African Journal of
Business Management

ABOUT AJBM

The African Journal of Business Management (AJBM) is published twice monthly (one volume per year) by Academic Journals.

African Journal of Business Management (AJBM) is an open access journal that publishes research analysis and inquiry into issues of importance to the business community. Articles in AJBM examine emerging trends and concerns in the areas of general management, business law, public responsibility and ethics, marketing theory and applications, business finance and investment, general business research, business and economics education, production/operations management, organizational behaviour and theory, strategic management policy, social issues and public policy, management organization, statistics and econometrics, personnel and industrial relations, technology and innovation, case studies, and management information systems. The goal of AJBM is to broaden the knowledge of business professionals and academicians by promoting free access and providing valuable insight to business-related information, research and ideas. AJBM is a weekly publication and all articles are peer-reviewed.

Contact Us

African Journal of Business Management

ARTICLES

Full length Research Paper

Business intelligence and change management: The case of an administrative service company operating in the context of the entrepreneurial associations

Sara Propeti* and Marco Giuliani

Department of Management, Marche Polytechnic University, Ancona, Italy.

This study aims to analyse the potential organizational impacts related to introduction and implementation of new managerial concepts methods and tools in Italian entrepreneurship associations using direct observation through daily presence as methodology in the structure. Results reveals that although the context of entrepreneurial associations assumes a certain degree of proactivity and dynamism in dealing with change, those who work there still cannot take decisive steps towards innovation. The analysed structure is strongly traditional, conservative, and unwilling to accept changes in software, roles and responsibilities, with the resulting difficulties being operating in a context that is increasingly turbulent. As the study is based on a case study, the conclusions achieved can be limited to the specific context examined. Investigating how the society can face the necessary change in skills and capabilities will make clear if the traditional stativity of the association quoted in the literature have been confirmed or not and, no less important, how such changes are perceived and managed by the structure. From the direct observation of reality, ideas and suggestions on how to handle the criticalities, therefore, favorability and optimization of the association's evolution could be achieved. This research thus showed the possibility of making a significant change that is developed and shared by the structure. In addition, the fact that these applications are studied in a rarely analysed and unconventional context, such as that of entrepreneurial associations, strengthens the originality of the study.

Key words: Entrepreneurial association, business intelligence, change management.

INTRODUCTION

Entrepreneurship associations are organizations specialized in the aggregation, selection, defence and promotion of the interests and collective goals of entrepreneurs, born with the intent of being a source of social order along with having an important function in regulating the economy. In Italy, most of them, apart

*Corresponding author. E-mail: s.propeti@pm.univpm.it; m.giuliani@staff.univpm.it. Tel:+39 071.2207127.

from representing the interests of their associates, provide services and support the promotion of economic development policies by providing services within their own or by creating ad hoc service structures such as service companies, consortia or "agents business" (Martinelli, 1999).

Despite the fact that in the economic contest there are increasingly signs of change, turbulence and innovation, it seems that associations continue to maintain the roots of tradition by "slow and gradual micro-adjustments that add up to the inertial mass of their traditional vigour" (Benevolo, 1997). Entrepreneurial associations seem to be an old institution (Zan, 2015), which sees to the reduction of threats posed by developmental potential and effectively represents the interest and identity of members from external interlocutors. On the other hand, there are no global strategies, as representation still tends to "protect and preserve" rather than "promoting and rethinking strategic" (Devika and Anmol, 2016).

In recent years, entrepreneurial associations play an important role. The biggest challenge for Italian entrepreneurial associations comes from the entrepreneurs themselves, who are facing technological innovations, transformations in the organization of work and production, new strengths in the labour market, growing internationalization of markets, uncertainties and changes in the political arena. To facilitate the transition from a "defensive" to a "proposition" phase (Lanzalaco, 1990; Lanzalaco and Urbani, 1992), it is necessary to define a new concept of representation, new identities, new services (more personalized and structured), promotion and relaunch initiatives of the groups represented, support internationalization, allow easy-terms access to a network of services and give constant support and assistance. Practically, it seems that associations need to abandon their static and usual approach in order to adopt a dynamic and proactive approach.

This kind of change is the one experienced in the past by several public organizations and big private entities. With reference to the former, several authors have highlighted that due to changes in the social and economic environment, several public organizations had to revise their internal and external processes in order to optimize them and achieve higher levels of efficiency and effectiveness. In the private sector, the hyper-competition that characterizes the market has pushed forward the mantras of "dynamicity", "adaptability" and "change" in order to be able to follow and even predict the evolution of the markets. Thus, while in public and private organizations the need to adopt and focus on managerial concepts methods and tools have been already experienced, Italian entrepreneurship associations are now becoming more business oriented and relaying less on the contributions of the government and of the members. In other words, there is a silent call for Italian entrepreneurship associations to adopt managerial concepts methods and tools in order to improve their efficiency and effectiveness.

One innovative tool that the association under investigation can adopt is business intelligence (BI) system. The implementation of such system is a major event and is likely to cause organizational perturbations (Yeoh and Popovic, 2015) as it is an infrastructure project, which can be defined as a set of shared, tangible IT resources that provide a foundation to enable present and future business applications.

A BI system entails a complex array of software and hardware components with highly specialized capabilities (Khan and Quadri, 2014). It requires considerable skills and resources, and involves various stakeholders over several months to initially develop and possibly years to become fully enterprise-wide. It is therefore clear how important it is to find a structure that is ready to support and improve that change. If the structure responds well to the novelties introduced or is inclined to welcome it positively, it will act as leverage that will make the change happen and will do it successfully. Otherwise, in case of a resistant organization it will impede the innovation that is the BI, to generate benefits and, thus, block the change.

Moving from these considerations, the purpose of the paper is to analyse the potential organizational impacts related to the introduction and implementation of new managerial concepts methods and tools in Italian entrepreneurship associations. In order to achieve this aim, a case study is examined.

The state of the art

Entrepreneurship associations are organizations specialized in the aggregation, selection, defence and promotion of the interests and collective goals of entrepreneurs. They were created with the intent of being a source of social order and to have an important function in regulating the economy.

The system of entrepreneurial representation in Italy is characterized by a highly fragmented structure and the divisions have numerous discriminators such as: the business sector (agriculture, industry, crafts, commerce, services, etc.), the size of the businesss (micro, small, medium and large enterprises), the type of property (cooperative, private capital, state-owned), etc. Traditionally, associations are analysed from an "organizational" point of view, which in turn can be broken down into two directions: on the one hand, there are purely descriptive studies concerning the organizational structure of the entrepreneurial associations; on the other hand, others propose interpretive cutting studies that approach them as complex organizations. There is limited literature on entrepreneurial associations that have an approach based on the conceptual frameworks of economics and management (Cavenago, 1997).

By briefly reviewing the historical evolution of Italian

business associations, it is noted that from their purely political goals, over time it is the provision of services that take on the true role of associate loyalty (services that have evolved from traditional trade unions up to the advanced ones). Over time, the associations have assumed an increasingly complex organizational structure. A capital company, with all the management compatibility issues that is derived from it, often accompanies the association. Looking more closely at the structural features of representative associations, some are referred to as "organizational dilemmas", which are "contradictory requirements that any association, as a complex organization, must be able to balance and therefore make associations constantly search for dynamic balance positions (Unioncamere, 2010).

Specifically, in addition to the many activities involved in the representation of interests and in the promotion of economic policies, there are a whole range of services that the associations provide to meet the needs of their associates and to have significant economic returns (for example: union services, support services for accounting and tax compliance, management services). These services strengthen the bond between associates and association, attract new members and provide valuable monetary resources. Some services are provided at policy prices and differences are covered by the own resources of the association, while others are offered at market prices.

The overlapping of such heterogeneous and diverse functions has contributed to increasing the structural and managerial complexity of business representation associations, which in their daily work are constantly forced to change to find a new balance. In fact, increasingly sophisticated services such as management control, training, marketing, and technological innovation are required. The original "defensive" phase of association must be abandoned to make room for a new "promising" phase. In order to be able to be proactive towards the customer, the associations must forcefully think back at the organizational level and succeed in becoming a high value-added service centre.

The primary change must however take place within the structure: reviewing and rethinking the operating tools used and updating and integrating the skills of human resources are the first steps towards the evolution that is needed (Cameron and Green, 2015; Robey, 2015). In organisations, in fact, the data needed for these purposes are normally fragmented and distributed on different structures and platforms (Arnott et al., 2017) and the ever-increasing demand for accurate and timely data is difficult to handle and meet. The necessary information is often incomplete, redundant, unreliable, heterogeneous, difficult to use and unanalysable.

According to Chong et al. (2017) and Isik et al. (2011), a BI systems can overcome these issues as they combine data collection, data storage and knowledge management with analytic tools, and thus allow you to present the most complex and relevant information in a simple and immediate way to the various decision makers. It is clear that, to facilitate the metamorphosis, the implementation of a Business Intelligence system is an excellent starting point. The advent of new information and communication technologies has allowed a significant increase of the effectiveness of organizational systems through the use of new tools for analysis and integration of processes, which have increased communication and sharing capabilities of information at all business levels.

BI's primary goal is to improve the timeliness and quality of the data used in decision-making (Rausch et al., 2013), ensuring consistency and flexibility. Measuring activity is an aspect that has a fundamental importance in the process of improvement: if it cannot be measured, it cannot be handled.

Usually, however, being able to absorb and manage similar changes, especially in the context of entrepreneurial associations, is certainly not an easy thing. One of the key factors explaining the difficulties and problems of implementing new IT tools is in fact the user's resistance to change.

During computerization projects, the conflict may concern the information control, the availability of processing resources or the gain of a prominent position in business development plans. In one study, Markus (1983) connects the causes of resistance to technological change to three categories of elements:

1. Subjective factors related to individuals and involved groups (for example, lack of knowledge about the project that gives rise to mistrust or novelty rejection);
2. Intrinsic features of the systems (for example, unsatisfactory performance offered by the computerized solution);
3. The interaction between the technological artefact and the organizational context in which the system itself is integrated (for example, when the introduction of a certain software affects the internal distribution of power, it is very likely that those who feel disadvantaged manifest their opposition through an attitude of resistance).

Markus (1983) supports the last option, and he frames resistance as the product of the interaction between the technical characteristics of the system and the power structure in the organization. Understanding how to better manage an organization when an important novelty (as a BI software is) is introduced can even lead to a significant reduction of problems and, paradoxically, to facilitate the process of acceptance and change.

It is important to underline that resistance to change is not to be underestimated because, according to the intensity of its manifestations in organizations, it can hinder the process or result in the abandonment of the change plan. Following a study by Coch and French

 (1949) entitled "Overcoming resistance to change", it emerged that active participation and involvement are the keys to minimizing resistance to change. The active involvement, training and coaching of the users are in fact considered to be the most useful ways of increasing the usability and effectiveness of the instruments and, consequently, their acceptance in the everyday working-life.

