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Review

Small and medium-sized enterprises (SMEs) engagement in corporate social responsibility (CSR) in developing countries: Literature review

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Although corporate social responsibility (CSR) has globally been recognized by both large and small businesses, little literature is currently available regarding the motivation and barriers for small and medium enterprises (SMEs) engagement in CSR practices. Until recently, the involvement of SMEs in social activities has received little attention by both scholars and practitioners. Therefore, this study is aimed at conducting a thorough literature review with regard to SMEs engagement in CSR activities. The study critically analyses the drivers and barriers to SMEs engagement in CSR practices, and then proposes strategies that SMEs can adopt to effectively participate in CSR activities.

Key words: Corporate social responsibility (CSR), small and medium-sized enterprises (SMEs), drivers and barriers for SMEs engagement in CSR.

INTRODUCTION

There is seemingly no consensus in the literature about the definition of corporate social responsibility (CSR) since scholars are used to offering definitions that vary in content, context, process and value (Inyang, 2013).

However, the World Business Council for Sustainable Development (WBSCD) (2000) defines CSR as “the commitment of business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve their quality of life”. On the other hand, the CSR is viewed as “the way firms integrate social, environmental and economic concerns with their values, culture, decision making, strategy and operations in a

transparent and accountable manner and thereby establish better practices within the firm, create wealth and improve society” (Mourougan, 2015).

The engagement of SMEs in CSR is very critical since they help create employment opportunities, drive economic growth and provide opportunity for equitable distribution of income in society (Inyang, 2013). SMEs have also been recognized to significantly contribute to job creation and poverty alleviation in developing countries (de Kok et al., 2013). Hence, businesses of any size- large or small are viewed as a creation of society and whose survival depends on the very society (Inyang, 2013).

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CSR has become a worldwide demand by both large and small businesses (Mehran and Azlan, 2009). Over the last two decades, there has been general literature about CSR and its implementation. However, the motivation for companies' engagement in CSR activities, particularly SMEs, has not been clearly documented.

Little literature is currently available regarding the motivation and barriers for SMEs engagement in CSR practices (Inyang, 2013). As a result of relatively little attention being given to CSR in relation to SMEs until recent years, the knowledge of social activities in this sector, particularly in developing countries, has remained unexplored (Sen, 2011).

As such, there has been a limited literature focused on the extent of the application of CSR in SMEs (Adapa and Rindfleish, 2013), yet SMEs could take advantage of the opportunities offered by CSR and maximise the business benefits from making the most of such opportunities (Jenkins, 2009).

It is important to note that there is a growing recognition that the issues which are significant for CSR are as relevant for SMEs as they are for large companies (Mehran and Azlan, 2009). Indeed, SMEs play an important role in pushing countries towards continuous economic growth globally.

However, the motivation for such practices seems to be unexplored, particularly in developing countries. Most of the studies on SME's engagement in CSR activities have been conducted in developed countries. The purpose of this study is to analyze literature regarding SMEs engagement in CSR activities. As such, the study will review literature on definitions of CSR from the perspective of SMEs, drivers of CSR in SMEs, barriers to SMEs engagement in CSR activities and then propose strategies for SMEs to effectively participate in CSR activities.

Definitions of CSR within SMEs

The concept of CSR is generally linked to responsible business practice (Adapa and Rindfleish, 2013). Despite the efforts made to define CSR, a conclusive definition does not exist (Moyeen and Courvisanos, 2012). To-date, various scholars view CSR differently. According to Engle (2007) and Blombäck and Wigren (2009), CSR literature has only presented similar notions such as corporate citizenship, corporate social performance, social marketing, responsible entrepreneurship and corporate philanthropy (Adapa and Rindfleish, 2013). From several definitions of CSR, Dahlsrud (2008) identifies some dimensions of CSR such as environmental, social, economic, stakeholders and voluntariness. CSR may imply different things to different stakeholders and businesses of different type or size (Smith and Langford, 2009; Yang and Rivers, 2009).

Although large businesses have attracted a substantial great volume of literature with regard to their involvement

in CSR activities, SMEs find it difficult to appreciate the concept of CSR (Jenkins, 2006). They understand the concept of CSR in terms of engaging in philanthropic activity, doing business within the community, taking care of employees and providing an enabling working environment (Roberts et al., 2006); providing employment and supporting the local economy (Jenkins, 2006); volunteering, donating time or money and recycling (Sweeney, 2007). Hence, it is difficult to articulate exactly which CSR activities should SMEs adopt (Lindgreen and Swaen, 2010); and those that are applicable to SMEs particularly in developing countries.

A great deal of CSR literature has focused on large corporations (Lee, 2008; Lindgreen and Swaen, 2010) despite the significant influence that SMEs have on the world economies and their impact on the social and natural environments. SME's engagement in CSR activities, especially in developing countries, has not yet received adequate research attention (Fassin, 2008; Blombäck and Wigren, 2009). Much of the existing literature on CSR in SMEs is not extensively empirically grounded largely due to the inclination of scholars to adopt the large businesses framework (Jenkins, 2006).

SMEs often unintentionally adopt socially responsible practices, have a special relationship with particular stakeholders and are also prepared to lose some of their profits while serving a greater goal (Azmat and Samaratunge, 2009). This notion is supported by Fassin (2008), who maintains that SMEs engage in responsible business practices although they do not publish formal social reporting.

Relatedly, Spence (2004) argues that SMEs are mainly rooted in local communities and their physical proximity to customers may translate to moral proximity which can focus the minds of owner/managers considerably on socially responsible behaviour. As customers and employees become visible in the local communities in which SMEs operate, these SMEs build and enhance their reputation, thereby enhancing their competitiveness (Moyeen and Courvisanos, 2012).

Consequently, SMEs would naturally engage themselves in CSR activities. This implies that the constant interactions of SMEs with the local communities would help them serve the community well (Moyeen and Courvisanos, 2012). However, SMEs claim to lack time, resources and support necessary to engage in more in-depth CSR activities (Jenkins, 2006; Sweeney, 2007).

METHODOLOGY

In this study, the background literature review on CSR in SMEs in developing countries has been conducted on several journey articles. This helped identify the drivers and barriers to SMEs engagement in CSR activities as a basis of proposing strategies that SMEs can adapt to successfully engage in CSR activities. However, an empirical study needs to be conducted to establish the

extent of SMEs engagement in CSR activities, particularly in developing countries.

Drivers for SMEs engagement in CSR

To appear more ethical, businesses may begin to adopt some of the best practices employed by some firms to make a wider positive impact. Businesses should seek to do good and avoid harm (African Business Magazine, 2013).

SMEs are viewed as businesses that treat customers, business partners and competitors with fairness and honesty; care about health, safety and general well-being of employees and customers; motivate the workforce by offering training and development opportunities; act as a "good citizen" in the local community; and are respectful of natural resources and the environment (Lepoutre and Heene, 2006).

In many cases, SMEs stress economic survival over voluntary social and environmental initiatives. Essentially, the economic motive is seen as the most important driver of CSR integration into business strategy (Lepoutre and Heene, 2006; Jenkins, 2004).

It has been argued that due to the owner-centric characteristics of SMEs, they integrate CSR into business strategy primarily for social and environmental motives. As such, CSR is important to SMEs because it is simply the 'right thing to do' (Jenkins, 2006).

The main benefits that SMEs may realise from engaging in CSR include good image, trust and reputation, improved market position, enhanced employee motivation, risk management and cost savings (Jenkins, 2006). However, it is argued that business benefits are not the deciding factor for SMEs to engage in CSR; it is rather the values and attitudes of owner/managers that largely drive CSR among SMEs (Spence et al., 2003; Spence and Rutherford, 2003; Jenkins, 2006).

There is a number of motivating factors responsible for SMEs engagement in CSR, which can be conceptualized as the internal and external pressures that promote or compel SMEs to identify with, engage and implement CSR activities (Inyang, 2013).

The internal motivations for SMEs engagement in CSR activities include the manager's personal values or ethical orientation and level of morality. They are likely to play a major role in determining the manager's level of commitment to the implementation of CSR activities in the enterprise (Vives, 2010; Lepoutre and Heene, 2006; Hsu and Cheng, 2011; Freisleben, 2011).

Gaining benefits from community engagement or philanthropy such as improved community image, better business returns and improved customer loyalty; and strong identification with the community also provide a driving force for SMEs engagement in CSR activities (Inyang, 2013). On the other hand, there are some external pressures that compel SMEs to engage in CSR.

These include community pressure to SMEs to handle the issues of social performance; the need to obey laws and regulations and avoid sanction and negative publicity; and the issue of customer loyalty to maintain reputation and integrity to attract and retain customers on a continuous basis (Inyang, 2013).

Furthermore, SMEs are said to be motivated to engage in CSR activities for long-term survival, increase employee morale, marketing, customer support, customer loyalty, business reputation, community expectations, access to information, meeting stakeholder expectations, character/values of the owner, innovation possibilities, legal compliance and business performance (Mankelov, 2003; Spence and Schmidpeter, 2003; Fuller and Tian, 2006; Murillo and Lozano, 2006; Williamson, Lynch-Wood and Ramsay, 2006).

It is also argued that factors such as philanthropic, access to human resources, moral and ethical reasons, business image, employee morale, stakeholder demands and expectations, trust, business reputation, legitimacy with specific stakeholders and external influences motivate SMEs to engage in CSR activities (Jenkins, 2006; Udayasankar, 2008; Russo and Perrini, 2009).

According to Courrent (2004), Hemingway (2005) and Murillo and Lozano (2006), personal or individual reasons remain the most important motivational factors for SMEs' engagement in CSR activities. Intrinsically, CSR in SMEs depends very much upon the personality and personal convictions of its managing directors (Gond and Igalens, 2008).

The commitment of SMEs to adopt and implement CSR activities is a result of pressure applied by stakeholders. Lepoutre and Heene (2006) assert that SMEs are more sensitive to practices relating to internal stakeholders such as employees, clients and suppliers. However, to some scholars (Worthington et al., 2006; Ellerup Nielsen and Thomsen, 2009), pressure exerted by stakeholders is often not very effective and is not the catalyst for a business to implement activities that go beyond legal and administrative requirements. In essence, it can be inferred that SMEs engagement in CSR activities is a result of both internal and external pressures.

In a study conducted in Somalia (Possenti, 2012), it is reported that ties and integration with the local community were the main drivers of CSR activities. Furthermore, ethical and personal values as well as commitment to environmental sustainability were considered fundamental drivers of SMEs engagement in CSR activities. Likewise, the increase of SME's reputation was indicated as an important driver to SMEs engagement in CSR activities.

General barriers to SMEs engagement in CSR activities

Research regarding the CSR policies of SMEs, particularly on the factors that influence the implementation

of those policies, is limited. This could be due to the fact that large companies have a greater influence compared to SMEs, whose capitalization tends to be small and thus lack sufficient resources (Revell and Blackburn, 2007).

According to Jenkins (2004) and Vives (2006), SMEs lack specific corporate strategies, financial resources and skills to engage in CSR activities. Although some SMEs would want to focus on certain social issues and seek active participation as part of their CSR policies, their efforts are hardly noticed (Schoenberger-Orgad and McKie, 2005; Revell and Blackburn, 2007). Similarly, many SMEs implement CSR activities, but they are not formally recognized as CSR activities (Niblock-Siddle, Jones and Black, 2007).

Whilst some SMEs are integrating CSR into their day-to-day management, they have to overcome many obstacles in order to do so (Kechiche and Soparnot, 2012). As such, barriers to SMEs engagement in CSR activities may be a result of personal characteristics of owners or the organizational characteristics of the firm (Massoud, 2010). According to Lepoutre and Heene (2006), small business owners lack time and specialized knowledge; engage in a wide variety of organizational activities; thus they lack the information to implement the CSR activities. Furthermore, the mindset of SME owners could represent a substantial barrier.

According to Vives (2006) and Sweeney (2007), SMEs are likely to perceive CSR as an issue that only concerns larger firms. Relatedly, organizational characteristics have been cited as barriers to CSR (Kusyk and Lozano, 2007; Sweeney, 2007; Vives, 2006). According to Jenkins (2004), SMEs tend to be more informal and owner-centric, and are often privately owned and sometimes family run. Hence, it is possible that CSR might not take precedence to other issues.

The size of an enterprise has been identified as a barrier for SMEs to engage in CSR practices (Brammer and Millington, 2006). It is argued that there is a positive link between the size of a firm and its commitment to CSR (Lepoutre and Heene, 2006; Cabagnols and Le Bas, 2006). Larger businesses are said to have the ability to absorb fixed costs and greater access to resources. As such, a larger workforce might make certain factors more likely (Berger-Douce, 2008).

Nevertheless, a number of researchers suggest that this barrier may not prevent SMEs from engaging in CSR activities (Castka et al., 2004; Vives, 2006), and that SMEs may actually benefit significantly from doing so. SMEs are also constrained by financial resources and bargaining to engage in CSR activities (Lepoutre and Heene, 2006; Kusyk and Lozano, 2007).

According to Spence and Schmidpeter (2003), time constraints and perceived lack of opportunity are the two major barriers for SMEs engagement in CSR activities. However, some owner-managers can still manage to get involved in community issues and therefore, time may not be a major barrier. Nevertheless, Lepoutre and Heene

(2006) assert that lack of time still remains a challenge for SMEs engagement in CSR activities since such activities further reduce their discretionary slack.

Furthermore, in the minds of most SME owner-managers, CSR activities are still perceived as costs that result in competitive disadvantage (Anglada, 2000), and hence they sometimes postpone such expenses even if they feel that CSR activities are something they are interested in doing. This is in agreement with Bylok (2016) and Moyeen and Courvisanos (2012) who identified key barriers by SMEs to engage in CSR activities as lack of time, knowledge and skills as well as money and resources.

On the other hand, Murillo and Lozano (2006) affirm that lack of awareness and financial resources may impede SMEs' full participation in CSR activities. According to Jenkins (2006), other factors that impede SMEs engagement in CSR activities include: organisational culture; difficulties getting employees involved; lack of measurement and quantification of CSR benefits; difficulties in making connections with the community; and the challenges of maintaining the momentum of such activities.

Similarly, lack of accountability and poor information availability from business organisations restrict SMEs engagement in CSR activities (Jenkins, 2006). A study conducted on SMEs in Somalia (Possenti, 2012) revealed that the main barriers to the implementation of CSR activities by SMEs were time and resource costs. Lack of efficient institutions and facilities to assist in the implementation of CSR activities were also identified as other barriers to SMEs engagement in CSR activities.

Strategies for SMEs engagement in CSR activities

Since SMEs operate within local communities and are more aware of community and environmental issues than their larger counterparts, they can design appropriate CSR strategies to address such concerns. They can take advantage of the opportunities presented by CSR and maximise the business benefits (Jenkins, 2009).

The comparatively local character of SMEs makes it possible for employees and owners to be well known in the community. Essentially, SMEs have strong identification with the community that serves as a major external driver. They can engage in community-related activities such as sports, health and education, and other philanthropy giving. Thus, meeting such obligations endures the business to the community (Inyang, 2013).

Furthermore, it is important to note that employees are key stakeholders in SMEs engagement in CSR. SMEs need to engage in employee-related initiatives such as promotion of employee health and safety, remedial education for disadvantaged employees, employee training and development, paying employee adequate rewards and improving the emotional and physical

working environment (Inyang, 2013; Turyakira, 2012).

Customers also play a role as drivers in CSR engagement of the SMEs. As such, SMEs should provide customers with high quality products and services at fair prices, respond quickly to customers' orders and complaints, and conduct honest and ethical advertising. SMEs can also participate in specific and inexpensive environmental-oriented CSR activities such as producing environmentally-friendly products, running environmental awareness initiatives for employees on efficient energy and resource use, and waste reduction and pollution management (Inyang, 2013). Relatedly, SMEs can encourage their suppliers to participate in projects involving social and environmental developments. These may include sponsorship of local events and employing people from local communities (Jenkins, 2006).

SMEs are increasingly entering into strategic alliances to achieve market growth and gain access to new markets. Thus, SMEs can be encouraged to unite and pursue agreed upon goals, while remaining independent. Essentially, engaging in CSR activities individually may be very expensive for SMEs, especially those in developing countries. Since most of the SMEs are financially constrained, they can form strategic alliances and share information, technology and costs of engaging in CSR activities.

SMEs owners/managers need adequate training to understand the concept of CSR, the benefits for their engagement in CSR and the process of integrating CSR initiatives into their business function. Therefore, managers who run SMEs and potential entrepreneurs should be equipped with appropriate training on CSR (Sotamenou, 2014). Media publicity and attendance of conferences and workshops can also help increase awareness about the core concerns of CSR initiatives (Jenkins, 2009). Similarly, there is need for government intervention even though CSR is voluntary. This may be helpful in providing a level playing field, and can be done through the enactment of appropriate legal framework to encourage CSR through tax policy incentives for CSR practices. Governments can also create incentives for SMEs to adopt CSR practices and further build their capacity to effectively implement the CSR practices (Inyang, 2013).

Conclusions

This literature review has made several contributions to the understanding of SMEs motivations for their engagement in CSR, barriers and strategies to enhance SMEs participation in CSR activities. Although CSR has mostly been associated with larger companies, especially multinationals, this does not necessarily mean that CSR is irrelevant for SMEs. No matter what the size of a business is, all businesses have economic, legal, social and ethical responsibilities to specific stakeholders. It is generally noted that SMEs engage in CSR activities for

long-term survival, increase employee morale, marketing, customer support, customer loyalty, business reputation, community expectations, access to information, meeting stakeholder expectations, character/ values of the owner, innovation possibilities, legal compliance and business performance. SMEs conduct CSR activities informally, and their understanding of CSR is influenced by the personal values of the owner/manager. Hence, the CSR activities of SMEs are developed in a non-structured and infrequent manner (Santos, 2011).

However, there are various barriers to SMEs engagement to CSR activities. These include lack specific corporate strategies, financial resources and skills. SMEs can engage in employee-related initiatives such as promotion of employee health and safety, remedial education for disadvantaged employees, employee training and development, paying employee adequate rewards and improving the emotional and physical working environment. It is also noted that literature on SMEs engagement to CSR activities in developing countries is insufficient. Hence, empirical research should be conducted to increase literature.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Full Length Research Paper

An assessment of nexus between infrastructural development and Nigerian economic growth

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This study investigates the nexus between infrastructural development and Nigerian economic growth using data from 1981 to 2014. The data was tested for stationarity followed by co-integration, and Vector Error Correction Model (VECM) was employed for the analysis. From the results, there is long run relationship between infrastructure development and Nigerian economic growth. VECM have the expected negative sign, and is between the accepted region of less than unity. It also shows a low speed adjustment towards equilibrium. Hence specifically, infrastructural development on road and communication show a positive relationship with the Nigerian economic growth for the period under review, while private investment, degree of openness and education produced negative relationship with economic growth. It was therefore recommended that, the government should beef up their commitment on improving infrastructure, develop the manufacturing sector to properly harness the advantages of openness of the economy, improve and monitor budgetary allocation to education to increase human capital development that is capable of utilizing available infrastructure and resources for the attainment of economic growth, and encourage private sector with series of incentives to increase their participation in investment activities which will lead to economic growth.

Key words: Infrastructure, economic growth, vector error correction model.

INTRODUCTION

Infrastructure development is an important part of public investment in social and physical infrastructures (Ogun, 2010). He argued that increase public investments in urban areas with the view that they are key determinants of sustainable growth in the long-run. This has the capacity for the poor to benefit from the growth process.

Theoretically, there exist three views on investment in infrastructure as a strategy of reducing poverty. The first school believes in investment in social infrastructure

which include education and health (Jahan and McCleery, 2005; Jerome and Ariyo, 2004).

The second theorists believe that poverty can be reduced through investment in not only social infrastructures but with physical infrastructures. The third theorists believe that poverty reduction is not as a result of infrastructural investment. Those who argued against the third theory based their arguments on three points. The first is that infrastructural investment brings about

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increase in economic growth but has little impact in reducing poverty. Secondly, infrastructural investment benefits on the society have not being felt as expected. The last is that the corrupt nature of government of developing countries with weak institutions and governance which affect investment in infrastructure, and increases the poverty level of its citizens (Ali and Pernia, 2003). In spite of these, it is generally believe that good governance and strong institutional framework must be strengthened before there can be a positive link between infrastructural investment and poverty reduction. The availability of infrastructure amenities accelerates socio-economic development. The unavailability of the social infrastructure will make development impossible, and its scarcity will make the prices of the good and services high. An indication of development is the availability of employment opportunity, electricity, roads, potable water supply, education, medical services among others (Adeyemo, 1989). Infrastructure can be broadly classified into two: physical and social infrastructure. Physical infrastructure includes roads, electricity, telecommunication and others while social infrastructure includes education, health, recreation, and housing among others. Physical infrastructure is also known as economic infrastructure.

In Africa especially in Nigeria, 20% of gross domestic product (GDP) and 60% of urban labour force informal sector are not accounted for. The highest number of the urban population lacked necessary infrastructure amenities to stimulate business activities and economic growth. Economic growth therefore, has the capacity to reduce poverty and improve access to infrastructural amenities. The link between infrastructural provision and economic development are necessary ingredients for improve standard of living (Alaci and Alehegn, 2009).

This study seeks to investigate the nexus between infrastructural development and Nigerian economic growth. To this end, this paper hunts to provide answers to the questions below:

1. Does infrastructural investment have positive impact on Nigerian economic growth?
2. What effect does short-run and long-run dynamics of public infrastructure has on Nigerian economic growth?

LITERATURE REVIEW

Investment in infrastructure is a long time process that involves outlays and yields. The market system will not necessarily provide the optimum level because the private individuals seek high return in the short-term. This means that their investment decisions are influenced by high discount rates even if the problems of non-excludability and non-rivalry can be overcome. According to Johnson (2001), both private and public investment has discount rates set by the market system. Therefore, it

would be reasonable to use market determine discount rates in infrastructure investments when capital markets operate efficiently, with full knowledge of risks and returns. There is always a bias in private discount rate as short term returns are preferred. Short payback period is what firms tend to seek investment.

Aschauer (1989) pioneered the econometric analysis on the impact of investment in public infrastructure, with productivity and GDP growth for the United States economy between 1949 to 1985. He said that the rate of return on private capital is positively influenced by public capital, and leads to private accumulation. There is a strong positive relationship between output per unit of capital input, the ratio of the public capital stock to the private capital input, and the private labour-capital ratio. Ashauer (1989) found that public infrastructure capital has elasticity of output.

Another notable work was done by Munnell (1990, 1992). He used virtually the same econometric framework by Aschauer (1989) to look at the relationship between public capital and economic growth. Munnell (1990, 1992) model is mainly a production function for marginal factor productivity (MFP) with public stock including transport capital as input. She used log-linear form to estimate the model for US data between 1948-1987, and she opined that the elasticity of labour productivity with regard to public capital is between 0.31 to 0.39. This shows a 10% increase in public capital would also increase productivity by 3.1 to 3.9%. On her estimate which was conducted between 1970 to 1990, she concluded that increase in public capital by 10% was to bring 1.4% increase aggregate output. From these estimates, most of the increase in aggregate output was as a result of an increase in factor productivity.

Pereira and De Frutos (1999) examined the empirical relationship between public capital and private variables, which include employment level, private investment and economy's output in the US using new vector autoregressive (VAR) framework. The outcome of the empirical study revealed that a one-dollar increase in public capital will surge long term production by 65 cents. There exists a positive relationship between employment and private, and public capital. Pereira (2000) used annual time series data between 1956-1997 to confirm the relationship between private sector performance and public investment in US using VAR methodology. He affirmed that all kinds of public investment are growth compatible. The productive of all public investment include sewage and water supply system, transit systems and airfields, electric and gas facilities. Other social infrastructures that produce low rate of return but are very important factors of growth include public buildings, hospital and education.

Lighthart (2000) examined the effect of public capital on growth in Portugal using time series data from 1965 to 1995 using production function. The outcome of the methodology shows an elasticity of public output up to

0.2, which means that a 1% increase in public capital will increase growth by 0.2%. The magnitude of output elasticity of labour was 0.67 while that of private capital had 0.37. He also tested the relationship using unrestricted VAR model and the results authenticated the previous studies.

It is what mentioning that there are studies that show negative and insignificant relationship between public infrastructure and growth. The study of Owen-Smith (1984) showed little relationship between roads infrastructure investment in UK regions and economic growth rate. Zainah (2009) investigated the role of public investment on infrastructure on economic performance in Mauritius between 1970 to 2006. He employed a reduced form of Solow growth model. An error correction model was adopted because of non-stationarity of the data. The results showed that public investment on infrastructure have significant contribution to Mauritian economic performance while private capital accumulation and openness showed indirect effects on economic performance.

Ekpong (2014) examined the trends of public expenditure on infrastructure, and economic growth in Nigeria between 1970 to 2010. Analyzing the data, he used VEC methodology. Public expenditure on transport/telecommunication, water supply, housing/environment, road construction and electricity supply is very low especially in the short-run and long-run; equilibrium is static and showed weak adjustment. The resulted expenditure on public investment has not yielded expected results, and this has shown in the dilapidated of public infrastructures in Nigeria during the period reviewed.

The Chow test showed that expenditure by the public on infrastructural amenities has been constant during the period under review.

Kweka and Morrissey (1999) conducted a study on government expenditure, and growth of the economy of Tanzania. The result from the study shows that there is positive relationship between public investment on physical infrastructure and human capital on economic growth. From the work of Al-Yousif (2000) and Abdullah (2000) in Saudi Arabia which were separately conducted, the result showed that government expenditure is positively related to economic growth. Dash and Sharma (2008) studies in India also showed the same result.

Many research works have been done on the relationship between government expenditure in Nigeria on infrastructures and economic growth by researchers. Oyinlola (1993) conducted an empirical study on nexus between expenditure on defense and economic development, the result shows a positive relationship between defense expenditure and economic growth. Fajingbesi and Odusola (1999) study was done in Nigeria on the relationship between government spending and economic growth.

The outcome revealed that there is positive and

significant relationship between government capital spending and real output, while there is a minimal influence between government recurrent expenditure and real output.

METHODOLOGY

Model specification

Following the link between infrastructure and economic development reviewed earlier, as well as the work of Pooloo (2009), the model for this study is formulated as thus:

$$GDP = f(\text{PRIINV}, \text{ROAD}, \text{COM}, \text{DOO} \text{ and } \text{EDU}) \quad (1)$$

Where GDP represents the economy's output, PRIINV represents the private capital as captured by the proportion of private investment to GDP showing the extent of private investment as well as foreign direct investment in Nigeria. ROAD is a proxy for transportation stock, while COM is a proxy for non-transportation stock. However, the length of paved road per square kilometer and telephone lines per 1,000 inhabitants are used to quantify ROAD and COM respectively. DOO represent the total of exports and imports divided by GDP which is simply tagged as degree of openness as a measure of the degree of openness in the country. Lastly, EDU represents education measured by secondary school enrolment ratio as a proxy for the quality of human capital. Hence, equation (1) can be specified in its econometrics form as thus:

$$GDP_t = \alpha + \beta_1 \text{PRIINV}_t + \beta_2 \text{ROAD}_t + \beta_3 \text{COM}_t + \beta_4 \text{DOO}_t + \beta_5 \text{EDU}_t + \mu_t \quad (2)$$

where α is the constant, $\beta_1 - \beta_5$ represent the coefficients of the explanatory variables, while μ is the error term. The apriori expectation posed that, all the independent variables produce a positive relationship with the dependent variable. Therefore, $\beta_1, \beta_2, \beta_3, \beta_4$ & $\beta_5 > 0$.

This study employed econometrics methodology in examining the relationship between infrastructural development and Nigerian economic growth. The VEC model was used to establish the long run relationship among the variables (road as a proxy for transportation stock, communication as a proxy for non-transportation stock, degree of openness as a measure of the degree of openness in the country and education measured by secondary school enrolment ratio as a proxy for the quality of human capital). Stationary test was conducted using both the Augmented Dickey Fuller (ADF) and Philips-Perrson (PP) test (Challis and Kitney, 1991; Granger and Newbold, 1974; Bowerman and O'connell, 1979; Dickey and Fuller, 1979; Gujarati, 2004; Brooks, 2008).

