the morphological characteristics of the agricultural properties and their size. The concept of space emerging from the accounting books is a fluid one, where a myriad of small owners and farmworkers are connected to the abbey and through the abbey to the non-rural population living in the city where the abbey is located. It appears that the abbey strengthened the relationship between rural and urban areas. Meanwhile, it was at the centre of a complex system of accountabilities whose main characteristic was not the accuracy of the records in detailing the assets, liabilities, expenses and revenue of the abbey but the maintenance of a control system to administer an extensive agricultural network and the identification of the relationships between the abbey and the stakeholders inhabiting its space.

The concepts of space and time underlined by the accounting sources analysed between 1350 and 1449 were therefore mainly related to natural cycles which inform the exchanges of money and goods as well as the life and proliferation of the agricultural activities. Although the abbey was in the city of Nonantola, we assume that its strong relationship with the farmland extended its political role to the positive development of non-agricultural activities, favouring the mediation between rural and non-rural populations. The estimate of properties followed the good will of the people in charge such as the *massaro* in 1454, but the books of pensions analysed show a great variety of contract lengths that are often related to specific families and their underlying relationships with the abbey. This study has contributed to the studies of accounting and religious institutions by problematising the concepts of space and time and identifying their impact on accounting practices and the way in which transactions reflecting the life of an organisation are recorded. Although this study does not investigate in detail the relationships of the abbey with other centres of power (Cordery, 2015) or the level of precision of its management accounting records (Dobie, 2008, 2011), it sheds light on the aspects of day-to-day life made visible by the primary sources.

Our findings have commonalities and differences when compared to those of other scholars who analysed accounting practices in Benedictine establishments. As noted by Harvey (1999), from the 14th century Benedictine abbeys mainly sought to lease out their lands, with accounts similar to Nonantola’s books of pensions used to “visualise” the patrimony of the abbey and identify the cash payments received by the lessees. Moreover, Nonantola’s revenue and expenses books resonate the *rationes* or *compoti* drawn up by English Benedictine establishments, which represented lists of income/receipts and expenses/payments (Dobie, 2015b), although in Nonantola’s case these did not clearly relate to a specific year. Nevertheless, at Nonantola no listings of assets and liabilities (*status*, Dobie, 2015b) have been found, with the books of pensions and appraisals of farmland the only means to identify the abbey’s patrimony. At Nonantola Abbey no traces of double entry bookkeeping have been found, not even towards the mid-15th century as was the case of other Italian abbeys (Montrone & Chirieleison, 2009). In other Benedictine abbeys, most especially in England, annualised accounting was evident (Dobie, 2015a) and even early forms of profit were calculated (Stone, 1962). Audits were also performed to ensure that resources were being used efficiently (Dobie, 2008). If in these abbeys “every known device was employed to increase the yield of the land” (Knowles, 1956, p. 37) and identify whether they had increased their wealth over time, this did not seem to be a priority at Nonantola.

This study represents a first investigation of the very rich materials stored in the Archive of Nonantola Abbey. Future research could further investigate the documents which, although not directly related to accounting, such as those of the *Pergamene* series, may help to shed further light on the accounting practices and processes at the abbey. Particularly interesting would be the analysis of any surviving visitation records, which may provide further insights into the financial management of Nonantola Abbey. Moreover, the lines of accountability explored in this study show that just a few organisational actors were involved in the management of the abbey’s patrimony and in accounting for it. In particular, the prominent figure in English Benedictine establishments charged with the duty to monitor receipts and expenditures, the bursar (Dobie, 2008), seems to be missing at Nonantola. This might be related to the size of the abbey or the economic difficulties it was facing in the period considered in this study. Research may further examine the roles of the abbey’s organisational actors. Another interesting line of enquiry would be investigating the reasons behind the different form and content of Nonantola’s accounting records as opposed to those of other Benedictine abbeys, where annual accounting was more rigorously implemented (Dobie, 2015a), and how this might be related to different levels of control over various stakeholders such as tenants. Extending the temporal boundaries of the research may also be helpful to investigate how accounting practices, which seemed very consistent throughout the 14th and the 15th centuries, evolved over time and reflected the changed social background and economic developments.