METHODOLOGY

In order to better observe, analyse and describe the implementation of a Business Intelligence Software in a particular context such as the one of the entrepreneurial association in terms of effectiveness and feasibility, the methodology adopted is the case study (Yin, 2003; Eisenhardt and Graebner, 2007; Flick, 2009).

The case study method was chosen as an appropriate means of exploring the research question since it allows us to collect "rich data" and to answer "if" and "how" questions (Yin, 2003). This approach allows the potential discovery of new conditions and interactions that could significantly contribute to understanding how organizations make sense of and give sense to IC measurements. In order to propose a study that can also contribute to bridging the gap between theory and practice, this paper is focused on the empirics of practice, as this allows understanding organizational phenomena as dynamic and accomplished in on-going, everyday actions. In short, the choice of the case study is based on the desire to deepen the knowledge of the business processes in question rather than its individual products and to understand the context as a whole rather than the specific variables (an activity based on discovery rather than confirmation).

This study examines the context of an entrepreneurial association case study, which was undertaken using an "action research" methodology (Sandy and Dumay, 2011). Action research is based on a collaborative process between the researcher and client, with a critical inquiry into the problems of social practice in a learning context.

In other words, action research requires a real issue of both research and managerial significance upon which the organization is embarking that has an uncertain outcome. Thus, the organization must be willing to be the subject of rigorous inquiry, thereby enabling the undertaking of a "live" case study in real time (Adams and McNicholas, 2007). This research methodology was chosen for this study because it allows scientific research and innovative practical solutions to be developed. This methodology allows the researcher to take part in the project, to access and collect "rich data" and to understand more in depth the context, of the variables, and of the process under analysis.

Finally, an interventionist method was chosen because, in accounting studies in general and in the IC literature in particular, there is a strong call for case studies to be developed with this methodology in order to test and observe concepts, methods, and tools in practice (Dumay, 2013). All in all, the main advantages of this approach are related to the possibility for the researcher to gain more valuable insights as an active participant, rather than as a non-participant observer, and to expand the case study methodology by collaborating with the organization in developing real solutions to problems; through this approach, the researcher is able to make both a theoretical contribution and an organizational one by assisting organizations in implementing change (Sandy and Dumay, 2011).

The analysis is based on the elaboration, validation and interpretation of information collected over a multi-year time span (2014 to 2017) through unstructured talks and informal conversations with officials, operators and executives of the company. For the considered associative system, the company analysed is the main service provider and offers, through its sixteen offices spread across the provincial territory, assistance and advice services in tax matters and labour legislation. It currently has about two thousand associated companies and a total operational staff of ninety employees, distributed in the various operating venues. In the case study, about fifty people were involved, located at different levels of the structure; of these interlocutors, seven were identified as key informants and as part of the focus group, represented respectively by a general manager, three division directors, one ITC manager, one administrative manager and one business advisor.

As for data collection, it was mostly done through participant observation, that is, by taking part "in real time" in the meetings of the focus group. The information were collected on the basis of a pre-established theoretical trajectory around eight key points aimed at digging deeper into the following aspects: the motivation to participate in the project; the objectives of the project; the underlying values of the choice to promote and adhere to the implementation of a management control area within the structure; implications in terms of resources involved (financial, human and knowledge resources); the expected results; the objectives and benefits achieved; the emerging criticalities and future prospects. In parallel, primary data sources have been matched with secondary sources (document analysis, consultation of provincial / regional / national association websites, report analysis).

Therefore, the research strategy was based on the use of a mixed information sources in order to acquire the cognitive elements needed to deepen the analysis. One of the researchers was constantly present in the various phases of the project, involved in meetings and in decision-making processes: "the action researcher does not become an independent observer, but becomes a participant, and the process of change becomes the subject of research". This is particularly useful in building theory in complex situations, because action research translates into an interactive process of diagnosis, intervention, action, and reflective learning.

Finally, it should be emphasized that the low importance given by the structure to the project in question has made the data collection particularly difficult; consequently, it will be predominantly made up of sections of dialogue, phrases, opinions and testimonies collected on informal daily life.

CASE STUDY

The problem

The initiative has been activated to generate a strong change in the structure and with the primary purpose to implement a real management control area with new software, new tools and new dedicated human resources. It was possible to thoroughly analyse this case thanks to the daily presence of one of the researchers in the structure for the whole period 01 November 2014 to 31 May 2017.

The main goal of the study was to start an improving business performance process, starting from optimizing information and data management to achieve an increase in the efficiency of the structure, which then turned into an upgrading of the quality of service provided to associates. Implementing a management control area, virtually absent in the structure, was thought to guarantee that quality, truthfulness and timeliness of the data as never had before, especially in view of the required

optimization of services to customers, increasingly dissatisfied and more and more inclined to withdrawal of membership in the association.

Obviously, in addition to the introduction of an ad hoc figure, the choice and acquisition of a new Business Intelligence software had to be carried out, since at the time of activation of the PhD the data needed for these purposes were fragmented and distributed on different structures and platforms. It is possible to summarize the project in question, not only with the creation of a new area that works with new tools and new people but, above all, with the introduction of a new way of working by adopting a different logic based on certain data , clear and timely. The information needed to carry out daily activities was often incomplete, redundant, unreliable, heterogeneous and difficult to use, and the introduction of a BI system is intended to improve these situations.

There was no market analysis of the software vendor choice, no quality and prices comparison among suppliers and the various software available. They asked the usual historical Software House, with all the pros and cons that this choice could have involved: if one could benefit from a deep knowledge of the industry and its issues, on the other hand the lack of involvement of external companies could limit the propulsive push to change.

Ever since the beginning, it was clear that the main difficulty would be to be able to penetrate a context that was immersed in its everyday life, with its own rhythms and habits. From the very first moment in which the project started, the difficulty that it would have had to make progress was immediately intuited: few and rare were the times when the focus was on the new goals and few time spent trying to pursue them. Ordinary daily life has always prevailed over any kind of proposed change and the lack of a real interest in the subjects studied was obvious at any hierarchical level.

First of all, the analysis of the case focused on the understanding of the concept that the structure had about "management control" and the way in which they used the resulting documentation. This is for the company to have a "management control" meant to print, retouch if necessary and deploy an infinite quantity of documents once a year in view of the closing session year. Separate revenue figures were distributed for the various provincial offices, direct staff costs (obtaining, by difference, the first contribution margin) and all other direct residual costs (obtaining, by subtracting them from the first, and the second contribution margin). Extrapolations were made using obsolete and scrumptious software that mixed data from multiple databases but constantly needed manual adjustments (only possible after extracting more information from other management systems, such as business management or CRM).

Consequently, the result was considered approximate and non-objective; it constantly changed on the basis of the entity responsible for the annual production of that documentation and presented a dubious trust. The assignment was entrusted to different subjects with different competencies: it was found that in 2013 it was for the Head of General Affairs in 2014 at the ITC Manager. Nobody, however, seemed to bother, and this proved that the attention to this fundamental business function was minimal *("So many documents that do not use virtually none", "Why do we have to print that?" Who wants these documents, will ask for them ... "," How did we do last year? I do not know, I did not care ... "*the most frequent reactions).

Even in front of the obvious lack of information on the produced documents, there has always been a great deal of aversion to changing things, both at document production level than in their contents (how to calculate contribution margins, for example, they would have to be reviewed), but no one has ever supported the change "because otherwise we lose our comparability with previous years" and because "we are used to seeing it this way" and "reasoning has always been based on that."

The first steps towards the desired change

The first real attempt to change was done in May 2015 when, at the initiative of the General Manager of the Company, the first FOCUS GROUP was established on MANAGEMENT CONTROL that involved many subjects at different levels: in addition to the General Manager himself, there were three Division Managers, a business consultant, an ITC manager, and the on-site research.

The working table was meant to view, comment and think about the data for the three-year period 2012/2013/2014, which would have been worked, organized and exhibited by the business consultant and the on-site researcher. Extraction and organization of the data was not an easy process: many sources were needed to find the necessary information (Administrative Software, Software for Employee Hours Discharge, Data Extraction Software for Various Locations, etc.), unsatisfactory the interpretations of the anomalies and subjective the result obtained.

By trying to make the job as precise and objective as possible, a financial statement one for each group company, the first consolidated budget of the structure and, on completion, an analysis of the indexes of the documents obtained has been drawn up. At the meeting, at the time of the presentation of the obtained results, despite the importance and uniqueness of the produced documents, the team did not have the expected interest and participation: there were obvious demonstrations of disinterest / indifference, ranging from the constant use of the mobile phone to the frequent deviation of the discussion on non-inherent themes. Therefore, neither the production nor the disclosure of this type of documentation has been followed.

Trying to go deeply into the reasons for such unexpected reactions to this new analytical tool rich in potential useful information to improve future strategies, it turned out that it basically did not care about anyone because no one had asked for it because it had never been done / Used (and therefore they did not perceive the utility) and because the reasoning and the strategies normally follow logic based on well-documented documents (from dubious reliability) interpreted by the various responsible persons:

"That particular trend I already knew without doing all these arguments .... "," These things were already known ... "," The data is wrong, I know things have gone differently... ".

It was therefore decided to start from the beginning, trying to optimize the process of extracting the data (a phase that, during the previous work, had spent much of the time) in order to make them certain, objective and reliable at the very moment Of extraction (thus avoiding the various personal interpretations). We realized that to pursue this first objective it was necessary to invest in a new software: too many personal interpretations influenced the reliability of the data (*"In my opinion here there is a mistake of extracting data, it is not possible that this is the situation. Let's fix it manually, I tell you how to do it"*).

Following this, consultation with the Software House was chosen to invest in BI. This process, however, was not straightforward: the relationship with the company providing the BI system was occasionally taken care of, was not considered as a priority activity, it did not perceive its usefulness and it was reminded only when there was evidence of slowness and inaccuracy in extracting data with the old system (*"Do we have the updated situation? We urge the software house to make the changes we want, otherwise the project never starts"*). To this is added a significant diffuse informal illiteracy at different levels of the structure, which makes the potential users of BI more sceptical and increases the indifference (sometimes resulting in resistance) in carrying on that project (*"But how does this new program work? Why do they change it, we were used to work with the old one ...For this time I still use the old software, doesn't matter! Next time I'll see if I'll use the new one…"*).

The failure

To date, any attempt made by the subjects involved in the innovation project is hitherto unsuccessful; with the logic in force, at a distance of months, the company has not yet systematized any new software and virtually no real management control area. Everything is still based on the old pre-existing and the researcher's figure, despite several attempts, is struggling to work with the same documents using the same obsolete databases and continuing to distribute them to those who will read - maybe- with the same read keys forever.

The lack of perceptions of the utility of a controller and of a new accurate and timely data extraction tool is also emphasized by the fact that this new figure, introduced with innovative aims, is often used to support the operational activities of the various business areas rather than to be used for the original purpose of the project (it is not uncommon that is being called to relate to simple low or no added value tasks –for example, data entry-). In the context analysed, professionalism is not always recognized and, in any case, is the daily life that continues to prevail, always and in any case.

