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The impact of outsourcing operating theatre support services on hospital performances: the case of the largest university hospital of the Albania

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ABSTRACT

Hospitals in most of the countries in transition face the challenge to raise efficiency in a rapidly evolving health sector. In this framework, the Albanian Ministry of Health has outsourced the sterilization and operating theatre support (SOTS) services of all the public hospitals. The aim of this article is to evaluate the impact of the outsourcing of SOTS services on the productivity of the surgical services. A case study analysis was conducted in the Country's largest hospital. Surgical activity data of all the surgical services were analyzed. Furthermore, interviews with key stakeholders were conducted in order to enable a more detailed exploration of the results. Compared with the previous twelve months, a relevant increase in the total number of surgical interventions performed by the hospital was registered in the twelve months after the introduction of the new organizational model (+14%); this significant increase occurred in almost all the surgical services. Results of the interviews highlighted several organizational-, supply capacity-, and confidence-related determinants behind the productivity gains. These findings have significant implications for poorly performant—but increasingly competitive and evolving—hospital sectors of countries in transition, in which the outsourcing of SOTS services may represent a key tool for enhancing the productivity.

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1. Introduction

Outsourcing is the process by which an organization transfers services or functions previously performed internally to an independent provider (Allen, 2000; Kremic et al., 2006; Taponen & Kauppi, 2020). In the health care sector, outsourcing has been a strategic tool for achieving reduction of costs, improvements of the quality of care, productivity increase and access to the latest technology and innovative

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capabilities. Furthermore, outsourcing may allow healthcare organizations to enhance their flexibility and capacity to promptly adapt to evolving situations and context (Roberts, 2001; Roberts et al., 2013; Omrani et al., 2018; Raeissi et al., 2018).

Traditionally, health care organizations have outsourced ancillary services not closely connected with their core business and health outcomes of the populations assisted (e.g., building maintenance, food preparation and serving, laundry and cleaning services) (Guimarães & de Carvalho, 2011). In most recent times, healthcare organizations have begun to consider the outsourcing of services more closely connected with health services and health outcomes in order to face the challenges posed by the tumultuous changes in demands and technology of the health care sector (Shinkman, 2000; Moschuris & Kondylis, 2006; Raeissi et al., 2018). Indeed, the outsourcing of services may allow the health care organizations to address these challenges more efficiently, shedding some managerial responsibilities for ancillary services and focusing more on what matter most for their patients (Roberts et al., 2013).

Sterilization and operating theatre support (SOTS) services have been historically performed internally as their functions are tightly connected with the governance of the surgical processes and with the health outcomes of the patients (Di Mascolo & Gouin, 2013; Dancer et al., 2012; Schweizer et al., 2014; Gaines et al., 2017; Rutala & Weber, 2004). Indeed, in addition to the sterile reprocessing of surgical instruments, SOTS services result essential for streamlining the surgical process as they include the supply of surgical instruments and materials (surgical drapes and operating theatre medical clothing), the maintenance and replacement of the surgical instruments, and the environmental cleaning and disinfection of surgical and invasive-procedure areas. However, these services require competences and technology that are not strategic for the hospital core business and have a great impact on the healthcare organization costs (Di Mascolo & Gouin, 2013; Childers & Maggard-Gibbons, 2018; Nast & Swords, 2019); for these reasons, year by year, the outsourcing of SOTS services has been increasingly considered as a viable strategy for health organizations (Giarraputo, 1990; Perry, 1992).

Besides taking into account the key areas related to the effectiveness of all the outsourcing project— such as the shape of the outsourcing contract and its duration (Drzewiecki & Krzos, 2020), the decision of outsourcing SOTS services requires a comprehensive evaluation of the risks and benefits that may be generated by the shift to a new organizational models. In this regard, the academic literature on the outsourcing of these services appears to be mainly focused on providing decision-support frameworks that typically discuss benefits, risks and motivations on theoretical grounds (Merola et al., 2016; Dehnavieh et al., 2016; Paltriccia et al., 2014). Several positive features of the outsourcing model have been described, most of which may translate into better patient care and efficiency; among the benefits of outsourcing SOTS services, it has been supposed a potential increase in the hospital caseloads (Dorsey, 1988; Friedman, 2004). However, at the best of our knowledge, no studies have empirically measured the effects of the outsourcing of SOTS services on hospital efficiency and in particular on the productivity of the surgical services. In this sense, our research contributes to fill this gap providing an explorative study based on a relevant case study.

