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Florence cathedral construction site (1353-1382)**

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Insights from the management and accountability practices of the Florence cathedral construction site (1353-1382)

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Abstract

This study examines the management and accountability practices employed by the Opera di Santa Maria del Fiore (OSMF) during the construction of Florence Cathedral between 1353 and 1382. Based on an analysis of 530 provisions recorded in the OSMF's historical archives, the research investigates voluntary reporting practices and stakeholder engagement, offering new insights into the governance of hybrid organisations in the Middle Ages. The OSMF, funded by public resources, balanced the pressures of political and religious authorities through transparency and participatory decision-making. The analysis highlights three key aspects: (i) the role of stakeholders involved as advisors in the management of the construction site; (ii) the adoption of early forms of workplace welfare, such as loans, injury compensations, and wine distributions; (iii) the evolution of accounting practices in response to institutional and socio-economic pressures. Applying stakeholder-agency theory, institutional theory, and legitimacy theory, the study demonstrates that the OSMF's reporting was not merely an administrative tool but also a means of securing social and political legitimacy. The findings contribute to accounting history and enhance our understanding of governance dynamics in complex environments. Furthermore, comparisons with contemporary accountability practices in public and hybrid organizations reveal interesting parallels and offer valuable lessons for modern management.

JEL Classifications: M40, M41, N33

Keywords: Accounting history, accountability, Middle Ages, reporting, welfare, stakeholder engagement, Florence

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1. Introduction

This paper examines the complex management and accountability practices employed by the Opera di Santa Maria del Fiore (OSMF) during the construction of Florence Cathedral between 1353 and 1382. The OSMF was a formally private institution, funded by public resources and influenced by both political and religious authorities. As a result, it was required to ensure greater "downward accountability" (Manetti et al., 2023) compared to other institutions, particularly towards the citizenry, the faithful, the local community, the diocese, and the Municipality of Florence. Drawing from the extensive collection of sources available at the OSMF Archive, this study reconstructs the Opera's key practices in managing the construction site and its associated accounting processes.

This research is based on detailed archival analyses conducted as part of the LASI⁵ project at the Department of Economics and Management (DISEI) and the Department of History, Archaeology, Geography, Fine and Performing Arts (SAGAS) at the University of Florence. The study provides a comprehensive examination of the 530 provisions recorded in the OSMF's historical registers. From the specific perspective of accounting history, it investigates early forms of accountability, stakeholder engagement, and workplace welfare, exploring how these practices shaped the governance of one of the most significant architectural projects of the medieval period.

The Opera di Santa Maria del Fiore was founded in 1294 by the City of Florence, with the task of managing the expansion of the city cathedral. In 1331, the Arte della Lana acquired control of the institution, providing it with the mercantile and financial know-how of its members, from among whom the members of the Opera's governing board were chosen. Work slowed down significantly because of the Black Death, but in 1353 it resumed with vigour, in a renewed socio-economic and political context that posed new problems: wage increases, cyclical epidemics and famines, wars, and internal political tensions. In this troubled context, the Opera managed to continue its activities, not without difficulty, eventually completing the construction of Florence's cathedral in 1436 and, before that, other public works that had been commissioned by the municipality.

The aim of this paper is to present the findings of archival research on the Opera's accounting documents and to interpret them from two perspectives: first, within their historical context, and second, through the lens of key theoretical frameworks in the literature on voluntary reporting practices in "quasi-public" or hybrid organisations such as the OSMF. By situating the findings within broader

⁵ *LASI - Lavoro, accountability e impatto sociale nei cantieri pubblici in età preindustriale: il caso dell'Opera di Santa Maria del Fiore nel Trecento*, is a research project funded by the European Union initiative *Next Generation EU* (MUR – DM 737/21) and by Fondazione CR Firenze. The project was managed by Pierluigi Terenzi and Marco Bellucci, of the University of Florence under the "Bandi competitivi RTD 2022-2023". Project website: <https://www.lasi.unifi.it/> (31/10/2024).

theoretical perspectives, including stakeholder-agency theory, institutional theory, and legitimacy theory (Hill and Jones, 1992; DiMaggio and Powell 1983; Suchman, 1995), this study seeks to bridge historical analysis with contemporary insights into governance in hybrid organisations. The OSMF, characterised by its unique integration of public, private, and religious dimensions, provides a valuable case study for understanding how organisations navigate complex stakeholder landscapes and societal expectations.

Within the field of accounting history, particular emphasis is placed on the motivations driving organisations to report on their resource use, internal and external management practices, and governance strategies, even in the absence of specific regulatory requirements. Voluntary reporting practices are generally interpreted in the literature through two primary lenses: economic theories (e.g., agency theory, signalling theory, resource dependency theory) and socio-political theories (e.g., stakeholder-agency theory, institutional or neo-institutional theory, legitimacy theory).

The structure of this paper is as follows: the introduction outlines the scope and objectives of the research, followed by an in-depth exploration of the theoretical frameworks underpinning the analysis. The research design section describes the methodologies employed, while the results section presents quantitative and qualitative findings. The discussion integrates these results with broader theoretical insights, and the paper concludes with reflections on the implications of the study and directions for future research.

2. Theoretical Background

This study's findings are grounded in socio-political theories, which provide a robust framework for analysing the OSMF's voluntary reporting practices. These practices, undertaken in the absence of formal regulatory requirements, demonstrate the organisation's commitment to ensuring transparency, legitimacy, and social accountability. The most relevant theories for this analysis include stakeholder-agency theory, institutional theory, and legitimacy theory.

2.1 Stakeholder-agency theory

Focusing on socio-political theories, it is necessary first to introduce the stakeholder-agency theory. This theory evolves from traditional agency theory (Fama and Jensen, 1983; Van Puyvelde et al., 2012), often used to analyse governance systems of conventional enterprises that present an identifiable economic actor. The agency relationship is defined as a contract in which one party (the principal)

engages another party (the agent) to perform a specific service on their behalf, granting decision-making autonomy (Jensen and Meckling, 2019).

While agency relationships between shareholders and managers are easily identifiable in modern business contexts, such relationships are less clear in non-profit and/or quasi-public organisations like the OSMF, where no single category of stakeholders dominates. Instead, a broad range of social actors is impacted to varying degrees by the organisation's activities (Jegers, 2008). Thus, for quasi-public organisations, an “expanded” agency theory is necessary, involving multiple stakeholders considered as “principals” (Balsler and McClusky, 2005; Collier 2008; Woodward and Marshall, 2003).

Stakeholder theory and the associated stakeholder-agency theory provide a useful perspective for identifying diverse forms of accountability, enabling organisations to account for their actions to a wide array of stakeholders. Because stakeholder categories are governed by varying degrees of regulatory discipline, the organisation must prioritise the needs and expectations of different groups accordingly. For example, Mitchell et al. (1997) argue that the relevance of stakeholders depends on the power, legitimacy, and urgency of their expectations. Building on this understanding, Van Puyvelde et al. (2012) propose an expanded agency theory, incorporating insights from stakeholder and stewardship theories (Donaldson and Davis, 1991) alongside empirical evidence from studies on the governance and management of quasi-public organisations. Hill and Jones (1992) contend that relationships between organisations and their stakeholders can be interpreted as agency relationships (stakeholder-agency theory). The authors describe a direct mandate between administrators and stakeholders, viewing the organisation as a web of implicit and explicit contractual relationships, each maintaining its unique significance. Administrators thus enter contractual relationships with all stakeholders, bearing the resulting accountability obligations.