"If there is any urgent work to do, ask THE INTERN for help! – who is actually the researcher, but not everyone knows it*", "The priority now is to come up with the data entry, everything else can wait!"*.

Solving the practical tasks that occur daily is often the priority, and the space dedicated to development and innovation is residual. It is perceived that the system modus operandi is to work always in emergency to deal with the unexpected of all days. The concepts of planning, analysis and strategy cannot be acquired and there is a constant aversion to what is new and which, by definition, abolishes the tacit rules in force in society.

DISCUSSION

The case study allows the proposal of reflections. First, the case study suggests that the will of few subjects to change the company's internal organizational system and improve its efficiency and effectiveness by implementing a new tool - BI - and a new management area - CDG - was not enough to make the first step towards change.

The internal resistances, the non-curation at the multiple levels of the structure, and the total disinterest towards new themes for the context were impeding the change. The strong reliance on routines and the lack of proactivity of the staff is bound to make every effort to progress. There is a "state" and traditional mentality where the important thing for each one is to make their own part and, possibly, with the same methodology used over time. The widespread disinterest at all levels towards reviewing and innovating decision-making tools is the most worrying aspect. Although pushes for change come from (some) directional levels, they are not perceived by either the structure or peers (which not only do not act as a lever for change, but often act as a barrier).

Consequently, the attention and care of these projects by the creators follows the slower tendencies: the supporters lack and every practical daily problem have

priority because it is considered closer to the immediate and real needs of society. These results are therefore to confirm the arguments put forward by Zan (2015) and Lanzalaco (1990), who argue that tradition in these particular contexts continues to prevail strongly.

Similar results but on a different business association of another city were obtained in 1998 by Fernando Alberti, who analysed how, in the past too, the bond with tradition has stalled the push for innovation and change. This new analysis attempted to see whether, after twenty years, things in the world of association had finally evolved or at least started to change. It has been found that, today as then, there is only the will of some subject to make improvements in the system but this type of structures made and still makes it extremely difficult to break away from the roots of tradition.

Second, there is a constant use of the simplest solution, or the one that has always been adopted, as universally recognized, recognizable and easily workable; roles and responsibilities have emerged informally over time, seemingly casual and not rebuildable.

"I do not know why I have to do this activity ... before it was played by Tizio, then it happened on my desk ... but basically I did not have anything").

It persists in any function and at any level (paradoxically in this kind of context), a sort of fear of not being able to handle the novelty and, consequently, a resistance to adopting procedures and / or using non-ordinary tools and documents. In this case, a better management of change seems to be the only possible solution: not just cognitive skills, but also skills related to relational and behavioural skills, to will and motivation.

Although, studies (and case studies) on change management are numerous, the extreme variability and mismatch of the situations make difficult to compare how different realities have resorted to an attempt to change. It is therefore complex, and perhaps even unhelpful, to compare this case study with others. It can be said, however, that this analysis, like others, can help to provide material for building lines, schemes and traces for action, on the basis of which management (of companies, entities or associations) can find a useful orientation to their own reality.

Third, difficulty in innovation could be emphasized, considering that same purchase of the BI system has been applied to the same Software House ever since. Although specialized and dropped entirely, the reality of entrepreneurial associations could limit, just as uniquely and historic, the real innovative boost that a new supplier might offer.

Conclusion

The purpose of the paper was to examine the potential organizational impacts related to the introduction and implementation of new managerial concepts methods and tools in Italian entrepreneurship associations. In order to achieve this aim, a case study was analysed.

The results obtained in the mentioned organization seem to align with what is reported in the literature with reference to public or private organizations. It can be confirmed that, despite the fact that in the economic context there are more and more phenomena of change, turbulence and innovation, associations are still too closely linked to tradition. There is a kind of old-age crisis that makes the adjustment process decisively slow. In order to reallocate associations to the evolution of entrepreneurial reality, it is therefore necessary to first redefine the internal organization of the structure and rethink roles and activities, managing the criticalities as much as possible and encouraging employees to go beyond everyday routine.

These results have significant implications for entrepreneurial associations that are now forced, to survive, to manage and revise in a substantial way their internal skills to allow the creation of a new conception of the associations as a high value added network (Cannarsi, 2000), which must be a strong landmark for a certain length of time. They should be able to find the way to face every internal resistance to change and to translate it in a stimulus to constantly improve themselves.

Although the case investigated confirms and empirically validates the main evolutionary features found in the literature, it should be noted that the results obtained relate exclusively to the analysed reality of a city and cannot be considered valid for all other service companies of the entrepreneurial associations.

Therefore, it may be useful and interesting to know if the dynamics found at the specific site are confirmed or decreased in other similar contexts, even if they are faced with such dynamics and with the same inevitable resistances to a change that arises as radical as indispensable.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Adams CA, McNicholas P (2007). Making a difference: Sustainability reporting, accountability and organisational change. Account. Audit. Accountability J. 20(3):382-402.

Arnott D, Lizama F, Song Y (2017). Patterns of business intelligence systems use in organizations, Decis. Support Syst. 97:58-68.

Benevolo F (1997). Crisi E Prospettive Dell'associazionismo Imprenditoriale, Fondazione CENSIS.

Cameron E, Green M (2015). Making sense of change management: A complete guide to the models, tools and techniques of organizational change. 4th Edition.

Cannarsi E (2000). Grande E Piccola Industria Nelle Associazioni Imprenditoriali", Lavoro E Previdenza N.6.

Cavenago D (1997). Associazione E Federazione Di Interessi. Il Ruolo Di Una Associazione Di Rappresentanza Territoriale Nella Percezione Dei Propri Associati, Economia and Management, N. 5.

Chong A, Yeoh W, Richards G (2017). Business intelligence effectiveness and corporate performance management: An empirical analysis. J. Comput. Inf. Syst. pp. 1-9.

Devika A, Anmol A (2016). Business Intelligence in Management-Strategic Support. Int. J. Res. IT Manage. 6(1):49-59.

Dumay J (2013). The third stage of IC: towards a new IC future and beyond. J. Intellectual Capital 14(1):5-9.

Eisenhardt KM, Graebner ME (2007). Theory building from cases: Opportunities and challenges. Acad. Manage. J. 50:25-32.

Flick U (2009). An introduction to qualitative research." 4th Ed., Sage Publication.

Isik O, Jones MC, Sidorova A (2011). Business Intelligence (BI) success and the role of BI capabilities. Intelligent Systems Account. Financ. Manage. 18(4):161-176.

Khan RA, Quadri SMK (2014). Business Intelligence: An integrated approach. Int. J. Manage. Innov. 6(2):21-31.

Lanzalaco L (1990). Dall'impresa All'associazione. Milano, Franco Angeli.

Lanzalaco L, Urbani G (1992). Imprenditori In Europa. Le Rappresentanze Imprenditoriali In Prospettiva Comparata. SIPI.

Martinelli A (a cura di), (1999). l'azione collettiva degli imprenditori Italiani. Le organizzazioni di rappresentanza degli interessi industriali in prospettiva comparata, Edizioni di Comunità, Torino.

Rausch P, Sheta AF, Ayesh A (2013). Business Intelligence and performance management. Theory, systems and industrial applications.

Sandy QQ, Dumay J (2011). The qualitative research interview. Qual. Res. Account. Manage. 8(3):238-264.

Robey D (2015). Change Management. Wiley Encyclopedia of Management. 7:1-5.

Unioncamere (2010). Le Piccole E Medie Imprese Nell'economia Italiana. Rapporto 2009, Istituto Tagliacarne, Milano: F. Angeli.

Yeoh W, Popovic A (2015). Extending the understanding of critical success factors for implementing business intelligence systems. J. Assoc. Inf. Sci. Technol. 67(1):134-147.

Yin RK (2013). Case study research: Design and methods. Sage Publications.

Zan S (2015). Imprese E Rappresentanza, ruolo e funzioni delle associazioni imprenditoriali. Carocci editore.

Full Length Research Paper

Ambidexterity between operation and innovation: A stochastic queuing model

Zhiyuan Shang* and Gongqi Guo

School of Economics and Management, University of Chinese Academy of Sciences, Beijing, China.

The notion of productivities dilemma indicates that organizations need to balance the tension between operation and innovation to ensure both short term performances and long term adaptability. Ambidexterity as a solution to productivity dilemma has lack analysis on micro-level ambidexterity. In this paper, a group process view and a stochastic queuing model were adopted to study the optimal time arrangement between operation and innovation. Our research reveals that time division between operation and innovation will have negative impact on operational efficiency; however, such negative impact can be managed through certain rhythm of time division between operation and innovation. Specifically, arranging frequent innovative activities is optimal to the situation between operation and exploitive innovation; whereas arranging infrequent innovative activities is optimal to the situation between operation and explorative innovation. Further, our result also may help managers to identify the timing to accelerate or decelerate the innovative activities while keeping the operational efficiency in an optimal state.

Key words: Dilemma, ambidexterity, operational efficiency, group process, process variability.

INTRODUCTION

Overtime business environment has become increasingly unstable, more chaotic and full of relentless change (Eisenhardt and Brown, 1998). Recent empirical research indicates that many firms have positioned themselves in more dynamic environments than ever, with continuous changes such as technical innovation, globalized competition and entrepreneurial action that impose heavy pressure on firms' daily operations and innovation

(Wiggins and Ruefli, 2005; Schreyögg and Sydow, 2010). The fact that firms need to balance conflictions rising from daily operations performance while preparing for future innovation shocks has become a fundamental assertion in operation, strategic management and organization theory literature (Venkatraman et al., 2007). Abernathy's (1978) research summarizes such paradox as the firm focuses on productivity gains inhibited its

*Corresponding author. E-mail: Shangzhiyuan13b@mails.ucas.ac.cn. Tel: +8618811782634.

flexibility and ability to innovate has inspired decades of research and debate. It has come into a general consensus in the management research that a firm's survival in the long term can only be secured by being simultaneously efficient and innovative (Abernathy, 1978; Hayes and Abernathy, 1980; Benner and Tushman, 2003; Adler et al., 1999).