Evaluating this potential increase in surgical service productivity may have far-reaching implications for decision makers, especially for those who are challenged by a rapidly evolving and increasingly competitive health sectors as the ones of several countries in Transition. Indeed, countries in transition are currently in the middle of reform processes oriented towards the increase of the efficiency, autonomy and competition in their healthcare sector (Antoun et al., 2011; Persiani et al., 2014; Persiani et al., 2018).

Among the services provided by hospitals operating in countries in transition, the surgical services appear to be the services in which there is more room both for efficiency and quality gains from outsourcing as they are frequently characterized by scarce productivity, high level of costs and, at the same time, an incapability to meet international quality standards with the consequent high level of surgical infections (Persiani et al., 2018; Gjerazi et al., 2015; Sodano et al., 2003; Childers & Maggard-Gibbons, 2018; Nast & Swords, 2019). In this regards, hospitals operating in countries in transitions require evidences and recommendations derived from researches carried out in similar health care contexts. For this purpose, this article provides results from a hospital of a Country in transitions contributing to fulfil the research gap in this area.

Indeed, it is to be expected that the outsourcing of SOTS services may impact differently on the efficiency of surgical services depending on the context in which it occurs. More precisely, since hospitals based in highly competitive health care systems—as the ones of the most developed countries—have already streamlined their surgical services to high efficiency levels, it is to be expected that the outsourcing of SOTS services could have smaller room for productivity gains compared with the one expected for hospitals based on the scarcely competitive health care system.

Therefore, the aim of this article is to measure the effects generated from the outsourcing of SOTS services on the productivity of the surgical services of a referral hospital operating in the countries in transition context. The research was carried out analyzing the data derived from the experience gained by the Albanian National Health Service. The Republic of Albania in fact has been one of the first countries that have completely outsourced SOTS services in all the public hospitals and in which the effects are now more concretely measurable. In particular, this article aims to investigate the impact of the introduction of the outsourcing of SOTS services on the volumes of patients treated by the surgical services of the largest public hospital of the Republic of Albania.

2. Methods

2.1. Research Design and Case Study Selection

Considering the novelty of the topic considered by the study, the research has an exploratory nature. Consequently, we applied a qualitative approach that is particularly appropriate when there is a possibility for further investigation of a specific matter (Lune & Berg, 2017). In the view of this consideration, we managed the case study method with the aim to discuss more data and information about the phenomenon in its on-field applications (Yin, 2018). We know that a principal issue of the

case study method is the findings' generalization, but it can be strengthened with a strategic selection of the case to study (Ragin & Becker, 1992).

Regarding the exploratory nature of the topic, the novelty of this research is limited not only to the nature of the topic but also to the context of this study concerning the Balkan area and the country of Albania in particular. For all these reasons, the case study method seems the most appropriate to conduct a research as it is commonly used to carry out studies in the management field (Yin, 2018).

The case study is structured in the following steps. After the description of the development and organization of the national project of outsourcing SOTS services carried out by the Albanian National Health Care Service, the country's main University Hospital, i.e., the Mother Theresa University Hospital in Tirana (MTUHT), has been identified as relevant example in which to analyse this new organizational model. The reason for this choice is linked to the relevance of this hospital in the Albanian healthcare system; indeed, the MTUHT is the largest public hospital of Albania and the only academic institution that provides medical education and training to health professionals in the Country. The MTUHT provides secondary and tertiary care services; as for the surgical services, the MTUHT encompasses all the surgical specialties which exist in Albania.