2.2 Institutional theory

Institutional theory, particularly as conceptualised by Burns and Scapens (2000), provides a useful framework for understanding changes in accounting practices and reporting systems. Burns and Scapens (2000) regard organisational change as an evolutionary process rather than a fixed outcome, involving modifications to rules and routines. Researchers can identify specific causes facilitating or hindering effective change in given contexts by analysing the formal and informal factors influencing these processes. Organisations adapt to institutional pressures by conforming to external environmental demands, aiming to secure legitimacy and resources, thereby enhancing their survival prospects (Scott, 1995). This adaptation often leads to convergent behavioural and organisational models inspired by other successful organisations (Sibilio and Vannini, 2020). Consequently, similar organisations adopt

comparable practices, which become “culturally supported and conceptually valid” (Carmona et al., 1998, p.117). Homogenisation processes also manifest through isomorphism as an adaptation and survival mechanism in response to shifting environmental conditions (Sakib, 2020). Isomorphism may be coercive, mimetic, or normative, yet its goal remains the convergence of organisational models and behaviours. Coercive isomorphism stems from direct or indirect pressures exerted by higher authorities (e.g., government regulators) or societal expectations (DiMaggio and Powell, 1983). This type of isomorphism is characterised by the fundamental role of those who exercise political or governmental authority and by the issue of organisational legitimacy. A crucial role is played by laws, regulations, and accreditation processes. Coercive isomorphism represents a stronger and more effective force in environments with oligarchic or corporate governance systems than in those characterised by greater pluralism or, conversely, by the strong role of individual initiative (Hodgson, 1988). In this sense, coercive isomorphism appears to have a particularly relevant and significant role in the OSMF during the period between the late Middle Ages and the early Renaissance.

Normative isomorphism, on the other hand, is linked to the world of professions and guilds, both regulated and independent, and is defined by DiMaggio and Powell (1983) as the collective struggle of members of a profession or a guild to define the conditions and methods of their work, to exert indirect control over production processes, and to establish a knowledge base and legitimation for their professional autonomy (DiMaggio and Powell, 1983). Therefore, normative isomorphic change is influenced by the pressures exerted by professions or guilds through, for example, the legitimation process in commercial or professional licences, accreditation, or the structuring of inter-organisational networks.

Finally, mimetic isomorphism is derived from the imitation of other organisations, particularly the sector's best practices, as entities aim to “imitate” the strategies of other successful organisations (DiMaggio and Powell, 1983). Managers, feeling overwhelmed by the turbulence, dynamism, and complexity of the environmental landscape, may opt to replicate the actions of other companies or organisations, especially when internal objectives are ambiguous or poorly shared or when environmental turbulence or dynamism produces uncertainty. The benefits regarding social legitimacy gained through uniformity and adaptation to environmental conditions encompass not just formal and organisational structures but also accounting and reporting systems (Ball and Craig, 2010; Carmona et al. 2004).

In accounting studies, institutional theory has been employed to interpret various approaches to management control (Baker and Rennie, 2013), including reporting systems (Mezias, 1990), accounting practices (Burns and Scapens, 2000; Soin et al. 2002), and budget preparation processes (Covaleski and Dirsmith, 1991). Accounting scholars tend to use institutional theory to understand

how the social context can influence administrators' decisions to initiate and implement specific managerial innovations or accounting, reporting, or internal control systems (Larrinaga and Bebbington, 2001; Milne and Patten, 2002; Ball and Craig, 2010).

The isomorphism framework has been employed in various studies investigating changes in public sector accounting systems (McSweeney and Duncan, 1998; Baker and Rennie, 2013). It has also been highlighted that, in practice, distinguishing between the three pressures towards isomorphism is not straightforward, as they may operate simultaneously (Christensen and Feltham, 2012; Joerges and Czamiawska, 1998).

2.3 Legitimacy theory

Another theoretical approach that can justify voluntary reporting practices is legitimacy theory, a specific and autonomous subcategory of institutional theory. According to Suchman (1995), organisational legitimacy is the generalised perception that the actions of a human entity are desirable and appropriate within a socially constructed system of norms, values, and beliefs. This definition implies that legitimacy is a socially desirable asset that extends beyond public image or perception and can be defined and negotiated at various levels of society (Mitchell et al., 1997). Human organisations are considered legitimate when they pursue ethically acceptable objectives in a socially acceptable manner. The consequence is that if the "licence to operate" is violated or damaged by illegitimate or socially irresponsible behaviour, investors and financiers often react by withdrawing resources from the organisation, causing financial imbalances. Therefore, a good reputation helps to maintain corporate value, while a poor reputation tends to diminish it (Gatzert, 2015). More specifically, Buhr (1998) identifies two dimensions of an organisation's efforts to achieve legitimacy: action (are the organisation's activities consistent with social values?) and presentation (do the organisation's activities appear consistent with social values?) (Chen and Roberts, 2010). Cho et al. (2015) argue that organisations employ "discourses", decisions, and actions—sometimes hypocritically—to manage the divergent interests of their stakeholders and, consequently, maintain their legitimacy. The authors refer to "discourses" as written documents or oral presentations that illustrate an organisation's commitments and policies in interaction with the general and competitive environment, particularly with external stakeholders. "Decisions" in contrast, are a specific type of discourse that indicates a future intention and a higher probability of linked and consequent actions. Finally, "actions" represent the execution of previously stated discourses and decisions (Brunsson, 1993; 2007; 2019). Each "discourse" contributes to constructing organisational façades—symbolic appearances used to manage organisational legitimacy. According to Abrahamson and Baumard (2008), organisational façades are

symbolic representations "erected by organisational participants and designed to reassure their relevant stakeholders about the organisation's legitimacy" (Abrahamson and Baumard, 2008, p. 437). An organisational façade can contribute to creating or reinforcing organisational legitimacy in the eyes of stakeholders. According to Cho et al. (2015), organisational façades and the hypocrisy in presenting an organisation can generate beneficial consequences for many stakeholders, despite the inconsistency between an organisation's statements and its actions (Cho et al., 2015). However, legitimacy is also a dynamic concept, as expectations can change over time, and specific events may negatively affect an organisation's reputation, legitimacy, and possibly even the conditions for its existence (Mäkelä and Näsi, 2010). This change is often considered a resource by proponents of legitimacy theory. On the one hand, organisations depend on this resource for survival; on the other, they can manipulate how society perceives their behaviour and activities. Legitimising actions refer to targeted, direct, and episodic interventions aimed at placating specific relevant stakeholders (Kuruppu et al., 2019). Such interventions respond to the need to obtain, maintain, or restore an organisation's social legitimacy, particularly through direct interactions with key stakeholders, to preserve the licence to operate within a particular local community. As suggested by Bebbington et al. (2008), this interaction aligns with the idea that reputational risk management can help explain the voluntary reporting and communication practices adopted by some organisations. This also occurs through stakeholder dialogue, either as a mere legitimisation tool or as a response to specific institutional pressures (Thorne et al., 2014).

Proponents of legitimacy theory argue that organisations, particularly those operating in sectors highly sensitive to social or environmental impacts, engage in voluntary reporting primarily to safeguard their own interests (Milne and Gray, 2013). The explicit objective is to divert attention, obscure, or superficially improve their social and environmental performance in response to reputational threats. In line with legitimacy theory, organisations prepare and publish voluntary reports to reduce external costs or lessen pressure from external stakeholders or regulatory authorities (Tate et al., 2010). This behaviour arises because organisations use these reports to influence (or even manipulate) stakeholder perceptions of their image, performance, and impact (Guidry and Patten, 2010). Scholars supporting this theoretical perspective assert that issues of social legitimacy can arise when there is a disparity between community values and the values and impacts of an organisation (Patten, 1992).