We also conducted co-integration test to establish the number of co-integrating vectors using Johansen's methodology which have two test statistics which are the trace test statistic and the maximum Eigen-value test statistic (Johansen, 1988). Co-integration rank was used to show the number of co-integrating vectors in VECM where two linearly independent combinations of non-stationary variables will be stationary and captured by a rank of two. However, the error correction term in the VEC model must be negative, significant and less than one to explain short term oscillation between the independent variables and the dependent variable resulting to a steady long-run relationship between the variables. However, this study was conducted using data from 1981 to 2014. The data was collected from Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS) and World Development Index (WDI).

Table 1. The result of the unit root test.

Variable	Level		Remark	First difference		Remark
	ADF	PP		ADF	PP	
LGDP	-2.611	-2.421	Non-stationary	-3.935*	-3.884*	Stationary
LPRIINV	-1.903	-1.548	Non-stationary	-8.833*	-8.673*	Stationary
LROAD	-1.434	-1.456	Non-stationary	-5.061*	-5.059*	Stationary
LCOM	-2.134	-2.581	Non-stationary	-5.540*	-5.924*	Stationary
LDOO	-2.386	-2.201	Non-stationary	-4.922*	-5.035*	Stationary
EDU	-0.572	-0.926	Non-stationary	-3.873490*	-4.848*	Stationary
	-3.662	-	-	-3.654	-	-
Critical value	-2.960	-	-	-2.957	-	-
	-2.619	-	-	-2.617	-	-

Source: Authors' computation from E-views output (Note: *denote significance at 1% level).

Estimation and interpretation of result

Result of unit root test

To conduct the unit root test, ADF and PP tests were used in testing if the variables considered are stationary or not as well as their order of integration. Table 1 reports the result of the unit root test. From Table 1, the ADF and PP unit root test revealed that all the variables considered were not stationary at level; as the critical values were greater than the calculated values produced by ADF and PP test. Therefore, the null hypothesis of no unit root for the variables cannot be rejected. Hence, we proceeded by taking the first difference of the variables and after the tests were conducted on the differenced variables. The critical value at 1% is less than the calculated value leading to rejection of the null hypothesis of unit root and acceptance of alternative hypothesis of no unit root problem. It can then be concluded that, the variables were all stationary at first difference and were integrated of order one $I(0)$. To identify the long-run relationship among the variables included in the model, co-integration test was employed.

Co-integration tests

After the stationarity test, the next step is to examine if there is a long-run cointegration among the variables considered. For this purpose, Johansen co-integration test is employed, and the result is presented in Table 2. As presented earlier, the result of trace test and maximum – eigen test both show existence of five cointegrating equations in the system of equation which is a pointer to the fact that, there exist a long-run relationship among the variables under consideration. From Table 2, both the maximum eigen value and the trace statistics are higher than the critical value at 5% level of significant, indicating that the variables are all cointegrated at 5% level of significant. Having satisfied the aforementioned two

conditions, we opt for estimating the model formulation using VEC Model.

Vector error correction model

The VEC model provides the value of the parameters of the co-integrating equations as well as that of the short-term adjustment parameters. The outcome of the scrutiny of the model in the long-run and short-run are presented in Tables 3 and 4.

From Table 3, the t-statistics shows that the variables are cointegrated except LDOO whose t-value is -1.960 which is statistically insignificant. Also, the result also indicated that the variables have long-run relationship and tends to move in the same direction in the long-run. Having established co-integration among the variables which indicate long-run relationship, it is necessary to examine their short-run relationship, and to identify the speed of adjustment that reconciles the long-run equilibrium and the short-run.

The estimated result presented in Table 4 shows that infrastructural facilities on road and communication have a positive relationship with GDP which is used as proxy for economic growth in the long-run, while private investment and education as measured by school enrolment have negative relationship with GDP in the long run. It can also be deduced that, all the explanatory variables were statistically significant in explaining the dependent variables and the elasticity of these variables in the long-run normalized vector as revealed in the result. A 1% increase in the growth of infrastructure on road holding other independent variables constant will on the average lead to 15% increase in GDP. Also, 1% increase in the growth of infrastructure on telecommunication holding other independent variables constant will on the average lead to 13% increase in GDP.

The result of the private investment, degree of openness and education contradicts expected positive

Table 2. The result of the co-integration test.

Unrestricted co-integration rank test (Trace)			
Hypothesized	Trace		0.05
No. of CE(s)	Eigen value	Statistic	Critical value
None*	0.778	109.82	95.754
At most 1	0.563	61.727	69.819
At most 2	0.4583	35.256	47.856
At most 3	0.296	15.638	29.797
At most 4	0.127	4.428	15.495
At most 5	0.003	0.080	3.842

Trace test indicates 1 cointegrating equation(s) at the 0.05 level
 *denotes rejection of the hypothesis at the 0.05 level
 **Mackinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)			
Hypothesized	Max-Eigen		0.05
No. of CE(s)	Eigenvalue	Statistic	Critical Value
None *	0.778	48.094	40.078
At most 1	0.563	26.470	33.877
At most 2	0.458	19.618	27.584
At most 3	0.296	11.210	21.132
At most 4	0.127	4.348	14.265
At most 5	0.003	0.080	3.842

Max-eigenvalue test indicates 1 cointegrating equation(s) at the 0.05 level
 *denotes rejection of the hypothesis at the 0.05 level
 **Mackinnon-Haug-Michelis (1999) p-values

Source: Authors' computation from E-views output.

Table 3. Results of the normalized long-run co-integration equation.

LGDP	LPRIINV	LROAD	LCOM	LDOO	EDU
1.000000	-0.159	0.131	0.331	-0.251	-0.078
-	(0.029)	(0.022)	(0.030)	(0.128)	(0.009)
-	[-5.918]	[5.918]	[11.001]	[-1.960]	[-8.8670]

Note: Standard errors in () and t-statistics in [].

Table 4. Vector error correction model result.

LGDP	CointEq1	LPRIINV	LROAD	LCOM	LDOO	EDU
1.000000	-0.020	-0.020	0.013	0.051	-0.013	-0.002
-	(0.042)	(0.200)	(0.010)	(0.049)	(0.028)	(0.004)
-	[-2.469]	[-1.372]	[1.304]	[1.023]	[-0.467]	[-0.444]
R ² = 0.47						
$\bar{R}^2 = 0.36$						

Note: Standard errors in () and t-statistics in [].

relationship in the long run. A unit increase in the private investment holding other independent variables constant

will on the average lead to 20% decrease in GDP. The implication of this is that, private investment in Nigeria

Table 5. Results of the variance decomposition analysis.

Variance decomposition of LGDP							
Period	S.E.	LGDP	LPRIINV	LROAD	LCOM	LDOO	EDU
1	0.030	100.000	0.000	0.000	0.000	0.000	0.000
2	0.052	92.616	5.675	0.517	1.079	0.112	0.0007
3	0.070	89.106	4.0007	0.582	6.166	0.065	0.080
4	0.086	87.473	3.246	0.389	8.666	0.064	0.162
5	0.101	86.765	2.442	0.335	9.701	0.464	0.293
6	0.115	86.328	1.909	0.265	10.468	0.618	0.412
7	0.127	85.233	1.576	0.270	11.848	0.623	0.451
8	0.140	83.433	1.317	0.423	13.717	0.648	0.463
9	0.153	81.994	1.132	0.753	14.926	0.749	0.446
10	0.165	80.962	0.984	0.981	15.813	0.827	0.433

has not developed to the level at which it can contribute positively to economic growth.

Furthermore, a unit increase in the degree of openness holding other independent variables constant will on the average lead to 13% decrease in GDP. A unit increase in the education holding other independent variables constant will on the average lead to 2% decrease in GDP. Also, due to over dependent on the primary product and paying little attention to development of our manufacturing sector, the advantages of openness of the economy has not been properly harnessed in the country. And lastly, the result from the empirical findings above shows that, the level of education in the country might not produce the level of growth expected in Nigeria.

In the same vein, the result of the short-run analysis shows that, the VEC is statistically significant, have negative sign as expected and less than one. The implication of this is that, a low speed of adjustment towards equilibrium is possible in the case of disequilibrium in the short-run at the rate of 2%. This further shows that there exists a short-run relationship between the variables under study. The explanatory variables also confirm with the long-run relationship and the coefficient of determination shows that, 47% of the variation in GDP is explained by the independent variables, while after thoughtfully considered the problem of degree of freedom, the adjusted coefficient of determination was at 36%.

Impulse responses

This section presents the impulse response functions (IRF). The impulse responses are visually presented and analyzed. This is presented in the Figure 1. Since this study focuses on economic growth, only the responses of GDP to the variables of concern are presented. The result shows GDP responds positively to a shock in itself, and also to a shock in infrastructure on road and telecommunication as well as private investment, while

GDP responds negatively to a shock in degree of openness and education. This result further support the Vector Error Correction mechanism in table 4 which indicated that degree of openness and education both have a negative impact on GDP. Also from the impulse response function infrastructure on road and telecommunication both have a positive impact on economic growth over the period investigated.

Variance decomposition analysis

Variance decomposition analysis offers a way of establishing the comparative importance of shocks in elucidating variations in the variable of concern. It allows us to see the significance of shocks in each of the independent variables in relation to how they explain the shocks in the dependent variables. The result is presented in Table 5.

The result in Table 5 shows that GDP react mostly to its own deviation and that telecommunication infrastructure has the largest pressure on the GDP in the next 10 years period with the average of 15%. This is followed by road infrastructure with average of 0.98%, degree of openness with 0.82% and education with 0.43%.

From the result, the shock of GDP continues to decline over the period on review. The shock of Private investment on GDP also declines over the period under study. The contribution of infrastructure on road to GDP fluctuates over the given period. On the other hand, the contribution of infrastructure on telecommunication to the variation in GDP over the period investigated continues to increase. Finally, the contribution of degree of openness and education to GDP over the period studied also continue to increase.

CONCLUSIONS

The evidences from various econometrics analyses from

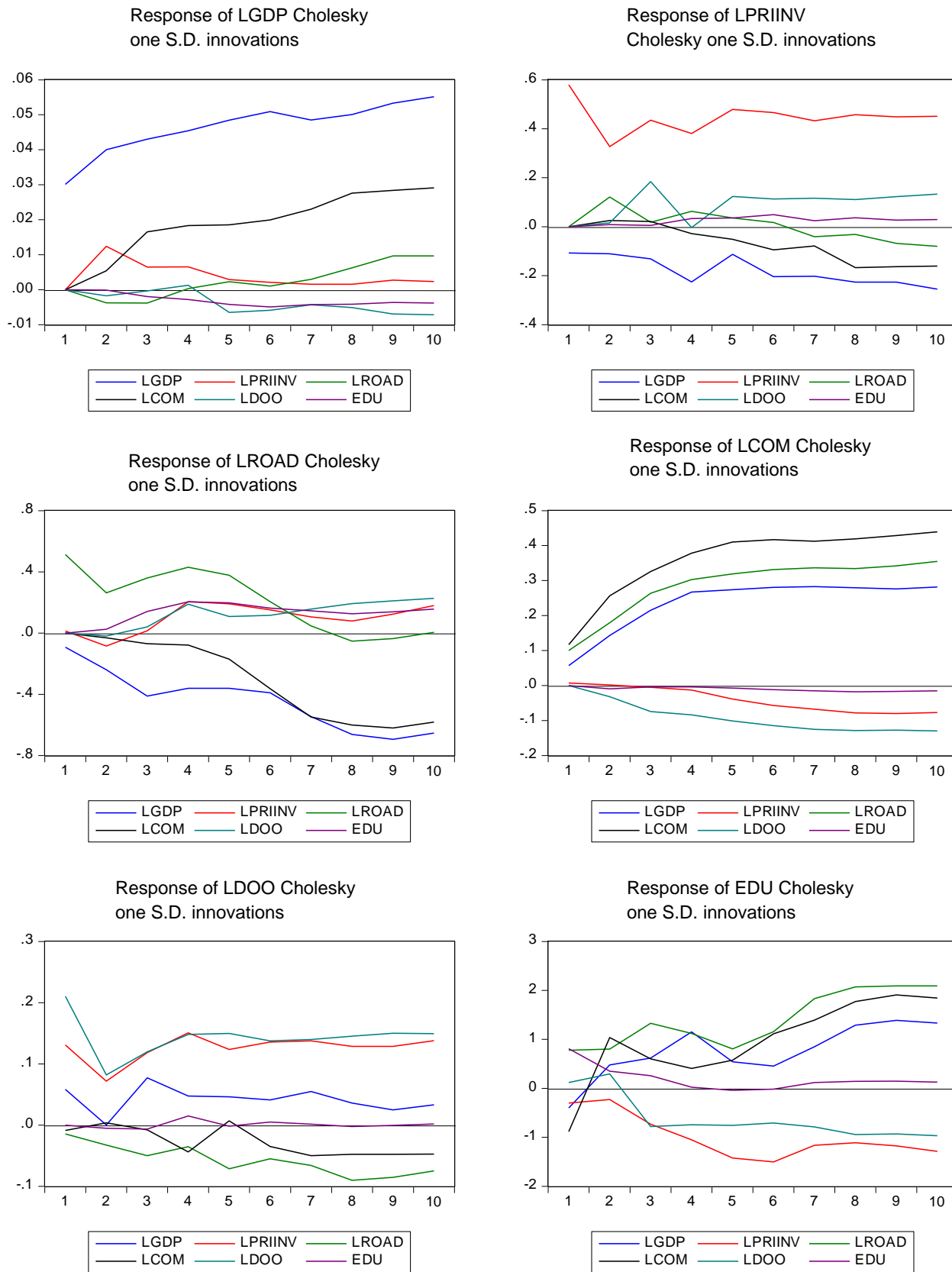


Figure 1. Impulse response between variables.

this study revealed that, there exist a long-run relationship between infrastructural development and economic growth in Nigeria.

This was confirmed by the positive relationship of the infrastructural development in road and communication with the economic growth in Nigeria during the period of the study. As for other variables considered, it was deduced that, private investment, degree of openness and education produced negative relationship with economic growth in Nigeria during the period under review. The implication of this is that, apart from the need for the government to beef up their commitment on improving infrastructure in the country, it is essential for the manufacturing sector to be appropriately developed to harness the advantages of openness of the economy; improve budgetary allocation to education and monitor the spending to increase human capital development that is capable of utilizing available infrastructure and resources for the attainment of economic growth. Lastly, given the interconnectivity between infrastructure and effective operation of investment, private sector should be encouraged with series of incentives to increase their participations in the provision of infrastructures which in turn will lead to economic growth and development in the Nigeria.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Full Length Research Paper

The increasing role of contract research organizations in the evolution of the biopharmaceutical industry

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The role played by contract research organizations (CROs) in the last decades has been almost completely neglected by the economic and managerial literature, which at most presents an outdated and misleading portrait, of firms performing routine clinical tasks. This study aims at filling this knowledge gap, by describing the evolution of the CRO segment of the biopharma industry in the last two decades, discussing the foundations of CROs' comparative advantage and underlining the consequences of their growth for the effective functioning of the whole industry. Importantly, this study argues that the increased role of CROs in performing fundamental phases of R & D has made the anatomy of the biopharma system more functional: in fact even if the turbulence and mortality of IP-based biotech firms is extremely high, if they rely to a great extent on CROs, the experience acquired to carry out their projects - which mostly fail - does not get lost but cumulatively enhances CROs' capabilities.

Key words: Evolution of industries, R & D outsourcing, tacit knowledge, learning, biopharma industry.

INTRODUCTION

It is curious that the enormous economic and managerial literature on the biopharmaceutical industry has almost completely omitted the role played at least in the last two decades by contract research organizations (CROs). In the absence of official data, the importance of this segment of the industry is brought to light only by some analysis and discussions in the medical literature and some managerial contributions mainly neglected by the mainstream literature.

The biopharma industry is in fact generally depicted as embedded in a tripartite vertical alliance network (Stuart et al., 2007), where biotech firms typically in-license new

ideas from universities, further develop and ultimately transfer this intellectual property to larger firms that possess the resources to perform clinical trials and commercialize the technology. At most we find some hints at CROs, which portray them as specialist firms performing routine clinical tasks.

According to this study, it is this representation of CROs' role that must be questioned, since though it may have been appropriate until about two decades ago, the subsequent evolution no longer justifies it. Moreover, the few contributions in the managerial literature focusing on CROs' activities mainly examine their role with respect to

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their big pharmaceutical clients.

Thus, a blatant gap in the literature regards the importance of CROs for smaller biotechnology firms. Not less important, an updated picture of the overall evolution of CROs is missing, as well as a discussion of the consequences of CROs' growth for the effective functioning of the whole biopharma system.

This research aims at bringing to light the role played by CROs in the last twenty years in the biopharma industry, in order to fill the literature gaps and to address the issues mentioned earlier. More precisely, the study focus is mainly on describing the broadening of CROs activity from the clinical into the preclinical field and on highlighting the importance that CROs have consequently acquired as providers of the entire range of R&D services to young biotech firms.

In fact the latter usually start their business with the project of a new drug or medical device, but lack to a great extent the capabilities to realize it. In particular, we concentrate the study attention on

1. The main reasons underpinning the competitive advantage of CROs vis-à-vis IP based small biotech firms in the execution of R&D tasks, stressing the importance of learning by experience and of tacit knowledge.
2. The importance of collaborations between CROs and their biotech clients, since the knowledge of the molecules (possessed by IP based biotech firms) and the knowledge about how to perform the development tasks must be integrated.
3. The contractual forms (open contractual arrangements) put in place in order to keep under control transactional hazards, which are particularly high in the provision of an activity whose results are intrinsically uncertain.

Finally, we reflect on the consequences of the increased role of CROs with regard to the sector cumulative learning, which, according to Pisano (2006a) analysis of the 'anatomy' of the biopharma industry, is one of the main challenges the sector has to cope.

WHAT WE KNOW ABOUT CROS

The CRO business model

CROs may be defined as 'portfolio of expertise' organizations, whose main goal is to attract clients (big pharmaceutical firms, biotech start-ups up to university scientists) needing to access their know-how and facilities for the execution of some (or even all) of the complex and numerous phases of development (Figure 1). The initial phases of development, preceding clinical trials, comprise discovery and preclinical characterization. Discovery in turn can be subdivided into two stages, lead selection and optimization followed by drug candidate confirmation. In the first phase several compounds are screened and selected for efficacy and basic drug-like characteristics. Tests are designed to be relatively low

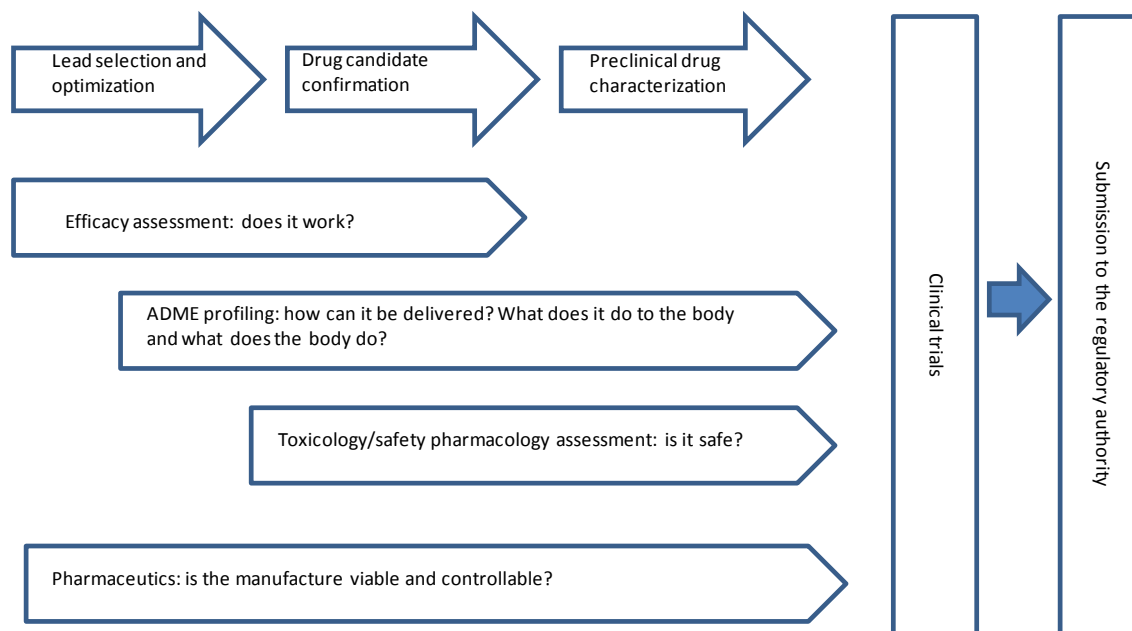
cost, using in vitro and in vivo models. In particular, early absorption, distribution, metabolism and excretion (ADME) pharmacological profiling (pharmacodynamics and pharmacokinetics) is realized by performing the tasks of in silico profiling, developing simple analytical methods, measuring membrane permeability and plasma stability. The best compounds are then assessed against more detailed criteria in the following phase of drug candidate confirmation, whose main objective is confirming that a compound is worthy of further development without incurring large costs. This involves a more in-depth application of the tests from the previous stage and adds a broader panel of tests, including some that may be 'show stoppers'. The data generated here is commonly used to meet investment milestones. The tasks and methods comprise preliminary CMC (chemistry, manufacture and control), validation of in vivo models, more advanced ADME profiling and preliminary toxicology.

Preclinical drug characterization has the objectives of providing highly accurate, reliable data that will be used to justify the conduct of clinical trials. It requires a high level of evidence and documentation to meet the demands of government regulations (e.g. GLP - good laboratory practices - accreditation) or pharmaceutical companies, and is therefore relatively expensive to conduct. The tasks and methods include detailed preclinical CMC, comprehensive ADME and a toxicology package.

A great number of CROs exist, with different specializations, both in terms of field of activity (ranging mostly from the preclinical phases of toxicology, analytics, pharmacodynamics, pharmacokinetics etc. to the various clinical phases) and therapeutic area. Their specialised capabilities are based to a large extent on static and dynamic economies of scale (a point that we shall develop later) and are continuously enhanced over time through learning.

In general, they are subject to a normal commercial risk, since their success does not depend on any one of the projects to which they add value: even if the results of some studies fail to meet expectations, CROs are paid for their work by their clients (fees for service), who instead bear the risk of the failure. Due to their expertise in the latest technologies, they are increasingly considered as strategic partners by clients (usually called sponsors) and have a growing impact on the overall research direction and success (Colin, 2015)¹. However,

¹ For example, the biopharma industry is currently extensively engaged in the development of ADCs (antibody drug conjugates), a breakthrough cancer treatment that can deliver cytotoxins directly to cancer cells without the collateral damage of traditional chemotherapy. These are complex molecules that need careful development of a bioanalytical strategy. Bioanalysis requires highly specialized equipment and expertise that are often only found at a CRO. Therefore, assembling a collaborative development team with diverse knowledge and technical expertise comprising members from the pharmaceutical company and the CRO has become crucial, in this as in other fields (Spriggs et al., 2015).



Source: Simon (2009)

Figure 1. Tasks performed in the phases of discovery and preclinical development .

there are also CROs with a hybrid business model, who devote some resources to pursue their own R&D projects.

Finally, many CROs also provide manufacturing services to their customers, who need small amounts of different bio drugs (cells, proteins, immunological products, plasmids for DNA-based vaccines etc.) for preclinical R&D and larger volumes for clinical trials. The batches used for clinical trials must be manufactured in facilities authorized by the regulatory authority and must comply with good manufacturing practices (GMP) guidelines. Firms offering manufacturing services are called contract manufacturing organizations (CMOs), so in many cases CROs are also CMOs.

The economic and managerial literature on CROs

To the best of this study knowledge, the first contribution on the topic is the work of Piachaud (2002). According to this author 'what was once a cottage industry of consultants and independent laboratories' grew significantly since the 1960s after the approval of the Kefauver-Harris Act in the United States (a consequence of the high incidence of birth defects resulting from the use of thalidomide), which required companies to provide proof of efficacy in addition to proof of safety.

Thus, the quantity of work in clinical trials increased substantially, inducing pharmaceutical firms to resort to the external expertise and resources of CROs. Piachaud

(2002) stresses that over the years CROs' activities expanded beyond clinical phases to include early stage research, preclinical development (pharmacokinetic, pharmacology, toxicology studies etc.), regulatory services and clinical manufacturing, even though by the year 2000 clinical trials still constituted about 60% of their revenues. Among about 1,300 active companies, some had annual sales exceeding \$500 million (for example, covance, quintiles, transnational corp. and parexel) and R & D departments pretty similar in size to those of their big pharmaceutical sponsors.

Piachaud (2002) mentions that also biotechnology and device industries were increasingly resorting to their services, but his focus is on big pharma companies. Through a questionnaire survey of multinational pharmaceutical organizations, he identifies the major advantages/disadvantages of collaborating with CROs as opposed to hiring, training and organizing R&D internally. Lack of resources - facilities and capabilities - turns out to be one of the primary drivers of collaborations. In fact due to the expansion of the knowledge base of the industry and the emergence of a number of novel research techniques, even the largest firms could no longer afford to keep in-house all fields of expertise. By outsourcing phases of development, they could strengthen their focus on core capabilities and broaden their research scope (in term of therapeutic targets) avoiding long-term commitments, thus increasing flexibility and diminishing risks. However, this growing reliance on external agents also raised concerns about the loss of control over the

Table 1. A decade of contract research organizations.

Variable	1992	2001
CRO market size	US\$ 1.0 billion	US\$ 7.9 billion
Top 20 CRO revenues	US\$ 0.5 billion	US\$ 4.6 billion
# CROs ≥ US\$ 100 million	2	16
CRO employees	12,000	94,000
# Publicly traded CRO	2	19
# Enrolled research subjects	7 million	20 million

Source: Mirowski and Van Horn (2005).

outsourced activities.

Mirowski and Van Horn (2005) showed some interesting data on the growth of CROs in the 1990s, which they acquire from industry sources (Table 1). CROs' expansion is remarkable, with an increase of the market served by about 8 times. They also emphasize the undeniable success of CROs in capturing the bulk of industry-sponsored clinical research away from Academic Health Centers (AHCs), whose share fell in a decade from about 70/80 to 35/40%.

They argue that in a period when the duration of the clinical developmental cycle was lengthening and its cost soaring, pharmaceutical firms as a remedy were looking for a new breed of scientific researchers who was more comfortable with deadlines and cost containing innovations; they also needed full-service providers, able to coordinate clinical research across national boundaries. Thus, CROs expanded due to the ability of far-sighted entrepreneurs to respond to these requests, by introducing 'a set of research practices that more effectively adjusted to the traffic and rhythms of corporate privatized science'.

Howells et al (2008) presented the results of a survey of 105 research-based UK pharmaceutical firms conducted in the period 1998 to 2003. The outcomes are similar to those of Piachaud (2002). The reasons to outsource rated most highly are accessing expertise not available in-house, followed by the ability to reduce development time and costs. In the activities not considered core by pharmaceutical firms, CROs could perform better due to 'more experience and scale and scope benefits' (p. 216): clinical trials rank first, followed by R&D software and applied research. Finally, in partner selection the most appreciated factors are capability, timeliness and trustworthiness. As to 'constraining' factors, Howells et al. (2008) highlight the absence of modularity in some tasks.

Lowman et al. (2012) focused exclusively on the increasing role of CROs in clinical development. While initially CROs provided only a limited service in clinical trials management, they gradually extended their expertise 'across a range of therapeutic areas, benefiting from working with, and learning from, multiple clients'.

Hu et al. (2007) proposed a more comprehensive view

of the CRO industry, in a working paper never published by refereed journals. According to these Authors, the model of outsourcing of big pharmaceutical firms was initially based on the need to save resources spent in labour intensive and routine tasks. 'CROs were traditionally seen as a necessary evil: while in-house teams allowed better oversight and typically had more experience, outsourced teams were more cost efficient'.

Over time, however, *the emergence of biotechnology radically changed the outsourcing landscape*. In fact biotech startups, distressed by scarcity of funds and lacking capabilities, found in outsourcing the natural solution to develop their ideas. In extreme cases, 'virtual companies' started to flourish, managing relationships with multiple CROs to complete all the preclinical and early clinical testing before looking for a more long-term partnership with a pharmaceutical firm.