2.2. Data collection and Analysis

The first phase within the case study method is to build a research protocol to provide reliability (Yin, 2018). A research protocol establishes the sources of the data, the people to interview and the questions to submit. This case study is managed by collecting data from different primary and secondary sources, i.e., interviews and official hospital data and documents—to strengthen the robustness of the results through the triangulation of data collection.

More in the details, the secondary data of the performed surgical interventions in the 12 existing general surgical and surgical specialty services have been obtained from the statistics department of the MTUHT. All the surgical specialties of the MTUHT were considered, with the exception of the orthopaedic surgical service as it was transferred to the Trauma Hospital in Tirana in 2017. For each surgical service, the volumes of surgical interventions in the calendar year before and after the adoption of the new organizational model were first evaluated; secondly, volumes of surgical interventions for the first fully operational twelve months of the new organizational model were compared to those of the preceding twelve months, so as to take into account the different starting times of the new organizational model in each of the surgical services considered. The volume of surgical interventions before and after the introduction of the new organizational model was used as a measure of productivity of each surgical service as all the inputs necessary for performing surgical interventions (e.g., hospital health workers involved in the surgical path, the number of operating theatres, number of hospital and intensive care beds) remained constant in all the surgical services during the study period, with the exception of input changes brought by the new organizational model.

The primary data are instead obtained with semi-structured interviews. In order to understand more in depth the managerial and productivity implications, the relationship between surgical services productivity and the outsourcing of SOTS services was evaluated through one-to-one interviews. Our questions explored the factors that have positively or negatively impacted on the productivity of the surgical services. More in the detail the questions in the interview studied these factors from individual issues, organizational ones, and supply side. The structure of the interview is provided in the appendix to this research.

Interviews were conducted with the health services manager, the surgery department manager, and the consortium of supplier manager in order to explore the topic and its implications from different point of views. For this reason, the interview structure was the same for the different managers so as to understand the different approach and compare the information obtained. The interviews were conducted in person with a researcher-generated interview guide containing open-ended questions. The interviews were recorded and transcribed verbatim. Afterwards, the interviews were subjected to a content analysis.

Lastly, we triangulated the data collection using the secondary sources to support the information obtained through the interviews and to improve the validity of the results (Bryman, 2015).

2.3. Background of the outsourcing of the sterilization and operating theatre support services in the Albanian National Health Care Service

In 2015, the Albanian Ministry of Health decided to implement an innovative project for the outsourcing of the SOTS services of all the districts, regional and university public hospitals of the Country. The reasons at the basis of the decision to embark this national outsourcing project were to provide common operational and quality standards for the sterilization reprocessing process of all the public hospitals of the Country and to increase the attention on surgical services both in terms of quality and efficiency. In this regard, it has to be highlighted that the Albanian hospital system has a long history of inefficiency and lack of structural investments whose roots may be dated back to the ‘Semashko’ model in place during the Communist regime; issues that were only partly addressed by the subsequent health reforms period (Persiani et al., 2014; Lastrucci et al., 2016; Tomini et al., 2013; Nuri & Tragakes, 2002). As for the specific case of the sterile processing departments, at the time of the implementation of the outsourcing project they were characterized by a general state of obsolescence and disrepair in most of the Albanian public hospitals, causing efficiency and quality of the care concerns in the surgical services provided. Indeed, concerns on surgical site infections have been frequently raised in the Albanian health care system as surgical site infections prevalence is higher compared to the European average and are a major cause of postoperative morbidity and mortality in Albania (Gjerazi et al., 2015; Faria et al., 2006; Faria et al., 2007; Faria et al., 2008; Sodano et al., 2003).