3. Historical context

In the second half of the fourteenth century, Florence was experiencing a period of major transformation. The Black Death of 1348 decimated the population and affected economic and social life, producing political consequences as well. A new world had begun. Wage labour obtained

tendentially better working conditions because demand remained high – especially in manufacturing – and supply had dwindled due to mortality. In the context of construction, it has been calculated that compared to the 1340s – a period of declining wage averages – after the Black Death, nominal wages for bricklayers grew by 170 per cent and labourers by 240 per cent (Tognetti, 2022). In the face of these market transformations, the authorities intervened to put a limit on the increases in order to safeguard the category of entrepreneurs, the same category from which Florence's government officials came. Indeed, at that time, the city was governed by the most important trade guilds, from which came the members of the Signoria (Priori and Gonfaloniere di Giustizia), the city's most important magistracy (Najemy, 2008).

The governance of the Opera di Santa Maria del Fiore was also part of this system, as in 1331 it was entrusted to the Arte della Lana, which expressed its managing board (the Operai) and could modify its decisions or impose its own (Grote, 2009). With this arrangement, the Opera found itself managing the work of expanding Florence Cathedral during and after the Black Death. Activity resumed at a good pace in 1353, after a major slowdown. The Operai fell in line with the general trend, establishing in 1355 a general reduction in wages. Thereafter, only twice more was such a decision made, but concerning only small groups of workers (in 1378 and in 1382). Yet, the Opera had to face in those decades, more than once, the serious problem of financing its activities. Funds proved insufficient several times, mainly because public money was diverted to other expenses, while the city was engaged in external and internal events that produced a certain amount of social instability. Between the 1350s and early 1380s, the city was hit by crises of varying nature and intensity, sometimes overlapping: epidemics (1360-1363 and 1373-1375); famines (1375); wars and raids (almost the entire period, with particular severity in the 1360s – war against Pisa – and 1370s – war of the Eight Saints, 1375-1378); internal conflicts (almost the entire period, due to factional conflicts of various kinds and culminating in the Ciompi tumult in 1378).

The Opera's activities were especially affected by military affairs, as they drained resources intended for public works. The investment for fortifications and for the sustenance of the troops and their activities reduced the availability or greatly delayed the disbursement of funds to the Opera, which more than once represented to the City of Florence the risk of interruption of the work. Through a relentless series of petitions, the Opera finally obtained a fixed and constant income in 1374: 6 denari for every lira collected by the municipality through taxes. This produced an important increase in available funds, which, however, turned out to be only nominal: on the one hand, the municipality entrusted the Opera with the construction of the Loggia dei priori (now the Loggia dei Lanzi: Frey 1885), without increasing the funds; on the other hand, the actual collection of the funding and other

assets proved difficult. This explains the additional requests for money made by the Opera to the municipality in the 1370s and 1380s (Terenzi, 2024).

In this difficult context, wage earners were not particularly affected except on a couple of occasions. To cope with the financial difficulties, they were asked to accept a reduced wage (1378) and to receive only one month's pay instead of two (1379). Almost all of them accepted, both because it was an exception and because it was very convenient to keep their jobs at the Opera anyway, even though lists of workers were created every semester, confirming or modifying previous ones, and therefore it was not safe to remain there; but, in prospect, a long-term public job such as the cathedral, to which others were being added, increased the likelihood of being hired. Similarly, it was convenient to bet on the prospect of a long job even if wages were lower on average than in private construction (Goldthwaite, 1982; De La Roncière, 1982).

In such a situation, the Operai had to show skill in holding together the various needs in order to grasp the goal: to complete the works, especially those of the cathedral. In this, the commitment to accountability was crucial to govern the flow of funding and spending, as well as the complexity of relationships with the workers, who were at the same time items of expenditures and human resources to be employed in order to grasp a goal of great identity value for the community: hence, the commitment to take into account their opinions and wishes.

4. Research Design

The research design for this study employed a two-phase approach, combining quantitative and qualitative methodologies to analyse the OSMF's accounting practices and stakeholder engagement strategies. The first phase involved quantitative descriptive analyses aimed at identifying and classifying the available sources, while the second phase focused on developing a content analysis targeting the most relevant document categories.

4.1 Quantitative Analysis

The analyses centred on provisions included in the database, which recorded decisions made by the Operai (the governing board of the entity) as transcribed in the registers housed at the historical archive of the OSMF, limited to those concerning daily wage workers.

Quantitative analyses of the database enabled the investigation of key trends characterising Opera's accounting practices during the period of interest. These activities included preliminary analyses of the volume of available provisions throughout the study period, as well as analyses related to the

periodicity of these provisions and their concentration during specific times of the year. Furthermore, the number of provisions by type was examined following the identification of macro-categories. Cross-referencing these analyses allowed the research team to identify recurring provision types, their seasonal patterns, and trends across different years.

4.2 Content Analysis

The research employed content analysis, which was applied to the summaries of the provisions elaborated by the team of historians, to analyse the content of the provisions.

Content analysis is a research technique used to systematically, scientifically, and reproducibly analyse texts and other materials (Krippendorff, 2018). This analysis can be qualitative or quantitative, depending on the research objectives, the research questions, and the documentary base to be examined (Schreier, 2012). In our case, the primary documents were highly fragmented and lacked standardisation, necessitating a combination of qualitative and quantitative content analysis depending on the availability of data for specific topics of interest. The content analysis was conducted manually, given the manageable size of the document base. Following Schreier's recommendations (Schreier, 2012), the first phase of qualitative content analysis involved identifying categories relevant to the documentary analysis based on empirical criteria. These categories partially overlapped with the database's classification categories but were also adapted to align more closely with historical accounting research. Specifically, the content analysis focused on provisions related to "Stakeholder engagement" and "Workers' support practices". By analysing the summaries of provisions in these two categories, the research aimed to explore how the Opera engaged social stakeholders in its decision-making processes and the early forms of workplace welfare it adopted. Furthermore, considering the peculiarities of our primary sources and the research objectives, the methodology followed some of the principal steps for organisational archival research suggested by Ventresca and Mohr (2017).

5. Presentation of primary sources

This study relied on information contained in the LASI project database, which collected provisions related to the management of the construction site from twenty registers preserved in the Historical Archive of the Opera di Santa Maria del Fiore in Florence. The analysed registers spanned 1353-1382, with a limited extension to 1383 to complete information on winter 1382-1383 workers. From these sources, 530 provisions were extracted and classified. Unfortunately, it is not possible to definitively determine which specific parts of the monumental complex were under construction during the years of interest. Pre-1375 sources mention work on the bell tower, while other fragmented and

discontinuous sources suggest that construction focused on the cathedral’s central section and the foundation of the future dome. In some cases, accounting records indicate that certain wage workers were engaged in constructing the Priors’ Loggia (now the Loggia dei Lanzi). Due to the sources’ fragmentation and lack of consistent accounting schemes, it is impossible to precisely distinguish which workers were employed on the cathedral’s construction and which on the loggia. Furthermore, this distinction may not have been rigid. Consequently, analyses did not differentiate between construction sites when examining wage workers’ provisions.

6. Results

6.1 Quantitative Analysis

The first analysis focused on the distribution of provisions over the period of interest, revealing significant variability in their number across different years (Figure 1). Specifically, a gradual increase in documentation is noted starting from 1365, with a notable decline between 1371-1374, where only a single provision is recorded.

 INSERT FIGURE 1

In terms of periodicity, provisions were particularly concentrated around specific times of the year, namely mid-year and year-end, aligning with the operational cycles of the winter and summer construction seasons, as illustrated in Table 1.

Table 1: Distribution of provisions by months.