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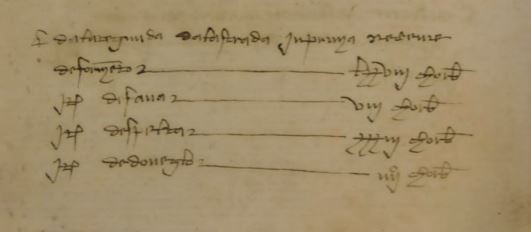
**Table 1 – Estimated population distribution in Italy between 1300 and 1400 (*millions*).**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Centuries* | Urban | Rural non-agricultural | Agricultural | Total |
| 1300 | 2.29 | 1.74 | 6.97 | 11 |
| 1400 | 1.93 | 1.21 | 4.87 | 8.01 |

Source: adapted from Allen, 2000, p. 9.

Note: “Total” is the total of the Italian population (in millions) involved in agricultural activities in urban, rural (non-agricultural) and agricultural areas.

**Figure 1 – An extract from the ‘wheat cycle’: seeds returned to the abbey – wheat, broad beans, spelt and unsifted wheat from the area of Manzolino**



I received from the farm along the road (of Manzolino)

wheat\_\_\_\_\_\_\_\_\_\_\_\_\_ 78 corbe

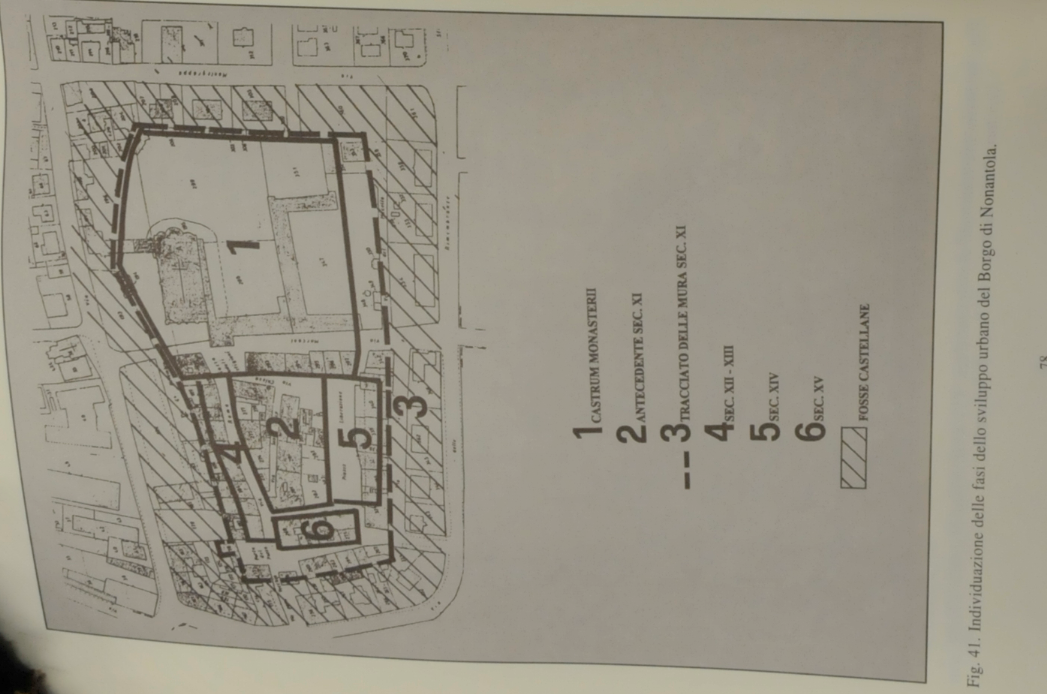
broad beans\_\_\_\_\_\_\_\_\_8 corbe

spelt\_\_\_\_\_\_\_\_\_\_\_\_\_ 33 corbe

unsifted wheat\_\_\_\_\_\_\_4 corbe

Source: ANA, Register n. 23, 1354, p. 1r (reproduced with permission). One ‘corba’ (plural: ‘corbe’) was the equivalent of a container with a capacity of 78.6 litres.