To address the above-described issues, the Albanian government launched an international call for tender for the outsourcing of SOTS services at national level, the

tender was open to international companies. The contract for the services was awarded to a consortium of European companies in 2016 for a concession period of ten years. In particular, the following SOTS services were outsourced in the framework of a public-private partnership:

- supply of reusable surgical instruments and of standardized surgical instruments kits (SSIK) to all the operating theatres throughout the Country: the surgical instruments are delivered daily accordingly to a scheduling system based on Kanban principles from dedicated warehouses;
- sterile reprocessing process and kits repackaging: the supplied reusable surgical instruments are collected after each intervention for the sterile reprocessing process and kits repackaging; consortium specialized nurses are allocated to the operating theatres taking care for all the logistical activities and of the first steps of the sterile reprocessing process. After that, the sterilization of surgical instruments is performed in off-site sterilization plants.
- maintenance and replacement of the supplied surgical instruments;
- supply of surgical drapes and operating theatre medical clothing;
- environmental cleaning and disinfection of surgical and invasive-procedure areas. This service is performed at three distinct intervals throughout the day: before the first procedure, between procedures, and after the last procedure (i.e., terminal cleaning);
- supply of specific medical devices to the operating theatres;
- other ancillary services for national and regional hospitals.

The public-private partnership included the construction of off-site sterilization facilities and their management over the lifetime of the contract. These facilities will become property of the Albanian Health Service at the end of the contract.

The project of outsourcing the SOTS services was considered innovative and resource-efficient for the Country as these services were fully provided internally in each single hospital (or even at the level of different surgery services within the same hospital) up to that moment. The project envisaged a progressive introduction of the outsourcing model that became the standard for the whole country by 2019.

The first hospital in which the outsourcing model was implemented was the 'Mother Teresa' University Hospital in Tirana (MTUHT). The new organizational model was introduced progressively in July 2016 and completed in December 2016 in all the operating theatres of the MTUHT. In MTUHT, operating theatres are shared among surgical services and the new organizational model did not change the number of operating theatres that remained constant over the study period.

3. Results

3.1. Analysis of the impact of outsourcing SOTS services on the surgical services productivity

To verify the changes in productivity following the introduction of the outsourcing model, the first data analysed was the variation in the number of surgeries performed by each

Table 1. Number of surgical interventions per surgical specialties, years 2015, 2016 and 2017.

	2015		2016		2017	
	N° surgical interventions		N° surgical interventions	Δ	N° surgical interventions	Δ
Oculist surgery	3,455		3,946	14%	5,058	28%
Otorhinolaryngology surgery	1,442		1,511	5%	1,469	-3%
Stomatology surgery	728		641	-12%	697	9%
General surgery 1	3,005		3,235	8%	3,410	5%
General surgery 2	1,292		1,415	10%	1,664	18%
General surgery 3	3,009		3,171	5%	3,537	12%
Plastic surgery	1,257		1,275	1%	1,432	12%
Angiology	751		680	-9%	756	11%
Cardiac surgery	646		691	7%	763	10%
Paediatric surgery	3,038		3,122	3%	2,955	-5%
Neurosurgery	1,051		1,280	22%	1,015	-21%
Cancer surgery	1,325		1,634	23%	1,642	0,67%
TOTAL	20,999		22,601	8%	24,398	8%

Source: Mother Theresa University Hospital in Tirana (MTUHT).

Table 2. Number of surgical interventions performed in the 12 months before and after the introduction of the outsourcing model.

	N° surgical interventions		
	Previous 12 months	Subsequent 12 months	Δ
Oculist surgery	3,856	4,846	26%
Otorhinolaryngology surgery	1,417	1,456	3%
Stomatology surgery	527	696	32%
General surgery 1	3196	3346	5%
General surgery 2	1307	1559	19%
General surgery 3	3002	3416	14%
Plastic surgery	1,157	1,432	24%
Angiology	573	738	29%
Cardiac surgery	598	745	25%
Paediatric surgery	2918	3197	10%
Neurosurgery	1,126	1,077	-4%
Cancer surgery	1,439	1,604	11%
TOTAL	21,116	24,112	14%

Source: Mother Theresa University Hospital in Tirana (MTUHT).

surgical specialties of the hospital in the calendar years before and after the implementation of the outsourcing of SOTS services, which occurred during 2016 (Table 1).