Month	Number of provisions
January	31
February	35
March	47
April	34
May	36
June	77
July	52
August	44
September	36

October	36
November	44
December	58
<i>Total</i>	<i>530</i>

Source: Authors' elaboration

The results shown in Table 1 aligns with the management practices of labourers, which traditionally divided the year into two main seasons: winter and summer (from October/November to March/April and vice versa, without fixed chronological boundaries). The start of each season was preceded by the drafting of an initial list of labourers, which was then adjusted during the work through additions or dismissals of personnel, depending on the needs of the construction site, the financial resources of the Opera, and the behaviour of the workers.

Table 2 provides a detailed classification of the provisions into categories and macro-categories. The identification of macro-categories for analysis allowed, on the one hand, an overall view of the distribution of the types of provisions, and on the other hand, it was functional to the implementation of qualitative content analysis, the results of which are presented in the following section.

Table 2: Distribution of provisions in Macro-categories and in the categories used in the database.

Macro-categories	Categories used in the database	N. of provisions
Payments and wages of workers (N= 260)	Payment of workers (wages)	140
	Wages of workers (ongoing season)	79
	Accounting of worker payments	21
	Wages of wokers (beginning of the season)	10
	Payment of workers (extra services)	4
	Increase in workers' wages	3
	Decrease in workers' wages	3
Workers management (N=120)	Workers' control	37
	Appointment of workers	36
	Removal of workers	18
	Placement of workers in workplaces	14
	Re-admission of workers	8
	Increase in the number of workers	3
	Decrease in the number of workers	3
	Loan of workers to other entities	1
Workers' support practices (N= 80)	Credit to workers	40
	Benefits for workers	22
	Support for injured workers	16
	Support for widows/family members of injured/deceased workers	2
Stakeholder engagement	Appointment of advisors	36

(N=52)	Payments of advisors	13
	Consultation of workers	2
	Reporting of advisors' payments	1
Management of <i>Capomaestri</i> (master builders) (N=18)	Appointment of <i>capomaestri</i>	10
	Delegation to <i>capomaestri</i>	6
	Removal of <i>capomaestri</i>	2
<i>Total number of provisions</i>		530

Source: Authors' elaboration

Analysing the measures by macro-category (Figure 2), it is evident that nearly 50% of the provisions concerning salaried workers during the period under consideration related to the payment of workers, while 23% were devoted to their management.

 INSERT FIGURE 2

The same division into macro-categories was also applied to observe the distribution of measures across months and years. The analysis of their monthly distribution (Figure 3) shows that provisions concerning wage payments for labourers were the predominant category throughout the year, with a particular concentration in June and December, as previously highlighted. It is interesting to note, however, that provisions related to the involvement of social actors were particularly concentrated in July and August, while decisions concerning support measures for labourers showed a higher concentration in March and June.

 INSERT FIGURE 3

The same type of analysis was conducted by considering the trends in the number of macro-categories of provisions over the different years examined (Figure 4).

 INSERT FIGURE 4

A key result emerging from the analysis of Figure 4 concerns the provisions related to stakeholder engagement, which primarily consisted of appointments and payments for councillors. These measures appear more prominently in the years 1366, 1367, and 1375, which correspond to particularly significant moments in the progress of the construction work, as will also emerge from the analysis of the registers.

6.2 Content analysis

As mentioned in Section 4, the quantitative analysis of the sources included in the database was accompanied by a content analysis of the provisions, limited to those falling within the macro-categories of "Stakeholder engagement" and "Workers' support practices".

6.2.1 Stakeholder Engagement

Regarding the theme of stakeholder engagement, Table 2 provides details on the provisions considered within this macro-category, which includes 52 provisions, accounting for approximately 10% of the total. Most of the provisions within this category concern the appointment of councillors (N=36), followed by payments to councillors (N=13). The content analysis conducted on the summaries of the provisions revealed that this practice was primarily used by the Opera to gather opinions on specific activities to be developed. Various advisors were, for instance, appointed to give their views on the designs proposed by Francesco Talenti, or to assess the progress of the construction of the bell tower and suggest how to proceed, to evaluate the scale models of the cathedral, or to express judgments on others' technical opinions, to mention only some of the most frequent or significant examples. Beyond analysing the reasons that led the Operai to appoint advisors, it is also interesting to examine the type of persons involved, the remuneration provided for their involvement, and the timing of the appointments (or payments) of advisors. Regarding the temporal distribution, Figure 4 shows a relative concentration of appointments and payments of councillors around the years 1366 (6 provisions), as well as 1367 and 1375, with 9 provisions recorded for each year.

It is important to highlight that, unfortunately, the provisions were not drafted following a precise and repeated format, leading to some gaps in the analysis. For example, the type of individuals appointed as councillors and the size of the group are not always specified. However, some summaries are more detailed, providing information on both the number and type of councillors appointed. Table 3 summarises the findings from this analysis, reporting the number of provisions in which that category

is mentioned for each category of councillors. It can therefore be observed that *maestri* and *capomaestri* were the most frequently appointed advisors, followed by citizens and friars.

Table 3: Types of advisors and frequency of their mention in provisions.

Type of advisors	Number of provisions
<i>Maestri and Capomaestri</i>	28
Citizens	15
Friars and Priests	13
Painters	5
Goldsmiths	3

Source: Authors' elaboration

Regarding the size of the group of advisors, the information contained in the database is highly fragmented and exhibits significant variability. In some cases, the provisions concern the appointment of a single advisor, whereas in other instances, the groups are larger and involve the participation of various types of individuals, reaching a maximum composition of over 80 members or even "large assemblies" of citizens (whose exact number, however, remains unknown). Another interesting aspect emerging from the analysis of the provision summaries concerns the duration of an advisor's tenure. In most cases, the sources do not provide detailed information on this matter. However, in certain instances, they specify the length of time for which advisors were appointed or indicate whether some advisors held permanent positions. Table 4 presents some significant examples in this regard.

Table 4: Examples of provisions appointing stable or long-term advisors.

Date of the provision	Document summary	Source
29/07/1366	The <i>Operai</i> summon more than eighty citizens and <i>maestri</i> , with the <i>capomaestri</i> , to discuss the continuation of the work on the church; it was decided to appoint eight citizens to advise on how to fortify the large and small vaults already built and on how to continue the work.	AOSMF, II 1 2, Bastardello di deliberazioni e stanziamenti di Giovanni di ser Corso, c. 67rv.
18/08/1366	The <i>Operai</i> appoint four masters and a painter as advisors to the master builders for a period of one year and with a salary of 15 fiorini.	AOSFM II 1 2, Bastardello di deliberazioni e stanziamenti di Giovanni di ser Corso, c. 70v.
12/08/1367	The <i>Operai</i> elect Frate Jacopo of San Marco, Frate Benedetto dal Poggiuolo and the presbyter Ser Taddeo of San Piero Maggiore as advisors to the master builders and the <i>Operai</i> themselves for a year.	AOSFM II 1 2, Bastardello di deliberazioni e stanziamenti di Giovanni di ser Corso, c. 86rv.

Furthermore, the analysis of the sources also shows that some advisors have been named several times, as in the case of Frate Benedetto dal Poggiuolo, ser Taddeo di San Piero Maggiore or the *maestro* Corso di Jacopo whose names occur several times in the sources analysed. Another important aspect that can be deduced from the sources concerns the payments of the advisors. As already highlighted in Table 2, the macro-category of measures relating to the involvement of

stakeholders includes both the provisions for the appointment of directors and the provisions relating their payments. The analysis of the registers referring to the payments of the advisors highlights that they were mainly intended to remunerate the involvement of the *maestri* or friars, while payments for the citizens involved are never expressly mentioned. Also in this case, the sources are heterogeneous and, in some cases, report very generic terms regarding the payments while in other cases the provision reports the exact amount that the Opera had to pay to its councillors, as a one-off payment or periodic salary (established on a monthly or annual basis). Only one case is highlighted in which the payment was made in kind, when for a group of advisors made up of friars and *maestri* a compensation was established for the friars, while the meals were offered to the *maestri*. Table 5 shows some examples.