In parallel, the pharma industry discovered not only that the external service providers could do all steps in the development process, but also that quality was no longer an issue. 'Because CROs began to specialize in certain steps of the development process or specific therapeutic fields, they became the experts in those areas'. Finally, by outsourcing to CROs that served many clients, each one client did not incur the risk of intermittent utilization of resources.

A brief overview of the recent evolution of the CRO industry

In order to update the picture of the CRO industry, in the absence of official data, we have relied on the reports written by the most important industrial advisors and consulting companies, publicly traded CROs' annual reports, CROs' directories and websites, specialized biopharmaceutical journals and industry magazines.

We present in Table 2 the main estimates of the global growth of outsourcing of preclinical and clinical development to CROs in the period 2005 to 2013, and forecasts until the year 2020.

According to most sources, CROs' market size (measured by revenues) reached about 23/25 billion dollars in 2013, a value which compared to that of about

Table 2. Outsourced preclinical and clinical development to CROs in 2013 and 2020: various estimates

Source	Global CRO market size 2013 to 2020 (\$b)	Global Biopharma R&D spending 2013 to 2020 and CROs' potential market (\$b)	Estimated future CROs' CAGR	Segmentation of CRO services 2013		Penetration rate of global biopharma R&D spend by CROs
				Preclinical (%)	Phase I-IV clinical (%)	
Brocair Partners (2014)	-	-	To 2018: 8.7% overall. Preclinical growth higher than clinical	21	79	-
Harris Williams & Co (2014)	25.3 (2013)	-	To 2018: overall 6.6%; preclinical 7.4%, clinical 6.4%	21	-	-
IMAP (2014)	25 (2013)	Global biopharma R&D spend 139 (2013)	Slower growth compared to the past	13	-	10% 2001 18% 2013
Innoaction (2014)	25-30 (2013)	-	To 2020: 7-9% overall	25	75	-
Results Healthcare (2014)	23-25 (2013) 30 (2018)	2/3 of the global R&D spend by the top 500 biopharma companies is CROs potential market (about 90/95b)	To 2018: 5-6% overall	Early stage (including phase 1 clinical services) 25%	Late stage: including phase 2-4 clinical trials and central lab services: 75%	24/28% 2013 35% 2018 more than 60% long term (penetration of the potential market)
William Blair and Company (2014)	23.5 (2013) 42.3 (2020)	Preclinical and clinical only global spend: 65.1 (2013) 87.1 (2020)	2013-2020: overall 8.8%; preclinical 7.8%; clinical 8.9%	12	88	36% 2013; 49% 2020
Zion Market Research (2015)	34 (2014) 59 (2020)	Global biopharma R&D spend 142 (2014); 160 (2020)	2015-2020: overall 9.8%; early stage 5.5%; late stage 11.2%	Early stage (including phase 1 clinical services) 28 (2014)	Late stage: (including phase 2-4 clinical trials and central lab services): 72 (2014)	24% 2014; 37% 2020

Source: The study elaborations from the cited industrial sources.

8 billion presented by Mirowsky and Van Horn (2005) produces a CAGR of about 19% over 12 years (in current dollars).

Relatedly, the penetration rate of the global biopharma R&D spending increased from 10% in 2001 to 18% in 2013 (IMAP, 2014) and is expected to grow further. The estimates of future CAGR to 2018/2020 vary within the range 6 to 9%, and those of future penetration differ mainly according to what is considered as potential market (since not all global R&D biopharma spending is conquerable by CROs), in the range between 40 to 60% in 2020. Even the lower bound is quite impressive. The value of clinical services offered by CROs in 2013 is generally considered about 4 times higher than preclinical,

but we find no consensus on whether clinical or preclinical activities will grow faster in the future. Given these figures, it is obvious that the largest CROs are those firms that keep a leading position in the clinical phases.

These forecasts reflect more than one evolutionary change. First, biopharmaceutical companies not only continue to reduce their R&D infrastructure and to search for more efficient and cost-effective modes of drug development, but they have also started to outsource drug discovery research, an area which historically was considered a core competence. Second, an increasing number of emerging specialised biotechnology companies have limited or no internal capabilities at all. Third, even academic

institutions, many of which are benefiting from funding by global biopharma companies, increasingly rely on CROs' assistance to navigate the drug discovery and development pipeline (Charles River Laboratories, Annual Report 2013) (Table 2).

According to common estimates, the number of companies active at the world level is currently more than 1,000. The share of the top four companies, which are all headquartered in the US, accounts for about 43% of the market (estimated at 25 b\$), with a growth in recent years (Table 3). Overall, the players are essentially segmented into three groups according to size: few top tier companies, several midsized firms, and several-hundred small, niche service-

Table 3. Largest CROs' revenue growth (2000-2013).

CRO	Revenues 2000 (M US \$)	Revenues 2013 (M US \$)	CAGR 2000-2013 (%)	Market share 2013 (%)
Quintiles	1,660	3,886	6.8	16
Covance	868	2,442	8.3	10
PPD	345	2,000	14.5	9
Parexel	378	1,892	13.2	8

Source: Mirowsky and Van Horn (2005) and Paine (2013).

Table 4. Main services offered by key-players (2013).

Name	Revenues 2013 (Millions US \$)	Global headcount (thousands)	Country	Ownership	Early stage					Late stage			Other		Central lab
					Pre-clinical					Clinical			Peri-approval		
					Research models	Discovery services	chemistry	Bio analysis	Toxicology	Phase 1	Phase 2	Phase 3	Phase 4	Consulting	
Quintiles	3,886	27.412	US	Public				√	-	√	√	√	√	√	√
Covance	2,442	11.800	US	Public	√	√	√	√	√	√	√	√	√	√	√
PPD	2,000	12.500	US	Private	-	√	√	√	√	√	√	√	√	√	√
Parexel	1,892	12.700	US	Public	-	-	-	√	-	√	√	√	√	√	√
Icon	1,369	9.500	Ireland	Public	-	-	√	√	-	√	√	√	√	√	√
Inventive health	1,300	13.000	US	Private	-	-	-	√	-	√	√	√	√	√	-
Charles river laboratories	1,174	8.000	US	Public	√	√		√	√	√	√	√	√	√	-
Wuxi Pharma.Tech.	593	7.000	China	Public	-	√	√	√	√	√	√	√	√	-	-
Inc research	550	5.000	US	Private	-	-		√		√	√	√	√	√	-
CMIC holdings	497	3.500	Japan	Public	-	-	√	√	√	√	√	√	√	√	√

Source: Authors' elaboration from BofAML CRO Industry report (2013), Credit Suisse CRO Industry report (2013), Brocair Partners, CRO industry perspective (2013).

providers, that have arisen, especially to supply small biotech companies. A spur to new entries can be attributed to the preference accorded by the larger CROs to their big pharmaceutical customers, which leaves biotech companies under-prioritized for these same services (Results Healthcare, 2014).

On the whole, the CRO industry is highly competitive, since CROs not only compete for business with other CROs, but also with in-house discovery and development departments of their larger clients, and, to a more limited extent, with

universities and teaching hospitals (Covance Annual Report, 2013; Quintiles Annual Report, 2013).

Quintiles, the world's largest CRO (Table 3), is particularly strong in the clinical phases. Both Covance, the second largest, and PPD deliver a wider range of services, also covering early stage development, while Parexel is more focused on clinical research, technology and consulting services. Behind these major players, Table 4 shows a group of large/mid-sized CROs offering more specialized services, such as Charles River

Laboratories (with sales of \$1.17 billion in 2013) and Wuxi Pharma Tech, particularly focused on the preclinical stages (including both discovery and development).

Recently, the major CROs made important steps to consolidate the fragmented structure of the industry by a number of acquisitions and by extending their global networks to run multinational clinical trials with sites in dozens of countries (Miller, 2015; Korieth, 2014; IMAP, 2014; Brocair Partners, 2014). The broader range of services offered and the extended geographic

Table 5. Affiliation of key informants: Type of firms.

Variable	Number of companies	Type of company
Pure CROs ¹	2	Public
Hybrid CRO also CMO	1	Private
Partnership broker in drug development	1	Private
Pure DBFs	5	Private
Hybrid biotech company ²	1	Public
Biopharma midsize company ³	2	Public
Diagnostics midsize company	1	Public
Total number	13	-

¹ One pure CRO is the Italian subsidiary of a company headquartered in the USA; ² By hybrid biotech company we mean a biotech company that works mainly on his own projects but also provides (extremely complex) research services to a single client; ³ One biopharma midsize company is headquartered in France. All the remaining companies are Italian.

coverage are the factors which enable a full-service and strategic partnerships relation with major pharma clients, who can streamline vendor management by an integrated support over the various development phases. Thus, many large biopharma companies transferred substantial portions of their clinical research operations to just two strategic partners, who were able to absorb hundreds of staff from their sponsors.

On the other hand, some big CROs have become interested in serving the market of biotech start-ups and are stepping in to help make starting new biotech projects a safer endeavor. Quintiles, for example, now directly co-invests in some projects with its clients (Quintile Annual Report, 2013). Among the study interviewees, Aptuit launched a biotech incubator in Verona, to help develop its potential future clients.

A final observation regards intellectual property rights. It seems that although patents are considered valuable by CROs, 'such factors as the technical expertise, proprietary know-how, ability and experience of our professionals are more important'². Moreover, where considered appropriate, proprietary know-how is protected through confidentiality agreements and registrations.

The relationships between biotech firms and CROs: The main insights from our survey

Methodological notes

In this section, we focus on the relationships between biotech firms and CROs in the phases of discovery and preclinical development, seeking to highlight the economic logic that drives their cooperation.

To get a first-hand knowledge of the phenomenon under investigation, we relied on interviews with key

informants (Kumar et al., 1993). The key informants approach has been widely used in empirical studies (Sen and Egelhoff, 2000; Stump and Heide, 1996) because of their access to strategic information and familiarity with the sector environment (Aguilar, 1967).

The study key informants included founders, CEOs and senior scientists, all individuals with direct knowledge about the R&D strategy of their firms. Most of them had previously worked for other companies and all had a deep knowledge of the international landscape.

After mailing a questionnaire to potential key informants and a letter explaining the purpose of the study, we were able to do 18 semi-structured interviews with 20 respondents affiliated to 13 firms (Table 5). The interviews were conducted face-to-face at the firms' head office, except 3 via Skype. Overall, approximately 25 h of interviews were tape-recorded and transcribed. The questions revolved around the R&D collaborations the firms engaged in, the main reasons for outsourcing development tasks and the type of contractual arrangements that framed the collaborations.

Superior CROs' capabilities lead DBFs to outsource R&D tasks

Dedicated biotechnology firms (DBFs) can be considered 'portfolio of IPs' organizations³. As it is well-known, they are the sponsors and developers of certain patented substances with therapeutic potential (molecules, antibodies etc.), which they often import from a university. Their activities, which are mainly funded by venture capital or big pharmaceutical firms, consist in planning and conducting the phases of discovery, preclinical development and in some cases also clinical development.

According to industry sources, the probability of

² This same claim is made in Charles River Laboratories, Annual Report 2013, p.12, and in Covance, Annual Report 2013, p.8. Similar views were expressed by our informants.

³ The IP portfolio of startups may be very limited, at the extreme to one or a couple of patents/licences.

Table 6. Biopharmaceutical drug development: the rate of attrition.

Phase	Drug discovery	Preclinical	Industry submitted	Clinical trials phase 1, 2, 3	NDA submitted	FDA review	Large scale manufacturing/ Phase 4
Phase cycle time	5 years	1.5 years		6 years		2 years	2 years
Number of compounds	From 10.000 to 250			From 250 to 5		1 FDA approved drug	1 FDA approved drug

Source: Simon (2009)

transforming a compound into an food and drug administration (FDA) approved drug is about 1 in 10 thousand (Table 6), in a field where the know-ledge base is extremely complex, many disciplines (such as biology, chemistry, pharmaceuticals, medicine and increasingly molecular biology and immunology) must be resorted to and many tasks must be performed. Thus, they face a very risky bet.

Usually a DBF starts its operations with a small team of researchers, a lean laboratory structure and the intellectual property (a patent or an exclusive license on a university patent) over the molecule(s) it bets on. Since it would be impossible to realize internally all the experiments and analysis which must be performed in order to fully understand the characteristics of their molecules and test their validity for curing a disease, a *crucial decision for a DBF is to choose which tasks to realize internally, and which to externalize*. According to the study interviewees, the decision must take into account a number of factors.

First, it must be considered whether the know-how needed to perform a given task is strategically or rather occasionally important⁴. Second, the costs of realizing the tasks internally must be compared with the cost of outsourcing their execution. Economies of scale are crucial with regard to this factor. Third, and most important, it must be considered whether *the degree of skill in performing the tasks mastered by an external specialized supplier could ever be emulated internally, in a long run perspective*. Thus, the issue is not simply one of relative costs and of efficiency (in a williamsonian perspective), but rather one of capabilities and their possible evolution over time. It is to this aspect that we devote the study attention, seeking to understand what determines the durable *gains from trade* (Jacobides and Hitt, 2005) that can be captured by biotech firms by resorting to specialised suppliers.

Tacit knowledge underpins capabilities

A particularly important form of complexity that must be

⁴ However, even if a certain know-how is deemed strategic, a newly born firm with tight resource constraints might not be in the condition to build it, at least in the short run, since it might not afford the investments which are required. Regarding the implications of cash constraints on entrepreneurial decisions about firm scope, see Jacobides and Winter (2007).

addressed in building a capability is the degree of tacitness of the know-how. According to the R&D managers we interviewed, tacit knowledge is extremely important in biotech R&D:

Firm A: It is important to evaluate to what extent experience, feeling and intuition matter for performing a task, as opposed to hard, transferable elements. In my case, I have a great experience on cells, which I cultivated for 12 years. Literally, from 1 cell 2 can be obtained, from 2 cells 4 etc. They are not chemical stuff and are more complex than chemical molecules. Cells must be cultivated like plants. When one observes plants, one sees how healthy they are: if they suffer or have aphids, if the leaves are yellow...cells are the same thing, one must look at them and understand their condition. It is very difficult to teach someone to understand the face of a cell at the microscope. No handbook teaches it.

Firm B: Cellular biology is an art, not only a science. When you look at cells at the microscope, apparently they are all equal. You must have a very keen eye, to discover differences. This depends on personal sensitivity and experience.

Firm C: We collaborate with a group of Quebec City that works with monkeys since 25 years...they know that if monkeys move a finger this means something...How can we compete?

Also: The experts in a field know how to interpret the data... we might become very excited for data we did not expect, but those who can locate it in a wide context, due to their experience, know whether those data are really interesting or not.

A *high level of tacitness* (Pisano 2006a, 2006b⁵; Balconi 2007) not only involves a long time to acquire

⁵ According to Pisano (2006b, p.151), despite the advances in science and the growing use of bioinformatics and computer-aided drug discovery, biotechnology still contains a strongly tacit dimension: 'what is known about a target or a molecule or the behavior of a drug inside the body cannot be fully codified or reduced to precise rules (if X, then Y). Data from experiments are subject to a high degree of interpretation and differences of opinion. What constitutes a strong signal of potential efficacy for one researcher may give pause to another, based on idiosyncrasies in their training and experiences.... posed differently, there is still an 'art' to drug discovery that relies on judgment, instinct, and experience'.

knowledge, since learning is based on experience, but it also confers a great weight to the intensity of use of this knowledge over time. Since tacit know-how is continuously improved through its intense application to a variety of problems, if the internal use is lower than the use made by external suppliers, internalization over time is bound to lead to an increasing and insurmountable competitive disadvantage. Any form of fixed investment with a low level of utilization creates a cost burden, but in the case of tacit knowledge the issue is compounded by the inability to keep abreast of competitors. This aspect, which was repeatedly emphasized by the researchers we interviewed, weighs heavily in determining the choice of DBFs in favor of accessing external expertise and buying the services of a CRO.

Integrating different capabilities requires collaboration

It is also worth noting that when DBFs work on big, complex molecules, they need *to collaborate* with the CRO to which they outsource a development task, since the knowledge of the molecule (possessed by DBFs) and the knowledge about how to perform the task must be integrated.

Outsourcing the task cannot be done at arm's length. These partnerships do not tend to be jeopardized by the possibility that the parties learn from each other and then become competitors. In fact, learning simply as a byproduct of a collaboration is impossible for complex tasks. One should here distinguish between learning about previously unknown characteristics of the molecule, which is a typical and important result for a DBF of the collaboration with a CRO, and learning in the sense of acquiring the know-how of the specialised collaborator. This much more engaging form of learning can be accomplished only by means of a deliberate and long lasting training. It involves learning certain techniques and methodologies of analysis and how to use some specific instruments and facilities with the active assistance of the trainer, besides acquiring a theoretical knowledge. Only very simple techniques can be learned just by looking, at times, at what the expert is doing during the collaboration. According to the R&D manager at firm D:

Learning is very difficult. In order to learn through a collaboration, you need a completely different approach from that you put in place in order to obtain a precise specific result. For example, we went to AAI (Applied Analytical Industries) since we needed an analytical test on a very complex protein. They had never done it before, but they possessed the resources/competences to do it. So we met, we discussed, our scientists explained the specifications and how we worked with this protein and we came up together with the methodology for the test. They could have developed the test

autonomously, but it would have taken too much time. We have been working on these kinds of proteins for 15 years, so they have learned something new from us. We have learned as well, since we saw how they performed the analytical method. However, to be able to perform it ourselves would have implied too costly investments. Moreover, there is a 'small' problem. They were doing about 20 projects of that type, and before those other 20, and in the future they would have done other 20, so that they have hundreds of different cases and they accumulated know-how on that topic that we do not have and will never have. We address only one problem, that associated is to our protein. This is the great difference.

Open contractual arrangements harness transactional difficulties due to uncertainty

As explained by Jacobides and Hitt (2005), the condition that must be met for vertical specialization to take place is that the gains from trade arising from accessing the superior capabilities of a vertical specialist are not offset by high transaction costs - *the net TC tax* - which is the difference between external and internal governance costs.

Transaction cost theory (Williamson, 1975) claims that the cost of market governance is high when the terms of exchange are surrounded by uncertainty and when a party needs to invest in transaction-specific assets. Contracts made in conditions of uncertainty are necessarily incomplete and may require renegotiation when unexpected contingencies occur.

Referring to the issue of sourcing external R&D capabilities, Pisano (1999) stressed contractual difficulties caused by small-numbers-bargaining and the appropriability problems that arise if the R&D contractor is able to sell the know-how created during the project to the sponsor's product market rivals.

Howells et al. (2008) discussed the issue of asymmetric information between the client and the knowledge provider concerning the quality of the knowledge transferred. They argue that contractual incompleteness in a research contract arises because the supplier of the knowledge himself does not know *a priori* the results of his experiments and their duration before the project demanded by the client is performed. These contractual difficulties are likely to be greater for more complex research projects, to a point where market exchanges might be precluded. As to the possibility that the supplier could provide the knowledge created for a client to other clients, they emphasize the importance of the confidence accorded to the supplier. The arguments aforementioned could be synthesized into two main points, namely that exchanges might be hindered by:

1. The need of renegotiating contracts over time, due to initial incompleteness, in a setting of high uncertainty
2. The risk of misbehavior of the R&D supplier.

As to uncertainty and contractual incompleteness, it is not relevant in the case of the externalization of simple and repetitive tests, which is easily accomplished through contracts based on fees for services. In contrast, when complex and long-lasting research projects are externalized, *the unexpected is the norm*, and the question of contractual incompleteness, as put by transaction costs theory, seems even to understate the purport of the problem. The issue, more than the possible occurrence of 'unexpected contingencies', is rather that of framing the provision of an activity whose results are intrinsically uncertain (Pisano, 2006b).

Relatedly, the problem is not that of *renegotiating* inflexible contracts, to address unanticipated deviations from a predetermined path. Rather, the path can be defined only over time, step by step, through a process of *successive negotiations*. Interestingly, the solution devised and generally applied are *open* contractual arrangements, explicitly designed *to be completed over time*, in steps scheduled according to the sequence of experiments, after their results have been known. According to firm A's manager:

'A contract is written, inflexible, while R&D activity is flexible by nature, since it is unknown where it will lead. The idea is to make the two things compatible'.

Compatibility is attained by grafting flexibility into the contracts through open clauses, to be written at the completion of each phase of the R&D process. Thus, uncertainty is unpacked and reined in by subdividing an uncertain long-lasting process into sequential steps, where the completion of each step, by transforming into known what was previously unknown, sets the stage for the contractual definition of the next.⁶

A contractual arrangement that we have found put in place is the following. The parties sign a Master Service Agreement, a long-term framework contract which sets the rules of the collaboration between the client and the R&D service provider, defining the objectives of the research project and the route to realize them.

A joint operating committee (JOC) and a joint steering committee are created, with equal participation of both parties, with the aim of monitoring and managing the development of activities. Then the so called Work Orders (WO) are introduced in the course of time, each defining what is to be realized in a certain phase and how. When each phase is completed, the results are evaluated by the JOC and the successive WO is defined. A WO itself is not fixed, since over time various amendments - the so called Change Requests - are introduced, which define technical details and their

prices. For example, a WO states that after activity A activity B will start, but if A does not yield the expected results, B must be postponed.

Therefore, a change request amends the unfulfilled WO. This system is deemed very effective, since the needs of amendments are fully understood by the client, due to the continuous interactions between the research staff of the two parties and the supervision of the JOC. Overall, the externalization of complex R&D projects amounts to a long-lasting collaboration based on intense relationships among the parties, rather than an arm's length provision of a service.

This form of collaboration might also evolve into a true partnership, formalized through a risk sharing agreement. This contractual form states that the activities undertaken by a CRO are not paid as the work develops, but at the end of the project when its value is monetized in the market (that is, a big pharma company buys the product/therapy developed).

This more risky business model has spread recently. It helps resource-constrained biotech firms to fund their projects and it is expected to increase CROs' profitability, by rewarding risk. However, most CROs' business is still based on fees for services, a model which ensures their basic economic viability, while risk sharing agreements tend to cover a minor part of their activities.

CROs might also prefer, instead of receiving only fragmented orders by many clients, to undertake integrated projects with them. In this case, the CRO's project team might include researchers of the client firm, and the form of payment becomes based on the number of researchers allocated to the project (Full Time Equivalent payment model). Some risk sharing might also be introduced, by reducing the FTE payment by an amount to be due at the end of the project in the form of a (higher) bonus in case of success.

The problem of small-numbers-bargaining seems to rise only in very particular cases, of extremely advanced research projects, such as tailor-made services for cell and gene therapy projects. An example of this sort is the collaboration between the Italian hybrid biotech company Molmed and Glaxo SmithKline. In order to provide GSK with the productive capacity required to develop gene therapies for some rare diseases, Molmed - already possessing the specialized know-how and the theoretical knowledge brought by its founder, a star academic scientist - had to make important investments, which tied it to GSK.

However, it would have been difficult for GSK to transfer the good manufacturing practices (GMP) methods developed by Molmed to the facilities of another firm. On both sides of the relation, the possibility of changing partner was very limited, due to the very small number of actors at the world level working on similar projects, and it would have involved significant costs, but it remained a potential threat. Thus, a delicate balance between the contractual strength of the partners had to be maintained day by day, through a process monitored

⁶ Clearly, 'unstructured technical dialogue' is a fundamental aspect underpinning contractual agreements in our case. The capability of commercial partners to manage this issue successfully stands in contrast with much literature (among others, Monteverde 1995, Christensen et al. 2002), according to which markets are inefficient coordination mechanisms 'across interdependent interfaces' (Helfat 2015).

and governed at the top level between Molmed's CEO and GSK manager responsible for the therapeutic area.

Cases of this sort are the exception, while the rule is that the market for R&D services is quite competitive - there are a multitude of CROs in most segments of the market - and in order to meet the demands of their clients CROs do not need to make relevant specific investments. The force of competition and the importance of reputation also diminish the risk that a CRO might provide services of unsatisfactory quality. And with regard to the risk that a CRO might transfer the knowledge acquired from one client to other clients, it is kept low by the fact that client firms always patent their discoveries before approaching a CROs for their services. Moreover, there is a widespread awareness that 'fairness' in contractual relations with R&D partners is fundamental.

The self-reinforcing dynamics of vertical specialization: A framework consistent with the study insights

The heterogeneity of firm capabilities is widely acknowledged, as well as its importance to determine the division of labour among firms (Jacobides and Hitt, 2005; Jacobides and Winter, 2005). Recently, Jacobides and Winter (2012) underlined that initial divergences among actors are sustained by a variety of mechanisms, both rational and behavioral, so that over time they tend to increase.

The focus of this study is not on the heterogeneity among single agents, but rather between IP-based firms (DBFs) and expertise-based firms (CROs). According to this perspective, once a process of vertical disintegration starts, and specialist firms arise (specialised in various stages/tasks of the R&D value chain) capabilities become *divergent*, not simply heterogeneous.

Moreover, specialists increasingly attain a competitive advantage over integrated firms as a consequence of specialization itself. We suggest that dynamic economies of scale are particularly salient⁷. In fact, specialists engaged in many projects are able to develop superior capabilities over time through a learning process which takes place more rapidly and deeply than it is possible within vertically integrated firms. If tacit knowledge is important - as it is in the R&D process in the biopharmaceutical industry - the scope and variety of experiences of specialists translate into a deep-rooted superior capability. This perfectly resonates with Jacobides and Winter (2005) contention:

Changes in vertical scope at the firm and especially at the industry level can and do affect the nature of the

knowledge accumulation and capability development process; indeed, such changes may be among the most pervasive and least studied drivers of capabilities over time. To the extent that the specialized production leads to faster knowledge accumulation, vertically specialized firms may be able to improve more quickly than the integrated ones.

The generated capability gap feeds back into an acceleration of the disintegration process, since it becomes increasingly advantageous to resort to specialised know-how. Thus, a self-reinforcing dynamic of specialization takes place. Moreover, the existence of an *industrial infrastructure of specialist capability carriers* at various stages of the R & D value chain facilitates entry by IP-based start-ups, which have the opportunity to choose even a virtual business model. Barriers to entry are low due to this infrastructure. The entry process further contributes to increase the degree of disintegration of the industry.

Finally, the study focus on capability gaps does not imply that other factors⁸ should be considered negligible to explain a disintegrated industrial architecture, such as the quest by firms of *velocity*, and *flexibility* and their tendency to concentrate resources on core strengths. The pursuit of flexibility is especially emphasized in the literature on the increasing reliance on CROs by big pharmaceutical firms, seeking to *streamline their structure and reduce risks* (Piachaud, 2002; Howells et al., 2008). Note that this process of reorganization which implied the expansion of CROs' market (disintegrating firms becoming their new clients), at the same time enabled CROs' growth, since they could absorb the experienced research teams that big pharmaceutical firms were disbanding. An interesting example we came across is the agreement of Aptuit with GlaxoSmithKline (GSK).

In February 2010 GSK announced its decision to cut its research center of Verona (Italy), staffed with about 500 scientists, in the context of its exit from the field of research on central nervous system. Aptuit, a CRO founded in 2004 and headquartered in Connecticut (USA), decided to acquire it, greatly increasing the scope of its capabilities. Hence an important scientific team was not dispersed, but became part of the global infrastructure of knowledge carriers to which IP-based firms can resort to, in their search for flexibility. And again, the process of streamlining R&D by big pharmaceutical firms feeds-back into strengthening the capabilities and resources of vertical specialists. The dynamics of the increasing division of R&D labour in the biopharmaceutical industry could be summarized as follows:

Phase 1) Initial state: The biopharmaceutical industry is

⁷As is well known, the importance of static economies of scale as a source of competitiveness for independent supplier firms was originally proposed by Stigler (1951), since their scale of production is not limited by the extent of in-house demand.

⁸According to Jacobides and Hitt (2005) a 'panoply of different factors can come into play in explaining vertical scope'.

populated by big integrated firms; also the first biotech firms are integrated in all phases of R&D (no external carriers of new biotech methodologies and techniques exist).