Prior literature has emphasized ambidextrous organization as the primary solution to such dilemma (Tushman and O'Reilly, 1996; Gibson and Birkinshaw, 2004; Adler et al., 2009); however, there has been a wide debate on how ambidextrous organization can be achieved. On an organizational level, prior literature generally offers structural solutions such as structural ambidexterity and punctuated equilibrium. These methods emphasize that the organizations need to separate efficiency oriented operations such as exploitation from adaption oriented innovations by dividing organizations' structure or temporal focuses. Some later literature shift focus to a micro-level such as business units and individuals to facilitate adaptation of entire system and avoid coordination problems generated by structural solutions. Such literature proposes continuous change and contextual ambidexterity to facilitate business unit level and individual level ambidexterity. Continuous change literature offers that organizational units should rhythmically switch their time and attention between efficiency oriented and innovation oriented activities, whereas contextual ambidexterity emphasizes that managers only provide supportive contexts and do not intervene individuals in the business unit to divide their time between different activities. Although, the aforementioned literature has reported various antecedents and outcomes on ambidexterity issue, empirical evidences reported by later researches are still inconsistent in regard to ambidexterity-performance linkage. Some literature finds positive link between organizational ambidexterity and firm performance (Gibson and Birkinshaw, 2004; He and Wong, 2004). Others find no direct effect between ambidexterity and performance (Bierly and Daly, 2007) or curvilinear relation (Yang and Atuahene-Gima, 2007). Lin et al. (2007) even finds negative relation between ambidextrous activities and firm performance. In reconsidering such gap in empirical evidences and previous theoretical development, it was observed that although major prior research has emphasized the importance of organizational process and system (Adler et al., 1999; Gibson and Birkinshaw, 2004), little attention has been paid to the question of how different potential arrangement on operational process may contribute to the inconsistence between ambidexterity and performance.

As in reality, organizations in multiple situations tend to assign both operational and innovative tasks to individuals and business units, such as for the consideration of advancing technological advantage,

improvement of marketing and sales results or major shift of strategic directions for sustaining competitive advantage and performances. However, individuals and business units when assigned with such tasks usually face difficulty of splitting time, resources and attentions between different types of tasks and such difficulty usually results in lack of focus and reduce the operational efficiency. In this paper, a process view was taken to delineate such difficult situations. Parting from traditional view only emphasize the culture and behavior context in solving the operation-innovation tension; the tension between operation and innovation within an integrated system was considered and investigated into the question how ambidextrous individual's time arrangement between operational and innovative activities impact efficiency of work process, and what is the best way for individuals to arrange their time between operation and innovation? Our synthesis of prior literature lead us to nuanced view that time division between operation and innovation needs to consider the process between operation and different types of innovation (e.g. exploitive innovation and explorative innovation). Different types of innovation were argued to have different impact on efficiency of individual work flow and group level process. Prior literature observed that different innovative activities generally bring variability to individuals' work flow and needs tradeoff for work operational efficiency (Benner and Tushman, 2003), however, with different magnitudes. Exploitive innovation as its adjacency to existing knowledge, brings relatively low level of variability to individual's work flow, whereas explorative innovation is generally distant from existing knowledge, and brings high level of variability to individual's work flow. Individuals' arrangement of time between operation and different types of innovations in an operational context was treated as a group process and a stochastic queuing model was adopted to capture the process and result of different time arrangements. Our research result shows that for time division between operation and exploitive activities, individuals need to adopt a rhythm of switching with high frequencies, whereas for time division between operation and explorative activities, individuals need to adopt a rhythm of switching with low frequencies.

To explain our theory and argument, this paper proceeds as follows. First, a synthesis of ambidextrous organization literature and relative theories regarding individual ambidexterity was made. The major shortcoming in existing literature on individual ambidexterity was identified and our theoretical argument with a process view of individual ambidextrous work flow was presented. The second step is to take simulation approach to understand the dynamics of switching of attentions for ambidextrous work process. By adopting a stochastic queuing system (Kingman, 1961) and a group process view, we wish to delineate the variability that different innovative activities bring about into the micro-level process and the tradeoff between work flow

variability and efficiency. The third part is modeling, simulation result discussion, and managerial implication. The end of this paper concludes the research.

THEORETICAL BACKGROUND

Abernathy (1978) suggests that the focus on productivity gains within a firm will consequently restrain its flexibility and ability to innovate. In his case of automobile industry, the constant pursuit of economic efficiency has a correlation with a firm's economic decline. Gupta et al. (2006) assert balancing efficiency and exploitation with innovation and exploration are still battering issue for nowadays organizations. In answering the question of how to achieve ambidexterity, literature has reported various antecedents and associated outcomes of ambidexterity.

On an organizational level, earlier researches have emphasizes structural antecedents and specialized units that focusing on either exploitation or exploration would help organizations to achieve ambidexterity (Duncan, 1976). The specialized units are spatially separated, which ensures each of such units can be configured to the requirements of their diversified tasks. Alternatively, later ambidexterity literature suggests punctuated equilibrium methods that emphasizes organizations to vacillate between centralized structures and decentralized structures to facilitate ambidexterity (Nickerson and Zenger, 2002; Siggelkow and Levinthal, 2003; Venkatraman et al., 2007). On a micro level, structural antecedents' literature also offers ample solutions such as the use of parallel structures (Bushe and Shani, 1991; McDonough and Leifer, 1983; Stein and Kanter, 1980; Zand, 1974). The parallel structure refers to business units switching back and forth from formal structures to semi-structures solutions. The formal structure aims at executing efficiency oriented operational tasks, whereas semi-structures aim at injecting flexibility into operational process with innovative tasks (Brown and Eisenhardt, 1997). Some other literature focusing on micro-level ambidexterity proposed contextual antecedents that emphasize business unit managers only provide a supportive context that uses systems, processes and beliefs to encourage individuals in the business units' engagement in innovative activities (Gibson and Birkinshaw, 2004). Later researches provide insights on different impact of coordination mechanisms on exploration and exploitation activities on ambidexterity. For example, the presence of formalization and top-down knowledge flows will enhance exploitation, whereas decentralization of decision making and bottom-up knowledge flows are to enhance exploration (Benner and Tushman, 2003; Jansen et al., 2006; Mom et al., 2007; Cardinal, 2001). More contextual factors were highlighted by later research such as how human resource management practices could help implement ambidexterity (Kang and Snell, 2000).

Micro-level analysis such as individual level or team/group level analysis has been limited and advocated for further theorization and more empirical research (Turner et al., 2013; Mom et al., 2007; Bonesso et al., 2014; Raisch and Birkinshaw, 2008). Extant literature represented by Mom et al. (2007, 2009) and Bonesso et al. (2014) has primarily focused on cognitive and behavioral factors. Mom et al. (2007, 2009) give a detailed account of managers' ambidextrous behavior and show not only firm level ambidexterity can be pursued but also individual level ambidexterity can be managed. Bonesso et al. (2014) further discuss the complex relation between individual perception and behavior of ambidexterity in working context and show how it is related to individual characteristics.

Prior ambidexterity literature builds on March (1991) learning activities distinction between exploitation and exploration in organizational learning. Such distinction captures the organizational level dichotomy in achieving balance between short term efficiency and long term growth in changing task environment. However, the micro-level ambidexterity exhibits much more complexity when individuals and business units are trying to operationalize the proposed solutions. Benner and Tushmen (2003) noted that such confliction not only creates tension between operation and innovation, but also between different types of innovation. Later strategy literature captures this phenomenon by distinguishing exploitation into two dimensions: the repetitive, incremental exploitation and exploration, and respectively ask the relationships between these three elements. Operational literature such as Kortmann et al. (2014) further conceptualizes the relationships into two levels of ambidexterity: the operational ambidexterity and innovative ambidexterity.

Prior literature has also emphasized that innovations concern with distinct categorization, because different types of innovation have contrasting determinants and organizational effects (Morone, 1993; Tushman and Smith, 2002). As a general consensus, innovations can be considered generally with two types by the adjacency to the existing technological trajectory: exploitative innovation and explorative innovation. Exploitative innovation refers to small changes in existing technological trajectory, enhancing firms existing technical capabilities, whereas explorative innovation brings about redirection of technological trajectory and creation of new organizational competencies (Dosi, 1982; Green et al., 1995). It is generally asserted that both efficiency oriented operation and all types of innovation need to be pursued simultaneously for firms' long term survival. On business unit and individual level, when individuals divide time between operational activities and innovative activities, previous literature did not specify the distinct role of operational activities in the pursuit of work flow efficiency, and the tension between exploitation and

exploration lacks consideration of operational efficiency in work flows. Different from prior understanding of exploitation and exploration tensions, it was argued that micro-level business unit in achieving ambidexterity needs to consider three distinct elements: the efficiency oriented operational efficiency, the improvement oriented exploitive innovation and the adaptation oriented explorative innovation.

Research on operational process management has traditionally been focused on reduction of process variability and improvement of process efficiency (Benner and Tushman, 2003). Industrial services organizations has reported variability in business work flow such as manufactured machine downtime, batching, hot lots, rework, setup and operator availability (Jacobs et al., 2003). A major source of process variability is lack of standardized practices and procedural information (Locher, 2007). Such variability is seen as negative towards operational efficiency because they are often triggered by problems in the work flow and require additional attentions and time to solve the causes of instability, both in processes and products. In ambidextrous context, innovative activities by nature are also interruptive towards operational process as they are both cognitively and procedurally distinctive from operation activities yet they have to be implemented for adaptation purposes. Swart and Kinnie (2007) treat such distinction as efficiency enhancing and variability increasing activities. The attention and time divided towards innovation following such logic can be seen as a particular type of variability in the context of ambidextrous organizations and business units.

On the micro-level ambidexterity analysis, the relations between repetitive operation and different types of innovation do not receive clarification. Such gap in literature was addressed by conceptualizing micro-level ambidexterity into two categories: operation-exploitation and operation-exploration ambidexterity. When individuals in the business unit divide time between operational and innovative activities in recurrence in the long run, the mixed process can be seen as a queuing process. The micro-level ambidexterity requires operational process share time and attention, which would create process variability that harms the process efficiency. Thus, we argue achieving micro-level ambidexterity needs to manage the variable and uncertain nature of such mixed process.

Adler et al. (1999) detailed illustration of how a Toyota manufacture venture in the vehicle industry can serve as an example to image such settings in the ambidexterity practice. In pursuing both operational efficiency and innovative flexibility, the company in Adler et al. (1999)'s case study adopts two major types of innovation, the Kaizen and the major changeover operation. Kaizen represents an orientation of continuous improvement (that is, exploitative innovation), and major product model changeover represents the substantial change both in product and in manufacturing system (that is, explorative

innovation). These two types of innovation were driven by contextual set up on both organizational level and individual level. The Kaizen is conducted by all individual employees in the process of daily operation; whereas major model changeovers are conducted by a pilot team consisting of engineers, managers and employees working in the production systems. In the case of major changeover, ordinary employees need to rotate back and forth from repetitive operation to pilot team and participate in explorative innovation. The case study reports that such a series of methods were in place to make sure the company goes smoothly through efficiency oriented operation as well as both types of innovation.

As organizations require individual ambidexterity to maintain both short term profitability and long term adaptation (Gibson and Birkinshaw, 2004; Tushman and O'Reilly, 1996), individual employees, as in the case study, need to balance between operational efficiency and certain amount of time and attention to both types of innovation. It was argued that different process variabilities induced by different types of innovation impact operational efficiency with different magnitudes. When individuals in a business unit need to divide time between operational activities and exploitive activities, the operational efficiency is negatively impacted with smaller magnitude, whereas when time division is between operational activities and explorative activities, the operational efficiency is negatively impacted with larger magnitude. It was also noticed that when individuals control the time division with certain rhythms or frequencies, the negative impact on operational process can be optimized for higher operational efficiency.