Table 5: Examples of provisions reporting payments to advisors.

Date of the provision	English translation	Source
31/08/1355	The <i>Operai</i> arrange the payment of <i>maestri</i> who acted as advisors.	AOSFM II 4 1, Ricordanze del provveditore Filippo Marsili, c. 14r
19/06/1357	The <i>Operai</i> order the payment of some friars who were appointed as advisors and offer a meal to the <i>maestri</i> who were appointed as counselors.	AOSFM II 4 1, Ricordanze del provveditore Filippo Marsili, c. 34r
15/11/1368	The <i>Operai</i> order that the treasurer pay the salaries of the three permanent advisors: Fra Benedetto dal Poggiuolo receives 16 <i>fiorini</i> ; Ser Taddeo of San Piero Maggiore receives 30 <i>fiorini</i> for ten months and Niccolò of Messer Francesco da Barberino (who took over from Brother Jacopo of San Marco) receives 36 <i>fiorini</i> for one year.	AOSFM II 1 2, Bastardello di deliberazioni e stanziamenti di Giovanni di ser Corso, cc. 42v-43r
02/05/1375	The <i>Operai</i> order that the treasurer give 1 <i>fiorno</i> , 9 gold <i>soldi</i> and 8 <i>denari</i> to the councilor Giovanni di Stefano known as Guazzetta.	AOSFM II 1 3, Bastardello di deliberazioni e stanziamenti di Jacopo di Benintende della Casa e Palmieri di Abate, c. 22r
30/07/1375	The <i>Operai</i> order that the treasurer pay a monthly salary of 1 <i>fiorino</i> to the advisor Corso di Jacopo.	AOSFM II 1 3, Bastardello di deliberazioni e stanziamenti Jacopo di Benintende della Casa e Palmieri di Abate, c. 35r

Finally, to conclude the analysis relating to the measures classified as "stakeholder engagement", we highlight two measures of a slightly different nature compared to those discussed so far. These are the two provisions relating to the consultation of workers, respectively of August 1378 and January 1379 in which the Opera proposed that some or all the workers continue to work at lower wages to cope with a prolonged phase of strong reductions in the Opera's income flows (Table 6).

Table 6: Examples of provisions on consultation of workers.

Date of the provision	English translation	Source
09/08/1378	Considering that the Opera's income has decreased (wheat and flour and salt duties), the <i>Operai</i> decide to ask the <i>maestri</i> and laborers listed if they want to work, receiving a salary commensurate with the available income (in proportion to the established salary). They all accept except two (Checco di Matone and Nanni di Baldo).	AOSFM II 1 8, Bastardello di deliberazioni e stanziamenti di Matteo di ser Meo Leoncini, cc. 8v-9v
28/01/1379	The <i>Operai</i> decide to ask the workers if they want to work for two months and receive payment for one month. They all accept.	AOSFM II 1 9, Bastardello di deliberazioni e stanziamenti di Santi di Giovanni da Castelfranco di Sopra, cc. 4r-5r

6.2.2 Workers' support practices

The second macro-category of interest was that relating to worker support practices. This category was created and analysed with the aim of identifying any prodromal practices of corporate welfare and Corporate Social Responsibility. The measures identified in the category "Workers' support practices" are 80 in total, divided into subcategories as indicated in Table 2.

Considering the results presented in Table 2 we can see that most provisions relating to this category of investigation are those relating to the granting of credit for workers (N=40). With respect to this subcategory, the content analysis highlighted that the main beneficiaries of the credits were *maestri* and *capomaestri*. Table 7 shows, for each category of beneficiary, the number of loans granted and the sum and average of the same calculated on the basis of the available data. It is specified that the number of loans granted seems to exceed the number of measures, as some provisions report a greater number of credits granted to various beneficiaries; for the purposes of this analysis, these credits were considered separately. Furthermore, it should be noted that 8 measures did not contain detailed information regarding the amounts granted as credit and were therefore not considered in the calculation.

Table 7: Analysis of credits granted to workers.

Type of beneficiary	Number of credits granted	Total amount in <i>fiorini</i>	Average of the credits granted in <i>fiorini</i>
<i>Maestri</i>	25	244,5	10,5
<i>Capomaestri</i>	21	441,5	26
Labourers (<i>manovali</i>)	4	22	7,3
Blacksmith	2	36	9
Workers	1	NA	NA
<i>Total</i>	53	744	14

Source: Authors' elaboration

Table 7 shows us that the credits were mainly intended for *maestri* and *capomaestri* and that the latter could access to significantly larger credits than the other categories, reaching an average of 26 *fiorini* per credit. To get an idea of the value of these credits we can refer to Richard Goldthwaite's 1975 study, which presents the trend in the price of wheat from 1360 to 1500. The following table shows Goldthwaite's results compared to the years of our interest for a bushel of wheat, equal to approximately 24 litres.

Table 8: Ten-year average of the price of a bushel of wheat in fiorini aurei.

Decade	Ten-year average of the price of a bushel of wheat in <i>fiorini aurei</i>
1360-69	0.28
1370-79	0.41
1380-89	0.39

Source: R.A. Goldthwaite, 1975

Among the *capomaestri* whose names are specified in the registers, the names of Francesco Talenti, his son Simone and Taddeo Ristori occur quite frequently. Sources tell us that Francesco Talenti received 3 credits from the Opera, but the total amount is not known. In fact, one register does not contain any indication regarding the amount, another specifies that it was the advance of 3 salaries, while for the third loan, the registers report that the Opera would have lent a sum equal to 50 *fiorini* by adding 5 *fiorini* to the monthly salary. As regards the son of Francesco Talenti, i.e. Simone di Francesco Talenti, he received 6 credits for a total of 95 *fiorini*, while in favor of Taddeo Ristori (often mentioned in the provisions together with Simone di Francesco Talenti) 7 credits were granted for a total of 105.5 *fiorini*.

Table 9 shows some significant examples of provisions and their contents and shows how, even in this case, there was not a fixed reporting scheme. In some cases, in fact, the name of the beneficiary, the amount of the credit and the repayment conditions are specified, but there are many cases in which only generic or no information is found regarding these aspects, greatly limiting the possibility of analysing and drawing conclusions regarding the Opera's practices regarding the granting and collection of credits towards its workers.

Table 9: Examples of provisions belonging to the category "Credit to workers".