Compared to 2015, the total number of the surgical interventions increased 8% in 2016, and a similar increase was observed in 2017 compared to the 2016. The annual growth of the number of interventions was observed in most of the surgical specialties both in 2016 and in 2017 ranging from 0,67% to 23%; otorhinolaryngology, stomatology, paediatric surgery and neurosurgery were the only surgical specialties that shown a decrease in the total number of intervention in 2017. However, to correctly evaluate and link these variations to the introduction of the outsourcing model, it is necessary to take into account the different times of the year in which the new organizational model started in each of the single surgical services considered. Therefore, for each surgical service, the number of surgical interventions performed in the first fully operational twelve months of the new organizational model was compared to the preceding twelve months, results are shown in Table 2.

The total number of surgical interventions performed increased 14% during the first fully operational 12 months of the new organizational model compared to the

12 months before its introduction. In particular, in the first fully operational twelve months, it was observed a relevant increase of the number of surgical interventions in almost all the surgical services, ranging from 5% for the general surgery 2 service to 32% for the stomatology surgical service; the only exceptions were otorhinolaryngology and neurosurgery surgical services that showed a moderate increase (3%) and decrease (-4%) of surgical interventions, respectively.

Reasons behind the increase in the number of surgical interventions performed registered in almost all the surgical services as well as the possible factors explaining the cases of otorhinolaryngology and neurosurgery surgical services were explored through interviews, whose results are reported in the following section.

3.2. Evaluation of the effect of the outsourcing of SOTS services on the surgical services productivity

Results of the interviews confirmed that the outsourcing of SOTS services had a positive impact on the productivity of the surgical services, and several factors were mentioned to have positively influenced the productivity. Furthermore, results of the interviews highlighted also the presence of factors not related to the outsourcing of SOTS services that may have limited the extent of the impact of the reorganization on services productivity.

After analysing the interviews with a content analysis approach, factors that have positively impacted on the productivity were clustered in 3 main themes: organizational-, supply capacity-, confidence-related factors.

Several organizational-related factors brought by the reorganization project were thought to have streamlined the operating theatres turnover times, ultimately resulting in a potential positive impact on the productivity of surgical services. The topic of operating theatres turnover times was raised by all the participants, with different perspectives reflecting the professional role of each of them. Indeed, the surgery department manager opined that *'For most of the surgical interventions, the presence of specific standard surgical instruments kits has reduced the surgical instruments preparation time from one case to the next'*; while, the consortium manager argued that the operating theatre preparation time was reduced thanks to a clear and coordinated division of tasks between hospital and consortium staff *'while the hospital nurses complete the chart, the consortium nurses collect the previously used surgical instruments and clean the room, while the hospital nurses finish to set up the room, the consortium nurses provide the surgical instruments for the following cases'*, and lastly the health manager affirmed that *'the planned supply of the surgical instruments has reduced the surgical slots delays and postponements due to the instruments preparation delay or unforeseen lack of material availability, that used to be a quite common issue'*. Reduced operating theatres turnover times ultimately enabled to schedule more cases in the surgical sessions, without increasing the risk of exceeding the time planned for the sessions. *'As the new organizational model began to be well-established in the hospital, we realized that we could plan to extend the cases in the daily operating list, and eventually we did it'* (Health services manager).

The effect of organizational-related factors on productivity appeared to be connected with the approach and the method of dealing to the project showed by each surgical services. Although the level of collaboration in the reorganization project was in general considered high for all the surgical services by both hospital and consortium managers, both expressed that the approach and method followed in the reorganization project largely differed among surgical services, and this was reckoned to have influenced the effect that the reorganization had on the productivity of each service. In particular, this issue emerged concerning the topic of elaborating and defining the SSIKs at the early stages of the project implementation, in which a more standardized, comprehensive and quality of care-oriented approach was deemed to have largely influenced the productivity results of the different surgical services. Some example quotes are given below:

The impression is that the time required to perform surgical interventions was streamlined to an extent that strongly correlates with the approach chosen for reviewing the surgical array and establishing SSIKs for specific procedures: the more systematic and inclusive the surgical teams were, the smoother were their operations flows after the introduction of the new organizational model (Consortium manager)

Some surgical services saw the reorganization as an opportunity to increase the quality of care and to enhance the workflow, and not only mere requirements to comply with the organizational change of the project (Health manager)