Contribution was made to the current literature by proposing an undervalued process perspective to the current ambidexterity antecedent-outcome debate (Adler et al., 1999; Gibson and Birkinshaw, 2004). By combining the findings in operational and group process literature, operation and innovation were integrated into a singular process model that captures the tension between operation and different types of innovation. A stochastic queuing model proposed by Kingman (1961) to delineate such process was adopted. Our finding on how to arrange time division between operation and innovation may further the current theoretical development on ambidexterity and provide practical implications for managers to achieve ambidexterity in a more operational and individual level.

NUMERICAL ANALYSIS BASED ON QUEUING MODEL

Analysis framework based on group process

Business operation and innovation are usually the result of group working process. Marks et al. (2001) illustrate group working processes help organizations to improve routine works such as select train and develop effective teamwork. Marks et al. (2001) define team process as: "members' interdependent acts that

convert inputs to outcomes through cognitive, verbal, and behavioral activities directed toward organizing taskwork to achieve collective goals" (2001: 357). Increased attention on group process rises from organizational research to incorporate new models accounting for group-organizational effectiveness, within which group processes are playing a very important role (Hackman, 1983; Guzzo and Shea, 1992; Gist et al., 1987). Prior literature on group process has extensively explored the usage of an input-process-outcome (I-P-O) framework. Groups are subjected to complex task work or even multitasked in today's organization environment. McGrath (1991) argues that today's working groups within a firm environment often have to manage simultaneously multiple lines of tasks. He asserted that one important aspect of such management skill is the temporal sequence tasks with attention to the task complexity. Marks et al. (2001) also shares McGrath's understanding that multi-tasking is an essential condition associating with group processes; thus, several tasks are often being executed within the same range of time. Multi-tasking creates an environment where members engage in complex sequences of interdependent tasks comprising a larger project (McGrath, 1991: 149). Such dynamic tasking of group process would stimulate group members to constantly involve in optimizing their group process both on a group level as well as on an individual level. Kozlowski et al. (1999) later mention that cycling of group process with multiple goals has contributed to the development of group level learning skills, and that the group process is carried out with multi-stage setting and within intervals of these stages, there are often phases of group developments that helps working groups to rearrange and improve task execution. Marks et al. (2001) developed an I-P-O group process model based on episodic recurrence of group task work. They differentiated group process focuses into two broad directions, one is those that focus directly on goal accomplishment and other group members reevaluate their performances and dwell on future actions. These phases of focus differentiation are categorized into "action" and "transition phases". The interplaying and reoccurrence pattern of group process focuses exhibit substantial resemblance to organizations carrying out exploration-exploitation activities that competes for organizational resources, focuses and routines. The team process may innately require individuals within a group, while achieving certain goals, to leave room for exploitative innovation of process efficiency and explorative innovation for strategic flexibilities. Such a view was adopted to utilize an I-P-O framework in a group process to illustrate how individuals in a group may divide their time between operational activities and different types of innovative activities.

Viewing innovative activities as interruptive intervals to operation

In our model, as prior literature asserted innovative activities are fundamentally different from operational activities, innovations were treated as interruptions on operation. Research such as Zellmer-Bruhn (2003) that is related to group process and interruption has contended interruptions as a trigger within automatic performance of routines for groups to switch into a conscious process of learning and creating new knowledge. Okhuysen and Eisenhardt (2002) contend interruptions act in group interaction as formal interventions that bring new knowledge to the existing resource base. These interventions facilitate knowledge acquisition, transition and integration by various methods such as simple rules on sharing information among members (Henry, 1995); or Schweiger et al. (1989)'s notion of Devil's Advocacy. Bartunek and Murninghan (1984) propose comprehensive structural methods like Nominal Group Technique, while some other literature mentions decisions making processing for strategic choices (Schwenk and Cosier, 1993; Schweiger and Finger, 1984; Cook and Hammond, 1982) and creation and retention of novel ideas (Diehl and Stroebe, 1987).

Such assertion also indicates that when business unit or individuals engage in both operation and innovation, they have to suffer loss of efficiency in operation, as indicated by operation researches on interruption. Federgruen and Green (1986) note service groups are subject to interruptions that are caused by breakdowns, scheduled off-periods or prioritized customs. Interruptions cause disruptive time-outs within cycling of group processes, which traditionally prior research has viewed as negative to performance of routines (Zellmer-Bruhn, 2003). Andrasik and Heimberg (1982) emphasize controlling and minimizing interruptions. Kirmeyer (1988) indicates interruptions increase working pressure. Perlow (1999) and Cellier and Eyrolle (1992) further link interruptions to coordination disruption, overtime work, and work pressure accentuated by temporal rearrangements, which also often associated increases in processing time and error rates. Such innovative activities are associated with loss of efficiency in operation. Our model wishes to delineate such relation by viewing innovative activities as interruption to operation and see how operation efficiency can be optimized with the consideration of different innovation types.

Stochastic queuing between operational and innovative activities

Our method follows Marks et al. (2001)'s notion to generalize business unit process as an operational task execution-innovation framework. We also followed note that individuals in the business unit as a group perform in temporal cycles of task work activities (Zaheer et al., 1999; Weingart, 1997). Process variability induced by innovation uncertainty using a stochastic setting in innovation time was captured. Flexsim software was used for simulation. Flexsim is an object-oriented software environment used to develop, model, simulate, visualize, and monitor dynamic-flow process activities and systems (Nordgren, 2003). The business group process was assumed to be an M/G/10 stochastic queuing model, which uses sequential processing system. The task arrival input will be an exponential distribution, operation task process time for each individual will be a normal distribution and ten individuals are assumed to be within the processing system (that is, business unit).

Figure 1 shows a recursive cycle of queuing between operational task execution process and innovation that follows Marks et al. (2001)'s I-P-O process.

SIMULATION RESULTS

Table 1 gives a data set of the tem-person business group operational process task output with different settings of innovation frequency and innovation time's variability (standard deviation). For example, $n = 1$ indicates an innovation activity will occur after one task is completed, and the mean time of innovation activity is given by $x_1 = 1$. Under these conditions, the variability of an innovation activity is given by $\sigma = 1, 2, ..., 8$. The corresponding operational process outputs respectively reach 44348, 43567, 42673, 41661, 40652, 39603, 38496, and 37420. It can be seen from the first column that as the variability level σ (standard deviation of innovation activity time) increases, the performance suffers from a gradual decrease.

Viewing the entire data set, it can also be seen that the
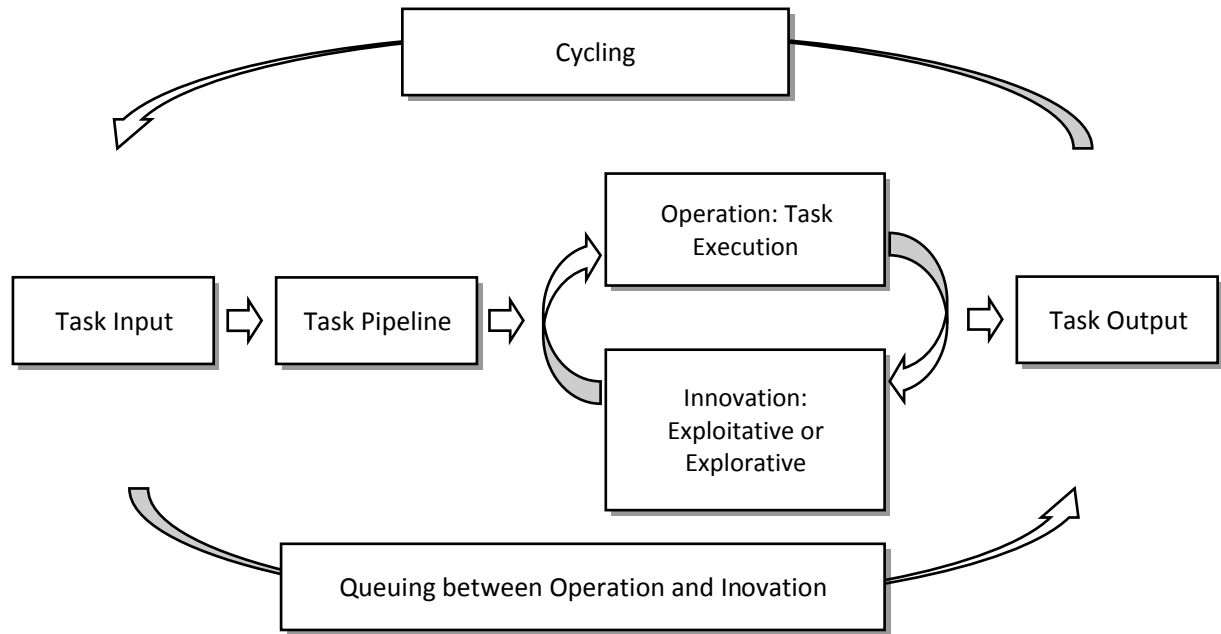
Figure 1. Reoccurring cycling group task and innovation.

Table 1. Simulation productivity levels within one type of innovation activity.

σ	n=1; x_1=1	n=2; x_2=2	n=3; x_3=3	n=4; x_4=4	n=4; x_4=4	n=6; x_6=6
1	44348	44349	44123	43821	43518	43244
2	43567	44017	43946	43736	43497	43165
3	42673	43484	43714	43417	43217	43017
4	41661	42920	43118	43172	43022	42806
5	40652	42036	42617	42668	42619	42480
6	39603	41269	42003	42171	42095	41971
7	38496	40624	41347	41698	41689	41626
8	37420	39764	40650	40994	41056	41106

output performances in each situation, as σ increases, do not decrease with the same speed. The boldfaced numbers indicate a turning points. Between any adjacent situations, N^{th} and $N+1^{th}$, when σ is lower than the turning point, output performance in the Nth situation is higher than that of the $N+1^{th}$, but when σ is higher than the turning point, output performance in the Nth situation is lower than that of the $N+1^{th}$ condition. For example, between situation $n=2$ and $n=3$, when σ is 1, smaller than 3, the output performance of situation $n=2$, 44349, is higher than that of $n=3$, 44123, and so is the case when σ reaches 2. When σ reaches 3 or larger, the output performance of situation $n=2$, 43484, is lower than that of $n=3$, 43714. Between $n=1$ and $n=2$, the turning point is at $\sigma=1$;

between $n=2$ and $n=3$, $\sigma=3$; between $n=3$ and $n=4$, $\sigma=4$; between $n=4$ and $n=5$, $\sigma=8$; between $n=5$ and $n=6$, $\sigma=8$. Figure 2 shows a complete output performance landscape of this data set. The turning points are illustrated as the intersections between any two lines.