**Figure 2 – Development of the city of Nonantola around its abbey**



15th century

Pre-9th century

Walls - 11th century

14th century

Abbey

Moat

12th- 13th centuries

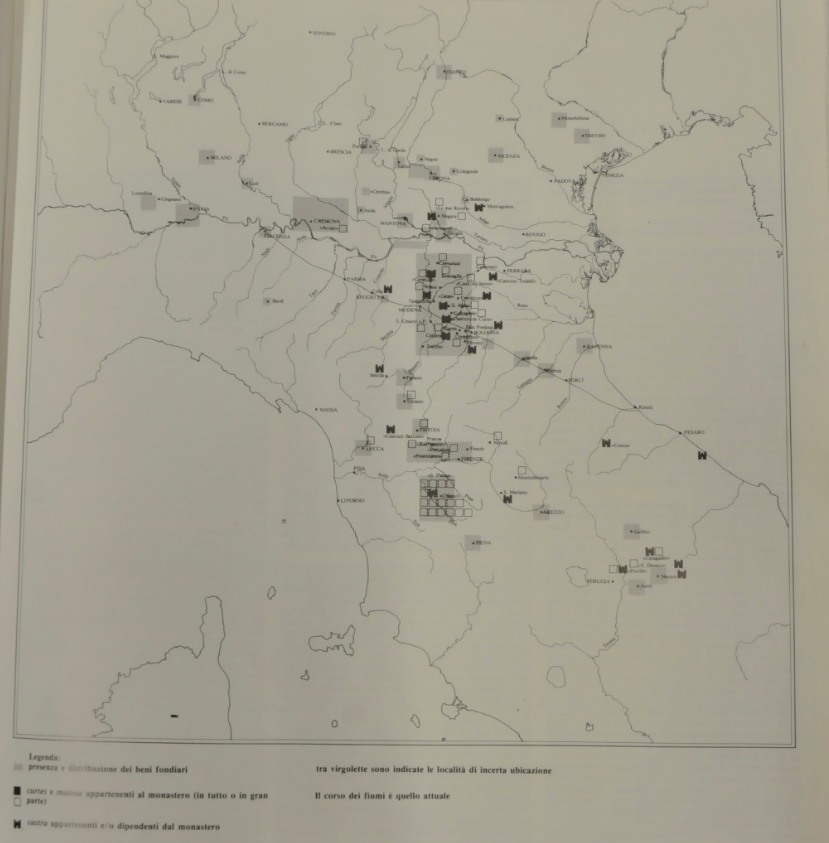
Source: Palazzi and Reggiani, 1998, p. 78.

**Figure 3 – Map of the territory of Nonantola in the 16th century**



Source: Mappario Estense, Series: Territories, n. 128 (reproduced with permission).

**Figure 4 – Distribution of the real estate of the abbey of Nonantola in northern and central Italy until the 12th century**



Source: Barbolini, 1984, p. 93.

Keys:

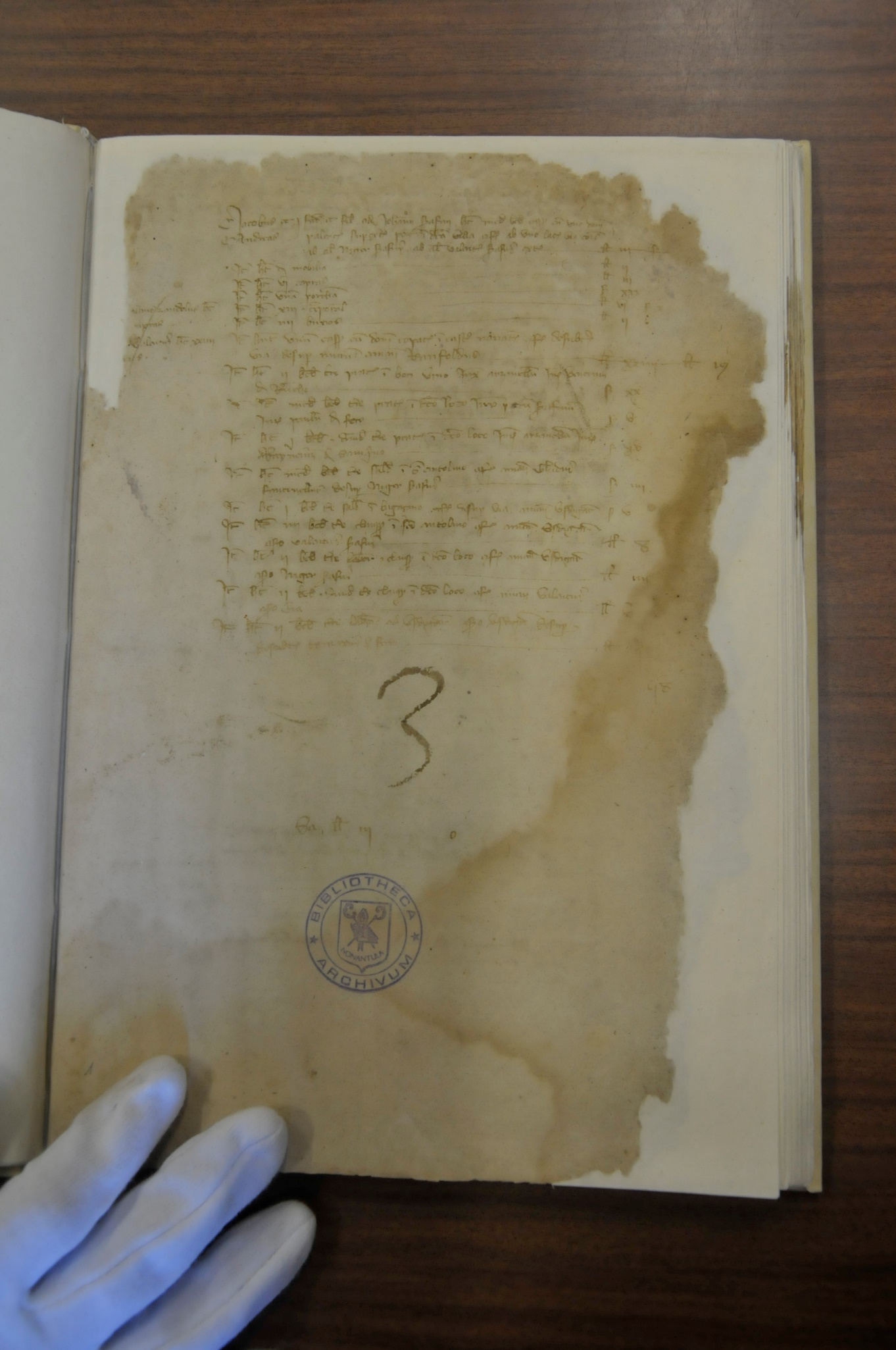
Distribution of the real estate of Nonantola abbey