The second theme that emerged from the interviews was that the supply and sterile reprocessing capacity of surgical instruments were not limiting anymore the capacity of the whole production chain of the operating theatres. Indeed, it emerged that the inventory and sterile reprocessing capacity were supporting the productivity of the operating theatres up to a certain number of procedures in the previous in-house model, beyond which the productivity of the operating theatres stalled for the lack of additional safe surgical instruments, and the contaminated instruments accumulated in the sterile processing units. The reorganization has improved the surgical instruments inventory and the sterile processing capacity, thus enabling the operating theatres to operate at higher capacity. The following quotes are examples that best illustrated this theme:

Surgical instruments availability is no longer an issue, now the only provider's limitation to perform surgical interventions is the availability of a hospital bed. (Surgery department manager)

Our inventory of surgical instruments was limited in number and disorganized, we did a considerable effort in standardize and expand it to meet the needs of the surgical services. (Health services manager)

[referring to the previous organizational model] Most of the times it was not possible for the sterile processing units to handle additional work loads, they were working almost at full capacity, not counting the time in which one or more machines were off for repair and maintenance. This bottleneck was frequently raised as an issues by the surgical services and structural investments were needed. (Health services manager)

Comparing with the situation we found before starting the project, we significantly expanded the inventory of the surgical instruments and the capacity of reprocessing them on time for the need of the surgical services. Up to now, we still have the reprocessing capacity to support further increases in the services demand. (Consortium manager)

As for the confidence-related factors theme, this theme mainly concerns the fact that surgical teams resulted to be encouraged to carry out more surgical interventions in the same surgical slot thanks to the increased availability, consistency and reliability of the surgical instruments. Indeed, surgical teams were keener to consider more surgical interventions in the same slot as the perceived risk of unexpected issues and down time was lower with the new surgical instruments supply model. This theme mainly emerged from the interview of the surgery department manager, but the interview with the consortium manager also mentioned aspects concerning reliability of the supply and the built of a trusted working relationship. The following quotes are examples that illustrate this theme:

[referring to the previous organizational model] *Instruments were missing or not ready to use when needed, so we had no choice but to resort to other surgical methods or delay the interventions; we had to take into account these potential risks when scheduling the interventions.* (Surgery department manager)

Those kind of unforeseen events refrained to perform more surgical interventions [referring to the previous organizational model], now we can schedule cases with shorter extra-time precautions. (Surgery department manager)

Our challenge was to deliver safe surgical instruments as planned according to the surgical service's needs. We know that delay in the provision, and incomplete or inaccurate surgical instruments create confusion and stress in the clinical staff, and more than that, it may impair patient safety and the quality of care provided. For these reasons, the standardization of processes was a key element of the reorganization project; we closely worked with the clinical staff of the surgical services in order to standardize the process of supply and to elaborate the most efficient communication tools. Furthermore, we deeply valued the involvement of the surgical teams in the constant process of monitoring and controlling as this allows the refinements and improvements needed to build a reliable and consistent service. (Consortium manager)

Lastly, some bottlenecks posed by factors not related to the reorganization were mentioned to have reduced the full potential of the project in terms of impact on the productivity of surgical services. In this regards, all the respondents pointed out that the extent of the involvement of each surgical service in the reorganization was a crucial factor in influencing its impact on the productivity. More precisely, the proportion of surgical instruments provided in the reorganization with respect to the total array used by each service highly impacted the effect of the reorganization on the productivity of each surgical services. In this regard, the neurosurgery surgical service was taken as the most emblematic case. Indeed, neurosurgery is a highly complex surgery that requires high expertise of the surgeons, specific surgical instruments, and personalized surgical instruments depending on the preference and technique of the surgeon. For this reasons, several surgical instruments for neurosurgery were not comprised in the project supply and only few SSIKs were established for this service. Furthermore, the surgical services demand and hospital bed capacity were also mentioned by the health manager and the surgery department manager as extrinsic factors that may have limited the productivity to different extent, depending on the specificity of each surgical service. The following quotes are examples that illustrate this:

Neurosurgery was only partially involved in the outsourcing project, especially for the aspects concerning the supply of surgical instruments and SSIKs. Addressing the complexity, specificity and surgeon instruments preferences of this surgical specialty was difficult in the framework of a general outsourcing project that includes several surgical services; a high level of customization was needed, but it was not possible. Definitely, for neurosurgery the changes made by the new organization were minimal compared to the other surgical services. (Health services manager).