Phase 2) Transformation: The increase of R&D costs and complexity prompts vertical specialization, as disintegration drivers acquire importance. A population of consultant and small independent laboratories undergoes a major transformation: the CRO segment of the biopharma industry emerges starting in the field of clinical trials, statistical analysis and database management and it grows (by expansion of incumbents and new entries) by expanding capabilities in the area of preclinical development (in fields such as pharmacokinetic, pharmacology, formulation and toxicity studies etc.) besides manufacturing of small batches in GMP. Transaction costs are kept low by devising contractual forms suited to address uncertainty, by competition among CROs and by the importance of reputation (both scientific/technical and moral) to attract clients. Barriers to entry for IP-based start-ups are lowered.

Phase 3) Self-reinforcing dynamics: The emerging division of R&D labour shapes capabilities. A self-reinforcing dynamics of specialization takes place. CROs increasingly become a sort of industrial infrastructure of R&D capabilities which IP-based firms (both incumbent firms and start-ups) and universities can tap.

CONCLUSIONS

The main contribution of this study is shedding light on a phenomenon which has been well known by practitioners already for many years, but scarcely studied and appraised by the economic and managerial literature: the role attained by CROs in the biopharma industry.

In particular, after presenting the breadth of their development by relying on industrial secondary sources, we develop a novel interpretation of the basis of their competitive advantage, delving into the mechanisms of R&D capability building. We also highlight how new open contractual forms make it possible to harness transactional difficulties in a context of extreme uncertainty.

Depending on the sources, the CROs' market size in the biopharma industry has reached about 25 to 34% in the years 2013 to 2014, and should increase to about 43 to 59% in the year 2020, with a CAGR of about 9 to 10% over the whole period. The major part of CROs' revenues (about 80%) will continue to be obtained at the clinical stage (as one can expect since clinical services are much more costly than preclinical ones), even though, according to various sources, preclinical growth will be higher. For a great part of small biotech firms the importance of CROs' both preclinical and clinical services has become paramount, but unfortunately no data are available and this appraisal relies mainly on the

witnesses that we have collected and on the contributions found in the medical/pharma literature.

The growth of CROs, specialised knowledge carriers capable of accomplishing the development tasks with higher expertise than most IP-based firms, has changed the vertical structure of the biopharma industry. Based on the interviews of a number of key informants, we propose that the higher scope for learning is the main factor underpinning CROs competitive advantage which drives their expansion.

In fact given the importance of tacit knowledge, the variety and the multitude of experiences are a fundamental lever for acquiring superior capabilities: this condition favors specialised actors working for many clients compared to those that can deepen their experience only by executing their own projects. Hence IP-based small and middle-size biotech firms (as well as big R&D streamlining pharmaceutical companies) can carry out their projects by leveraging this external infrastructure of specialised capabilities, supposed they are endowed with the human capital required to build a collaborative dialogue with them.

This infrastructure is very important for an effective functioning of the biopharma industry. The existence, as underscored by Pisano (2006), of many inexperienced firms in the industry, due to the high rate of IP-based firm formation and early demise, no longer means that 'much of the tacit technical and organizational knowledge needed to do R & D well is not accumulating in the industry' (Pisano 2006a). While it remains true that IP-based biotech firms, with the exception of established actors like Genentech, Amgen and few others, are not organized to learn from experience, at the level of the industry this weakness has been to a large extent made up for by the role acquired by CROs.

In other words, the emergence and expansion of CROs is functional for the industry, since a sort of backbone of stable capabilities has been created. Even if the turbulence and mortality of IP-based firms is extremely high, if they rely to a great extent on CROs, the experience acquired to carry out their projects - which mostly fail - does not get lost but cumulatively enhances CROs capabilities, a resource that remains available for an effective execution of further projects sponsored by other actors.

Finally, some interesting managerial implications can be drawn from the study analysis. First, we stress the importance, in the managerial decision regarding whether to outsource R&D, of taking into account not only static sources of competitive advantage (such as economies of scale), but also the likely dynamics of capabilities over time, on a comparative basis with external R&D providers. In a knowledge-based field of activity this aspect is crucial. Second, we suggest decision makers not to consider transaction costs as a given: innovation in contractual forms might lower them to acceptable levels, even if uncertainty is very high. In particular, in a

collaborative relationship between client and supplier, open contractual forms, with clauses to be defined over time as an R & D project reaches new milestones, might be very effective. The main limitation of this study is the absence of first-hand quantitative data and the reliance of secondary sources.

Thus, a very interesting direction for future research would be the collection of data on the diffusion of CROs at a global level, or at least within a wide geographic area, such as Europe or North America. This could be done only through a research project lasting a few years and based on a great number of interviews to biopharma firms, aimed at uncovering their real nature, whether of process-based firms or rather of product/IP based. But many other interesting questions could be addressed: for example, what is the relative competitive force of big CROs versus small ones? What tasks can be automated over time and thus would no longer rely on tacit knowledge? Accordingly, how would processes of capability development change?

These and many other possible questions are suggested by this study, that we hope can open a breach in a field that is both very interesting and largely unexplored.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Full Length Research Paper

Popular financial reporting: Results, expense and welfare markers

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The National and international accounting principles converged with the aim to provide information about consolidated groups, be it accessible, comprehensible and transparent. A public company group certainly varied in the support of Popular Financial Reporting, an instrument of consolidated economic property and financial cost reporting. It completes financial, economic, patrimonial, quantitative and qualitative information of the consolidated group with a simple language, comprehensible to unauthorised personnel and all the citizens. Through quantitative statements, the results of local public companies are known, while qualitative information makes explicit the modalities through which results are obtained. Colloquial documents are an important instrument of communication used collectively to describe results and expand the cost of reporting in a social dimension. The quantitative and qualitative data are inserted into the Popular Financial Reporting in order to guarantee transparency and provide useful information to understand the complexity of the consolidated public group. Citizens make themselves more and more bearers of active interest based on the definition of public politics. For decades, sociologists and psychologists have been working together to develop indexes which mirror the developments of life quality better than Gross National Product statistics. "Happiness formulas" have also been invented, combining various criteria of welfare measurements with measure subjective perception of individuals in a situation. This work analyzes the role of consolidated information starting from the financial statement to the available instruments that make it accessible to citizens. The work team wondered if potential correlations among compound indicators of welfare and expense for functions could be significant in the analysis of the results in local governments. As an example, in our analysis, indicators made up of security, environment and heritage/culture and the related expense entries of the Italian province administrative centers have been taken into account. The research result demonstrates the usefulness of the compound indicators in the translation of the Public Group results towards citizens and the potential correlation between indicators and expense.

Key words: Public governance, popular reporting, local governments, consolidated information, indicators compounds of welfare.

INTRODUCTION

The consolidated balance for local public companies shows the information necessary to verify the

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achievement grade of the whole aggregate, mainly with references to the composition of sources and uses (Biancone et al., 2014).

In this context, it allows one to know the financial structure of the group, the grade of financial autonomy and the level of debt, the structure of the group property, its overall cost, the structural composition of the costs, especially those that are the most significant elements of production. The consolidated balance supplies the information and knowledge of the different compositions of income, as well as the analysis of the relationship between the incomes which tax the capacity of the checking and income done by the exchange among the supervised societies with consequent possibility of prevision per unit of consolidated business. It also supplies information and knowledge of formulating programs for more optimisation and finding the use of resources. New Public Management (NPM) is the label that many scholars have given to a series of reforms since 1980 to improve the efficiency and pre-stations of Western governments and/ or public sector organizations (Pollit and Boukaert, 2007).

Examples include the development of performance and benchmarking indicators, staff reforms aimed at determining public sector employment based on private sector models, implementing executive departments at arm's length from ministries, creating public-private partnerships and increasing the introduction of new techniques and management tools. Berntzen (2013) shows government's growing awareness of the rooted centrality of citizens in "New Public Management".

The basic idea is to integrate traditional administrative law and traditional business practices that govern the operation of a public body (focusing on the consistency of administrative norms and requirements) with more result-oriented management measures (ensuring greater efficiency, efficiency and effectiveness in resource management and service delivery).

Kickert and Toonen (2006) summarizes some of the main points of the rationalization programs of the administrative apparatus that gives concreteness to the idea of NPM. In the public domain, stakeholders mean involving any person or organization that has interest and can be positively or negatively influenced by public policies. This includes government and private organizations, companies of all sizes, local authors, the community in general, individual citizens, other stakeholders, such as universities, schools, volunteers and community organizations, disadvantaged groups, indigenous groups and people of non-native language background.

Each public service involves a wide range of relationships between policy makers and stakeholders. Strengthened partnerships with these stakeholders can potentially provide a tool to optimize territorial, resource and environmental needs. Indeed, the legitimacy of public policy is now often dependent on a process of exchange

between society and the government (Quirchmayr and Tagg, 2002).

Stakeholders need information and it depends on the levels of interaction with public companies. The stakeholders themselves are the users and recipients of the accounting and balance information of the public companies and groups to which it is headed. The government should see citizens as clients and provide the same service to them as it does to the private companies. Informational needs are perceived not only in the inner front, in the process of planning and control of the consolidated group activities, but also in the outer part, as instrument of accountability towards citizens/users.

The most significant topics that have provoked intense organisational innovations in local governments include greater independence from political power, independence gained considering crises of the traditional party system, but leveraging adjustment to the citizen/user's expectations, and in operational terms, through an increasingly stricter comparison with the private enterprise or with the public one present in the international context (Farneti, 1993).

Quantitative and qualitative data are inserted in Popular Financial Reporting in order to guarantee transparency and provide information useful to understand the complexity of the consolidated public group. From this, a high complexity is derived for public administrations to guarantee the pursuit of public interest and transparency (Borgonovi, 2004; Ditillo et al., 2014).

Transparency is guaranteed also through the identification of corporations and companies responsible of the production of public service and of the members or figures assigned to the supervision made by the local government in all the phases of the production process (Biancone and Secinaro, 2010). That is translated into an increasing request of accountability (Freeman, 1984) in the multiple meaning of assumption of responsibility, attention to transparency, reinforcement of participation and engagement of the interest bearers (Freeman, 2010).

Therefore, in this work, it has been asked which instruments give bigger engagement to citizens, as users, suppliers and inspectors of the services of the consolidated group and of the local government. The difficulty in the reading of the results of financial statement and of local government's balance sheet of the citizens needs no other economic instruments to understand the public situation.

To this end, it is necessary to identify alternative and explicatory indicators different from those economies. In the literature, several alternative and sometimes competing ideas exist on the origins and rationale of public policy (Smith, 1827; Marx, 1975; Mill, 1966; Marshall, 1950; Rawls, 1971; Bator, 1958; Moyer and Josling, 1990; Stigler, 1971; Krueger, 1974; Petit et al., 1987).

The different ideas are now defined in two different ways (Sheingate, 2001). The first definition sees policy

makers to be kind of neutral, benign beings who seek to protect weaker members of the society, promoting their human rights and related moral properties, or correcting market failures. The other definition considers policymakers to be captured by one or more powerful interest including the rich, capitalists, monopolies, large farmers and other 'rent-seekers'.

Public policy differs from popular interest. In the definition of public policy, political decision-makers pursue the interests of the citizens, while in the popular culture; it is citizens that make the decisions. This is directly linked to New Public Management and the need for participatory tools. Both the concept of popular culture and public policy identify instruments of transparency and analysis of results to make decisions (Biancone et al., 2016).

At the end of the sixties, we moved slowly and gradually from an objective and monetary vision to a subjective one with a greater attention on social reality. It is in this revolutionary context that the so-called "Movement of the Social Indicators" comes alive, putting to the test the worldwide planning of the marketplaces addressed to economic growth.

Scientists, politicians, economists and sociologists consider sustainability and social welfare as the society bond in the face of common aims, society participation in the democratic process, governability and access of the population to instruction, food, health services, etc (De Carvalho, 2011).

For a decade, sociologists and psychologists have been working together to develop indexes which mirror the developments of life quality better than Gross National Product statistics. "Happiness formula" has also been invented combining various criteria of welfare measurements of subjective perception of individuals on one's situation. During this period, there has been much theoretical concern for the study of competitiveness practiced by experts and international organisms (World Economic Forum, World Bank, International Monetary Fund); from experts of the academic field and consultation societies. The majority of these studies describe the main determiners of the economic performances on competitiveness and interdependence between the current socio-economic development of a country and its potential growth.

In February 2008, the French President, Nicholas Sarkozy created a committee called "The Committee on the measurement of economic Performance and of social progress", guided by Joseph Stiglitz and Amartya Sen. The purpose of the Commission was to "identify the limit of Gross National Product (GNP) as indicator of economic performance and social progress, including the problem of its measurement".

The committee had also the purpose of considering which additional information was needed for the production of indicators more relevant than social progress; to consider the feasibility of alternative

measurement instruments, and to discuss how to introduce statistical information in an appropriate way. The real difficulty already encountered was between official keys of measurement and spread perception. The first document that the committee made gave a list of recommendations and finally judgement instruments. A greater emphasis on income and usage was given, rather than on production; with bigger weight on the experience of single families rather than the whole economy, and on wealth and income. Finally, the document declares being able to read sustainability and citizens' wealth through a "dashboard of indicators".

The GNP is the most widely used indicator in the measure of economic activity, but it has various drawbacks. It measures only market production, without making use of market prices, and it does not take into account the surplus of the consumer or produced externalities. But we have not had current recession because we did not follow the advice given by this Commission; current recession is a periodic process and is part of the nature of the economic system (Leunig, 2011).

The problem is that wealth is extremely difficult to measure. The report acknowledges that the human capital is difficult to measure, and that for a lot of people proficiency is the most important wealth they have and that this is unlikely quantifiable on welfare. Large-scale official investigations should be reported to the territory because happiness of people, their hedonistic experiences and priorities change.

The British Government already does it; and due to acceptance that people in different countries have radically different preferences, it is hard to imagine that these investigations could be standardised at international level in a useful way, as done for standardised national accounts which are at the basis of GNP evaluations. We have also noticed that the creation of too many indexes from the created commission could make the report non-interpretable and non-generalizable, giving again GNP the role of main indicators of comparison.

The report of the commission on the measurement of economic performance and social progress is vaguely interesting, but it gives little in terms of economic historic value. It does not give alternatives in time about how different societies have realized shares on the basis of different indexes. It is evaluated that, taken as a whole, per capita GNP variations could overestimate or underestimate the economic and social progress performance, or that aforementioned measure is more or less accurate for different countries or for different time periods. Indicators and compound indexes are increasingly recognized as useful instruments for policies because they bring information about a country's performance towards their specific purposes inside the three main aspects of sustainability (environment quality, social equity, and economic welfare).

The main advantage of an indicator is its ability of summarizing complex information of our dynamic world in a manageable quantity of significant information. There are no instruments of ideal planning to reach sustainability neither on regional scale nor on local scale (Keiner, 2006).

Recently, politicians have started encouraging scientists to improve the models and develop new techniques for the integration of quantitative and qualitative analysis for local and regional planning of sustainable development (Grosskuth, 2007). To achieve success in planning on any scale, appropriate methods, procedures and instructions are mandatory (Keiner, 2006).

In particular, the indicators right choice is essential to supervise the progresses towards sustainable territorial development. In 2015 a survey was carried on 25 compound indicators, analysing and comparing 36 countries in Europe; it highlighted how it is possible to group in cluster the countries in 4 homogeneous categories. Unfortunately, it is not possible to compare the single countries among them unless through homogeneous cluster groups (Richard and Sara, 2015).

In Italy, the introduction of BES project: Equitable and sustainable welfare carried out in 2014 by ISTAT CNEL guarantees some reference indicators at national level. The detailed analysis of the indicators, made in BES report, aims at making the country more aware of its strong points and of the difficulties to overcome in order to improve life quality of citizens, putting this concept at the basis of public policies and individual choices. The theme of absorbed resources, their allocation to services and the assessment of well-being is closely linked to long-term economic performance and the resulting climate change is linked to excessive production without governance and decision-sharing (OECD, 2016, 2017; Sen, 1999; Stern, 2006a).

METHODOLOGY

The study aims to investigate the possibility of providing benchmarks for the reading of the results of the Local Government's Consolidated Group in pursuit of greater transparency, responsibility and sharing of the results with the citizens through the Popular Financial Reporting. The study also verifies the possible correlation between compound indicators of social welfare in BES report and expense items in the balance sheet of local public companies in relation to specific sectors. In order to verify the possible correlations among some of these indicators (safety, environment and heritage/culture) and its balance sheet item, the Spearman correlation and linear regression coefficients were used. The variables are quantitative (spending, square kilometers, citizens) and qualitative (compound welfare indicators). Such expense functions have been taken into account by way of example for Italian provincial capitals. The statistical analysis was conducted through non-parametric analysis; the Spearman's rank correlation coefficients for all pairs of all the variables in the dataset. The variables used are grouped in Tables 1 to 3 and each able represents an analysis for each topic. All

statistical analyses were carried out using STATA V.13 (Stata Corp, College Station, Texas, USA, 2013) and p value <0.05 was considered significant for all analyses.

RESULTS AND DISCUSSION

The role of local public companies in the achievement of welfare for the city stakeholders

Public companies are characterized by the production of goods and services which are aimed at a collective consumption that takes into account also the objective of wealth redistribution (Puddu, 2001). The first element to be analysed is that public companies are characterized by the production of goods and services as in the case of private enterprises, although the public sector actually addresses them to the whole community.

Companies can be rationally studied and classified under many points of view: The definitions of companies proposed by the doctrine are numerous, but they are nothing more than different interpretations of the same phenomenon, which depend on the particular moment crossed by the studies (Giannessi, 1960).

It is Ferrero (1968) company concept as a social economic, dynamic, open system that was created to satisfy the needs. From the centrality of the satisfaction of needs repercussions on the image, reputation, human resources, relations with suppliers and customers, territorial impact are generated (Harrison and Caron, 1998). The role played by public companies is to answer the needs of social necessity: public companies finalize the production of goods and services to the satisfaction of particular customers, public service users (Borgonovi, 1984).

In this second perspective, the issue of accounting harmonization and its social reporting function is inserted (Meneguzzo et al., 2006; Lazzini and Ponzio, 2007). Accountability is closely linked to responsibility: the person who performs a programming, management or control function is a responsible subject towards those who suffer/accept the effects of the exercise of these functions (Ricci, 2005). With reference to a territory, if you report organization is because there are people whose job is necessary "to account" and, at the same time, there are people who feel the need and responsibility of "accountability" of the actions taken.

The social responsibility of the territory is a development approach that is emerging in the search for sustainable models on a global scale. The "share" is the focus in its broadest and fullest sense, including and overcoming the economic categories and the profit needs. Consequently, companies are key players in social responsibility (Fox et al., 2002), but not only one.

In the center, there is the community as a promoter and at the same time beneficiary of mentality, strategy and socially responsible behaviour of each of its components.

Table 1. Expense environment function and specific BES indicators.

Region	Administrative center	Environment expense	Surface Km ²	Per meter expense	IBES indicator environment chapter 10 page 257
The Abruzzi	L'aquila	2892107.61	466	6206.239506	113.9
Basilicata	Potenza	28646748.6	173	165588.1422	103.5
Calabria	Catanzaro	161551196.5	102.3	1579190.581	98.7
Campania	Naples	291850000	117.3	2488064.791	105.4
Emilia Romagna	Bologna	3926000	140.7	27903.34044	102.6
Friuli Venezia Giulia	Trieste	14079901.2	212	66414.6283	105.9
Lazio	Rome	12932164.73	1285	10063.94142	100.8
Liguria	Genoa	172799055.5	243.6	709355.7287	103.8
Lombardy	Milan	367751110.8	181.8	2022833.393	103.9
The Marche	Ancona	22336787.3	123.7	180572.2498	98.1
Molise	Campobasso	16243234.28	55	295331.5324	100.7
Piedmont	Turin	2547059500	130.2	19562668.97	105.5
Apulia	Bari	77182708.02	130.2	592801.1369	103.5
Sardinia	Cagliari	104332175.8	85.45	1220973.385	108.1
Sicily	Palermo	140074607.1	158.9	881526.7913	92.4
Tuscany	Florence	113.322.189.92	102.4	1106662.011	101.5
Trentino Alto Adige	Trento	58691390.95	157.9	371699.7527	118.8
Umbria	Perugia	41978437.24	449.9	93306.15079	102.9
Valle D'aosta	Aosta	5699000	21.37	266682.2649	116.5
Veneto	Venice	118162413.8	414.6	285003.4101	106.9

Table 2. Expense for the function of landscape, heritage and culture safeguard and BES indicators.

Region	Administrative center	Culture expense	Resident number	Per capita expense	Landscape and cultural heritage BES indicators chap 9 page 235
The Abruzzi	L'aquila	825642.35	69753	11.8366572	91
Basilicata	Potenza	1179473.79	67122	17.57208948	91.9
Calabria	Catanzaro	7937382.2	90840	87.37761118	75.2
Campania	Naples	10560000	974074	10.84106546	79.9
Emilia Romagna	Bologna	1238000	386181	3.205750671	101,8
Friuli Venezia Giulia	Trieste	9678565.33	205413	47.1175891	104
Lazio	Rome	3179781.6	2864731	1.109975631	94
Liguria	Genoa	29626727.75	586655	50.5011084	95.5
Lombardy	Milan	122439115.1	1345851	90.97523805	102.7
Marche	Ancona	6093882.53	101518	60.02760624	100.9
Molise	Campobasso	560158.9	49431	11.33213773	81.9
Piedmont	Turin	55518733.69	890529	62.34354377	10.6
Apulia	Bari	5947758.27	327361	18.16880529	92.8
Sardinia	Cagliari	28362657.34	154460	183.6246105	100.3
Sicily	Palermo	11672104.67	678492	17.20301001	84
Tuscany	Florence	40.495.804.18	382.808	105.7862014	102.7
Trentino Alto Adige	Trento	807114836.5	39099	20642.85113	117.3
Umbria	Perugia	5465432.75	165668	32.99027422	103.9
Valle D'aosta	Aosta	3399700	34777	97.75713834	97.4
Veneto	Venice	15035475.33	264579	56.8279241	91.9

The transition to accrual accounting in the public sector began at the end of 1980 and at the beginning of 1990. In several countries accrual accounting was introduced.

This reform was part of a large administrative reform, often referred to as NPM. NPM is the collection of management practices and leadership gradually introduced

Table 3. Expense for safety function and BES indicators.

Region	Administrative center	Safety expense	Resident number	Per capita expense	Safety BES indicators chapter 7 page 195
The Abruzzi	L'aquila	9754227.09	69753	139.8395351	111.4
Basilicata	Potenza	4846671.66	67122	72.20690176	93.2
Calabria	Catanzaro	625663.1	90840	6.887528622	85.1
Campania	Naples	81290000	974074	83.45361851	94.6
Emilia Romagna	Bologna	7633000	386181	19.76534319	116.9
Friuli Venezia Giulia	Trieste	211296.15	205413	1.028640592	91.4
Lazio	Rome	67610852.51	2864731	23.60111735	97.6
Liguria	Genoa	45887334.55	586655	78.21860301	104.8
Lombardy	Milan	213367315.8	1345851	158.5371009	104
Marche	Ancona	3555824.08	101518	35.02653795	99.4
Molise	Campobasso	2259241.7	49431	45.7049564	104.6
Piedmont	Turin	97613411	890529	109.612838	105.2
Apulia	Bari	28582914.74	327361	87.31313364	98.4
Sardinia	Cagliari	14047175	154460	90.94377185	88.6
Sicily	Palermo	42956685.83	678492	63.31200048	97.4
Tuscany	Florence	50.572.933.33	382.808	132.11044	105.6
Trentino Alto Adige	Trento	26074980.74	39099	666.896359	115.5
Umbria	Perugia	6871933.45	165668	41.48014976	57.3
Valle d'aosta	Aosta	728300	34777	20.9420019	117.3
Veneto	Venice	23102194.22	264579	87.3168098	91.4

in the public sector since 1980. NPM is a broad term for a variety of management ideas, often borrowed from the private sector, namely through the introduction of tools and ideas as competition, privatization, management by objectives, decentralization, etc. in the public sector (Hood, 1991; 1995).

However, it is often not possible or economically viable the realization of private analysis tools such as financial reports tailored to each individual stakeholder. The services provided by the public companies, and particularly by local authorities like water service, waste, gas distribution and energy and local transport not only enter directly into the basket of consumers' goods households of residents, impacting the cost of living, but they enter the production processes of the companies of a certain area affected by their performance by influencing the production costs and thus the prices of their goods. The way in which this input in production processes and household spending takes place are not limited to the level and dynamics of prices, because a crucial role is also played by the quality of the performance; in fact, the latter determines the degree to which public services spread positive externalities in the served area.

Containment of the tariff increases and raising of the quality of services are the two main outcomes that economic theory associates with a process of liberalization of markets previously characterized by vertically integrated local monopoly, entrusted with management without selection procedures open to public.

As it is known, competition in the market, technologically or for the market in segments where there is still a form of natural monopoly and contestability regimes covered by appropriate legislation and creation of modern regulatory institutions, is functional for extracting monopoly rents and consumer surplus maximization (Armstrong and Sappington, 2006).

If competition, in the two meanings, or regulation, cannot have effect in this direction, the inefficiency - productive and allocative - that results tends, by raising production and containment of quality costs, to spread throughout the whole economy. Competition in the market or for the market is growing very slowly, and some signals leave well portend that the ongoing reforms will not rely even entirely on the benefits associated with these forms of rivalry and contestability, in which ancient and widespread resistances seem to be once again the better.

On the other hand, this transition is experienced by users in non-favourable way, since apparently, the price dynamics seem to register increases instead of reductions, as called for by economic theory. However, we should not forget that the time reference benchmark is not correct, in the sense that prior to the reforms of the organization of local public services, the level of rates was influenced by deficits that more or less surreptitiously companies created and which were covered by general taxation, whose load was not directly perceived by users. Therefore, the gain in terms of transparency and financial accountability is now firmly grasped by users because the

costs of the inefficiency of past managements were unloaded on all taxpayers or future generations through public debt (Petretto, 2007).

Consolidated financial statement and popular financial reporting

The overall view of the starting point is the consolidated financial statement (Puddu et al., 2013). The Financial Reporting would stimulate the relationship between government and stakeholders in a clear and understandable view of the results meeting the need for transparency and accountability of institutions (Biancone et al., 2016). We are not talking about social balance and neither about the mission report in the strict sense, but about Popular Financial Reporting, a useful tool to empower the population democratically involving other actors in the production process (Biancone and Secinaro, 2015).

The independent organization that establishes and improves the accounting standards in the United States is called GASB. It started its activities in 1984 and introduced the fundamentals to draw up a report based on the popular Budget. The Government Finance Officers Association (GFOA) offers a different approach to the financial statement to generally accepted accounting principles (GAAP). For the first time in February 2006, GFOA encouraged all to issue a comprehensive annual financial report (CAFR), in accordance with GAAP.

The Public Body should produce a short and easy to read document, understandable to all citizens. In addition, it could allow easy reading of other potential users, such as politicians, employees of the public sector, the media, community groups, etc. (GASB, 1992).

The Popular Financial Reporting must be drawn up within six months of approval of the consolidated financial statement. It must present the information in an engaging and easy to understand writing, avoiding technical jargon and translating the information into graphs. The language must be narrative to highlight certain information and must present financial data through trends and comparisons. Essential to the success of the document is the encouragement of feedback from stakeholders.

In the US, 60% of municipalities use the Popular Financial Reporting. This new tool has been adapted to meet the international accounting standards IPSAS and evaluate the performance in the public context (Montesinos et al., 2013).

Indicators in local authorities

The conceptual framework, according to the General Purpose financial report (GPFR) of public sector entities (2008), identifies by the International Accounting Standards Board (IPSASB) (2013). Three large groups of

potential users: recipients of services or their representatives: the suppliers of the resources, or their representatives, and other parts that include special interest groups and their representatives.

The IPSASB in particular points out that the legislature, acting in the interest of members of the community, is a great GPFRs user. Thus, by 2010, according to the conceptual framework for General Purpose, the IPSAS identifies citizens as primary users of GPFR. Contrary to the definition of New Public Economy in the 20th century, now even the poor, who pay little or no taxes, evaluate the efficiency and effectiveness of the market through voting. In developed countries, it is clear that the reform of the system of performance and Reform Strategy of the purposes of the public system are aimed at increasing effectiveness and productivity, and provide greater citizens' satisfaction (Yusuf, 2013).