We expanded the data horizon to see all 50 situations and corresponding turning points. Table 2 is a summary of turning points of 50 situations. Although performance turning points is applicable to all the situations, but the locations of all the turning points do not appear in an aligned fashion. As the n increases, the location of turning points as marked by σ starts fluctuating.

Figure 3 shows an illustration of all 50 turning points of 50 situations. The turning points' location varies as n increases. A trend line of these locations as marked by n and σ is given by $y=0.9569x+6.3796$, with
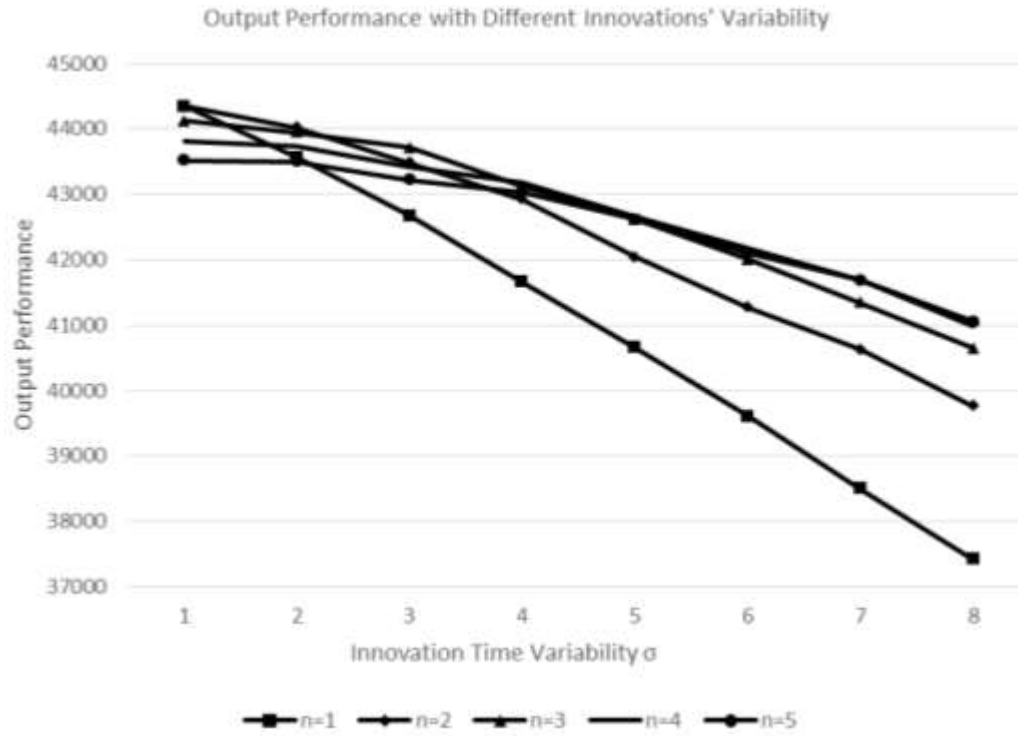
Figure 2. Output performance with different innovation activities.

Table 2. Turning points of 50 situations.

n	σ	Performance	n	σ	Performance
1	1	44349	26	39	32967
2	3	43714	27	38	33180
3	4	43172	28	42	32609
4	8	41056	29	38	33128
5	8	41106	30	38	33232
6	13	39123	31	34	33760
7	13	39138	32	42	32852
8	14	38136	33	27	34375
9	18	38136	34	45	32599
10	16	37166	35	37	33516
11	20	35580	36	45	32943
12	18	36438	37	37	33592
13	23	34922	38	42	33032
14	26	34069	39	57	31914
15	19	36080	40	54	32273
16	23	35099	41	35	33657
17	24	34873	42	35	33747
18	22	35287	43	40	33396
19	17	36126	44	42	33075
20	27	34419	45	41	33304
21	36	32809	46	46	32947
22	29	34073	47	51	32761
23	29	34083	48	56	32442
24	27	34359	49	49	32827
25	23	35011	50	67	31824

Turning Point Locations
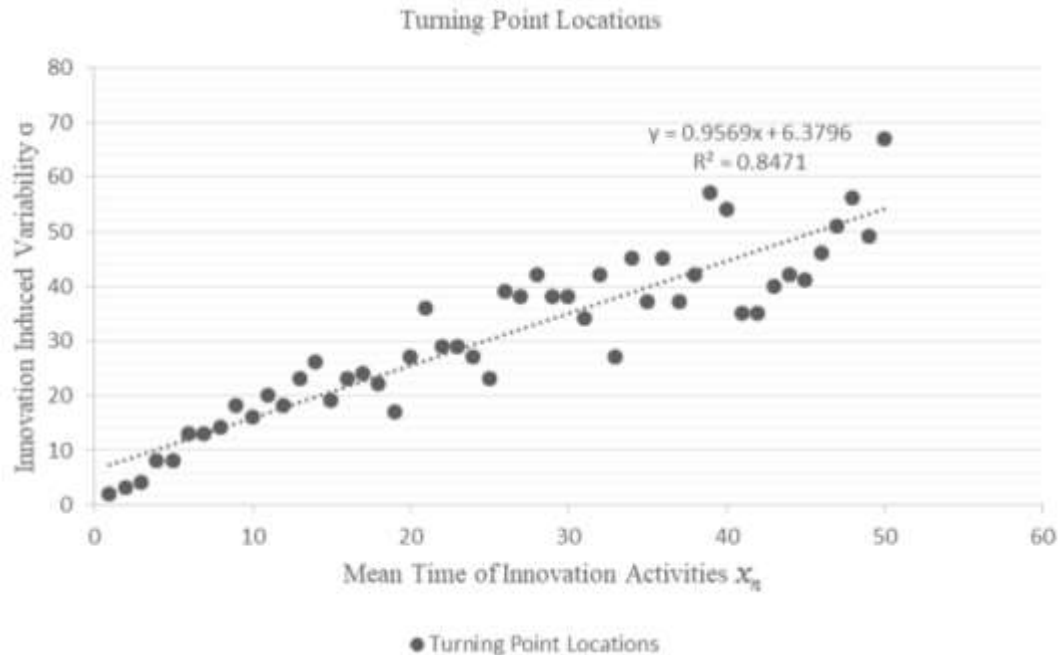
Figure 3. Turning points locations of 50 situations.

$R^2 = 0.8471$. This result indicates that the performance of operational process can be optimized by increasing or decreasing n linearly according to σ changes.

From Table 2 and Figure 3, it can be seen that the optimal efficiency occurs when frequency of innovative activities are matched with their variability linearly. The implication of this result is that balancing exploitation and exploration on a group level requires attention to different learning types of innovation. For those explorative activities that has high variability in time requirement, it is best that these activities are carried out with lower frequencies; whereas for those exploitive innovative activities that has lower variability in time requirement, output can be optimal when innovative activities are carried out with higher frequencies. This result also implicates that optimal efficiency does not restrain innovative activities with fixed speeds, as the managers can accelerate or decelerate innovative activities with an attention to their variability changes.

DISCUSSION AND MANAGERIAL IMPLICATION

Previous literature on how to achieve ambidexterity has primarily focused on the structural and organizational level antecedents and outcomes. Although rich debates have generated various methods to achieve organizational ambidexterity, empirical studies have reported mixed findings on ambidexterity-performance links. On the other hand, ambidexterity at the micro-level has been underexplored as the focus of previous studies

has been on organizational implications (Junni et al., 2013; Mom et al., 2009; Lavie et al., 2010; Raisch and Birkinshaw, 2008). This paper attempts to provide a process view into the discussion of ambidexterity antecedents and outcomes and further the understanding on why organizational ambidexterity may or may not help organizations to achieve superior performance.

It was argued that on business unit and individual level, how individuals' time is divided between operational and innovative activities can also be counted a crucial antecedent that contributes to the complex relationship between organizational ambidexterity and performance. In an ambidextrous business unit, individuals' operational process is intervened by innovative activities. The operational efficiency will be negatively impacted by such time division. The process variability induced by innovation uncertainties will also contribute to such impacts.

Further, ambidexterity literature asserts that micro-level ambidexterity requires business unit and individuals in an organizations not only optimizing operational efficiency but also conducting both exploitative and explorative innovations. It was argued that two types of innovation impose different level of variability to operational process. Specifically, when individuals in a business unit as a group needs to intervene operational process with exploitive innovation, the operational efficiency and performance overtime will be impacted by time division and process variability with smaller magnitude whereas when operational process is intervened by explorative innovation, the negative impact from time division and

process variability is larger.

As individuals in a business unit have to cyclically divide time between operation and innovation, we adopt an Input-Output group process model and a stochastic queuing system to simulate such process. Our findings indicate that operational efficiency can be negatively impacted by time division and process variability induced by innovative activities, and different level of variability has different impact on operational efficiency. However, another key finding of our research indicates that controlling frequency of innovation activities can help alleviate the negative impact from process variability. Specifically, when individuals need to divide time between operational activities and exploitive innovation with low process variability, high frequency is preferable for optimizing operational efficiency. When individuals need to divide time between operational activities and explorative innovation with high process variability, low frequency is preferable for optimizing operational efficiency.

Our research findings have implications in several ways: first, managers not only need to pay attentions to structural or contextual antecedents and associated performances, the micro-level process related antecedent such as operational process variability and time division also requires attention for management. Our research confirms that the process variability induced by dividing time to innovative activities will negatively impact operational efficiency. However, process variability induced by innovation uncertainty cannot be directly reduced since innovations are naturally associated with uncertainty. Second, instead of trading off operation time and efficiency for innovation, managers and individuals in a business group can alleviate such negative impact imposed by innovation by adopting a certain temporal rhythm for conducting innovative activities. Further, as different types of innovation bring about different process variability, adopting different rhythms for conducting different innovative activities can optimize operational efficiency. Innovations with high uncertainties such as explorative innovation, can be associated with infrequent rhythm, and innovations with relatively low level of uncertainties such as exploitive innovation, and can be associated with frequent rhythm. Such arrangement will help organizations to achieve superior performance and at the same time leaving enough time for innovation at business unit and individual level.

Take Adler et al. (1999)'s case study as an example to better illustrate the management implication of our theory. In the case study, individual employees working in the Toyota manufacturing system needs to balance between repetitive operation and two types of innovation (that is, the Kaizen and the pilot team program). Uncontrolled arrangement of time among these three types of activities may negatively impact operational efficiency because the working time needs to be divided into three parts other than focusing all into repetitive operation or

manufacturing, which is very likely to result in the less optimal balancing effort of ambidexterity. However, as our simulation indicates, controlling the frequency of dividing time from operation to innovation can result in different level of efficiency. Our simulation shows the key to control such time division is the variability level of innovative activities, in which case we use the standard deviation of the time divided innovation as the indicator of variability level. Our results indicate controlling frequency of innovative activities according to their variability level can help the operational efficiency to reach superior state. Specifically, when individuals need to divide time between repetitive operation and exploitive innovation (such as Kaizen), the frequency of innovative activities should be high. When individuals need to divide time between repetitive operation and explorative innovation (such as rotating into the pilot team to facilitate major model changeover), the frequency of innovative activities should be set much lower considering the variability of such activities.