Otorhinolaryngology surgical service was almost at full production capacity when the reorganization started as it only substantially performs tonsillectomies and few other procedures, for which the waiting lists were short even before the reorganization. (Health services manager)

As the project went by, the limited number of beds available in the intensive care units and in the wards challenged the scheduling of surgical interventions, especially of the mayor ones. (Surgery department manager)

4. Discussion and implications

The aim of this article was to measure the effects generated from the outsourcing of SOTS services on the productivity of the surgical services of the largest public hospital of the Republic of Albania. Considering the general novelty of the subject in the literature and the specific lack of studies for the countries in transition context, the research was carried out with the case study method. This research contributes to fill the research gap in two different areas: from one side, the results provide an empirical measure of the effects of the outsourcing of SOTS services on hospital efficiency with particular attention to the productivity of the surgical services; from the other, these evidences and recommendations are analyzed in a hospital of a Country in transition where the outsourcing of SOTS services could have relevant effects on efficiency and quality improvement of healthcare services.

The case study was carried out through the analysis of data from the surgical services and interviews with key stakeholders of the outsourcing project. Results from data of the surgical services showed that the introduction of the new organizational model had a significant effect in terms of increasing the productivity of the different surgical services of the hospital. In particular, the number of patients treated by each surgical service of the MTUHT was considerably higher in the twelve months after the introduction of the outsourcing of SOTS services than in the twelve months before; only two out of twelve surgical services did not show an increase in their productivity. Results from the interviews with key stakeholders confirmed the positive impact of the outsourcing model on the productivity of the surgical services and provided further insights on the factors that have driven these productivity gains. In particular, the reduced operating theatre turnover times, the augmented inventory and sterile reprocessing capacity, and the increased confidence of the surgical teams on the reliability of the surgical paths were mentioned among the main drivers of the productivity increases. Lastly, results of the interviews highlighted some internal and external bottlenecks that may have limited the effect of the reorganization on the productivity of surgical services.

The results coherently pointed out that the outsourcing of the SOTS services induced a consistent increase in the surgical services productivity. In this regards, it has to be highlighted that the only two surgical services that resulted to have no increases in their productivity were the same services that were mentioned to be more limited by bottlenecks that are not related to the outsourcing project: i.e., the limited service demands in the case of the otorhinolaryngology surgical service, and the limited possibility of involvement in the project due to the high complexity and peculiarity of the surgery performed in the case of the neurosurgical surgical service. Considering these bottlenecks, these two exceptions seem to confirm that the registered generalized increases in surgical services productivity were actually induced by the reorganization.

Although it was registered a generalized increase in the volumes of patients treated after the implementation of the outsourcing of SOTS services, the extent of this increase vary across surgical services. The causes of these variations seem to be largely explained by the results of the interviews; productivity variation in surgical services was mainly attributed to contextual factors that are not related with the reorganization, such as the specific demand for each surgical services and hospital and ICU beds availability. However, factors directly related to the project implementation were also mentioned to have influenced the effect of the reorganization on the productivity of the surgical services, such as the level of engagement and effort posed by the distinct surgical teams during the initial phases of the reorganization and in the monitoring and controlling functions. This aspect suggests that the active collaboration of the clinical staff involved by SOTS services may boost the effects of the outsourcing on productivity. Therefore, strategies and tools that stimulate participation and ownership of the clinical staff involved in the operating theatre processes have to be taken into account while considering the outsourcing of SOTS services.