Land (*curtes* and *mansi*) owned by the abbey

W

Fortified villages (*castra*) owned by or dependent from the abbey

**Figure 5 – Example of records in the book “14th century appraisal of farmland”**



Type of property: wooden farm housing, furniture, 6 goats, 1 pig, 13 piglets, 4 oxen

Estimated value of the item: 3 liras … soldi; 2 liras; 3 liras; 30 soldi; 6 liras, 10 soldi; 2 liras

Tenants: Giacomo and Andrea; family link (sons of Giovanni Serafino); reason of the tenancy: inheritance (i.e. Giovanni Serafino has died); Size of the property (0.5 *biolcas*)

Source: ANA, Register n. 36, p. 1r.

**Appendix I.**

Tabled page from Register n. 36, 14th century, “Estimo” di Nonantola (“Estimate” of Nonantola). One sample page reproduced and summarised in this table. […] means that the record is unreadable.

Measures used in the register:

Land size

b. = biolca, around 2,830 m2

q. = quartario (1/4 of a biolca)

t. = tavola (1/12 of a biolca)

Currency

l. = lira

s. = soldo (1/20 of a lira)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Ref.** (page of the register) | **Tenants** | **Location of the parcel of land or property** | **Size of the parcel of land or property** (measurement units of the time) | **Type of land or property** (e.g. crop, orchard, vineyard, rural household) | **Value of the rent** (appraisal of the land or the property) |
| 1 (back) | Giacomo and Andrea, sons of Giovanni Serafino (deceased) | Nonantola | 0,5 b. | rural household: 1 wooden house | 3 l., [...] s. |
| furniture | 2 l. |
| 6 goats | 3 l. |
| 1 pig | 30 s. |
| 13 young pigs | 6 l., 10 s. |
| 4 oxen | 2 l. |
| Castle of Nonantola | […] | rural household with 1 wooden house | 19 l. |
| Bon Vino | 2 b. | grassland | 20 s. |
| Bon Vino | 0,5 b. | grassland | 5 s. |
| Bon Vino | 1,5 b. | grassland | 15 s. |
| S. Antolino | 0,5 b. | uncultivated | 4 s. |
| Bagazzano | 1 b. | uncultivated | 5 s. |
| S. Antolino | 4 b. | fenced | 8 l. |
| S. Antolino | 2 b. | arable land and fenced | 4 l. |
| S. Antolino | 2,5 b. | fenced | 2 l. |
| Usdrigaro | 2 b. | arable land | [...] l. |

**Appendix II.**

Tabled pages from Register n. 55, 1423-1427, Libro dei debitori e creditori (Book of debtors and creditors). Two sample pages reproduced and summarised in this table. […] means that the record is unreadable.