Date of the provision	Document summary	Source
16/08/1367	Given the commitment of the <i>capomaestro</i> of the Opera Giovanni di Lapo Ghini in the construction of the cathedral, considering the increase in salary granted to him by the consuls of the Wool Guild which Giovanni himself had refused and, finally, given that	AOSFM II 1 2, Bastardello di deliberazioni e stanziamenti di Giovanni di ser Corso, c. 25r

	Giovanni has an unmarried daughter, the <i>Operai</i> establish that the treasurer grants him a loan of 100 <i>fiorini</i> to be repaid over the next ten years.	
14/03/1376	The <i>Operai</i> arrange that the treasurer uses certain monies to make loans to masters and laborers of the Opera, as much as is possible with the usual salaries.	AOSFM II 1 4, Bastardello di deliberazioni e stanziamenti di Bonaffè di ser Piero, c. 5r
24/04/1377	The <i>Operai</i> order that the treasurer lend 20 <i>fiorini</i> to the blacksmith Migliore di Niccolò; the refund will be deducted from the payment of the lead for the lodge.	AOSFM II 1 6, Bastardello di deliberazioni e stanziamenti di Jacopo di Feo di Giunta e Niccolò di Michele da Carmignano, c. 24r
26/06/1381	The <i>Operai</i> granted a series of loans to some workers, to the capomaestro Giovanni di Stefano and to others.	AOSFM II 1 13, Bastardello di deliberazioni e stanziamenti di Cione di Paolo di Cione, c. 27r
27/06/1381	The <i>Operai</i> order Forese di Sandro to be registered among the debtors of the Opera, for the 16 <i>fiorini</i> borrowed, and that he will have to repay them by deducting 1 <i>fiorino</i> per month from his pay and no more, and not in other ways.	AOSFM II 1 13, Bastardello di deliberazioni e stanziamenti di Cione di Paolo di Cione, c. 27r

A final analysis was carried out with respect to the number of provisions relating to credits to identify dense moments, both in terms of months and in terms of years. This type of analysis, the results of which are reported in table 10, allowed us to identify a certain concentration in the month of June (with 11 provisions, equal to approximately 26% of the total), while as regards the years, a certain concentration of provisions can be noted in 1376 and 1377, in which 8 provisions were recorded for each year and which together constitute approximately 40% of the provisions recorded for this category.

Table 10: Distribution of the “credit to workers” provisions per years and months.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1358										1		1	2
1365											1		1
1366			1										1
1367								1			1		2
1368			1		1								2
1369							2						2
1376			1	1			1		2		2	1	8
1377	1	1	1	1	1	3							8
1378												1	1
1379			1		2	3		1					7
1381				1		5							6
<i>Total</i>	<i>1</i>	<i>1</i>	<i>5</i>	<i>3</i>	<i>4</i>	<i>11</i>	<i>3</i>	<i>2</i>	<i>2</i>	<i>1</i>	<i>4</i>	<i>3</i>	<i>40</i>

Source: Authors' elaboration

Considering now the subcategory of provisions “benefits for workers”, the sources tell us that the main benefit granted to workers was wine for *maestri* and labourers. In some cases, the registers report

that wine was offered to workers on certain occasions, such as the achievement of a certain goal or a holiday. In other instances, it is specified that the Opera preferred to provide workers with diluted wine to mitigate the risks of injury that could have arisen from the stronger alcoholic wine served in taverns. In the provisions analysed, there are only two provisions that mention types of benefits other than wine, and they are a lunch attended by workers, *capomaestri* and *mastri* and the days of rest granted to *mastri* and labourers for the Christmas period of 1375.

Table 11: Examples of provisions belonging to the category “benefits for workers”.

Date of the provision	Document summary	Source
15/12/1362	The <i>Operai</i> order the purchase of the wine which will be given to the <i>maestri</i> and laborers on the same day on the occasion of the closing of the second arch of the church.	AOSFM II 1 1, Bastardello di deliberazioni e stanziamenti di Giovanni di ser Corso, c. 10r
07/02/1368	The <i>Operai</i> establish that the treasurer gives 4 lire to the <i>capomaestro</i> of the Opera Francesco Talenti and Giovanni di Lapo Ghini for wine, so that they do not go to the tavern.	AOSFM II 1 2, Bastardello di deliberazioni e stanziamenti di Giovanni di ser Corso, c. 33r
28/11/1368	The <i>Operai</i> order to pay 5 lire, 5 soldi and 6 denari to the nuncio of the Opera for a lunch held on November 17th in which the <i>Operai</i> themselves, the advisors, the <i>capomaestri</i> and other <i>maestri</i> participate.	AOSFM II 1 2, Bastardello di deliberazioni e stanziamenti di Giovanni di ser Corso, c. 44r
20/12/1375	The <i>Operai</i> grant a period of "holiday", between December 20th and January 2nd, to <i>maestri</i> and laborers.	AOSFM II 1 3, Bastardello di deliberazioni e stanziamenti di Jacopo di Benintende della Casa, Palmieri di Abate, c. 58r

Also, for this type of provision, an in-depth analysis was carried out regarding their distribution in terms of months and years. The results, presented in Table 12, also in this case, show a relative concentration of provisions for the month of June, while the year with the highest number of provisions is 1368.

Table 12: Distribution of the “benefits for workers” provisions per years and months.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1353						1							1
1356						1							1
1357						1	1						2
1362												1	1
1366			1		1								2
1367											1	1	2
1368		2	1			2			1		1		7
1369								2					2
1375						1						1	2
1378												1	1
1380						1							1
Total	-	2	2	-	1	7	1	2	1	-	2	4	22

Source: Authors' elaboration

Finally, the analysis focused on the provisions relating to the category "Support for injured workers" to which the provisions relating to "Support for family members of injured or deceased workers" were also merged, given the small number of the latter (only 2 provisions).

The analysis of the records highlights that in these cases the Opera adopted mainly two different behaviours towards the injured: i) it provided for the payment of the days not worked due to the accident; ii) paid accident compensations. Even in this case, the provisions are compiled in an uneven manner and do not all present the same information. This makes it difficult to reconstruct the criteria applied by the Opera to assign compensation for accidents. In fact, only one of the provisions recorded in the database contains information regarding the qualification of the injured person, the type of injury, the duration of the state of disability and the financial compensation paid by the Opera. It was therefore not possible to reconstruct a fixed pattern of the behaviour of the Opera in relation to these variables. However, it is interesting to report the case of the labourer Domenico di Nardo who suffered an injury to a leg and a foot due to a falling stone and who is expressly mentioned in four different provisions as he received continuous financial support from the Opera in the period December 1378-June 1379, for a total of 12 *lire* and 30 *soldi*.

Table 13: Examples of "Support for injured workers" and "Support for family members of injured or deceased workers" provisions.

Date of the provisions	English version	Source
24/03/1363	The <i>Operai</i> establish that Maestro Giovanni Belcari, who has been serving the Opera for a long time, being injured due to a fall from the walls of the church and considering his poverty, should receive 10 <i>lire</i> . Furthermore, the <i>Operai</i> order that an injured laborer be given 3 <i>lire</i> .	AOSFM II 1 1, Bastardello di deliberazioni e stanziamenti di Giovanni di ser Corso, c. 12r
30/03/1368	The <i>Operai</i> establish that the treasurer grants 2 <i>lire</i> in favor of a <i>maestro</i> carpenter who was injured after a fall while he was making a roof.	AOSFM II 1 2, Bastardello di deliberazioni e stanziamenti di Giovanni di ser Corso, c. 35r
14/07/1378	Given the death of a <i>maestro</i> carpenter in the service of the Opera, the <i>Operai</i> decide that the treasurer assigns 4 <i>fiorini</i> to the wife of the deceased to contribute to the support of his large family.	AOSFM II 1 8, Bastardello di deliberazioni e stanziamenti di Matteo di ser Meo Leoncini, cc. 6v-7r
18/01/1379	The <i>Operai</i> establish that the treasurer assigns 4 <i>lire</i> to the laborer Domenico di Nardo, who suffered an accident while working on the construction site of the Opera: this provision represents the continuation of the economic support granted to Domenico on 23 December of the previous year.	AOSFM II 1 9, Bastardello di deliberazioni e stanziamenti di Santi di Giovanni da Castelfranco di Sopra, c. 3v
14/06/1379	The <i>Operai</i> establish that the treasurer assigns 20 <i>soldi</i> to one <i>maestro</i> and gives 40 <i>soldi</i> to another <i>maestro</i> . Both <i>maestri</i> were victims of a fall, which left them ill for a certain period: in particular the first <i>maestro</i> found himself disabled for five days.	AOSFM II 1 9, Bastardello di deliberazioni e stanziamenti di Santi di Giovanni da Castelfranco di Sopra, c. 16v

The analysis relating to the months and years in which the measures were recorded was also carried out for this last type of document. As table 14 shows, the data is extremely fragmented, with a relative concentration recorded in the year 1379, while when checking for concentration in certain months, it was observed that the month of March appears to be the one with the most provisions. However, as already underlined, the data are extremely fragmented and therefore do not lend themselves to being used to draw generalizations in terms of the Opera's behaviour.