The factors reported to have driven the increase of the productivity of the surgical services are not peculiar of the specific case of the hospital selected in the case study. Indeed, the organizational, supply and sterilization capacity, and confidence-related factors emerged from the interviews are issues that are common for hospitals operating in countries in transition. Indeed, the current Albanian hospital care system is characterized by poor performances and efficiency and by a lack of autonomy and competition of hospitals (Persiani et al., 2014, Lastrucci et al., 2016), and these features are quite common in most of the hospitals operating in countries in transition (Kujawska, 2017, World Health Organization, 2006). Furthermore, comparing the characteristics of the case study described with other hospital contexts, it needs to be recognised that the hospital that was taken in the present case study has a long experience and dedicated expertise in the organization and optimization of surgical paths as it is the national referral hospital for surgical services and the largest teaching hospital of the Country. Therefore, the productivity changes obtained as a consequence of the outsourcing of SOTS services occurred in surgical services that were already streamlined up to a certain level. Consequently, it could be argued that there may be room for even higher productivity gains in the cases of less experienced or peripheral hospitals.

Although several characteristics of the case described by our study may be common to other hospitals from countries in transition, it should be pointed out that the case study approach is not designed to provide conclusive or generalizable results, rather to bring the understanding of a complex and unexplored topic and to provide a foundation in which develop future research. In the light of this, future researches from representative sample of hospitals are necessary to estimate the impact of the outsourcing of SOTS services according to hospital and healthcare system characteristics.

Although this study is a case study of one particular hospital in Albania, our results, although not generalizable, provide first evidences and may serve as a basis for further studies on the outsourcing of SOTS services in the countries in transition especially for the context of those countries that have their current health care systems inherited from the Soviet 'Semashko' model (Kujawska, 2017, Figueras et al., 2004), as it is the case of the former Soviet Union countries and of several Central-Eastern European and Balkan countries. Indeed, in most of these countries, the legacy of a hospital sector characterized by a low level of efficiency and competition was left by the previous centralized and totally state-run 'Semashko' model. Nowadays, while these countries have followed different trajectories after the dissolution of the Soviet Union, their overall aims in the health sectors have often been similar and it is possible to identify common trends and challenges for the future (World Health Organization, 2006; Glonti, 2015; Persiani et al., 2018). In fact, health reforms aimed to increase autonomy, competition and efficiency were and are currently pursued in order to react to the inadequacies of the hospital sectors inherited from the communist period. In the light of these autonomy and efficiency challenges imposed by the increasingly competitive and evolving health sector of these countries, organizational innovations will be required for hospitals, and the outsourcing of SOTS services may represent a key managerial tools in the hands of health managers.

The findings of this study must be considered within the context of its limitations. The main limitation of the study consists on the fact that the case study was carried out in only one third-level university hospital, therefore findings of the study provide little basis for generalization to wider hospital context. Furthermore, the study was mainly focused on the factors influencing the productivity of the surgical services within the examined hospital; however, several other factors outside the hospital could have affected the productivity of the surgical services, such as health-market or policy changes. Although possible, it is unlikely that these factors influenced the observed results as no changes have occurred in policy for financing, accessing and evaluating/monitoring the surgical services during the study period and because the study period was relatively limited to register relevant changes in price of health material or equipment. Moreover, in this regard, it should be highlighted that none of the key stakeholders interviewed mentioned other external factors influencing the productivity of surgical services in the study period. As for changes introduced by the reorganization, it should be underlined that they cannot be considered as extra resources as the outsourcing of SOTS services—besides increasing the quality—had the final aim of reducing costs. Despite the limitations above described, the findings of our study enrich the current understanding on the impact of outsourcing of SOTS

services from the productivity perspective, and these insights may serve as a basis for more definite research on this relevant topic, especially for the countries in transition context. Therefore, research perspectives in this field are to evaluate the impact on the productivity levels in different hospitals in order to confirm our results and to identify the key characteristics of the hospitals that may benefit most from the outsourcing of SOTS services; this will require evidences from larger studies that include representative sample of hospitals of different sizes and levels of care.

Data availability statement

The data that support the findings of this study are available from the corresponding author, NP, upon reasonable request.

Disclosure statement

No potential conflict of interest was reported by the authors.

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