A more interesting finding from our result is that manager may be able to dynamically maintain high level of operational efficiency and in the same time accelerate or decelerate the frequency of exploitative innovation and explorative innovation. Although our results do not directly indicate when to accelerate or to decelerate innovative activities, they do implicate the best operational efficiency in such ambidextrous case is in a linear relationship with variability level of innovative activities. Such implication may help managers to judge for the timing of appropriate frequency of each type of innovation and the optimal time for acceleration or deceleration. If the variability of innovation is dropping, such as when the employees are becoming experienced in Kaizen or participating pilot team, they are quicker in completing the innovation objective and reach positive result than the past, managers in this case may consider accelerating the innovation pace. Whereas when variability level of innovative activities is raising, such as undertaking innovations that are more distant from current technological trajectory or associated with higher level of uncertainty, managers may need to consider decrease the frequency of employee's engagement in innovative activities. On the other hand, when the external environment requires organizations face acceleration or deceleration environmental change that puts more pressure on organizations to accelerate or decelerate their innovative activities, managers may also be able to adjust their pace according to our theory. To accommodate change in the organization or in a business unit to catch up with environmental change, managers may adopt major measures to reduce variability in the operation-innovation process such as the techniques in Lean management or Six Sigma programs with an arrangement and consideration between innovation and operation. Reduced variability in the operating-innovation combined process can create more

space for manager to accelerate innovative activities while maintaining the same level of performance. Our theory in this way can help managers not only make judgment on how to decide the speed or frequency of innovative activities for individuals in a business unit, but also they can help the managers adjust the speed or frequency of innovative activities to optimize the operational performances.

Conclusions

This paper uses a stochastic queuing model to analyze how to achieve ambidexterity to address productivity dilemma on a micro level. A nuanced perspective focusing on organizational process to explain the mixed empirical findings on ambidexterity was provided. Our findings suggest the time division between operation and innovation needs to consider the process variability induced by innovation uncertainty, because these factors prove to be negatively associated with operational efficiency. However, controlling the frequency of innovation can help alleviate such negative impacts. Different types of innovations are associated with different levels of uncertainty, and therefore the different frequency needs to be matched contingently towards different types of innovation. Further, as our result presents a linear link between frequency of innovative activities and innovation variability, managers may also be able to judge the better time for acceleration or deceleration of innovative activities. Our research contributes to the literature with a new perspective to the understanding of antecedents and outcomes for ambidextrous organization and a method to optimize efficiency in micro level ambidexterity. As our research is a simulation base analysis, future researches can empirically test our results. Also, our model does not consider different industries may concern different operational process, different processes associated with different industries may provide more insights to the process view of ambidextrous organization.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Abernathy WJ (1978). The productivity dilemma: Roadlock to innovation in the automobile industry. Baltimore: Johns Hopkins.

Adler PS, Benner M, Brunner DJ, MacDuffie JP, Osono E, Staats BR, Winter SG (2009). Perspectives on the productivity dilemma. J. Oper. Manag. 27(2):99-113.

Adler PS, Goldoftas B, Levine DI (1999). Flexibility versus efficiency? A case study of model changeovers in the Toyota production system. Organ. Sci. 10(1):43-68.

Andrasik F, Heimberg JS (1982). Self-management procedures. In L.W. Frederikson (Ed.,) Handbook of organizational behavior management. pp. 219-247.

Bartunek JM, Murninghan JK (1984). The nominal group technique: expanding the basic procedure and underlying assumptions. Group Organ. Manage. 9(3):417-432.

Benner MJ, Tushman ML (2003). Exploitation, exploration, and process management: The productivity dilemma revisited. Acad. Manage. Rev. 28(2):238-256.

Bierly PE, Daly PS (2007). Alternative knowledge strategies, competitive environment, and organizational performance in small manufacturing firms. Entrep. Theory Pract. 31(4):493-516.

Bonesso S, Gerli F, Scapolan A (2014). The individual side of ambidexterity: do individuals' perceptions match actual behaviors in reconciling the exploration and exploitation trade-off? Eur. Manage. J. 32(3):392-405.

Brown SL, Eisenhardt KM (1997). The art of continuous change: Linking complexity theory and time-paced evolution in relentlessly shifting organizations. Admin. Sci. Quart. 42(1):1-34.

Bushe GR, Shani AB (1991). Parallel learning structures: Increasing innovation in bureaucracies. Reading, MA: Addison-Wesley.

Cardinal LB (2001). Technological innovation in the pharmaceutical industry: The use of organizational control in managing research and development. Organ. Sci.12(1):19-36.

Cellier JM, Eyrolle H (1992). Interference between switched tasks. Ergonomics 35(1):25-36.

Cook RL, Hammond KR (1982). "Interpersonal Learning and Interpersonal Conflict Reduction in Decision Making Groups" in R.A. Guzzo (ed.), Improving Group Decision Making, New York, Academic Press. pp. 13-72.

Diehl M, Stroebe W (1987). Productivity loss in brainstorming groups: Toward the solution of a riddle. J. Pers. Soc. Psychol. 53(3):497-509.

Dosi G (1982). Technological paradigms and technological trajectories: A suggested interpretation of the determinants and directions of technical change. Res. Pol. 11(3):147-162.

Duncan RB (1976). The ambidextrous organization: Designing dual structures for innovation. Manage. Organ. 1:167-188.

Eisenhardt KM, Brown SL (1998). Competing on the edge: Strategy as structured chaos. Long Range Plann. 31(5): 786-789.

Federgruen A, Green L (1986). Queuing systems with service innovation activities. Oper. Res. 34(5):752-768.

Gibson CB, Birkinshaw J (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. Acad. Manage. J. 47(2):209-226.

Gist ME, Locke EA, Taylor MS (1987). Organizational behavior: Group structure, process, and effectiveness. J. Manage. 13(2):237-257.

Green SG, Gavin MB, Aiman-Smith L (1995). Assessing a multidimensional measure of radical technological innovation. IEEE Trans. Eng. Manage. 42(3):203-214.

Gupta AK, Smith KG, Shalley CE (2006). The interplay between exploration and exploitation. Acad. Manage. J. 49(4):693-706.

Guzzo RA, Shea GP (1992). Group performance and intergroup relations in organizations. Handb. Ind. Organ. Psychol. 3:269-313.

Hackman JR (1983). A normative model of work team effectiveness (No. TR-2). Office of Naval Research Arlington VA.

Hayes RH, Abernathy WJ (1980). Managing our way to economic decline. Harv. Bus. Rev. 58(4):66-77.

He ZL, Wong PK (2004). Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. Organ. Sci. 15(4):481-494.

Henry RA (1995). Improving group Judgement accuracy: Information sharing and determining the best member. Organization. Behav. Hum Decis Processes 62(2):190-197.

Jacobs JH, Etman LFP, Van Campen EJJ, Rooda JE (2003). Characterization of operational time variability using effective process times. IEEE Transactions on semiconductor manufacturing. 16(3): 511-520.

Jansen JJ, Van Den Bosch FA, Volberda HW (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. Manage. Sci. 52(11):1661-1674.

Junni P, Sarala RM, Taras V, Tarba SY (2013). Organizational ambidexterity and performance: A meta-analysis. Acad. Manage. Perspect. 27(4):299-312.

Kang SC, Snell SA (2009). Intellectual capital architectures and

ambidextrous learning: a framework for human resource management. J. Manage. Stud. 46(1):65-92.

Kingman JFC (1961). The single server queue in heavy traffic. In Mathematical Proceedings of the Cambridge Philosophical Society. Cambridge University Press. 57(04):902-904.

Kirmeyer SL (1988). Coping with competing demands: innovation activity and the type A pattern. J. Appl. Psychol. 73(4):621.

Kortmann S, Gelhard C, Zimmermann C, Piller FT (2014). Linking strategic flexibility and operational efficiency: The mediating role of ambidextrous operational capabilities. J. Oper. Manage. 32(7):475-490.

Kozlowski SW, Gully SM, Nason ER, Smith EM (1999). Developing adaptive teams: A theory of compilation and performance across levels and time. Pulakos (Eds.), the changing nature of performance: Implications for staffing, motivation, and development, pp.240-292.

Lavie D, Stettner U, Tushman ML (2010). Exploration and exploitation within and across organizations. Acad. Manage. Ann. 4(1):109-155.

Lin Z, Yang H, Demirkan I (2007). The performance consequences of ambidexterity in strategic alliance formations: Empirical investigation and computational theorizing. Manage. Sci. 53(10):1645-1658.

Locher D (2007). In the office: Where lean and six sigma converge. Qual. Prog. 40(10):54.

March JG (1991). Exploration and exploitation in organizational learning. Organ. Sci. 2(1):71-87.

Marks MA, Mathieu JE, Zaccaro SJ (2001). A temporally based framework and taxonomy of team processes. Acad. Manage. Rev. 26(3):356-376.

McDonough EF, Leifer R (1983). Using simultaneous structures to cope with uncertainty. Acad. Manage. J. 26(4):727-735.

McGrath JE (1991). Time, interaction, and performance (TIP) A Theory of Groups. Small Gr. Res. 22(2):147-174.

Mom TJ, Van Den Bosch FA, Volberda HW (2007). Investigating managers' exploration and exploitation activities: The influence of top‐down, bottom‐up, and horizontal knowledge inflows. J. Manage. Stud. 44(6):910-931.

Mom TJ, Van Den Bosch FA, Volberda HW (2009). Understanding variation in managers' ambidexterity: Investigating direct and interaction effects of formal structural and personal coordination mechanisms. Organ. Sci. 20(4):812-828.

Morone JG (1993). Winning in high-tech markets: The role of general management. Harvard Business School Press. 277p.

Nickerson JA, Zenger TR (2002). Being efficiently fickle: A dynamic theory of organizational choice. Organ. Sci. 13(5):547-566.

Nordgren WB (2003). Flexible simulation (Flexsim) software: Flexim simulation environment. Proceedings of the 35 the Conference on Writer Simulation: Driving Innovation, New Orleans Louisiana.

Okhuysen GA, Eisenhardt KM (2002). Integrating knowledge in groups: How formal interventions enable flexibility. Organ. Sci. 13(4):370-386.

Perlow LA (1999). The time famine: Toward a sociology of work time. Admin. Sci. Quart. 44(1):57-81.

Raisch S, Birkinshaw J (2008). Organizational ambidexterity: Antecedents, outcomes, and moderators. J. Manage. 34(3):375-409.

Schreyögg G, Sydow J (2010). Crossroads-organizing for fluidity? Dilemmas of new organizational forms. Organ. Sci. 21(6):1251-1262.