It should be noted an identification and proposal of a plan of indicators with the expected results of the budget in order to explain the objectives of management, in addition to measuring the results and monitoring the services and activities. Forwarding this analysis, the theory of liability is based on the concept that citizens want good performance from their governments and that the performance of the directors can be measured. These aspects are equally important for citizens (Kelly, 2005).

The public body tends to public responsibility to meet and increase efforts towards the services that the population requires. In public institutions, there is a growing push toward internal management control and the achievement of performance. The evaluation of the results achieved by individuals is only a tool to consolidate and increase sales, according to a consumption-based approach by referring to the fiscal targets.

Seldomly, the public assessments are efficient. Often the needs of citizens and stakeholders in general are against the public interest to satisfy the interest of the individual. Since the criticism of public responsibility you can think that the Popular Financial Reporting is a useful tool to strengthen the capacity of the population and stakeholders in the evaluation of results, and that this can be interpreted correctly by changing the ability of the citizens.

BES: Equitable and sustainable welfare

The project to measure the equitable and sustainable welfare, born of a joint initiative of the CNEL and ISTAT, is part of the international debate on "GNP passing", fuelled by the knowledge that the parameters on which to evaluate the progress of a society cannot be exclusively economic, but should also take account of the fundamental social and environmental dimensions of welfare, accompanied by measures of inequality and sustainability. The document was presented in its third

edition on December 2, 2015.

The BES (Equitable and Sustainable Welfare) is based largely on the Organisation for Economic Co-operation and Development (OECD) framework presented earlier. It is a bigger challenge than the initiatives presented in this document because it tries to integrate the welfare with equity and sustainability. This provides considerable theoretical problems which must be clarified and resolved before we can begin the technical / methodological discussion on how to measure the size in the various domains.

BES is a process that takes as its starting point the multidimensionality of welfare and, by analysing a large number of indicators, describes all of the aspects that contribute to the quality of life of citizens. In this context, official statistics must keep up with the growing demand for quality statistical information. It is up to the citizens and their representatives choose which dimensions of welfare can return more value and on which it is better to invest, with the understanding that the achievement of certain objectives may affect or delay the achievement of others.

BES can assist the government in the process of planning resolution and at the same time provide the citizen with information to guarantee transparency and a key also linked to the services that the institution offers. The Local Entity functions can be represented in aggregate and in terms of quantity and quality of achievement of planned results, and through comparison and interpretation such as statistical Regional indicators of reference of specific activities (for example, Heritage, environment or safety).

In a complex system you must seek common interpretations and maximum indicators to understand the work of the governance, culture and economy of a region / organization. The Popular Financial Reporting can provide comparison tools, and use the different Bes indicators as interpretations, thus assisting the administrator in future programming. Welfare can be a tool to increase or decrease the supply of services in pursuance of economic availability of the entity, going to decrease waste, also instructing the citizen welfare perceived in the different functions carried out by the body.

Transparency, governance and resource control

From 2008, the issue of enhancing global tax transparency to curtail tax evasion has been at the top of international agenda. That year, the G20 shone a spotlight on the lack of tax transparency, and followed swiftly in 2009 with a commitment to put an end to bank secrecy and protect public finances.

To ensure a global level playing field where there was no place to hide, it was important that the tax transparency standard at the time, the EOIR standard,

was widely adopted, including financial centres. Coinciding with the G20 meeting in April 2009, the OECD issued a progress report on jurisdictions' implementation of the EOIR standard, identifying those jurisdictions that had substantially implemented it, committed to implementing it, or had not yet made such a commitment. That progress report has been supplanted by the Global Forum's review and rating process.

Today, there is an additional standard on tax transparency that provides automatic exchange of financial account information (AEOI). Reflecting a step change in tax transparency, the new standard, consisting primarily of the Common Reporting Standard (CRS), was established by the OECD in 2014 and endorsed by the G20 Finance Ministers and Leaders.

The EOIR standard requires that all jurisdictions ensure that they maintain information (on ownership of entities and arrangements, accounting information and bank information), that their tax authorities have access to that information and are able to exchange it with foreign tax authorities when it is foreseeably relevant to the administration and enforcement of their tax laws.

The OECD-hosted Global Forum on Transparency and Exchange of Information for Tax Purposes has released the results of its Fast-Track review process. The outcome is clear - massive progress has been made by many jurisdictions towards the exchange of information on standard request (the EOIR standard) in the last 15 months, since the G20 Finance Ministers call for identification of noncooperative jurisdictions with respect to tax transparency.

Progress to meet the automatic exchange of information standards (AEOI standard) as well as efforts by countries to expand their network of exchange of information agreements by joining the multilateral Convention on Mutual Administrative Assistance in Tax Matters has also been significant (OECD, 2016; 2017). The Global Forum's review process considers whether a jurisdiction has a sufficient legal and regulatory framework as well as appropriate processes and procedures in place to meet the EOIR Standard. All members of the Global Forum (today 142 countries and jurisdictions) undergo a peer review, as do "jurisdictions of relevance", which are not Global Forum members but identified as relevant to its work to tackle tax evasion through a level-playing field based on greater transparency. The path of tax transparency and the exchange of information between states is one of the many steps to ensure full transparency. At present, tax evasion and resource shifting may result in lower collection and spending on different sectors. The World Bank, in the Global Economic Prospects, also represents in 2017 a decline in growth in the BRIC countries due to low confidence in government. Policies to address the EMDE investment weakness include both direct and indirect measures.

Public investment directly lifts overall investment, and

improvements in its delivery increase its benefits to growth. It can also foster private investment, at least in the presence of economic slack, sizable infrastructure needs, and sound governance. Finally, public investment may have the collateral benefit of reducing income inequality. More indirectly, cyclical and structural policies for strengthening growth prospects, a key driver of investment, stimulate investment.

These may include cyclical stimulus in countries where activity is weak for cyclical reasons and which have the available policy space. Most importantly, structural reforms to improve governance could encourage investment, foreign direct investment, and trade, and thereby improve longer-term growth prospects (World Bank, 2017).

Quantitative analysis, BES indicators and expense functions

In a complex system, common interpretations and maximum indicators must be searched for, which allow one to understand the work of the governance, culture and economy of a region / organization. The Popular Financial Reporting can provide comparison tools, and use the different Bes indicators as interpretations.

We wonder if correlations between BES indicators, expense, population and other parameters useful to the analysis exist. We have examined the financial statements of the year 2015 of the Regional capitals and analysing some specific functions at the level of environment (Table 1), landscape and cultural heritage (Table 2) and safety (Table 3). To start the analysis of data and possible correlations between expense and welfare indicators, we examined the composite indicators for BES function assuming other comparison variables (number of inhabitants or Km²).

Statistical analysis was conducted through the Spearman correlation and using linear regression in order to identify possible significant results between analysed variables. With regard to the safety function, there is a positive but not statistically significant correlation between per capita expense and BES indicators, neither with the Spearman correlation (Spearman's rho = 0.266; p = 0.258) nor by linear regression ($\beta = 0.03$; p = 0.148). With regard to the environmental function, there is an inverse but not statistically significant correlation between expense Km² and BES indicators, both with the Spearman correlation (Spearman's rho = -0.049; p = 0.838) and linear regression ($\beta = -9.18$; p = 0.997).

As for the function of safeguarding the heritage of culture and education, there is positive and statistically significant correlation between per capita expense and BES indicators, highlighted with the Spearman correlation (Spearman's rho = 0.460; p = 0.0414) or by linear regression ($\beta = 0.001$; p = 0.019).

In two cases, a significant correlation is not found; in

one it is. There is a correlation between economic data and indicators of welfare synthesized by originating region and function. But further analysis is needed to identify major accident variables and possible correlations between economic data (expense) and welfare.

CONCLUSION AND IMPLICATIONS OF THE RESEARCH

The BES indicators can be analysed to assume a correlation between economic data, both quantitative and qualitative recognized in Popular Financial Reporting. Nonetheless, they are not absolute interpretations because such indicators include independent data on which the government cannot intervene. The BES indicators are certainly a useful parameter to evaluate in historical terms a variation between indicators based on the implementation of targeted policies for functions or service.

However, the statistical correlation between BES indicators and expense by function does not provide useful data to the reading of the results of Local Government and Consolidated Group. It is different in the case of individual services and quantities produced, compared to BES indicators detected for particular topics of national interest.

In the study view, a correct interpretation of the quality and cost of provision for the citizen service can reduce the distorting effects on the data market externalities allowing greater ability to interpret the public service. An objective comparison also allows greater transparency of the result represented according to international accounting standards, increasing the responsibilities of public managers and the ability of the population to evaluate the performance of the Consolidated Group of the Local Government. It is suggested that the use of compound welfare indicators to assess whether service policies related to the volume or quality affect the perception of the city.

In conclusion, both BES indicators and the Popular Financial Reporting must be mutable documents according to the objectives of consolidation of the Local Group and the needs of the citizens. The Popular Financial Reporting integrated with BES indicators will provide significant further planning and control tools; not limiting the stakeholders in a simple reading of the collected results.

The OECD's fiscal transparency path (OECD, 2016; 2017; Kingma and Schaper, 2017) ensures more allocation effectiveness. These activities in Agenda supported by the states, coupled with Popular Financial Reporting and compound welfare indicators, converge towards greater participation and decision by the citizens and stakeholders. Tax transparency and the ability to readily allocate resources and results immediately are the

tools used to correct tax evasion effect (Bernardi and Franzoni, 2004).

The governance tools proposed in this document may favour public sector investment by assessing both the perception of the population and the performance of the committed resources. Popular Financial Reporting also ensures easy reading of the allocation. Greater governance can also facilitate the growth of BRIC states (World Bank, 2017).

Furthermore, Pareto identifies possible distortions caused by the interest of few in the market. Here the remedy has to lie in more freedom, including that of public decision and participatory political decisions (Sen, 2001). Recognizing the right level of spending resources, consumption and perception of well-being related to public services is also a valuable tool to reduce environmental pollution. In a long-term perspective, enhancing the various values by ensuring transparency can lead to rationalization of resources and the empowerment of citizenship and public decision-makers in the direction of the sustainable development (Stern, 2006b).

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Full Length Research Paper

Retention strategies used for doctors and nurses in Lesotho: An implementation framework

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This study reviews the retention strategies used for Lesotho's doctors and nurses, and it presents an implementation framework that supports and promotes staff retention. Based on the increasing necessity to retain doctors and nurses, the implementation framework is an essential element of retention strategy. A qualitative and quantitative research design method for collecting data was adopted in the form of a self-administered questionnaire and interviews. The sample consists of 120 doctors and nurses. The information was statistically analyzed using statistical package for social sciences (SPSS) and grounded theory. Results show that the current implementation strategy has failed to increase the retention rate of doctors and nurses. It is hoped that the implementation framework presented in this study would help to achieve increased retention rate for doctors and nurses.

Key words: Employee retention, human resource, health professionals, implementation framework, human resource strategies.

INTRODUCTION

Human capital is the most essential asset of any organisation, irrespective of size or division. This is true for the health sector in Lesotho that is currently having a high turnover rate of doctors and nurses. This increase in turnover has made the Lesotho health sector less successful. In order to fulfil its service delivery mandate, another implementation framework is needed to support retention strategies for doctors and nurses.

This study recognises and observes an appropriate implementation framework that can be utilised to retain and manage these retention strategies. It can be expected

that the current retention strategies have failed to effectively keep the healthcare professionals in Lesotho, and are permitted to keep falling regardless of the vital commitment doctors and nurses could make to help understand the service delivery mandate. Doctors and nurses are short staffed and the implementation framework that attempts to enhance the retention rate would help address the issue of service delivery and control the scarcity of healthcare professionals in Lesotho.

In the strategy document, the arrangement of incentives

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to doctors and nurses was made and implemented to guarantee enhanced retention rate (Ministry of Health and Social Welfare, Government of Lesotho, 2010). The success of some of these financial incentives has been investigated by Dambisya (2007), and fits into two classifications, namely financial and non-financial incentives.

The aforementioned methodologies have been put into practice by the government of Lesotho (GoL) for three years while implementation of the present retention strategy permits the compensation of financial incentives to healthcare professionals in two mountainous regions (Mokhotlong and Qacha's Nek) (Schwabe et al., 2004).

This practice, though well-intentioned, has neglected to accomplish the needed impact since it is both unfair and selective; healthcare professionals working in different parts of the nation do not meet all requirements to get such incentives. Notwithstanding the unfair and selected implementation of financial incentives, there are different payments, for example, occupational risk and call allowance that help to extend discrimination and exclusion, to the detriment of wholesome retention that is both effective and proactive (Schwabe et al., 2004).

While the aforementioned strategy implementation cannot possibly accomplish the required retention, it is important for making apprehension among healthcare professionals that experience discrimination, and are eliminated from the incentive payment.

Moreover, qualification rewards or incentives are paid to those with higher qualifications. In spite of the fact that this incentive payment is oppressive, it requires keeping up a higher standard of qualification and additionally advance the way of life of constant professionals improvement; a necessary component of professionalism and quality assurance.

Maslow theory, according to Lin (2007), indicates that individuals are no longer motivated by money as its power is limited. These discoveries are in accordance with studies completed by Herzberg (1966) referred to in Mbah and Ikemefuna (2012). Mbah and Ikemefuna (2012) carried out the studies in line with these results. However, Schwabe et al. (2004) contended that bonus reward enhanced retention if prepared with rigid salary.

In addition, bonding strategy is a non-financial incentive whereby students trained in South Africa, and abroad, are obliged to give benefits in fulfillment of their studies for a period that is equivalent to the duration of the scholarship/bursary; however, just few graduates come back (Schwabe et al., 2004).

These graduates are more willing to reimburse the government costs as opposed to serving which shows that this procedure is not sufficiently thorough to retain graduates. From the aforementioned, it is presumed that the implemented retention strategy has neglected to accomplish expected retention, since Lesotho's health sector is yet to encounter a high turnover of doctors and

nurses. This is confirmed by Ministry of Health and Social Welfare, Government of Lesotho (2010) which demonstrates 15% of nurses depart the service consistently, while around 90% of health centers function without healthcare professionals.

Right now, the nation is seriously reliant on non-national medical doctors, among which there is likewise high steady loss rate since they are utilising Lesotho as a stepping stone to South Africa. This circumstance obstructs long pull arranging and maintainability of health service delivery and projects expected to enhance the talented human resource base (Ministry of Health and Social Welfare, 2013).

The rationale for this research is to discover failure of the present retention strategy for health professionals working for the Lesotho Health sector, with the likelihood of helping the department in creating and implementing a successful retention strategy.

Statement of research problem

While the retention strategy is valuable in retaining doctors and nurses, the Lesotho health sector would gain from the know-how of their medical staff. This is valid for the health sector that is facing a high rate of staff leaving the organization; the increased turnover has constrained the Lesotho health sector to work with a predetermined number of health professionals to the detriment of the guaranteed service delivery mandate (Ministry of Health and Social Welfare, 2010).

From one perspective, according to the WHO (2017), the shortage of medical school in Lesotho represents most doctors and nurses who travel to another country to study, particularly in South Africa. It urges health professionals to search for better paying occupations abroad to complete their studies; the present circumstance seems to be caused by nations, for example, United Kingdom (UK) and Australia that draw in and retain doctors and nurses, while the health sector has not succeeded.

Then again, the health sector has not figured out how to create compelling systems for retention; this along these lines has a colossal unconstructive impact on hospitals, clinics as well as community health centers. The contention here is that a large portion of these facilities is horribly understaffed which is an issue of awesome concern, and each one of those that have been employed are overburdened as they are seriously dwarfed by the measure of patients every day (Matamane, 2014).

The Healthcare and Family Services (HFS) contemplate affirms that more than seventy five percent of the Health centers do not have a full staff supplement, while one in five health focuses is controlled by nursing assistants (Ministry of Health and Social Welfare, 2013).

The lack of staff brings about restricted contact time of patients with medical attendants. Substantial nursing workloads are probably going to detrimentally affect patient care and health results. Currently, retention strategies implemented have not improved the retention rate for healthcare professionals, and a new implementation framework to improve retention has become inevitable for the Lesotho health sector.

LITERATURE REVIEW

This area shows the investigation of writing on retention strategy for doctors and nurses. This review analysed proposing and contradicting disagreement on retention strategy to highlight best practice and distinguish implementation challenges based on a study plan. The plan of the literature review was to classify the research questions that would form the basis on which the study was conducted. The chapter begins with the definition of an implementation framework, the importance of implementation framework, synopsis of Lesotho's different implementation framework success and failure factors, and how these factors can be incorporated in the revised and updated framework, and the need for a new implementation framework in Lesotho.

Importance of implementation framework

The implementation framework helps with rebuilding of future workers, managing and engaging the productivity of the present workers (Government of Health Western Australia Department of Health, 2012). It is proposed to attract and protect staff and meet existing and planned requests by expanding the importance and nature of the potential workers. It supports the plan stage by supporting careful examination of proof, helping one not to misuse inadequate resources (Health Workforce Australia, 2011). As per the Center for Mental Health (2012), the significance of an implementation framework is to take methodologies to the following level by grasping the vision of the association, bring about the genuine and quantifiable upgrades for individuals comprehensively through deciphering goals into real activity that can be utilized by the association.

Implementation framework defined

Nyamwanza and Mavhiki (2014) describe implementation as the way an association ought to develop, utilise and combine hierarchical structures, control frameworks and culture to take after methodologies that prompt viable and better implementation. As indicated by Li et al. (2008), strategy implementation is a key test for today's

associations. Organisation accomplishment is controlled further by how well techniques are actualised than by how extraordinary the approach is (Speculand, 2009); the implementation of the framework passes on returns, not the making of it (Speculand, 2009). Various structures have been made to help system implementation. Notwithstanding the way that associations welcome the prerequisite for technique and fruitful implementation, the last as often as possible comes up short concerning the targets the affiliation has set itself (Shah, 2005) as referred to in Nyamwanza and Mavhiki (2014).

Synopsis of Lesotho's different implementation framework success and failure factors

As per literature, many elements affect strategy implementation in an association and, thus, impact organisational performance (Belbin, 2011). A lot of variables can possibly influence a total strategy or one choice. Challenges frequently happen in the succeeding implementation advancement (Li et al., 2008). Managers' view is frequently imperfect; therefore, in vast majority of times (9/10), they do not prevail to successfully implement the strategies they have made (Speculand, 2009). Speculand contended that managers continually think little of the test of implementing strategy, and accordingly assign the procedure to others, taking their eyes off what should be done; thus, strategies have inadequacies not because the methodology is not right, but rather that the implementation is ineffectively done (Speculand, 2009). The Lesotho retention strategy portrayed underneath has neglected to accomplish retention rate for doctors and nurses on the grounds that the implementation was poor (Ministry of Health and Social Welfare Lesotho, 2013). The Attraction and Retention Model of the Lesotho Health Workforce can be seen in Figure 1.

Incorporation of Lesotho success and failure factors in a revised framework

From the literature review, it is clear that the retention strategy presented earlier has neglected to enhance the retention rate for doctors and nurses in the country since there are insufficient health professionals to convey quality service to patients (Health Sector Strategic Plan (HSSP) 2012 to 2017). The researcher reasoned that managers have neglected to move from plan to activity. This model was implemented with no functional base to control the decision of mediation. The findings of its success and failure are outlined below.

Personal development: According to Dambisya (2007), the Lesotho Health and Social Welfare is offering

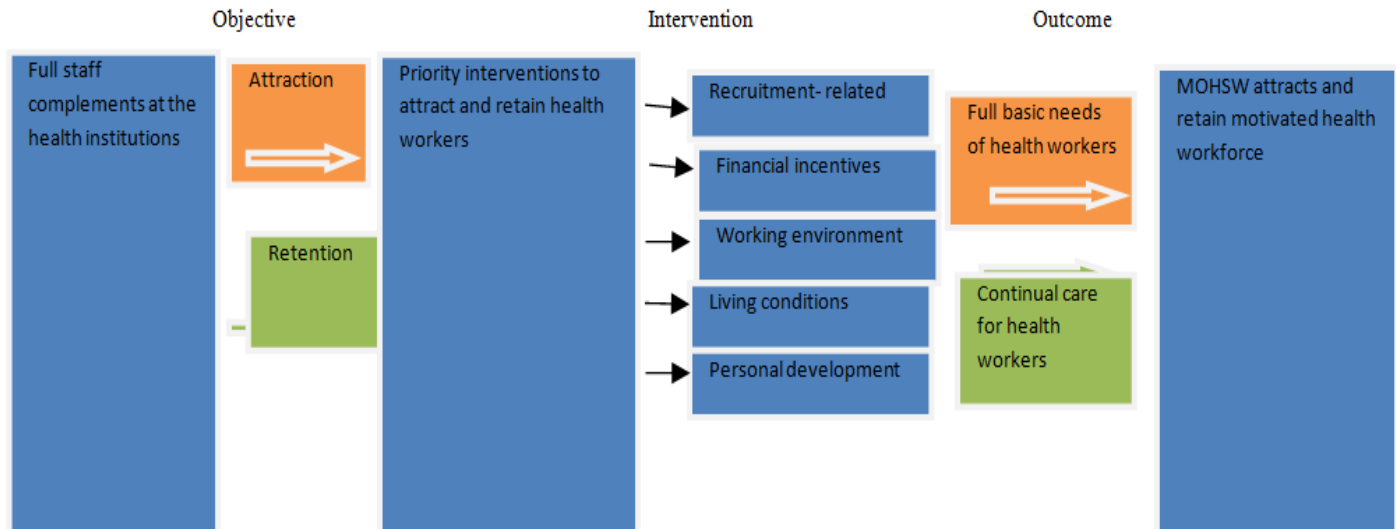


Figure 1. Lesotho Health Workforce: Attraction and Retention Model (adapted from Ministry of Health and Social Welfare Government, 2010).

bursaries/scholarships to students who are contemplating towards acquiring medical education in South Africa and other countries because there are no medical schools in Lesotho (Lesotho Health Sector Strategic Plan 2012/13 to 2016/17, 2013:18). This is in a form of a bonding agreement whereby graduates are required to serve the division for a time that is equivalent to the length of their education programs (Schwabe et al., 2004). This was believed to be a good retention strategy to absorb them into the public service pool during the agreement, however, it gives the idea this is insufficient as some of these doctors and nurses are set up to pay back the departmental expenses, rather than working for it (Dambisya, 2007).

Career/Promotion: In Lesotho, there is lack of opportunity to continue studies in the government health department even if in-service training is provided (Schwabe et al., 2004). There is also a glaring lack of career advancement in nursing; the profession hierarchy is restricted and progressive (Schwabe et al., 2004). In the case of the doctors' cadre, the succession inside the Medical Doctor unit from Medical Officer to Specialist is small by territorial and worldwide measures (Schwabe et al., 2004). The Health Sector Human Resources Needs Assessment uncovered this, and also exposed the high extent of non-nationals in the Medical Officer occupation in Lesotho (Schwabe et al., 2004).

Working environment. For many years, infrastructure in Lesotho such as clinics and the main transfer hospital, Queen Elizabeth II in Maseru, was worse and the increasing population continued to apply pressure on both inadequate staff and facilities (Coelho and O'Farrel,

2011). In addition, several services were unavailable through the Lesotho public health system and patients were transferred to South African facilities for treatment at premium prices (Public Eye, 2012). Moreover, the National Referral Hospital (QE II) has turned 100 years old, and as a result required either replacement or extensive refurbishment (Netcare Limited Annual integrated report, 2013). The replacement was achieved through public/private joint venture (PPP) understanding between Ts'epong (a consortium involving South Africa's Netcare and a Basotho organisation) and the government of Lesotho through an 18-year PPP contract (Kaplan et al., 2013). The PPP managed to replace the aging QEII, and also improved the network of urban filter (Satellite) clinics (Mwase et al., 2010).

Living conditions: Most support efforts to improve living conditions for Lesotho have not yet been implemented (Ministry of Health and Social Welfare, 2013). Nurses in Lesotho are staying in residences that are not in good condition, while doctors are staying in better places with basic furniture but heat and electricity is a challenge there (Dambisya et al., 2013).

Recruitment related: According to WHO (2017), Lesotho has formed an alliance with Boston University called Lesotho Boston Health Alliance (LeBOHA) in an effort to improve recruitment of health professionals as approach to retain them. Likewise, as far back as the program began more than 30 specialists have connected to come back to Lesotho to join the Family Medicine Speciality Training Program (FMSTP) but only three students were absorbed (WHO, 2017). LeBOHA has not succeeded in getting on a correspondence operation in the

media to advance the arrival and retention of doctors, in an effort to attract Basotho doctors back to the country (Rankhone, personal communication 10 May 2015). LeBOHA has also failed to assist the government of Lesotho in drawing a database in order to trace medicinal students, understudies and specialists in the neighbouring country (South Africa) in an effort to comprehend the target audience of the campaign (Rankhone, 2015).

Incorporation of Lesotho success and failure factors in a revised framework

Financial incentives

As indicated by Kossivi et al. (2016), the connection amongst pay and retention has been the subject of many studies. Researchers are not consistent about the effect of pay on retention. For a few, fulfillment with pay emphatically connects with the representative choice to remain in the organisation. For others, pay does not impact on retention (Kossivi et al., 2016). It is imperative that the revised framework will undertake to eliminate inequality and discrimination by not considering equity of pay within Lesotho but also in comparison with neighbouring countries and/or Africa. In terms of salary inequality, doctors and nurses should be paid for their competencies, not supplementary qualifications they hold; they are a team that requires full participation and expertise of both. The updated and revised framework should also include the provision of education allowance for health workers' children in order to supplement their salaries, waive entry exams to school graduates wishing to study towards health related qualification, provide postgraduate education to young general practitioners, provide subsidised mortgages and homes in areas with a shortage of health workers, provide health workers with supplemented income from donor projects and the MOHSW to implement new incentive programs that will be essential to monitor results and lessons learned to be disseminated to other countries (Kaplan et al., 2013).

Personal development/ Career and promotion

Skilled improvement is not a least retention cause (Kossivi et al., 2016). Hiltropp (1999) sees professions achievement and organisation as the capacity to make representatives remain in their employments. Individual and expert development is a deciding element of retention and advancement openings expand representative responsibility regarding stay (Kossivi et al., 2016).

Leidner (2013) is likewise of the view that representative reliability is enhanced through guidance and growth (Kossivi et al., 2016). It is necessary that in a revised framework, the ministry of finance should, for the sake of

consistency, bring some standardisation to the layout of bond understanding and question the conditions to make them more unequivocal and exhaustive for the gatherings to know about the different ramification of breach of understanding.

A bank guarantees that expenditure incurred for sponsorship/traineeship can be easily recouped. In case of breach of obligations, employees subscribes to a bank guarantee and its service charges and graduate certificates are to be confirmed after the proof of service.

In its response, Lesotho should provide clearly defined and transparent career paths, promote them and also open new medical schools by training new therapeutic schools via preparing new units of health professionals and bringing in doctors as a temporary solution.

Working environment

According to Kossivi et al. (2016), a helpful workplace has all the earmarks of fundamental figure worker retention. Spence et al. (2009) confirm supporting the way that ideal workplace adds to representative retention. A useful situation can be characterised as an adaptable environment where working knowledge is agreeable, assets are sufficiently given. On the other hand, the researcher suggests that for further working condition improvement, the Department of Health should put in better equipment such as telemedicine to allow medical providers in isolated locations to confer with experts about diagnosis and cure.

Living conditions

The revised framework should provide benefits that are comparable to non-nationals, develop living condition for doctors and nurses and their relatives by putting resources into framework and administrations (sanitation, broadcast communications, pre schooling and childcare's etc.), provide subsidies for water and electricity, and guarantee security and protection for doctors and nurses equally at and off work.

Recruitment related

The revised framework should suggest the building of a medical school in the country so that Lesotho will be able to make enough doctors and nurses to address the issues of its population. Moreover, a strong enlistment bundle and a coordinated enrollment and retention procedure - consolidated with the aggregate cooperative energy of the MOHSW systems and objectives - ought to work more in order to address the wide enrollment and retention needs. The basis should be to do projects and

administrations that strengthen enlistment and retention, draw in MOHSW healing, exiles and universal graduates to advance professions in the country which will increase the capacity of MOHSW to attract and retain the specialists it requires.