Table 14: Distribution of the provisions regarding compensations for injuries per years and months.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1363			1										1
1365							1				1		2
1366	1												1
1368			1										1
1375			1										1
1377	1												1
1378							1					1	2
1379	1		1		1	3							6
1380			1						1				2
1382											1		1
<i>Total</i>	<i>3</i>	<i>-</i>	<i>5</i>	<i>-</i>	<i>1</i>	<i>7</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>-</i>	<i>2</i>	<i>1</i>	<i>18</i>

Source: Authors' elaboration

7. Discussion and conclusions

This paper has presented key findings from the LASI project, examining 530 provisions from the accounting records of the Opera di Santa Maria del Fiore during the period 1353–1382. The analysis has shed light on the Opera's practices in managing its workforce, engaging stakeholders, and adopting early forms of accountability and workplace welfare. Despite the fragmented nature of the sources, the research highlights the Opera's efforts to maintain transparency and legitimacy while navigating the socio-economic challenges of the time. The provisions reveal that the Opera engaged local stakeholders through consultative practices, particularly involving master builders and craftsmen, who provided technical expertise and contributed to decision-making processes. This approach not only addressed immediate operational needs but also enhanced the legitimacy of the Opera as an entity managing public funds for a civic and religious purpose.

The findings of this study provide insights into the governance model of the OSMF, highlighting a sophisticated blend of economic pragmatism and socio-political engagement. This dual approach enabled the organisation to navigate the intricate challenges of managing a large-scale construction project in a socio-political environment characterised by diverse stakeholder interests and evolving

expectations. One of the most striking aspects of the OSMF's governance was its reliance on voluntary reporting and consultative practices. These practices were not merely functional tools for operational efficiency but were integral to maintaining the legitimacy of the organisation that is a crucial desirable asset for an organisation (Suchman, 1995; Mitchell et al., 1997). By transparently documenting its decisions and actively involving stakeholders in the governance process, the OSMF reinforced its role as a steward of public and religious resources. This emphasis on transparency and stakeholder engagement resonates strongly with contemporary theories of governance, particularly in hybrid organisations where accountability extends beyond a single principal-agent relationship (Collier, 2008).

The integration of stakeholder-agency theory (Balse and McClusky, 2005) into the analysis of the OSMF's practices reveals how the organisation effectively balanced the competing interests of its diverse stakeholders. For instance, the inclusion of *capomaestri* and craftsmen in decision-making processes not only ensured the technical integrity of the construction work but also fostered trust and collaboration among key stakeholders. This consultative approach was further augmented by the engagement of community representatives and municipal officials, illustrating the OSMF's commitment to inclusivity and transparency. Such practices highlight the organisation's awareness of its broader social responsibilities, aligning its operations with the expectations of both civic and religious authorities.

From the perspective of institutional theory (Burns and Scapens, 2000), the OSMF's governance model reflects an adaptive response to external pressures and environmental demands. The organisation's accounting practices, characterised by periodic reporting and detailed documentation of provisions, demonstrate an alignment with institutional norms that prioritised transparency and accountability (DiMaggio and Powell, 1983). The influence of coercive isomorphism is particularly evident in the OSMF's adoption of standardised reporting practices, which were likely driven by the expectations of guild leaders and municipal authorities. These practices not only enhanced the organisation's credibility but also ensured its survival and continuity in a competitive and dynamic socio-political context.

The application of legitimacy theory to the OSMF's practices underscores the importance of aligning organisational actions with societal values and norms. By implementing measures such as loans to workers, the distribution of wine, and compensation for injuries, the OSMF not only addressed the immediate needs of its workforce but also reinforced its reputation as a socially responsible entity. These measures underscore the Opera's awareness of its responsibilities towards its workers and the broader community, reflecting an early understanding of social accountability, since these practices were not merely operational necessities but were strategic tools for building and maintaining trust

among stakeholders. The emphasis on social accountability, as evidenced by the organisation's support for injured workers and their families, highlights a forward-thinking approach to governance that resonates with modern principles of Corporate Social Responsibility. The results show the ability of OSMF to navigate the complexities of its operational environment through a combination of transparency, stakeholder engagement, and social accountability. These practices not only ensured the success of the Florence Cathedral project but also set a precedent for governance that remains relevant to this day.

Moreover, the OSMF's governance model provides valuable lessons for contemporary hybrid organisations. The organisation's ability to balance economic efficiency with social accountability offers a blueprint for managing complex stakeholder relationships in today's multifaceted institutional environments. The parallels between the OSMF's practices and modern governance frameworks underscore the enduring relevance of the principles embodied in its management approach.

The analysis has also identified gaps and limitations in the primary sources, which constrain a comprehensive reconstruction of all the Opera's practices and behaviours. However, the preserved records remain an invaluable historical asset, providing a window into the management of one of the most significant architectural projects of the medieval period.

Future research could investigate whether the practices observed in the Opera's accounting records were unique to its organisational model or indicative of broader trends in public and quasi-public entities during the same period. Moreover, a comparative study of similar organisations could deepen our understanding of accountability and governance in pre-modern contexts.