Measures used in the register:

Currency

l. = lira

s. = soldo (1/20 of a lira)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Left-hand side of the page: details of the debtor/s and amount due** | | | | | **Right-hand side of the page: details of the payment/s of the debtor/s** | | | |
| **Ref.**  (page of the register) | **Date** | **Name of the debtor/s** | **Reason of the debt** | **Amount to be paid** | **Ref.** (page of the register) | **Date** | **Type of payment** | **Amount paid** |
| 2 (back) | 1 March | Archpriest of the parish church of Nonantola | rent | 5 l. | 3 (front) | 1 March | money | 1 l. |
| 11 June | money | 2 l., 10 s. |
| 1 March | Benedetto [...] | precaria (type of medieval contract for farmland) | 14 s. |  |  |  |
| rent | 3 l., 10 s. | 1 March | money | 4 l. |
| 1 March | Giacomo of Badia and his wife Zechina | remainder of a lease renewal signed on 27 January1423 | 6 l., 10 s. | 21 November | money | 1 l., 10 s. |
| in kind | 1 castellata of grapes (784 kg of crushed grapes) |
| 10 March | Giovanni Bruno | rent | 4 l., 4 s. |  | money | 2 l. |
| 14 March | Piero Marchesello | renewal of lease | 12 l. |  | money | 4 l., 10 s. |
| rent | 1 l. | May | money | 5 l. |
| money | 1 l. |

**Appendix III.**

Tabled pages relating to the ‘wheat cycle’ from Register n. 23, 1354, Libro di entrata e uscita del fattore Bertolaglia (Book of inflows and outflows of chief-farmer Bertolaglia). three sample pages reproduced and summarised in this table.

Measures used in the register:

Capacity:

c. = corba, around 78.6 litres

q. = quartirolo (1/16 of a corba)

|  |  |  |  |
| --- | --- | --- | --- |
| **Ref.** (page of the register) | **Source** | **Type of seeds/crop** | **Capacity measurement** |
| 3 (front) | Sum of the seeds lent to the farmers | Wheat | 30 c., 1 q. |
| Barley | 1.5 c. |
| Broad beans | 12 c., 3 q. |
| Spelt | 15 c. |
| 4 (front) | Sum of the seeds lent to the farmers and returned to Bertolaglia (*Fattore*) following the harvest | Wheat | 30 c., 1 q. |
| Barley | 1.5 c. |
| Broad beans | 12 c., 3 q. |
| Spelt | 15 c. |
| 6 (back) | Sum of all the produce received by Bertolaglia following the harvest | Wheat | 755.5 c. |
| Broad beans | 80.5 c. |
| Veccia (type of infesting herbaceous plant for forage) | 10 c., 3 q. |
| Barley | 9 c. |
| Spelt | 187 c. |
| Unsifted wheat | 20 c. |
| Cereals sent to the house of the abbot in the town of Bologna | Wheat | 57 c. |
| Spelt | 157 c. |
| Of which the Captain of Bologna received: |  | 55 c. |
| Of which the notary Dal Fango received in presence of the vicar Beltrame |  | 12.5 c. |

**Appendix IV.**

Tabled pages of expenses from Register n. 25, 1357-1359, Conti dell’Ospizio di Nonantola (Accounts of Nonantola hospice). An extract from two sample pages reproduced and summarised in this table. The official title of the register does not reflect the entire content of the document, which is not limited to the usage of the harvest for covering the expenses of the pilgrims’ hospice.

Measures used in the register:

Capacity:

c. = corba, around 78.6 litres

q. = quartirolo (1/16 of a corba)

Currency

l. = lira

s. = soldo (1/20 of a lira)

|  |  |  |  |
| --- | --- | --- | --- |
| **Ref. (page of the register)** | **Date (year: 1357)** | **Explanation of use of crop** | **Quantity used and value** |
| 2 (front) | 5 March | Given to Antonio | 2 c. |
| 6 March | Sold to cover the expenses for the pilgrims’ hospice | 2 c. for 9 s. per corba |
| 13 March | Sold to cover the expenses for the pilgrims’ hospice | 1 c. for 9 s. per corba |
| 31 March | Sold to pay taxes | 1 c. for 10 s. |
| 7 April | Sold | 2 c. for 16 s. |
| 16 April | Given to Seraldo in exchange for flour | 4 c. |
| 4 (front) | 22 June | Milled | 4 c. |
| 5 July | Milled | 5 c. |
| 12 July | Milled | 8 c. |
| 1 August | Milled | 6 c. |
| 27 August | Milled | 8 c. |