Need for new implementation framework in Lesotho

Lesotho health sector has an employer of 8,600 staff individuals (Ministry of Health and Social Welfare, Government of Lesotho, 2009). Like some other Sub-Saharan nation, Lesotho is at present confronted with extraordinary difficulties to retain doctors and nurses (Ministry of Health and Social Welfare, 2009).

The number of inhabitants in Lesotho is around 2 million (WHO, 2009), which incorporates a devastatingly high human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS) rate of 24%-an extreme deficiency of health professionals (Government of Lesotho, 2013). As indicated by the results, it is apparent that the Lesotho health sector is less compelling in conveying quality health services to its population because of the present situation (Ministry of Health and Social Welfare, 2009).

Not very many doctors and nurses are serving the extensive variety of truly sick patients (Smith and Stark, 2009) who require serious care. Basically, a compelling usage system is required to enhance the retention implementation of doctors and nurses, so as to achieve the nation vision 2020 with its vision articulation:

“By the year 2020, Lesotho shall be a stable democracy, a united and prosperous nation at peace with itself and its neighbours (Ministry of Finance and Development Planning, 2004)”.

It shall have a healthy and well-developed human resource base. Its economy will be strong; its environment well managed and its technology well established (Ministry of Finance and Development Planning, 2004). To make this vision a reality, the framework should concentrate on enhancing retention which will prompt successful service delivery. In this way people using health organisations alongside their families should get help and treatment they may require in all circumstances (Ministry of Finance and Development Planning, 2004). The framework for retention strategies used for doctors and nurses introduced underneath depends on the conclusion got from the audit of writing. It is normal that this framework would upgrade retention rate for doctors and nurses, and enhance service delivery in the association, especially, the hospitals through the implementation of retention elements approved to be viable in enhancing retention, and service delivery. This is reflected in the accompanying model (Figure 2).

Framework to enhance retention rate

The researcher distinguished six key factors in particular:

1. Financial incentives
2. Working environment
3. Personal development
4. Recruitment
5. Living conditions, and
6. Communication and feedback which will be included in the improved implementation framework.

The researcher witnessed that strategies are commenced and implemented in a vital setting (the overall strategic direction of the company and the need to design new initiatives). Why are a few organizations ready to accomplish remarkable outcomes in both financial and additionally non-financial while others are not (Nyamwanza and Mavhiki, 2014). The implementation framework helps with rebuilding of future workers. It is planned to draw in and protect tremendously refreshing staff.

It advances the plan stage through cautious examination of confirmation, helps to avoid inadequate squander of funds or things that can harm effectively by planning and resourcing in an unexpected way (Health Workforce Australia 2011: National Health Workforce Innovation and Reform Strategic Framework for Action 2011 to 2015). As indicated by Center for Mental Health (2012), significance of implementation framework is to take methodologies to the following level by grasping the vision of the association, realize the genuine and quantifiable upgrades for individuals all around by interpreting beliefs into honest to goodness activity that can be utilised by association (Okumus,2001).

The aforementioned system recommends that if all hospitals utilize it, they would probably effectively implement strategy. Every hospital will highlight certain parts of the framework and accomplish distinctive outcomes. After that, the individuals who embrace the procedure will be closer to accomplishing their objectives while those that do not use this methodology will not accomplish preferred outcomes.

Research gap

Ongoing instability in the health workforce is bringing up issues worldwide about the problem of doctors and nurses turnover and retention. Studies have been carried out on the level of and extent of the health workforce turnover issue, turnover costs and the effect on patients, doctors, nurses and framework result (Onyango, 2016). Though there exists a body of literature on retention and turnover of workers in the human service, there is inadequate one on its extent originating from the extremely constrained measure of research that has been directed.



Figure 2. Framework to enhance retention rate for doctors and nurses.

Gaps in existing information incorporate the examination of large scale level variable, for example, organisation size, setting, structure and funding status (Barak, 2001) as referred to in Onyango (2016). Consequently, there exists a solid requirement for replication studies. In Lesotho, for instance, literature accessible is from research done in government and Christian Health Association of Lesotho (CHAL) organisations; there is a need to research the same in private facilities.

METHODOLOGY

This research work utilizes two research techniques, qualitative and quantitative techniques: A survey using a research instrument constituted of both Five Point-Likert Scale questions (closed-ended) and open-ended questions and interviews. Three hospitals were selected using simple random sampling. The support of this procedure depends on the way it enables each subject in the examining edge to control circumstances, to be chosen without predisposition in an efficient way.

The essential information incorporated an assessment of the hospital retention strategy and in addition a directed survey on 120 doctors and nurses and personal interviews. The questionnaire was self-directed. An audit of authentic archives was done similarly to throw more light on the organisation retention strategy based on the shared accord amongst doctors and nurses and administration in terms of financial and non-financial incentives. The kind of information gathered was mainly essential. These were gathered

utilising survey and personal interviews.

The questions were done in a way whereby the respondents would give answers to a number of the research questions. Other documents inspected were journals, newspapers, magazines, websites, records, reports relevant to research, textbooks and articles of the Ministry of Health and Social Welfare.

Data collection procedure

Questionnaire

A self-administered questionnaire was used. The instrument was taken from Kukano (2011) and Lennie (2008); nevertheless, a couple of changes were made by the researcher to fit to the present study. The questionnaire was administered among one hundred and twenty (120) doctors and nurses in their hospitals during lunch break. The questionnaire involved 39 items. The first part of the instrument contained a statement of purpose and heading, and was intended to gather biographical or individual information that incorporates place of work, age, gender, and marital status, home language, position, job status, educational attainment and years of work experience with Scott, Mohlomi and Bots'abelo hospitals. The second part of the questionnaire contained headings and 29 five point Likert-scale items for rating the present retention strategies actualised by the Ministry of Health with a particular ultimate objective to improve retention rate of doctors and nurses in Lesotho. The items asked the participants to rate how much they agree or disagree with certain areas of their retention at their different hospitals. The rating scale is thus: 5=strongly agree; 4=agree; 3=neutral; 2=disagree; 1=strongly disagree. By using

Table 1. Response rate.

Occupation	Respondents		No. distributed
	Doctors	Nurse	
Scott hospital	5	32	40
Mohlomi hospital	3	17	40
Bots'abelo hospital	2	13	40
Total	10	62	120

questionnaire, the research would have a superior likelihood of giving a more precise impression of the pattern of reactions. Reactions were then assembled and evaluated as they answer the question item.

Interview

Interview guides were planned for every hospital to guarantee that the interviewees in every hospital were asked similar questions (Nyamwanza and Mavhiki, 2014). Subsequent to making the essential arrangements, the researcher visited the hospitals concerned to direct the interviews. The interview happened in April 2015; it lasted from 30 min to 1 h in doctors' lounge. Consent was given by the members to record the interviews. This was used to limit interruptions in the interviews and to empower the members to speak completely about all issues relating to current retention strategies. The interview was done according to interview guide using semi structured approach that allows the members respond well and ensures the flow of the interview. The focus of the interview questions was to allow for more in-depth discussion around the questions that are presented in the questionnaire.

Piloting and response rate

From studies similar to the current one, survey has been disputed to be ineffective as it does interfere with employees' jobs. However, 60% response rate was experienced in this study as it is supported by the findings of Mugenda and Mugenda (1999). The questionnaire was pilot tested in three hospitals namely Scott hospital, Mohlomi hospital and Bots'abelo hospital. Health professionals were randomly selected from the population reflected in the study, but they were not part of the sample (Table 1).

Data analysis

The quantitative data were evaluated utilising the computer software statistical Package for the social Sciences (SPSS). The researcher compiled information as frequencies, and represented them in tables. The subjective information was compiled utilising the simple descriptive percentage method and the information was continually compared.

RESULTS AND DISCUSSION

The research design, methodology, research procedure, respondents of the study and the instrument used were described earlier. This chapter discussed data presentation, analysis and interpretation based on

responses received from the respondents (doctors and nurses at the hospitals, Scott, Mohlomi and Bots'abelo). Therefore, the focus of this chapter seeks to answer the study inquiry and purpose of the research. As information was presented, it was crucial that the limitations perceived from the returned questionnaires be drawn.

Response rate

The study focuses on a sample size of 120 which includes doctors and nurse. 10 doctors and 62 nurses filled and returned the questionnaire making a reaction of 60%. This reaction rate was sufficient to make conclusions for the study. The reaction rate was representative. According to Mugenda and Mugenda (1999), a response rate of 50% is adequate for the study and report, a rate of 60% is great and a reaction rate of 70% and over is fantastic. Based on the statement, the reaction rate was viewed as great (Table 2). Table 2 delineates the response rate of usable questionnaire.

Descriptive statistics

Descriptive statistics (numbers and rates) was utilised to determine the biographic information. For retention factors, it incorporates occupation of the respondents, their age, gender, home language, position, current job and level of education. As per Iwu (2012), each instrument must be evaluated before it is utilised for both validity and reliability purposes. The validity and reliability of the instrument were tried by directing pilot study with 100 members (Table 3).

As per the outcomes, a sum of 72 respondents took part in the study. Table 3 demonstrates that most of the members were females (72.2%). This is an indication that both genders were well involved in this study and thus the findings did not suffer from gender bias. The nursing profession is mainly female dominated hence the gender disparity.

The least age of respondents was <25 years and the greatest age was >60 years. Larger parts of respondents were between the ages of 30 to 34 (22.2%). This is an indication that the respondents were fairly distributed in

Table 2. Response rate.

Occupation	Respondents		No. distributed
	Doctors	Nurse	
Scott hospital	5	32	40
Mohlomi hospital	3	17	40
Bots'abelo hospital	2	13	40
Total	10	62	120

Table 3. Biographical information of the respondents.

Variable		Number (n)	Percentage (%)
Gender	Male	20	27.8
	Female	52	72.2
Age	<25	3	4.2
	25-29	13	18.1
	30-34	16	22.2
	35-39	6	8.3
	40-44	5	6.9
	45-49	11	15.3
	50-54	6	8.3
	55-59	6	8.3
Home language	English	7	9.7
	Sesotho	57	79.2
	IsiXhosa	1	1.4
	Other	6	8.3
Current job status	Permanent	55	76.4
	Contract	14	19.4
	Temporary	1	1.4
	Other	1	1.4
Level of education	National certificate	16	22.2
	National diploma	30	41.7
	Bachelor's degree	20	27.8
	Honours degree	1	1.4
	Doctorate	5	6.9
	National certificate	16	22.2
Job title	Doctor	10	13.9
	Nurse	62	86.1

terms of their age group. The greater parts (79.2%) of the respondents were Sesotho speakers. This implies that the respondents were in a position to give credible information relating to this study. The study demonstrated

that almost 75% of the respondents (76.4%) were for all time working at this hospital.

This implies that the findings of this research were fairly reached. With respect to level of education, 41.7% of the

Table 4. Financial incentives.

Financial Incentives		Disagree/ Strongly disagree	Neutral	Strongly agree/Agree	No answer	Total
I am provided with additional compensation for advanced qualifications	No %	51 70.8	6 8.3	9 12.5	6 8.3	72 100
I am satisfied with my present remuneration	No %	44 61.1	13 18.1	11 15.3	4 5.6	72 100
I am allowed to take a second job such as running private practice in order to improve my income	No %	59 82	7 9.7	5 7	1 1.4	72 100
Educational benefit for my children is offered	No %	66 91.6	3 4.2	2 2.8	1 1.4	72 100
I enjoy benefits such as housing loans	No %	51 70.9	9 12.5	11 15.3	1 1.4	72 100

members hold a National Diploma while 27.8% had a Bachelor's degree. This implies that majority of the respondents were well educated, which implies that they were in a position to give credible information relating to this study. The bigger percentage was nurses (86.1%), while the remaining 18.42% were doctors. This implies that both the respondents were fairly drawn putting into consideration their duties.

Quantitative findings

Quantitative findings used frequency and percentage to investigate retention factors. Respondents were made to determine the retention

strategies utilised at their particular hospitals. The researcher was intrigued to know which strategies were unsuccessful and prevailing so as to build up another structure. The rundown of things outlined from retention strategies for the health workforce, implemented in 2010 by the Ministry of Health was utilised for the respondents to give their perspectives. The questions were replied in a 5-point Likert scale ranging from one to five: 1 = strongly disagreed, 2 = agreed, 3 = neutral, 4 = disagreed, 5 = strongly disagreed. The respondents needed to tick to determine how much they agree/disagree with the statements. The retention strategy intervention factors are presented in Table 4. The responses from Table 4 present descriptive appraisal of a possible

retention strategy using financial incentives. This presentation covers different levels of satisfaction amongst respondents as follows:

Additional compensation for advanced qualification

At this level, 12.5% of the respondents agreed that they were given additional compensation for higher qualification, while 7.8% disagreed. However, 8 respondents representing 8.3% of the total sample did not respond. Although 12.5% agreement is low, the best part of health professionals expressed the need to be appreciated and cared for; these feelings influence

their inspiration and level of dedication to their job.

Satisfaction with remuneration is analysed as follows

15.3% of the respondents agreed that they are happy with the present remuneration, 61.1% disagreed, and 18.1% remained neutral while 5.6% did not respond to the statement. In the aspect of retention, 15.3% agreement is low; the majority of respondents indicated that allowances - especially risk allowance - that were withdrawn with no valid reasons and small salaries that do not meet their needs. These appear to have a large impact on why employees leave, and are a major problem with regards to retention issues that the organisation should capitalise on in future to enhance retention. The prizes offered to staff must be significant keeping in mind the end goal to affect their views of the institute and in this manner impact its retention activities.

Private practice involvements at this level

5 respondents representing 7% of the total sample agreed that they are allowed to take a second job such as doing a private practice, in order to improve their income; 82% disagreed and 9.7% remained neutral. However, 1 respondent representing 1.4% did not respond. The majority of respondents disagreeing probably considered this element essential to retention, since the hospital cannot accomplish its vital objectives of retention in the atmosphere of aloofness and despair. Health workers in Lesotho are paid fixed monthly salaries. They felt that they are dishonored as they lead a low standard life in contrast with the rank they possess. The submissions are in agreement with those of Amani (2010). This result confirms the finding of Dovlo (2004) that demonstrates the strong link between salary level and retention. As a result, to acquire positive inspiration, it is significant to build the basic passion for the occupation and give representatives an awareness of other's expectations, accomplishment and development, which involves humanising their purchasing power.

Educational support at this stage

2 respondents representing 2.8% of the sampled population agreed that educational benefits for the children is provided, 91.6% disagrees, with 4.2% remaining neutral with regards to the statement. Nevertheless, 1.4% did not respond to that view. The number does not signify a decent rate that shows support in terms of monetary incentives such as provision of educational benefits to health professional's children. Money related motivation is a great degree alluring to

workforce as they get the advantage rapidly and in solid terms. They believed that providing educational benefits would compensate for their low salaries.

Benefits such as house loans, at this point

70.9% of respondents disagreed that they enjoy benefits such as house loans, 12.5% remained neutral whilst 15.3% agreed. However, 1 4% did not respond. With very low salary levels, benefits such as those for housing assume improved significance. Majority of respondents suggested that the level of salary is too low to accommodate house loans. Housing is the biggest expense for health workers and most suggested that loans are inadequate due to their low salaries. This forces them to leave. The majority of them recommended that purchasing a house is one of the main objectives for relocation (Table 5).

Conducive residential accommodation at this level

9.7% of the respondents agreed that the residential accommodation is in good condition, 65.3% disagreed, only 22.2% remained neutral to the statement. And 2.8% did not respond to the statement while the 9.7% agreement is very low; majority of nurses indicate the poor residential accommodation compared to those of doctors. They felt that they are discriminated against and not taken care of. These nurses articulated the need to be respected and recognised by maintaining least values for living conditions with excellent emphasis on physical comfort, because these practices can address retention issues. The result confirms the findings of Professor Alan Brown that housing is extremely significant and workers acknowledge least standards.

Provision for free medical care, at this stage

23.6% of respondents agreed that free medical care for spouse and children is provided. Only 65.3% disagreed, while 9.7 % of the respondents were neutral. Nevertheless, 4 respondents on behalf of 5.6% of the whole example did not reply to the description. They feel they are not being appreciated. Respondents articulated that giving competitive things like medical assistance and health plans send influential messages to human resources about their significance in the association. They indicated that when prizes given to workers are significant, it impacts on their impression of the association and in this way affect its retention actions. Employees need to be provided and supported by a comprehensive health insurance scheme. These advantages will improve workforce achievement and

Table 5. Living conditions.

Living conditions		Disagree/Strongly disagree	Neutral	Strongly agree/Agree	No answer	Total
My residential accommodation is in good conditions	No %	47 65.3	16 22.2	7 9.7	2 2.8	72 100
My employer provides free medical care for my spouse and children	No %	47 65.3	7 9.7	17 23.6	1 1.4	72 100
I have support of utilities(water, electricity, telephone)	No %	40 55.6	14 19.4	14 19.4	4 5.6	72 100
This hospital provides pre-schooling and care for my children	No %	64 88.9	2 2.8	2 2.8	4 5.6	72 100
Security is provided on and off duty	No %	50 69.4	11 15.3	10 13.9	1 1.4	72 100

retention; as a result guarantee accomplishing organisational goals.

Support of utilities (water, electricity, telephone) at this level

19.4% of the respondents agreed and neutral respectively that they have support of utilities, 55.6% disagreed, only 5 respondents representing 5.6% did not respond to the statement. While the 19.4% agreement is low, the majority of respondents specified the lack of utilities at their residential accommodation; they spend days without running water and paying for electricity that is too costly to pay for. The respondents believe that accessibility of facilities can improve retention by attracting and retaining other available

labour pools, as well as non- national workers. Employees feel more relaxed in safe and protected housing with all the services. Management should play a leadership role by providing high excellent accommodation that is efficient element to achievement because it can help to retain workers who may struggle with the problems of living in a remote location, away from home or family.

Provision of non-financial incentive at this level

2.8% of the respondents are neutral and agreed respectively that they were provided with pre-schooling and care for children, 88.9% disagreed. However 4 respondents representing 5.6% of the

total sample did not respond. The 2.8% agreement is very low; the majority of health professionals expressed the necessity to be assisted. They expressed that practices, for example, making day care services accessible in the premises can assist them to keep up stability among individual and work life. These would therefore advance retention, as it encourages employees to spend extra time with their kids, and bring about strong work/life goals.

Security at this level

13.9% of respondents agreed that security is provided on and off duty. Only 69.4% disagreed, while 15.3% of the respondents were neutral. On the other hand, 1 respondent on behalf of 1.4% of

Table 6. Recruitment related.

Recruitment related		Disagree/ Strongly disagree	Neutral	Strongly agree/Agree	No answer	Total
A career development programme that helps employees to become more aware of and responsible for their own career development is available	No	45	15	10	2	72
	%	62.5	20.8	13.9	2.8	100
I am allowed to work additional shifts, with pay, within my duty station	No	64	2	6	-	72
	%	88.9	2.8	8.3	-	100
Promotion criteria in my workplace are clear and fair	No	40	18	14	-	72
	%	55.5	25	19.4	-	100
Conditions of employment guarantee job security in this hospital	No	22	19	31	-	72
	%	30.6	26.4	43.1	-	100
I was well received by my manager when I was first employed at this hospital	No	4	6	61	1	72
	%	5.6	8.3	84.8	1.4	100

the whole example sample did not reply the statement. The majority of respondents attributed insecurities. Employees point out that their objective to stay and be focused on an organisation could be clarified inside the setting of Abraham Maslow's hierarchy of needs theory. The theory explains that individuals are influenced to fulfill five need levels and the second lower level of the hierarchy represents safety needs, which can be satisfied through protection from elements, security, order, law, stability, and so on. In the event that these necessities are not satisfactorily fulfilled, then the individual hunts for another job. In order to enhance retention, employees need a place with zero tolerance for violence; they need to be safe and relaxed enough to deal with

patients and management demands every day (Table 6).

Available career development programme at this level

This study indicated 62.5% of the respondents disagreed that their organisation had a profession improvement program that helped them to end up distinctly more mindful of and in charge of their profession advancement, and 13.9% agreed. Almost 20.8% were neutral while 2.8% did not respond. Though less percentage agreed, the majority of them talked about lack of career development plan, which results in the hospital

being unable to retain skilled doctors and nurses.

Permission to work additional shifts, at this stage

88.9% of the respondents disagreed that they are paid for additional shifts within their duty station. Only 8.3% agreed while 2.8% were neutral. Most participants complained about perceived higher work overload within their duty stations without additional pay, which results in failure to deliver high-quality care due to lack of incentive. They recommended remuneration as an act of appreciation for added effort invested. In this study, it was discovered that the existing salary

structure provides no incentives for additional shifts.

Promotion opportunities at this level

Is characterised by the fact that 19.4% agreed that the promotion criteria in the workplace is clear and fair, 55.5% disagreed and 25% were neutral. In this study, participants articulated that there is lack of understandable structures at the Department of Health for promotion. The majority indicated that it is often vague. Health workers believe chances for promotion is among the mostly important rationale why employees terminate their service. A relative study was done among 13 British universities and found that over a quarter of academics were in the top of their academic scale, which meant no promotion or progression beyond annual "cost of living" (Netswera et al., 2005). When employees experience that they have outgrown their assignments and that additional preparation does not upgrade their profession moves inside the organisation, they choose to depart. And also the limited self-development opportunities cause them not to stay similarly located for the next upcoming years.

Conditions of employment at this point

Revealed that 43.1% of the respondents agreed that conditions of employment guarantees job security, 30.6% disagreed while 26.4% were neutral. The 43.1% signifies a good percentage that reveals provision of job security in the hospital. The majority articulated that professional constancy is useful for the stimulation of staff. Such protection keeps them away from the apprehension of becoming jobless. This result proves the findings of Nyamekye (2012) that employees will be common just when they are treated with kindness, love, warmth and pride.

First day at work is analyzed as follows

84.8% of the respondents agreed that they were well received by their managers when they were first employed at the hospital, 5.6% disagreed, 8.3% remained neutral and 1.4% did not respond to the statement. This appears to have a large impact on employee retention. Participants indicated that early introductions are enduring; the way an employee is introduced to the organisation from the principal day at work sets the tone for how they feel regarding the organisation. Therefore, a meaningful orientation program with several sessions of follow-up is recommended. They indicate that the sooner a new employee gains a comfort level, the earlier another employee picks up a solace level; and the sooner that

individual will get to be distinctly gainful, also giving out data about the organisation, such as, its main goal, items, administrations, history, objectives, structure and so forth will set up a firm connection between the individual and the organisation from the onset. And, this will make it less demanding for an employee to relate to the organisation and discover importance in the work; and as a result increase retention (Table 7).

Loyalty to the hospital at this point shows

29.2% agreed that they are loyal to the hospital because of available support services, 29.1% disagreed, and 38.9% neutral. Nevertheless, 2 respondents representing 2.8% did not respond.

Although the percentage of agree and disagree about lack of loyalty was similar, those who disagreed indicated that they deserve support services, especially mentorship from this hospital. Yazinski (2009) indicated that a mentoring program integrated with a goal-oriented feedback system provides a structured mechanism for developing strong relationships within an organisation and is a firm foundation for employee retention and growth.

Development of confidence and trust

This stage indicated that 38.9% agreed that the hospital appraisal systems develop their confidence and trust, 26.4% disagreed and 31.9% were neutral. On the other hand, 2.8% did not respond to the statement. The figure represents a good percentage that reflects an environment with trust and confidence. The 38.9% indicated that performance appraisal encourages an open and trusting relationship within the hospital and as a result, increases work fulfillment by advising groups when an occupation is well done and assisting them to develop where they go wrong.

Transfer of intangible and tacit knowledge is analysed as follows

41.6% of the respondents agreed that they are nurtured professionally through training and lifelong learning in the workplace (transferring intangible and tacit knowledge), 34.7% disagreed, 22.2% were neutral and only 1.4% did not respond. The majority of agreement (41.6%) indicated that mentoring is efficient between generational learning exchange instruments and might be especially imperative to an organisation experiencing retention problems. According to Frank as cited in Ghansah (2011:61), mentoring is successfully well known to most organisations as a preparation mechanism; nevertheless it is similarly imperative in exchanging insubstantial and

inferred information. The findings are in line with those of Frank as cited in Ghansah (2011: 61). This outcome confirms the finding of Hom (1995) which indicates that mentoring is a practical way for employees to give out "lessons learned," as the mentoree time and again has the chance to profit by the coach's experimentation encounter.

Nurturing morally and spiritually at this level

55.5% of the respondents agreed that they are nurtured through recollection and prayer service in the workplace and 26.4% disagreed. Only 15.3% were neutral, while 2 respondents on behalf of 2.8% of the complete example did not reply. From the aforementioned, it means that the management – employee, employee– employee relationship and support is generally good. It is understandable that there is inspiring communication in the place of work. When employees are not working in isolation, the peer support and sharing of ideas will raise a professional environment and thus advances retention (Table 8).

Availability of scholarships and bursaries at this point

51.3% of the respondents disagreed that they have opportunities to pursue further studies through the availability of scholarships and bursaries, 26.4% agreed and 16.7% were neutral while 5.6% did not respond. These results show that the employers do not financially support health professionals to pursue further studies. The fact that there is no medical school in the country is the barrier to retention, because those awarded scholarships to study abroad produced graduates that are unable to meet demand and therefore impact negatively service delivery. The participants mentioned that they have to take an online course which is self-sponsored should they want to pursue additional studies, and also indicated that the experience of failing to obtain sponsorship or bursary can be a critical obstacle to retention as they expect these training opportunities to be a basic entitlement for the workforce in the public sector.

Provision of training at this level showed

43% of the total sampled agreed that training provided is of direct significance to their job, and 23.6% disagreed while 29.2% were neutral. On the other hand, 4.2% respondents did not respond to the statement. From the above, it is evident that a remarkable number of doctors and nurses are taking up duties that are in line with their preparation or potential. The submission agrees with

Muula and Maseko (2005), who indicated that preparing can be an inspiring variable that helps with the retention of healthcare professionals.

Access to library at this level

68% disagreed that they have a library that they can use in the workplace, 29.2% agreed and 1.4% were neutral and not responding respectively. The study showed that 68% of the respondents need a library in the workplace in order to be kept abreast with unknown and latest diseases, and to sharpen their knowledge and skills for effectual service delivery.

Career development activities

34.7% agreed that the hospital has profession advancement exercises to help them recognise/enhance capacities, objectives, qualities and shortcomings; 37.5% disagreed and 26.4% were neutral. Only 1.4% did not respond. With the results above, there appears to be a great need for career development that is not currently being addressed. Perhaps it is merely a perception of employees that one can constantly expect to be groomed by the organisation in order to develop in the above-mentioned areas of development. Consequently, the Ministry of Health should accord these actions to employees in order to generate a motivating and demanding environment.

Acquisition of expertise at this point

58.3% agreed that they have acquired expertise through seminars and training, 22.2% disagreed and 19.4% were neutral. The agreeing figure reflects a good percentage that reflects provision of seminars and training in the hospital. The respondents revealed that they perceived seminar places as excellent motivation for professional advancement as it is crucial to amend their knowledge with a definite end goal to address the problems of patients. The results are in line with those of Butler (2005) as referred in Mokoka et al. (2010), who maintain that the great work environments are areas where medical caretakers are provided with opportunities to develop (Table 9).

Availability of equipment at this level

55.6% disagreed that equipment is well maintained in order for them to do their work effectively, 26.4% agreed while 18.1% were neutral. From the information aforementioned, it is clear that the performance of health

Table 7. Mentoring.

Mentoring		Disagree/ Strongly disagree	Neutral	Strongly agree/ Agree	No answer	Total
I am loyal to this hospital because of available support services	No %	21 29.1	28 38.9	21 29.2	2 2.8	72 100
The hospital's appraisal system develops my confidence and trust	No %	19 26.4	23 31.9	28 38.9	2 2.8	72 100
I am nurtured professionally through training and lifelong learning in my workplace(transferring intangible and tacit knowledge)	No %	25 34.7	16 22.2	30 41.6	1 1.4	72 100
I am nurtured morally and spiritually through recollection and prayer service in my workplace	No %	19 26.4	11 15.3	40 55.5	2 2.8	72 100

Table 8. Personal development.