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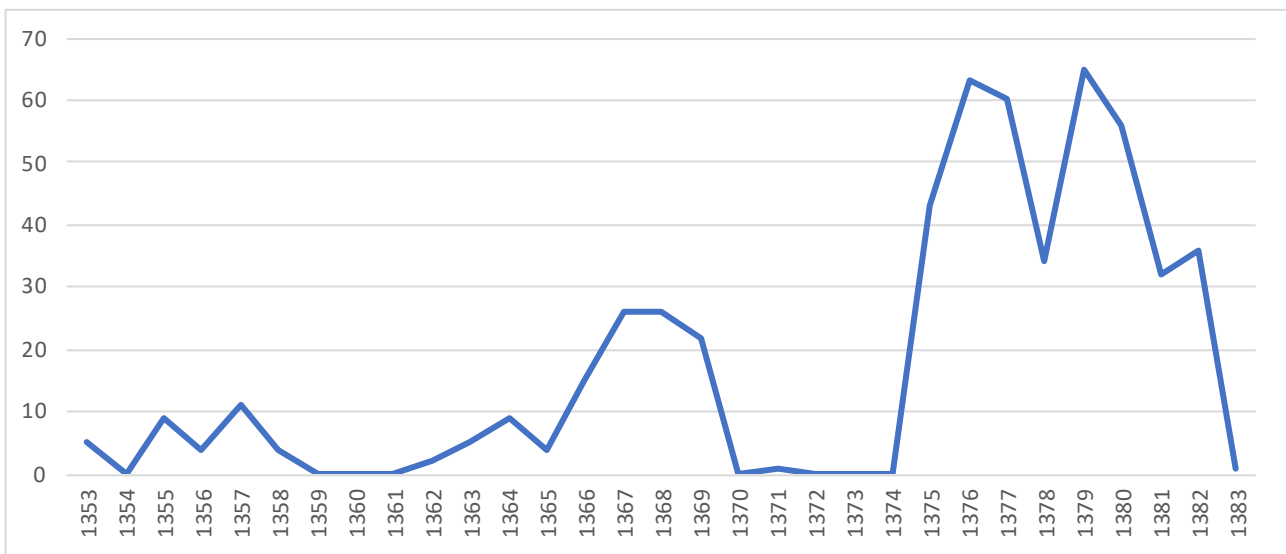
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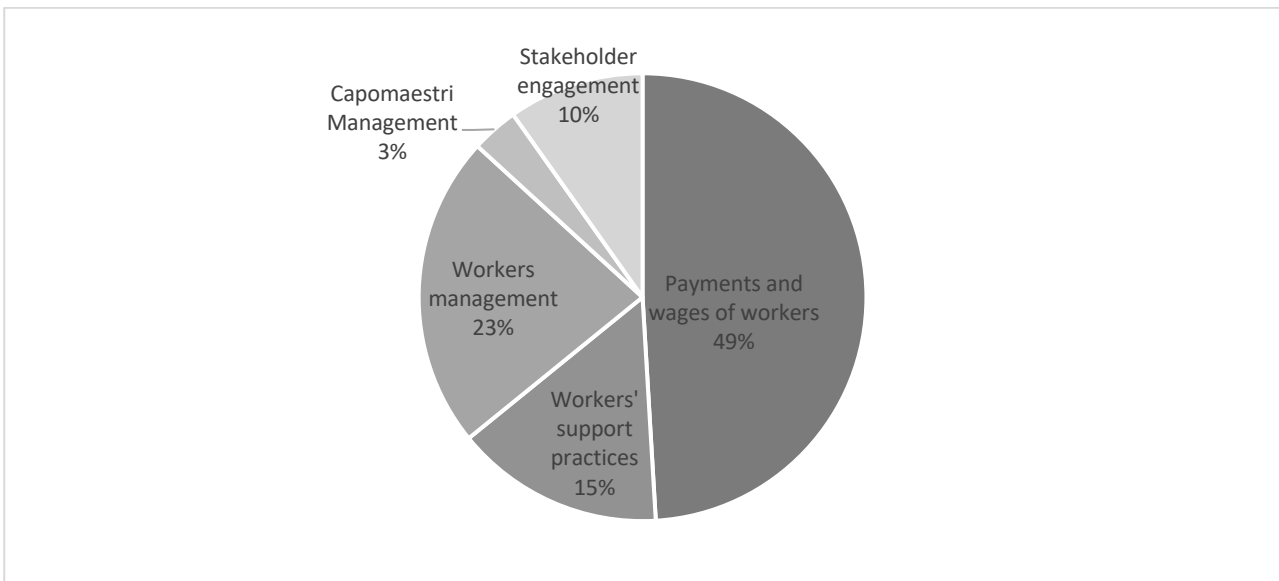
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Figure 1: Distribution of the provisions included in the database for the years 1353-1383.



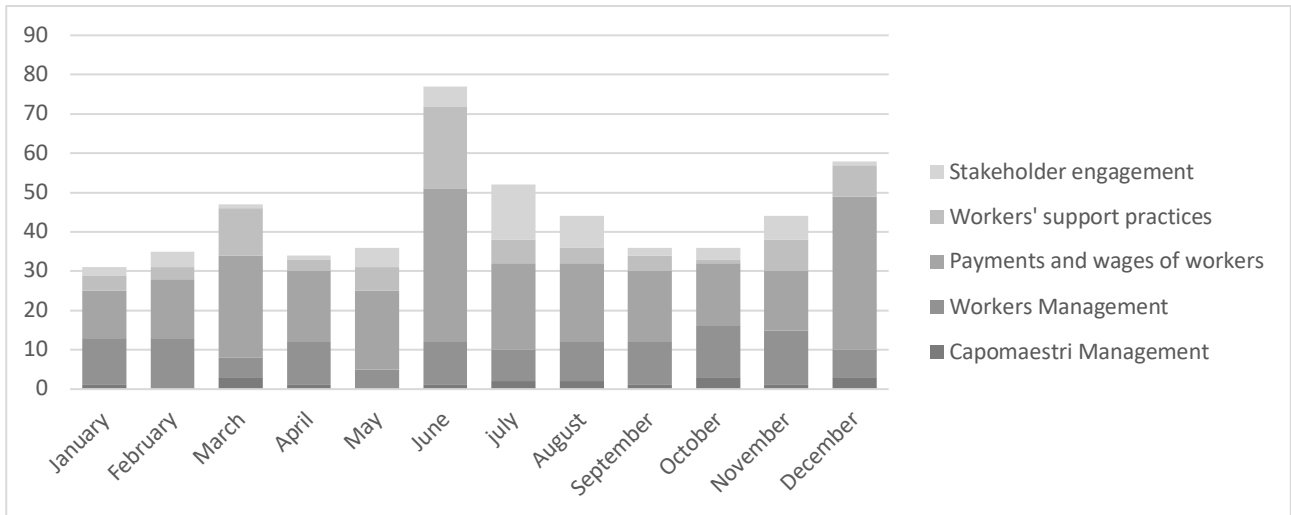
Source: Authors' elaboration

Figure 2: Distribution of the provisions in macro-categories 1353-1383.



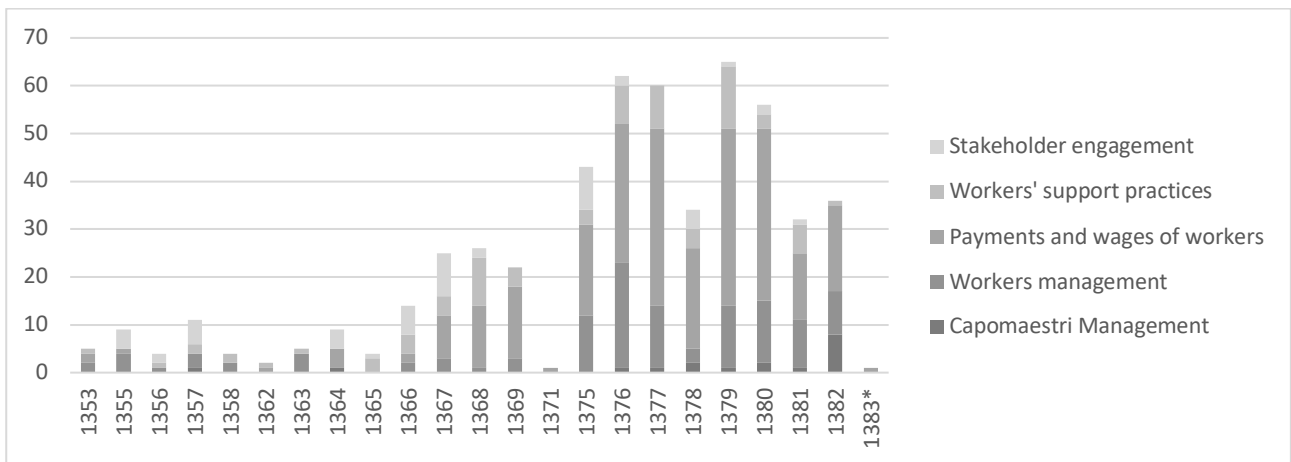
Source: Authors' elaboration

Figure 3: Distribution of the provisions in macro-categories and for months.



Source: Authors' elaboration

Figure 4: Distribution of the provisions in macro-categories and for years.



*Please note that a single provision was inserted for 1383 in order to complete the insertion of data relating to the winter season of 1382.

Source: Authors' elaboration