1. In the context of the paper, we use “patrimony” mainly to refer to Nonantola Abbey’s landholding and related properties, such as buildings, animals and tools. [↑](#footnote-ref-1)
2. An indiction is a cycle of 15 years counted as *indictio prima*, *secunda* and so on, to 15, reverting then to 1 (Cheney, 1945, p. 2). [↑](#footnote-ref-2)
3. Saint Benedict (ca. 480 – ca. 547), the founder of the Benedictine Order, in his *Rule* provided a corpus of principles which every monk was expected to follow. For the purposes of this work, we have accessed a 1492 copy of the *Rule of Saint Benedict*, written in ancient Italian, which, unlike modern translations, retains the original terminology, most especially the way in which the measurement of time is referred to. [↑](#footnote-ref-3)
4. An abbey *in commendam* is characterised by a separation between the legal ownership of an abbey and the management of the monastic community. The abbot *in commendam* may be an ecclesiastic or a lay person and does not necessarily reside in the abbey. The abbot *in commendam* holds a temporary position and does not have any authority on the internal monastic discipline. In the case of Nonantola abbey, the abbots *in commendam* were nominated by the Pope (in contrast with the *Rule of Saint Benedict*), whereas the management of the monastic community was undertaken by a vicar or by a prior reporting to a vicar. [↑](#footnote-ref-4)
5. Other important series are the *Pergamene* (Parchments, 4,537 documents), which includes contracts, deeds and other legal documents, and the *Registri vari di amministrazione economica e di affari ecclesiastici* (Registers of miscellaneous economic and religious affairs). The registers included in these series are have not been considered for they are not accounting documents or are outside of the timeframe chosen for the present study. [↑](#footnote-ref-5)
6. Although outside the period considered by the study, Register n. 1 has been studied to check if there had been any variations over time in the way in which books of pensions were kept. [↑](#footnote-ref-6)
7. Transcriptions have been essential to the analysis for a thorough knowledge of Latin and palaeography is required to read the documents. The authors are indebted to medievalists Corinna Mezzetti and Lorenzo Magnani for their invaluable help. [↑](#footnote-ref-7)
8. These visitations were penetrating inspections of the spiritual and temporal state of the house, which were undertaken by papal representatives, bishops or general chapters (see Dobie, 2015b; Bigoni, Deidda Gagliardo & Funnell, 2015). [↑](#footnote-ref-8)
9. Sylvester I was the 33rd Pope of the Roman Catholic Church and his Pontificate took place during the reign of the emperor Constantine in the 4th century. He is believed to have had an influence on the emperor, who inaugurated a series of reforms to protect and promote Catholicism in the Roman Empire (Scorza Barcellona, 2000). [↑](#footnote-ref-9)
10. The tax amounted to 81 gold florins, which was so high that in 1348 the abbot had to resort to pawning part of the monastery’s holy furnishings to pay it (Tiraboschi, 1785). [↑](#footnote-ref-10)
11. In 1343 farmers were issued with 58.5 ‘corbe’ and 4 ‘quartiroli’ of different seeds, which were returned in 1344 together with the share belonging to the abbey for a total of 1,062 ‘corbe’ and 3 ‘quartiroli’. Of these, 214 ‘corbe’ were allocated to the abbot, part of which was used to repay debts, the remainder used to feed the monks and lend seeds to the farmers for the following season (ANA, Register n. 23, 1354). [↑](#footnote-ref-11)
12. Ademaro borrowed a significant amount of money from a local notable, to repay which he leased to the moneylender many lands belonging to the abbey for a very low rent. This ultimately led to his removal by the Pope. [↑](#footnote-ref-12)
13. A *precaria* is a form of land tenure granting a petitioner the use and usufruct of ecclesiastical property for a specified time, or for the life of the grantee. The owner retains the power to reclaim the property at any time (hence the petitioner’s rights on the land are “precarious”). The first forms of *precaria*, which rose during the Roman era, did not involve any payment from the petitioner, but in the Middle Ages these contracts identified the amount of rent or services owed by the petitioner (Boudinhon, 1911). [↑](#footnote-ref-13)