Personal development		Disagree/ Strongly disagree	Neutral	Strongly agree/ Agree	No answer	Total
I have the opportunity to pursue further studies through the availability of scholarships and bursaries	No %	37 51.3	12 16.7	19 26.4	4 5.6	72 100
Training provided is of direct relevance to my job	No %	17 23.6	21 29.2	31 43	3 4.2	72 100
We have a library that I can use at my workplace	No %	49 68	1 1.4	21 29.2	1 1.4	72 100
This hospital has career development activities to help me identify/improve abilities, goals, strengths and weaknesses	No %	27 37.5	19 26.4	25 34.7	1 1.4	72 100
I have acquired expertise through seminars and training	No %	16 22.2	14 19.4	42 58.3%	- -	72 100

Table 9. Working environment.

Working environment		Disagree/Strongly disagree	Neutral	Strongly agree/ Agree	No answer	Total
Equipment is well maintained in order for me to do my work effectively	No %	40 55.6	13 18.1	19 26.4	- -	72 100
I am provided with cutting edge technology	No %	43 59.7	10 13.9	15 20.8	4 5.6	72 100
My workplace is healthy, clean and well-organised (conducive)	No %	33 45.9	15 20.8	23 31.9	1 1.4	72 100
I have autonomy at work (that is, little interference from my manager)	No %	22 30.6	12 16.7	36 50	2 2.8	7 100
I have good interpersonal relationship with my colleagues	No %	2 2.8	5 6.9	65 90.3	- -	72 100

professionals is negatively affected due to lack of equipment.

The respondents declared they that no one cared for them as they lacked drugs, equipment and had problems related to staff which they experienced every day. In this study, the respondents showed lack of equipment, mostly circulatory strain machines and bed cloth is very upsetting, because it has unconstructive impact on the nature of care. According to respondents, the lack of linen in the hospital was the reason for patients developing bed sores as it was difficult to keep patients dry at all times. The terrible working conditions made it difficult for these hospitals to maintain healthcare professionals.

Provision of technology at this level shows that 59.7% disagreed and 20.8% agreed that they are provided with cutting edge technology, while

13.9% were neutral. However, 5.6% did not respond. The participants indicated that there are no computers in the workplace; lack of satisfactory innovation remains a major obstacle to the Lesotho prescription and conquer the test of the present day solution, therefore execution and the nature of care suffers.

The Ministry of Health should make it a priority to provide hospitals with computers in order for healthcare professionals to be kept abreast with advances in technology to improve the quality of care. This statement was confirmed in the study conducted in the North West region of Cameroon, by Tita et al. (2005), who found that the dearth of essential supplies was felt by many healthcare employees to hinder their utilization of proof based-and basic medication. The respondents recommended an introduction to advance

technology to assist them treat patients distantly.

Conducive working environment at this level

31.9% agreed that the workplace is healthy, clean and well-organised (conducive), 45.9% disagreed while 20.8% were neutral. Conversely, 1 respondent representing 1.4% did not respond. In the present study, the working environment is not safe; the units are overloaded, exposing the respondents and other healthcare providers to communicable diseases. Moreover, the patients are also exposed to universal infections because of the shortage of separation units. The hospital buildings were not up to standard.

The respondents working in female wards at mental institutions feel unsafe due to physical

Table 10. Preference on implementation of current strategy.

Variable	Frequency	Percentage (%)	
Valid	Yes	48	66.7
	No	5	6.9
	No answer	19	26.4
	Total	72	100.0

attacks from patients. The majority of respondents cited hazardous work environment, some working in specific areas such as low-cost wards, theatre departments and labour wards seeming that they were exposed to a higher risk of disease. Low-cost wards generally have unclean conditions and there is higher exposure to human immunodeficiency virus (HIV) in labour wards due to regular needle-stick injuries and a shortage of protective measures.

Although the supply of gloves and gowns seems adequate, some basic protective equipment such as goggles and shoes are not provided. The dangerous working environment needs to be addressed, as the work of doctors and nurses is very demanding and hard work should be made to guarantee that they can carry out their employment well by using their insight without limitations, inside a protected location. This ought to be a basic element of any strategy to improve retention of staff.

Autonomy at this stage is analysed as follows

50% agreed that they have little interference from their managers in the workplace, 30.6% disagreed and 16.7% were neutral. However, 2.8% did not respond. This figure reflects a good percentage that shows autonomy in the workplace. This study has shown that autonomy is offered by these hospitals and also fewer repetitiveness of the job which is likely to impact work accomplishment. Worker cooperation enhances inspiration through power sharing and expanded duty, which is seen as a sign of positive reactions. Workers' teamwork allows people to settle on main administrative decisions that influence different workers. This leads to increased work achievement and implementation, which in turn enhances retention.

Interpersonal relationships at this stage

90.3% agreed that they have great interpersonal relations with their co-workers, 2.8% disagreed and 6.9% were neutral. A number of members noticed that friends in the work environment could impact health workers' choice to stay or leave, as well as fellowship and support amongst co-worker and companions. Few narrated that workers

are occasionally ill-treated in words and physically by patients and their relatives. Mokoka et al. (2010) agreed with this, where relations with co-workers were positive and collegial; workers agreed that patients likewise got great care, while medical caretakers who helped each other made the workload more manageable, adding to lower turnover rates in such hospitals.

Qualitative findings

The qualitative data were broken down utilising grounded theory approach depicted by Strauss and Corbin (1990). This uncovered the achievement and disappointment elements of methodologies presently implemented by the Ministry of Health. Members were questioned about their perspectives on the present retention strategies whether they wish it to be implemented in contrast with an end goal to upgrade retention rate (Table 10).

In Table 10, 66.7% respondents prefer their current strategy be implemented differently, whereas 6.9% do not prefer a different implementation. Only 26.4% did not respond to the inquiry. The preference of bigger part of the respondents is because of the way the existing retention strategy has failed to retain doctors and nurses in Lesotho (Table 11).

As seen in Table 11, different views surfaced from this study. The most reasonable answers are: improve financial incentives according to 23.6% of the participants. Another factor is improving financial and non-financial incentives according to 22.2% of the respondents and to compensate according to international standards according to 13.9% of the participants. This is identified in many studies, articles and responses from the interviews and it is believed to have some retention influence on health professionals. The diverse pay structures that are utilised by organisations in Lesotho permit flexibility for the private sectors and parastatals to set aggressive pay packages, leaving government lagging behind in payment. As a result, inhabitants depart for greener pastures (Table 12).

To this question, 66.7% of the participants will continue working in this hospital in the next 12 months, whereas 16.7% are uncertain. Only 6.9% will not continue. The choice of employees will always differ, as there are many factors involved. What may be a reason to one individual

Table 11. Improving retention strategy for Doctors and Nurses.

Variable	Frequency	Percentage (%)
Improve financial incentives	17	23.6
Improve financial and non-financial incentives	16	22.2
Pay according to international standards	10	13.9
No answer	13	18.1
Improve living conditions	7	9.7
Valid Nationals should be paid similarly to non-nationals	1	1.4
Provide other incentives other than salary	3	4.2
Promote staff according to qualifications	2	2.8
Career development	2	2.8
Improve work environment	1	1.4
Total	72	100.0

Table 12. Work duration.

Variable	Frequency	Percentage (%)
Yes	48	66.7
Uncertain	12	16.7
Valid No	5	6.9
No answer	7	9.7
Total	72	100.0

Table 13. Motivation.

Variable	Frequency	Percentage (%)
Personal development	11	15.3
Improved living conditions	2	2.8
Increasing salaries	8	11.1
No answer	10	13.9
Demotivated	14	19.4
Job rotation	3	4.2
Providing effective service delivery	10	13.9
Valid Challenges of work encountered	1	1.4
Good working conditions and availability of equipment	3	4.2
Working relationships	5	6.9
Positive feedback from clients	2	2.8
Restructuring of nurses salaries	1	1.4
Co-operation between doctors and nurses	1	1.4
Add more staff	1	1.4
Total	72	100.0

may not pertain to another. However, some of the reasons for wanting to leave the hospital include workload, lack of service delivery, lack of career development, non-conducive work environment and small salary (Table 13).

In Table 13, the necessary motivational reason to stay with the hospital is personal development, as shown by 15.3% of the participants. Moreover, salaries were improved as outlined by 11.1% of the respondents.

However, 19.4% of the respondents were demotivated.

Table 14. Preferred change in your job.

Variable	Frequency	Percentage (%)	
Valid	Yes	55	76.4
	Uncertain	1	1.4
	No	1	1.4
	no answer	15	20.8
	Total	72	100.0

Table 15. Effective implementation strategy framework.

Variable	Frequency	Percentage (%)	
Valid	Good financial incentives	12	16.7
	Non-financial incentives	1	1.4
	Financial and non-financial incentives	16	22.2
	Pay salaries like other SADC countries	8	11.1
	No answer	24	33.3
	Job rotation	3	4.2
	Strategic planning and evaluation	1	1.4
	Paying better salaries and recognizing qualifications	3	4.2
	Better living conditions	3	4.2
	More doctors and nurses	1	1.4
	Total	72	100.0

Table 16. Can the framework attract doctors and nurses?

Variable	Frequency	Percentage (%)	
Valid	Yes	43	59.7
	Uncertain	11	15.3
	No	1	1.4
	No answer	17	23.6
	Total	72	100.0

And lack of motivation discourages retention (Table 14).

This study confirms that most of the participants consent that there is something that can be changed or improved in their jobs: 76.4% of the participants believe that changes or improvements can be made in their jobs.

As distinguished in literature at some point after the implementation strategy, some factors failed. An example of such as noted in the literature review is that the payment of incentives and allowance in Lesotho was initially unequal and unreasonable.

There are no medical schools in the country, which results in losing doctors to the South African healthcare system after the completion of their training. Clinics and the main transfer hospital Queen Elizabeth II in Maseru were in a terrible condition and the growing populace was treated under pressure by both insufficient staff and

facilities. It has also been noted that there is an imbalanced allocation of residences among doctors and nurses. Nurses are staying at residences that are poor condition, while doctors are staying at improved places with basic furniture (Table 15).

Table 15 shows that the most important reason to achieve desired retention strategies for doctors and nurses are good financial incentives, arrangement of monetary and non-monetary motivation and paying salaries similar to other SADC countries (16.7% good financial incentives, arrangement of monetary and non-monetary motivation (22.2%) and salaries similar to other SADC countries, 11.1% is for effective retention pay (Table 16).

This study shows that 59.7% of respondents believe that the new implementation framework will be able to

attract and retain doctors and nurses. An example that can be noted from the opinions given by respondents who has mentioned that improved living conditions, a conducive working environment, financial incentives and career progression, improved salaries, a sports facility that empowers workers to exercise and live a healthy life - all of these serve to increase retention.

DISCUSSION

For the outcomes of the questionnaire, the retention interventions, for example, the arrangement of financial and non-financial incentives as far as the retention of doctors and nurses in the health sector has been unsuccessful, both in literature in Lesotho and Sub Saharan nations. Most hospitals in Lesotho offer a lower compensation for public sector workforce serving in the nation than for those serving in private areas. However, the total of the incentive differs among divisions.

The study demonstrates that when the Ministry of health concentrates on financial and non-financial incentives, retention rate is low. This finding is similar to that of Ditlopo et al. (2011) past review who discovered that financial incentives alone are inadequate to hold health professionals. Ditlopo et al. additionally exhibits that non-financial incentives identified with working and accommodation conditions could impact retention. A few reviews perceived that health professionals will dependably move frequently for reasons beyond the impact of any workforce retention program.

Hence no single measure is probably going to enhance retention if different variables are not thought about. The afore mentioned factors clearly illustrate that employee retention factors such as financial incentives, personal development, living conditions, working environment and recruitment have a direct impact on retention. If these factors are present in the organisation the possibility for turnover decreases. It is clear that if the above mentioned factors exist in the organisation it will not only assist to attract new employees into the organisation but will also lead to the enhanced retention of the existing employees.

Results from Scott, Mohlomi and Bots'abelo hospitals' interviews demonstrated that working conditions were not favourable for doctors and nurses. Doctors and nurses were not cheerful about the financial incentives provided. Their answers were fixated on improved pay and employee benefit. From the interviews, the researcher has found that remittances have some retention powers for nurses and doctors in hospitals.

The interviews established that the Scott, Mohlomi and Bots'abelo hospitals had inadequate education opportunities regardless of the guidelines. This illustrates that it might give qualified individuals who have worked for the office for at least 3 years and under 50 years old conditioned scholarship in a form of bonding strategy for durable training. Recruitment is done utilising diverse

strategies, however the present doctors and nurses emergency in the Lesotho health sector affirms failure to create adequate quantities of expert health workforce. The nation has 89 doctors of which 80% are immigrants from other African nations; the majority are anticipating affirmation in South Africa to land higher paying positions. Nurses are likewise hard to find. There is proof of lack of housing. There are insufficient houses to suit all the key health workers. Accommodation board just prevails with regards to assigning houses to doctors, who value the houses given by the health offices; nurses remain in the houses that are in awful condition and minor upkeep of the houses does not succeed.

CONCLUSION AND RECOMMENDATIONS

The main finding of this study was that the present framework implemented by the Lesotho Health sector with an attempt to upgrade retention was unsuccessful. As seen in the problem statement, the present retention strategies have not enhanced the retention rate for doctors and nurses.

Regardless of this disappointment another implementation framework ends up being vital for the Lesotho health sector to advance retention. The literature review could decide why particular elements were unsuccessful in supporting retention and definitely how the fruitful ones oversaw. This literature has been maintained by the outcome got from the feedback of the survey and interviews carried out at Mohlomi, Bots'abelo and Scott hospital. It can be seen from the analysis that the health sector does not have a viable framework as the present circumstance was described by absence of doctors and nurses, expanded workloads, and poor service delivery. The study suggests that Lesotho health sector build up a new implementation framework so as to accomplish its favoured purpose.

Lesotho health sector needs to implement framework that would enhance degree of consistency of doctors and nurses whose skills are basic to service delivery. Administration needs to set up an acknowledgment program for its health workforce. Lesotho ought to pay compensations that are reasonable as well as incorporate stipends. Doctors and nurses ought to be perceived for the association they make, to build up favourable workplace. Government ought to construct medical schools in the nation to help health professionals acquire higher qualification broadly without investing a great part of the energy out of the nation, build up an open criticism orientated environment and present retention framework arrangement which join a few parts of the private sector practices.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Full Length Research Paper

Organisational culture as a driver of outsourcing choices: A conceptual model

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It is generally known that organisational culture plays an important role in conditioning both behaviour and entrepreneurial choices, which can occur either consciously or unconsciously as well as differently based on specific entrepreneurial situations. This paper investigated the impact of organisational culture on outsourcing choices and provided a conceptual model on how this conditioning occurs. Through a critical analysis of the relevant literature on organisational culture, on one hand, and on outsourcing, on the other hand, this paper aims above all to identify the main cultural factors conditioning outsourcing choices, and to propose a way of conceptualising this link. The findings of this paper showed that, together with the rational factors involved in making the outsourcing choices, certain cultural factors significantly influence attitudes towards outsourcing, particularly i) designing and making choice and ii) subsequent implementation, especially regarding the relationship structure between the outsourcer and the outsourcee. The cultural factors identified are: the degree of path dependency, uncertainty avoidance, and trust. These were unified in the concept of "relational culture."

Key words: Organisational culture, organisational change, outsourcing, relational culture.

INTRODUCTION

Organisational culture is a wide concept that can be analysed through different perspectives in different subjects, such as sociology, psychology, anthropology and management. Among these, the management science perspective investigates what a company's organisational culture means and identifies the main organisational culture dimensions that determine what influences both the behaviour and choices made by a single company.

From this perspective, organisational culture has been

defined as the set of values and beliefs, patterns, symbols, rituals and myths that characterise a particular company during a specific historical period (Schein, 1985; Hatch, 1993; Arayesh et al., 2017; Yang and Hsu, 2010). This set of elements forms a holistic construct that influences both the behaviours and choices of the organisational culture as a whole (Schwartz and Davis, 1981; Schein, 2006) as well as individual employees (Davis, 1990; Nyameh, 2013; Nikpour, 2017).

According to one of its most widespread definitions,

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organisational culture can be 'a pattern of shared basic assumptions that the group learns as it solves its problems of external adaptation and internal integration, which has worked well enough to be considered valid and therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems' (Shein, 1985: 9). The author considers organisational culture as a construct that includes three interdependent domains: a) artefacts, such as procedures, organisational structures, visible behaviour, styles and even clothing; b) espoused values, which include rules, values, beliefs, standards and prohibitions; c) basic underlying assumptions, which are the invisible essences of organisational culture that determine the perceptions, feelings and preconditions of individuals' behaviours.

Organisational culture includes both formal and informal elements and results from their combination (Hofstetter and Harzap, 2015); its features are also determined by both its internal and external environments. Hence, organisational culture is influenced by societal culture, as noted by Hofstede (1983, 1984, 1993, 1994) and more recently by Sagiv and Schwartz (2007). The authors claim that organisational culture is influenced by the norms, values and regulations of societies when members introduce their own cultural background, which was formed within their specific societal context during a specific timeframe.

Within the management science field, many scholars have analysed organisational culture in connection with either performance (Denison, 1990; Boyce et al., 2015; Naranjo-Valencia et al., 2016; Chih and Yang, 2011) strategy (Schwartz and Davis, 1981; Choe, 1993; Hock et al., 2016), organisational change in general (Hofstede, 1984, 2003; Ahmed, 1998; Pool, 2000; Omazić and Sopta, 2017; Engelen et al., 2014; Iljins et al., 2015) or its relationship with uncertainty in decision-making processes (Milliken, 1987, 1990; Schendel, 2007; Ashill and Jobber, 2010; Thomya and Saenchaiyathon, 2015; Liu and Almor, 2016). Few studies have conducted in-depth analyses of the link between organisational culture and outsourcing choices. This paper aims to fill that gap by investigating this link and proposing a conceptual model to show how certain dimensions of organisational culture can affect the rationale of the outsourcing choices.

The idea of this paper arises from the observation that, in general terms, outsourcing choices are made based on "rational factors" – which is to say qualitative and quantitative assessments that managers make with regard to whether or not outsourcing choices are to be adopted; in particular, the criteria guiding the choice of outsourcing refer to the economic conditions, advantages, and disadvantages that are produced on the strategic and organisational levels, and the risks of various kinds connected with choice. It is an assessment process that aims to be "rational" through evaluations that

are as objective as possible. In actuality, as the work will go on to analyze, every business is characterised by a particular organisational culture, which acts both consciously and unconsciously, and which influences apparently objective and rational reasoning and assessments.

Therefore, the cultural factors both people and organisations bring overall play a major role in how all the elements based on which business choices are made are perceived (Naveed et al., 2016; Mierke and Williamson 2017; Lukic et al., 2017). This is even more true when, precisely as in the case of outsourcing, the choices the managers must make trigger processes of organisational change. In this case, organisational culture can both facilitate and hamper change processes (Borekci et al., 2014), and also cause them to take on certain features rather than others.

Research questions

This paper aims to closely examine the influence that organisational culture exerts on a company's outsourcing choices, posing the following three interrelated research questions:

RQ 1. What are the dimensions of organisational cultures that, more than others, condition the choice of whether or not to resort to outsourcing?

RQ 2. In what way do these identified factors act upon the choice of outsourcing and, in particular, is it possible to arrive at a theoretical conceptualisation of this influence they have?

RQ 3. In what way does organisational culture condition how the partnership relationship between outsourcer and outsourcee is structured?

The context in which answers to the three research questions will be sought is that of "strategic outsourcing," in which the objective that is set is not simply reducing costs, as in the forms of "tactical outsourcing," but of increasing the business potential to create value through the sharing of resources and skills with the outsourcee and consequent establishment of partnership relationships. In fact, in the case of tactical outsourcing, where the objective is cost saving above all, the choice of outsourcing is fundamentally based on calculations of cost effectiveness, and there is therefore very little room for organisational culture to carry out its conditioning role; in these cases, outsourcing mostly takes on the nature of transaction-based outsourcing. Conversely, in cases of strategic outsourcing, where the aim is sharing resources and skills between outsourcer and outsourcee, organisational culture has fertile terrain to exert its conditioning force, since the outsourcing relationship that is created between outsourcer and outsourcee takes on the features of partnership-based outsourcing.

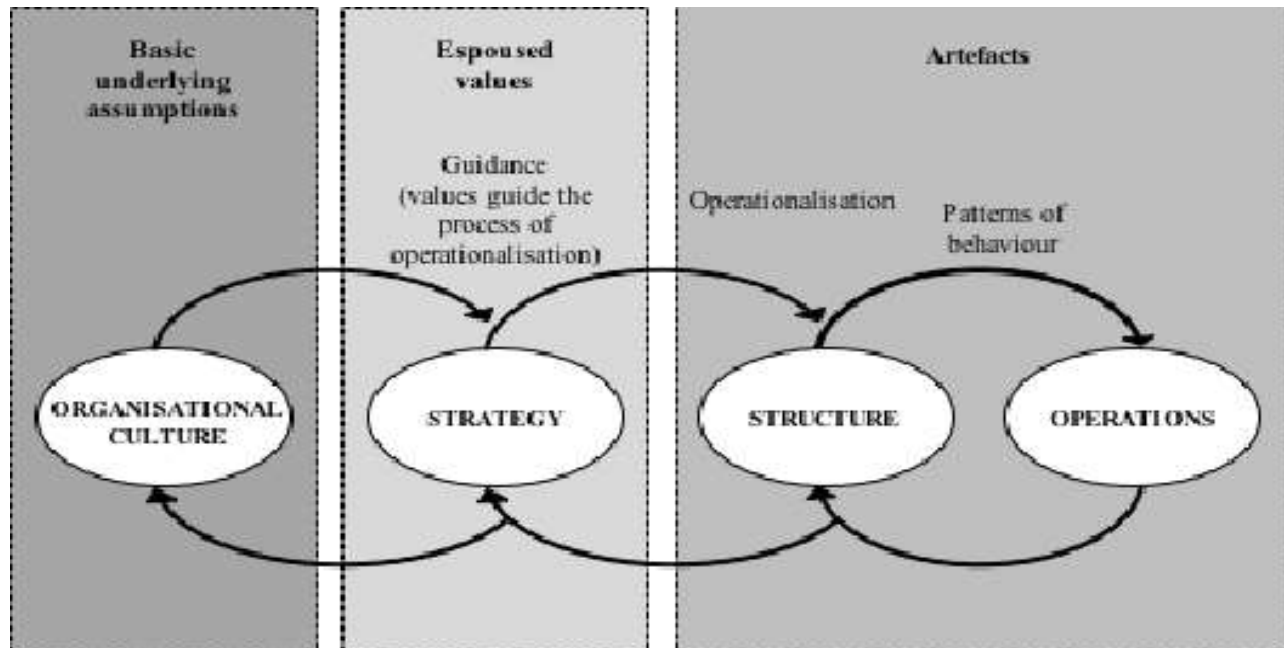


Figure 1. Organisational culture and internal environment
Source: Schein (1985).

LITERATURE REVIEW

The conceptual backgrounds presented in this section are selected on the basis of the relevance of certain dimensions of organisational culture that, more than others, impact the processes of organisational change, in order to have the conceptual framework from which the considerations proposed in this study arise, which will be formulated based on the organisational change linked to outsourcing choices.

The degree of path dependency

Organisational culture is built over time and is consolidated within people and organisations, becoming a structural element. It becomes specific to each organisation and thoroughly pervades it. Therefore, to link organisational culture and organisational change, first of all we had to define the field to better understand what organisational factors are involved both directly and relevantly to this relationship.

This involves organisational exploration at every management level and concerned strategy, structure and operations, which, according to Schein (1985), comprise a hierarchical order that generates a learning process. Each element takes shape through this process and modifies, adapts and improves, depending on its interdependence with the other elements (Hogan and Coote, 2014). Figure 1 shows the domain where the conditional role of organisational culture and its links to

interdependence amongst strategy, structure and operations become relevant.

Moreover, Tsui et al. (2007) state that it is possible to distinguish both internal and external dimensions in organisational cultures. The authors consider the concept of organisational culture as a holistic construct that includes five main elements: employee development, harmony, customer orientation, social responsibility and innovation. Among these, employee development and harmony express the 'internal integration' of organisational culture; conversely, customer orientation, social responsibility and innovation express the 'external adaptation' of organisational culture. This specification allows for understanding organisational culture as a distinguishing element of every company and the conditioning that affects both its internal evolution and external relationships.

Using the concepts of internal and external integration processes together with Tsui et al. (2007) five organisational culture elements we can distinguish two different types of organisational culture, integrative and hierarchical cultures, which differ depending on how the abovementioned processes are either facilitated or obstructed by companies' unique characteristics. There is an integrative culture when strong values are both widespread and shared by all organisational members, which helps achieve both internal integration and external adaptation. As noted by O'Reilly et al. (1991), it is a type of culture that is based on the values of caring for employees, customers and society (which also help the internal integration process) as well as values regarding

innovation and high performance (which help the external adaptation process). Similarly, Shein (1992) defines integrative culture as the synthesis of all five organisational culture elements that were identified by Tsui et al. (2007). What characterises organisations with a high regard for the care of employees, customers and society, making them flexible and willing to change, is that employees are supported in their strategy by employers who invoke a strong sense of belonging, commitment and organisational performance. In integrative cultures, sharing and involvement prevail, and these characteristics concern both individuals working inside organisations and those interacting with outside institutions during the production and distribution processes. A hierarchical culture includes formal rules, coordination mechanisms that are based on a hierarchy and strict supervision, with either few or no strong, shared values leading the organisation. This culture involves greater rigidity and formalisation of organisational conditions, and individuals tend to have defensive attitudes; therefore, they search for a greater feeling of security through continuity. Consequently, they evoke low levels of sensitivity and availability towards change because they feel at risk and uncertain. Naranjo-Valencia et al. (2011) state that this is why, in organisations that adopt a hierarchical culture, it is more difficult to create the proper conditions for both internal integration and external adaptation.

In the current economic contexts, the external environment changes so rapidly and continuously from every perspective (technological, economic, politic, social and cultural) that companies struggle to evolve at the same speed and intensity; therefore, difficulties and changes in inertial forces are unavoidable. These occur with ease because the adaptation process involves changes in organisational culture, whose formation and consolidation processes are slower than that of environmental change.

Moreover, organisational change in every company has unique and distinguishing factors, such as management style, values and past successful behaviours, which are determined by the most critical human functions of that organisation (Gao, 2017). These play a significant role because, in most cases, individuals resist everything that is either unknown or considered risky; an employee is generally more reassured by what he/she knows and has already internalised. In addition, he/she is generally worried about how the repercussions of organisational change could affect his/her work, status, wages and any other change that could have a psychological implication. According to Elizur and Guttman (1976), the reactions that individuals have towards change can include three different dimensions at once: 1. An affective reaction concerns the feelings of either satisfaction or anxiety through which an individual accepts change; 2. A cognitive reaction involves the rationality sphere and both the opinions and evaluations that individuals have about

the change's worth, importance, need and the ability to make things either better or worse; 3. An instrumental reaction includes all concrete actions and professional implications that are linked to the change.

For these reasons, Dunham (1984) affirms that the crucial factor in making any change effective is an organisation's reaction to individuals' beliefs, values, assumptions and attitudes. Notably, Juechter et al. (1998) and Nikpour (2017) share the same opinion, underlining that the most important aspect of every significant change is human resources, which are the foundation of every business system.

Another aspect to be considered in analyzing the role of organisational culture on organisational change processes is that organisations often have significantly different declared and existing organisational cultures, as noted by Hofstetter and Harpaz (2015), who conducted a study on this issue via a performance appraisal system. In this type of system, cultural meanings are communicated to all members (Trice and Beyer, 1984), and performance outcomes are particularly construed as organisational values and norms, which managers can then use to communicate organisational expectations for success.

Hence, relevant organisational values and norms are embedded in expected performances, and the performance measurement process could be considered a valid tool for analysing a declared organisational culture. Conversely, performance analysis outcomes could indicate an existing organisational culture and thus reflect the realistic management and performance of individuals. In this study, the authors show that, while the norms and values declared are expressed by top management through the performance appraisal system, the true norms and values are found in the organisation's lower level achievements, which are revealed in the performance analyses. Two other important aspects that help elucidate what organisational culture means and how it affects an organisation's true behaviours include the following:

The manager expresses the organisational expectations based on formal and declared values and norms, while both middle and lower management pursue results that align with their specific jobs and career objectives, or other individual objectives. Consequently, there is a discrepancy between organisational targets and individual targets (Bartunek and Moch, 1987), which can create significant differences between declared and actual organisational behaviour, particularly in the change processes.

The cultural assimilation process is slow and gradual; therefore, the impact of the declared norms on individuals' behaviours is not instantaneous. The result is either a shorter or longer period when resistance and inactivity by the organisation in both the perception and assimilation of new organisational norms occur (Trice and Beyer, 1984). This aspect can be a conditioning factor in

the change process and in its actual nature.

In conclusion, organisational culture is generated through internal integration and external adaptation; according to Gordon (1991), organisational culture results from successful adaptation to the internal and external environment. Every organisation interacts with and develops by constantly balancing both internal and external factors: in this balance, it develops its own degree of path dependency that it then puts into play when urged to change. This degree of path dependency therefore becomes an element of great importance in the change process, both when the business has to choose whether or not and how to change, and when implementing the choice, and then having change take on characteristics and directions guided by the organisational culture. As pointed out by Chukwuka (2016) and Arif et al. (2017), organisational culture can both be a strength and a weakness in organisational change processes.

The attitude of organisational culture towards uncertainty

Another aspect to consider is the connection between organisational culture and uncertainty, which is undoubtedly one of the most critical aspects of change. Uncertainty conditions both the strategic and organisational choices of any organisation during its lifetime. Every entrepreneurial decision is made during uncertain conditions, and most decisions have a strategic dimension. As highlighted by Shendel (2007), the way in which uncertainty is faced is crucial to either the successes or failures of entrepreneurial choices. According to Liu and Almor (2016), both societal and organisational cultures are critical in determining how organisations perceive, analyse and handle uncertainty. It is not surprising that organisations that are pressured by the same degree of environmental uncertainty react differently and initiate different change processes. The reason for diversity between organisational culture and uncertainty was clearly described by Milliken (1987, 1990), who underlined that uncertainty has three different levels of analysis, which include how an organisation perceives, interprets and responds to uncertainty. The first difference lies in the different perceptions of uncertainty, which emerge from change; however, the interpretation of how the change can impact a particular organisation and, as a consequence, the organisation's reaction to the need for change, are also important. According to Milliken (1990), organisations can make different choices if pressured by the same environmental stimuli because there are three uncertainty conditions that apply to all organisations: state, effect and response. State uncertainty refers to the unpredictability of the way some environmental conditions could change; therefore, it is the general difficulty of knowing the true state of

certain conditions. This aspect is usually defined in literature as 'perceived environmental uncertainty'. Effect uncertainty instead refers to the uncertain impact that a change in certain environmental conditions can cause to a specific organisation, which can be different in different organisational situations. This is an 'interpretive' field for organisational decision makers regarding the way uncertainty could affect their organisation and the possible positive as well as negative consequences of change on the different parts of their firm's system. Finally, response uncertainty refers to both the imperfect knowledge and comprehension of strategic options that are planned as responses to environmental stimuli, including the uncertainty of each possible response outcome (Wang and Rafiq, 2014).

The role of societal culture in determining trust towards partners

As stated above, organisational and societal (or national) cultures are two different yet not separate domains due to their interdependence and mutual influence. To widely analyse the cultural dimensions that affect organisational change and, in particular, change determined by outsourcing choices, we had to identify what dimension(s) of societal or national cultures are important to consider regarding this issue.

We found that one relevant element of societal culture that is reflected in organisational culture is the trust that individuals place in potential interlocutors (Wicks et al., 1999; Van der Meer-Kooistra and Vosselman, 2000). This trust, regarding our specific focus on human action, is important to every form of collaboration and every partnership among companies that outsource. Concerning this theme, some studies have emphasised trust in entrepreneurial relationships and have identified a link between trust and societal-cultural dimensions. Among these, there are some interesting studies that concern this type of analysis and which include Hofstede's theory (1983, 1993) of societal culture, which states that there are four main dimensions of societal culture: individualism, power distance, uncertainty avoidance and masculinity.

Excluding the dimension of masculinity, some studies confirm the existence of a link between the other three dimensions and the level of trust that people and, as a result, the organisation, indirectly express during a relationship. Regarding collectivism versus individualism, Realo et al. (2008) and Etzioni (1993) find a higher level of interpersonal trust in countries where collectivism prevails over individualism. Similarly, Putnam (2001) underlines that, where collectivism prevails, people understand that the pursuit of their wellness can be achieved more easily when pursuing collectivistic goals. Regarding power distance, Huff et al. (2002) demonstrate that, the more people feel a high hierarchical order, the

less they are willing to trust other people. Finally, in a study on uncertainty avoidance, Inglehart (1997) demonstrates that a high level of uncertainty avoidance generally decreases interpersonal trust; in this kind of society, people find it more difficult to place their trust outside their inner circle of family, friends and acquaintances.

METHODOLOGY

Methodologically, this paper reviewed existing research and was characterised as a conceptual study with a qualitative approach. It has striven to contribute to the existing literature by correlating relevant theoretical concerns about organisational culture and strategic outsourcing. The literature review was conducted with the objective of identifying the dimensions and factors of organisational culture that, more than others, impact outsourcing choices, both in the phase of choosing whether or not to resort to outsourcing, and in its implementation phase.

The logical path followed to achieve the purposes of this study includes the following steps: first, the meaning and dimensions of organisational culture were analysed from a management science perspective; then, the relationship between organisational culture and strategic and organisational change was analysed, in order to identify the main cultural factors that condition the change processes in general; lastly, the conditioning of organisational culture on organisational change was discussed, with particular reference to a specific type of change linked to outsourcing choices.

Therefore, this paper is organised as follows: after the introduction, the second section provides the conceptual background about the meaning and main dimensions of organisational culture from a management science perspective; the third section shows the results of the literature review, identifying the main cultural factors that condition the processes of organisational change by acting as facilitator or by applying the brakes; the fourth section deals with the central topic of this essay and discusses how organisational culture affects the outsourcing choices, providing a conceptual model to explain how the identified organisational factors affect the choice of whether or not to resort to outsourcing; the same section discusses the conditioning of organisational culture over the structuring of the relationship established between outsourcer and outsourcee; finally, in the conclusion section, both the findings of this study and future research are identified.

RESULTS

The results of the literature review show, first of all, that organisational culture is unique to each organisation because it includes tradition, shared values and beliefs, shared expectations about organisational life and refers to the present as well as the future. Quoting Cartwright and Cooper (1993), it may be stated that culture is to an organisation what personality is to an individual.

Moreover, it has emerged that organisational culture is the result of a long-term process of spreading and consolidating values, principles, procedures, attitudes, and ways of working, and that these elements are partially formal and partially informal. As a consequence, it is inevitable that organisational culture plays a significant role when the organisation is called upon to

change by external or internal environmental factors. In particular, with regard to change, organisational culture may be a factor of both hindrance and facilitation; when organisations are called upon to change, both centrifugal forces which promote and facilitate change, and centripetal forces exerting an inertia that hampers change, are created. Therefore, organisations often resist organisational change because organisational culture results from successfully adapting to both internal and external environments (Gordon, 1991), which is difficult to achieve.

In light of the conceptual backgrounds analysed earlier, the following three factors of organisational culture take on, more than others, importance in the processes of organisational change:

The degree of "path dependency" that each organisation chooses vis-à-vis change; quoting Shein (1985), organisational culture is 'a pattern of shared basic assumptions', that is constructed over time and that may be translated into difficulty of change, or into a full-blown obstacle. Similarly, Arthur (1989) and Gordon (1991) highlight that organisations are often mistrustful about implementing new working conditions that consolidate a particular organisational culture. In many cases, the company is bound to a dependence phenomenon that conditions both the objective and rational evaluation of all factors involved in the outsourcing choice.

Since each entrepreneurial decision is taken in conditions of uncertainty, every organization shows a different degree of "uncertainty avoidance." It is a dimension of organisational culture that regards the way in which the organisation perceives and deals with the uncertainty of change; often, it is translated into an overestimation of risks and an underestimation of potential benefits of change.

The 'trust' that companies have towards partners, if decreased, can limit the tendency to collaborate and share, create mistrust towards the goals achieved by the counterpart, create a tendency to organise strict processes of control and make the relationship quite formal.

The first two elements have an importance of a general nature, and carry out their conditioning role with regard to every kind of organisational change; the third, that of trust, has specific relevance with regard to those change processes, like outsourcing, that entail establishing partnership relationships with other businesses. In these cases, the organisational culture shows very different attitudes with regard to the new relationship, and in these cases as well, the degree of trust towards potential partners can be an element hampering or facilitating change.

DISCUSSION

Having outlined the link between organisational culture

and organisational change, the discussion analyses this link with reference to a particular type of organisational change, which is the one connected with outsourcing choices. The research questions defined in this study regard, firstly, the identification of the factors of organisational culture that, more than others, condition outsourcing choices; secondly, the way in which the link between organisational culture and outsourcing choices can be conceptualised; and thirdly, the way in which organisational culture impacts the structuring of the partnership relationship between outsourcer and outsourcee.

Before providing answers to these research questions, some notions on outsourcing bear discussion. During the last decades, outsourcing has become a sensational phenomenon in entrepreneurial practice. In today's market, all companies' activities, functions and processes can be outsourced to a third party (Leavy, 2001; Marjit and Mukherjee, 2008, Feeny et al., 2005). The phenomenon has recently changed physiognomy and has suffered from a progressive increase concerning content (or activities subject to outsourcing) and aims.

From the content perspective, there has been a transition from outsourcing that is limited to companies' activities and functions of both low management complexity and low strategic importance (commodities) to activities, functions and even entire processes that either have a strong proximity or belong to the company's core business. Therefore, more complex forms, such as strategic outsourcing, business process outsourcing and transformational outsourcing, have joined more traditional and less complex tactical outsourcing.

Regarding aims, there has been both an increase and a differentiation of goals; they have transitioned from traditional cost reduction to goals linked to the use of knowledge, skills and technologies of a third party (McIvor, 2000; Maskell et al., 2007). One of the main features of post-Fordism is the loss of the 'self-sufficiency' feature of companies that have progressively developed evolved relational skills (Popoli and Popoli, 2009). They have learned to follow a company's sourcing strategy perspective, which is the more innovative feature in a business system structure when inside a hypercompetitive and globalised environment such as the current one (Brown and Wilson, 2005; Popoli, 2011).

Notably, outsourcing choices result from a complex evaluative and analytic process, which consists of the following phases:

- (i) Evaluation followed by the decision to outsource as well as what to outsource;
- (ii) Definition of objectives;
Choice of provider;
- (iii) Negotiation of terms and conditions (service-level agreement and stipulation of contract);
- (iv) Managing relations;
- (v) Monitoring and evaluation of results.

Each of these phases requires a set of criteria and certain approaches, which must be derived from the patrimony of technical knowledge and the management skills developed throughout a company's history.

In light of this brief remark, the thesis proposed in this paper was that an outsourcing choice is not only led by "rational criteria" but also by a company's organisational culture, which conditions every phase of the process above described. Conditioning occurs both implicitly and tacitly because organisational culture is partly within both the criteria and the procedural methods used consciously in the choice; it is partly tacit as a factor of conditioning, which, through unconscious mechanisms, affects the choices and behaviours of all companies' employees. This occurs at all organisational levels, both top management, responsible for the choice, and middle and lower management responsible for the implementation of the adopted outsourcing choice. For example, as Greaver (1999) states, the motivations expressed by top management to justify the renouncement of outsourcing choice are proper 'excuses' concealing the will not to change; the author highlights typical excuses, including 'closer studies are necessary', 'it is a good idea, but it is not the right time' and 'there are many fields where hidden costs can emerge', and so on.

The conditioning role of organisational culture can relate to every company's change because it includes characteristics that are produced by the intersection of rational factors as well as irrational and unconscious ones. Hence, outsourcing—as a specific process of both strategic and organisational change—is not free from organisational culture in both choice making and implementation.

The following discussion therefore regards two separate analysis areas in which organisational culture conditioning over the outsourcing process may be observed: i) the adoption of the choice of whether or not to rely on outsourcing, and ii) the structuring of the partnership relationship that is established between outsourcer and outsourcee.

The following two sub-sections explore these different analysis areas.

Organisational culture and outsourcing choice: A conceptual model

The thesis proposed in this study was described through a conceptual model that underlines the critical factors in outsourcing choices by identifying those related to organisational culture and those that use the 'rational' tools.

Preliminarily, the rational factors for the outsourcing choices are: the need for change (given the external environmental conditions), the costs and benefits of outsourcing and the related risks.

The need for change refers to the company's need to

implement an external environment change. Importantly, outsourcing choices must be considered as an adaptive response to the technological, economic and cultural changes that occur in environmental systems, and companies should search for new sources of competitive advantage, such as cost advantages, focusing on the core business, risk fragmentation, access to resources, know-how and technologies only possessed by third parties. Therefore, the need for change instigates outsourcing because it is then that the company becomes aware of a potential competitive advantage that can be gained from outside its organisational circle.

Costs and benefits are elements that must be compared through the analysis of all economic, strategic and organisational aspects involved in the choice to outsource. In addition, through a cost-benefit ratio, a company can identify every possible repercussion of outsourcing on the entire company system, including its value chain, strengths and weaknesses, strategic and operational flexibility, organisational structure and operational processes and human resources management.

Risk refers to all unknown aspects that are inevitably present in every strategic and operational change that the company might undertake. The main risks include economic, strategic and organisational aspects, such as loss of control of either activities, outsourcing functions or processes, loss of internal competence and subsequent dependence on a supplier, 'hidden costs', difficulty in including the outsourcing process or functioning within the activity though back sourcing.

These three factors, which appear to be merely rational, are conditioned by organisational culture through an unconscious mechanism that influences the individual perceptual sphere, so it becomes more appropriate to speak of "perceived need for change", "perceived costs and benefits" and "perceived risks". This means that managing outsourcing choices relying exclusively on economic rationality is an unrealistic ambition and conceptually deceptive. In detail, amongst all the organisational culture perspectives discussed within this article, those that directly affect outsourcing choices are the following:

- (i) Degree of path dependency;
- (ii) Uncertainty avoidance;
- (iii) Trust.

These three factors, above analysed, were summarised in our innovative concept of 'relational culture'. The reason why the three factors are included in the concept of relational culture lies in the fact that there was the desire to identify, in the area of the general organisational culture, those factors that, more than others, play a major role in building and managing a partnership relationship. Therefore, in the choices of strategic outsourcing, in which the relationship between outsourcer and

outsourcee is played out in accordance with a partnership-based approach, the three identified "relational factors" may, taken together, be considered the expression of the "relational culture" possessed by the business.

The conceptual model shown in Figure 2 clarified the role that organisational culture plays on outsourcing choices and the ways in which its effects emerge.

This model highlights the critical factors in outsourcing choices by identifying those related to organisational culture and those that use the 'rational' tools.

As shown in Figure 2, each of the three rational factors is under the relational culture influence; the degree of relational culture will inevitably affect the evaluation of critical factors at the root of the outsourcing choice, starting from the same perception of the need for change, which will affect both the significance and the importance given to the cost-benefit analysis, and the identification and evaluation of economic, strategic and organisational risks that are linked to the outsourcing choice. In detail, in Figure 2, the arrows' directions show either the positive or negative correlation of each factor that affects an outsourcing choice; the arrows' widths indicate the influence intensity of each factor.

Organisational culture and the structuring of the partnership relationship

Relational culture and its three constituent elements – degree of path dependency, uncertainty avoidance, and trust – do not only impact the choice of whether or not to resort to outsourcing, but also have a major influence on the structuring of the relationship established between outsourcer and outsourcee. In fact, it is clear that the attitude and behaviour that each of the two partners takes on towards the other are conditioned by these three dimensions of the organisational culture. The characteristics taken on by the relationship between the two parties may therefore differ greatly in terms of control mechanisms, degree of formalism in terms of the outsourcing contract, degree of detail of the respective rights and duties, modes and procedures of coordination, and intensity in exchanging information.

Moreover, the more the two parties show cultural differences, the more difficult it becomes to manage the relationship, both in the planning phase and in the ongoing management phase. In this regard, many researchers have identified cultural differences as one of the main obstacles to positive performances (Kvedaraviciene and Boguslauskas, 2010); many aspects of the organisational culture concept can create relational problems.

For example, Hofstede et al. (1990) note six main problem areas, including process versus result, employee versus job, parochial versus professional, open versus closed systems, loose versus tight control and normative

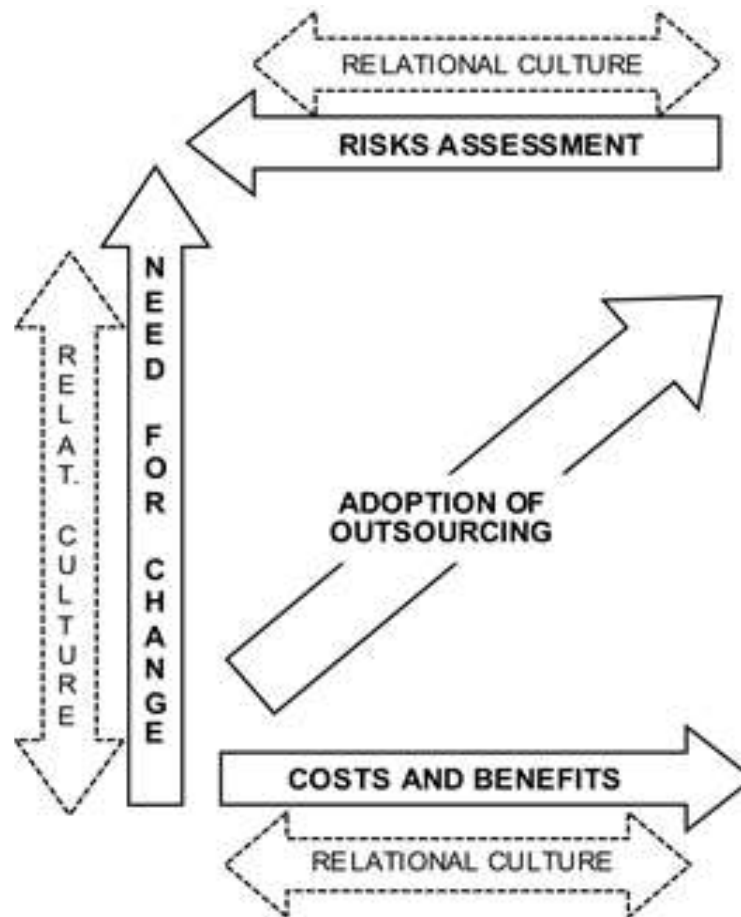


Figure 2. Critical factors at the root of outsourcing choices: A conceptual model.

versus pragmatic. The process versus result orientation refers to different approaches to tasks, such as either striving to achieve specific well-identified goals, according to a mechanistic vision of the division of roles between the two subjects (results orientation), or achieving general goals that are related to both partners, according to an organicist vision of the relationship, which can imply more frequent variation in each partner's goals and greater sharing of difficulties.

The employee versus job orientation refers to differences in management style, such as different considerations regarding problems that employees can face while doing their job; specifically, from the employees' perspective, individual problems become general problems to be faced, while, from the job's orientation, they become negative evaluation elements of a single worker's conduct.

The parochial versus professional orientation refers to the identification of workers within the organisation (parochial) or in the kind of job that they do (professional). This difference is also linked to the famous distinction made by Ouchi (1980) between 'clan' and 'market' as an organising environment, from which

different work organisational systems, coordination mechanisms and reward and punishment systems emanate.

The open versus closed system refers to the communication climate, which includes an organisation's ability to change its organisational practices between partners, interact during activities and introduce changes via ongoing management processes.

The loose versus tight control orientation refers to the differences in the control systems of the jobs done by partners. This element can either create a climate of suspicion and eliminate mutual trust (tight control) or be less strict and more informal (loose control), which facilitates mutual trust and the sharing of problems.

Finally, the normative versus pragmatic orientation refers to differences in the structuring of managerial processes that include either well-defined, standardised norms (normative) or tight cohesion with customers' differentiated needs (pragmatic). In other words, this cultural dimension concerns both the formalisation and codification levels of managerial processes, and it is another element that creates relational difficulties between partners.

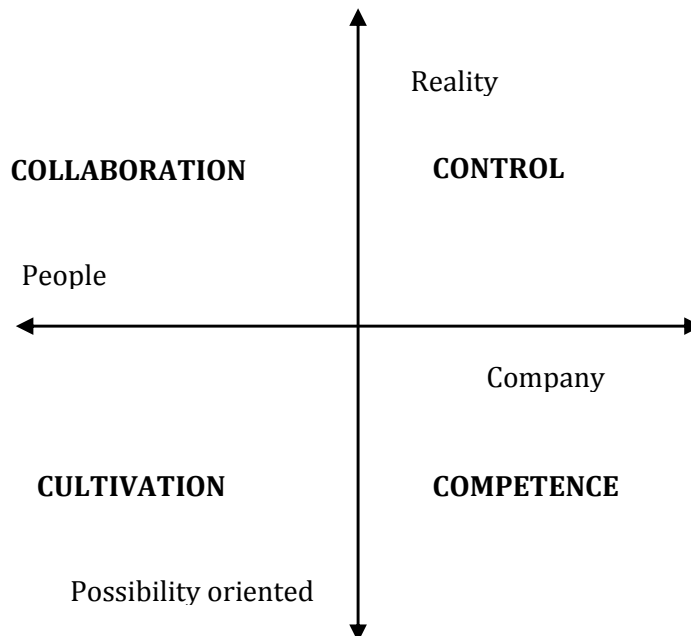


Figure 3. Schneider cultural model.
Source: Schneider (1994).

Another important analysis of the differences in the characteristics of the organisational culture can take on various organisations was done by Schneider (1994), who identified four different ideal culture types: Competence, Control, Collaboration, and Cultivation. The author's cultural model presents a matrix with four quadrants representing the four types of culture, which arise from the intersection of the variables that were considered (reality orientation; possibility orientation; people orientation; company orientation) (Figure 3).

Referring to Schneider's book (1994) for more in-depth examination of the characteristics of the four types of culture, for the purposes of this work it is useful to emphasize only that the relationship between outsourcer and outsourcee is highly conditioned by the predominant culture possessed by one and the other. It is intuitive to think of the difficulties that can arise when outsourcer and outsourcee present dominant cultures opposing or different from one another. For example, if one of the two parties has a control culture, that party will obviously try to structure the relationship with a high degree of formalism and standardisation, a hierarchical coordination, and a process orientation; this may result in conflict with a collaboration culture that the other party might have, which is instead people-oriented, and based on trust, teamwork, interaction, and partnership.

Based on these considerations, cultural differences between clients and vendors often become difficulties when managing all partnership activities (Ertel, 2009), communicating effectively, managing performance, generating innovation, identifying, raising and resolving

issues, establishing an effective governance structure, managing commitments, creating buy-ins with stakeholders, managing the scope and making joint decisions. These difficulties hinder the achievement of goals, decrease innovation and synergy chances, hinder the achievement of cost-saving goals, create conflicts, which waste time and increase costs, lower provider service quality, lower motivation and worsen the general conditions of the organisational environment.

Lastly, three considerations are to be made for an additional examination of the conditioning role of organisational culture on the outsourcing relationship:

(i) The importance of cultural differences obviously depends on the realised method of outsourcing, such as if either tactical outsourcing or strategic outsourcing are used, that is if the goal is a mere cost reduction or if there is something more in the creation of the value perspective. In tactical outsourcing, the outsourcing objectives are business activities and/or functions that are strategically unimportant (commodities). Their main goal is cost savings; therefore, cultural differences cannot adversely affect the decision-making process. By contrast, in strategic outsourcing, the objects of the outsourcing are business activities and/or functions that are characterised by both strategic importance and the purpose is to obtain a significant contribution to value creation; as consequence, there are many ways in which cultural differences can influence the partnership organisation and its management.

(ii) The problem with cultural compatibility between clients

and vendors becomes more important when a company adopts a multi-sourcing strategy because it must weave multiple relationships to enable the supply of goods and services and conduct business activities and processes with multiple suppliers. The multi-sourcing strategy requires differentiation of the relational approach, depending on the cultural differences that emanate from the related subjects as well as on the different planning schemes of each relationship (that is, the different objectives and goals of every outsourcing relation).

(iii) Finally, it is important to underline the concept of 'cultural compatibility', which should not be confused with 'cultural similarity'; some cultural differences between partnership subjects can create learning and synergy opportunities. According to Larsson and Filkelstein (1999), cultural differences may affect the extent to which synergies can be realised by enhancing the 'combination potential'. Similarly, Vermeulen and Barkema (2001) affirm that existing cultural differences between relating subjects can improve innovation, resource sharing and learning opportunities. As noted by Slangen (2006) and Bjorkman et al. (2007), a potentially positive cultural difference intensity must be controlled so that it will not affect coordination and interaction mechanisms between subjects.

CONCLUSION AND FUTURE RESEARCH DIRECTIONS

Starting from the analysis of organisational culture dimensions and their impact on organisational change in general, this paper provided a conceptually detailed examination of a particular change that can be generated by the choice to outsource either activities, functions or company processes to a third party.

Within the different aspects of the organisational culture concept, the study identified the main factors that directly affect outsourcing choices (research question n. 1): the degree of path dependency, uncertainty avoidance, and trust. These factors were categorised under the innovative concept of 'relational culture', through which there was the intention to give emphasis to those cultural factors that, more than others, affect both the choice of whether or not to resort to outsourcing, and the way in which the relationship between outsourcer and outsourcee is structured.

Regarding the way in which the three identified factors play a significant role of conditioning the choice on whether or not to resort to outsourcing (research question n. 2), this study found that the three cultural factors impact how decision makers perceive: the advantages and disadvantages of outsourcing, the correlated risks and the economic conditions based on which assessments of convenience are made. In detail, the thesis proposed in this study is that the choice of whether or not to resort to outsourcing is not only founded upon objective and rational assessments, but undergoes the

influence of the degree of path dependency, of uncertainty avoidance, and of the degree of trust nurtured with regard to potential partners. Therefore, the three cultural factors that were identified as most determinant of the outsourcing choices interfere with the rational factors ascribable to "economic rationality"; the different impacts that every culture factor (irrational and/or emotive) can have on an outsourcing choice are expressed through a conceptual model charted in Figure 2.

Regarding the organisational culture conditioning role over the structuring of the relationship that is established between outsourcer and outsourcee (research question no. 3), this study has found that the three cultural factors (degree of path dependency, uncertainty avoidance, and trust) are not limited to conditioning the choice of whether or not to resort to outsourcing, but also play a conditioning role over determining the characteristics of the consequent outsourcing relationship. In particular, the degree of formalism and of informalism attributed to the relationship, the mechanisms of coordination between the two parties, the degree of specification of the expected results and of the respective rights and duties, the degree of flexibility or rigidity characterizing the outsourcing contract, and others, are all elements that undergo the influence of cultural factors as well. Moreover, this study has found that these factors' role is even more critical when in the presence of significant cultural differences between outsourcer and outsourcee. In fact, cultural differences are one of the main reasons for difficulty or failure of the outsourcing relationship; this is particularly true in strategic outsourcing, where the relationship between outsourcer and outsourcee is founded upon a partnership-based approach, which is to say upon flexibility, mutual trust, the sharing of resources and skills, and therefore the cultural compatibility between the two parties.

In conclusion, the main aim of this paper was to provide a detailed examination of the outsourcing choices, particularly regarding the factors on which the choices are based. The proposed conceptual model with regard to the choice of whether or not to resort to outsourcing could be improved and expanded through future research, both conceptually and empirically. Conceptually, future research could identify other dimensions within organisational culture that could potentially influence outsourcing choice, improve the "relational culture" content beyond the three identified elements and analyse more details of a particular type of outsourcing by exploring particular objectives and aims. Empirically, it could be useful to survey decision makers with the aim of measuring the incidence levels of the cultural factors that were identified for the outsourcing choices and their interaction with the rational factors.

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