Schweiger DM, Finger PA (1984). The comparative effectiveness of dialectical inquiry and devil's advocacy: The impact of task biases on previous research findings. Strateg. Manage. J. 5(4):335-350.

Schweiger DM, Sandberg WR, Rechner PL (1989). Experiential effects of dialectical inquiry, devil's advocacy and consensus approaches to strategic decision making. Acad. Manage. J. 32(4):745-772.

Schwenk CR, Cosier RA (1993). Effects of Consensus and Devill's Advocacy On Strategic Decision-Making. J. Appl. Soc. Psychol. 23(2):126-139.

Siggelkow N, Levinthal DA (2003). Temporarily divide to conquer: Centralized, decentralized, and reintegrated organizational approaches to exploration and adaptation. Organ. Sci. 14(6):650-669.

Stein BA, Kanter RM (1980). Building the parallel organization: Creating mechanisms for permanent quality of work life. J. Appl. Behav. Sci. 16(3):371-388.

Swart J, Kinnie N (2007). Simultaneity of learning orientations in a marketing agency. Manage. Learning, 38(3):337-357.

Turner N, Swart J, Maylor H (2013). Mechanisms for managing ambidexterity: A review and research agenda. Int. J. Manage. Rev. 15(3):317-332.

Tushman ML, O'Reilly CA (1996). The ambidextrous organizations: Managing evolutionary and revolutionary change. California Manage. Rev. 38(4):8-30.

Tushman ML, Smith W (2002). Organizational technology. In: Baum, J. A. C. (Ed.). Blackwell companion to organizations. Malden. pp. 386-414.

Venkatraman N, Lee CH, Iyer B (2007). Strategic ambidexterity and sales growth: A longitudinal test in the software sector. In Unpublished Manuscript (earlier version presented at the Academy of Management Meetings, 2005).

Weingart LR (1997). How did they do that? Res. Organ. Behav. 19:189-239.

Wiggins RR, Ruefli TW (2005). Schumpeter's ghost: Is hypercompetition making the best of times shorter? Strateg. Manage. J. 26(10):887-911.

Yang H, Atuahene-Gima K (2007). Ambidexterity in product innovation management: the direct and contingent effects on product development performance. In annual meeting of the Academy of Management, Philadelphia, PA.

Zaheer S, Albert S, Zaheer A (1999). Time scales and organizational theory. Acad. Manage. Rev. 24(4):725-741.

Zand DE (1974). Collateral organization: A new change strategy. J. Appl. Behav. Sci. 10(1):63-89.

Zellmer-Bruhn ME (2003). Interruptive events and team knowledge acquisition. Manage. Sci. 49(4):514-528.

Full Length Research Paper

Why small and medium-sized firms tend to make recourse to external debt: An investigation into an Italian sample

Alberto Mazzoleni[1]*, Elisa Giacosa[2] and Manzi Luca Maria[3]

[1]Department of Economics and Management, University of Brescia, Italy.
[2]Department of Management, University of Turin, Italy.
[3]Department of Economics, Social Sciences, Mathematical and Statistics, University of Turin, Italy.

The purpose of this research is to identify the determinants impacting companies' financial structure in SMEs belonging to different economic sectors. The research is due to the current situation which characterizes the banking system and the companies' environment. Within this context, both companies and stakeholders need to identify the determinants impacting these companies' financial structure in order to optimize their decisions in terms of short and medium-long term goals and internal/external sources. In a previous research, the frame work of this study has been presented in which some variables impacting companies' financial structure have been identified. Finally, our sample is composed of 12,175 Italian companies; 2% of them are bankrupt; 97% have external debts. The present research identifies the relationship between variables introduced by the literature on the level of indebtedness. In particular, the following variables have been analysed to assess their impact on suitable funding methods: The growth of the company, the attitude to repaying financial debts, the companies' financial situation, their age, size, intangible assets ratio, and economic sector. The present research has some interesting theoretical and practical implications, along with some limitations linked to the sample and research method.

Key words: Debts degree, indebtedness, small and medium companies.

INTRODUCTION

The growth of small and medium-sized companies is a phenomenon of great interest in the literature, and financial structure influences a company's growth; indeed, the difficulty in finding and then maintaining adequate financial resources can be an obstacle to this growth.

The changed economic context as well as the progressive disengagement of the banking system towards financing enterprises for long-term investments has recently (since 2008) facilitated a series of regulatory measures aimed at introducing some alternative financial instruments in the banking channel, and the development of the same in the financial markets (Mazzoleni and Giacosa, 2017).

*Corresponding author. E-mail: alberto.mazzoleni@unibs.it.

Companies' financial structure has been strongly investigated, starting from the Modigliani and Miller theory (1958) and followed by different theories. However, most of the studies focus on the big listed companies and pay less attention to the small and medium-sized enterprises (SMEs), which represent a significant reality as they contribute 58% of European added value and their employees represent 67% of the workforce at a European level (Moritz et al., 2015). On the other hand, a company needs to operate in profitable conditions and meet its obligations in a timely manner. Not fulfilling financial commitments could result in default. Within this context, a company has a possibility to do both: meet its obligations and resort to other debt in order to fund future projects. Instead, a company with a high ratio of debt over invested capital can be considered risky by the financial system, and, consequently, it cannot resort easily to the resources necessary to realize important projects. Therefore, the relation between debt and invested capital and the investigation of its main determinants is highly relevant.

The purpose of this research is to identify the determinants impacting companies' financial structure in SMEs belonging to different economic sectors. The research is due to the current situation which characterizes the banking system and companies' environment. Indeed, until some years ago, the banking system provided financial resources for both investment and working capital coverage. This availability has come to nothing in recent years, as banks are now in a position to provide financial resources for short-term needs but have difficulty in financing long-term investments.

Based on this, the Italian Government intervened by promoting several kinds of financing tools that varied from the banking ones, and making some authority interventions. In addition, the government provided some forms of collateral to the subscribers of the above-mentioned instruments to reduce the risk of investing in SMEs typically characterized by a limited financial culture and a modest ability to communicate financially.

Therefore, both companies and stakeholders need to identify the determinants impacting these companies' financial structure in order to optimize their decisions in terms of short and medium-long term goals and internal/external sources. Financing methods suitable for SMEs belong to the following groups: i) sources of financing of internal origin, which are made up of capital taken as a full risk by the owner or shareholders of the company; their remuneration is linked to the results obtained and without any obligation to repay. Similar to other conditions, these sources of funding allow for greater governmental influence within the company, since they are permanently tied to it. Among internal sources, the company's ability to generate self-financing should also be considered, generally identifiable with the increased economic result of non-monetary costs; (ii) sources of external financing (that is both commercial and financial debts, such as those payables to suppliers,

banks and other financial entities), which are made up of the debt that the company owes outside. This form of financing grants the lending party both the right to repayment of capital and its remuneration, unlike capital at risk.

The added value of the work is then consistent with the current context of reference, which is changing profoundly for both economic and regulatory reasons, highlighting a completely different perspective than the business experience of recent years. Progressive disengagement of the banking system by some types of financing, and the almost total exit from some sectors of the economy necessitate understanding the determinants of companies' financial structures. In addition, the plentiful credit provided by the banking system up to 2008, the ability of banks to cover all SMEs' investment needs and the modest selection of entrusted persons have led to limited development of SMEs' financial culture. This has created substantial managerial incompetence and capital inadequacy in Italian SMEs.

Our framework is represented by Giacosa (2015) and Broccardo et al. (2016), in which some variables impacting companies' financial structure have been identified. In particular, Mazzoleni and Giacosa (2017) made an initial investigation to explore the average and standard deviation of the variables for each economic sector, but the relationship between dependent and explanatory variables was not verified. A second investigation (Giacosa and Mazzoleni, 2017) verified the impact of a series of variables affecting degree of debt and systemic perspective in SMEs (Ferrero, 1968, 1987). That investigation involved Italian manufacturing companies, as the manufacturing sector is the main representative sector in Italy. On the contrary, the present research analyzes the phenomenon in different economic sectors and also investigates the role of "the sector variable" (Giacosa, 2015).

LITERATURE REVIEW

A rich literature review of the field explores the combination between a company's economic and financial aspects (Giunta, 2007; Vause, 2001) plus its business management and opportunities to evaluate and understand its situations in the short, medium, and long term. In particular, numerous scholars focused on the issue of financial structure in small and medium-sized companies (Chittenden et al., 1996; Hamilton and Fox, 1998) as this factor influences a company's growth (Michaelas et al., 1999; Hall et al., 2000). In addition, studies have focused on the most appropriate relation between investments and funding, along with the connection between the financial structure and financial situation (Mazzoleni and Giacosa, 2017).

Different theories have been used to identify the right financial structure, starting from Durand (1952),

Modigliani and Miller (1958) and their revision (1963), Myers (1974), Miller (1977), Miles and Ezzel (1980) and other studies. They recognize the determinants of the financial structure (Domenichelli, 2013; Galbiati, 1999; Garofalo, 1987; Venanzi, 2010), along with the relationship between corporate governance and financial structure (La Rocca, 2008; Maggioni et. al., 2009; Montalenti, 2009).

The theories were developed in terms of large-sized companies but are also applicable to small and medium-sized ones (Esperança et al., 2003; Fu et al., 2002) using multivariate analysis (Hall et al., 2004; Cassar and Holmes, 2003; Broccardo et al., 2016). The dilemma (Dallocchio et al., 2011; La Rocca, 2007) of the right financial structure has been discussed in numerous publications (Venanzi, 2003; Zazzaro, 2008), as the topic has an important role in terms of business management (Giacosa and Guelfi, 2003; Giacosa, 2015; Fazzari et al., 1988) and the financial requirements of a company (Ferri and Messori, 2000; Oliveira and Fortunato, 2006). Within this context, a proper definition of the financial structure has been made (Grandinetti and Nassimbeni, 2007), along with the balance between different sources of financing (Capasso et al., 2015; Giacosa and Mazzoleni, 2017; La Rocca, 2007), the attitude of self-financing (Brealey et al., 1999; Rossi et al., 2015), the balance between financing and investments (Golinelli, 1994; Miglietta, 2004) and the suitable level of financial independence from third parties (Giacosa and Mazzoleni, 2016). In terms of funding, a company needs to choose between equity and external borrowings (Miglietta, 2004; Rossi, 2014, b; Rossi et al., 2015), as their equilibrium influences the financial and economic situation in terms of financial costs and the freedom of action in terms of investment strategy and independence from third-party investors (Baginski and Hassel, 2004; Bernstein and Wild, 1998; Brealey et al., 1999; Singer, 2000).

Several empirical analyses have been made to compare the financial structure of small, medium and large companies in Europe and the United States (Giacosa, 2015). In particular, studies explore the financial structures and performances, along with how the financial crisis has impacted companies (de Socio et al., 2014; De Bonis et al., 2012; Rivaud-Danset et al., 2001). Within this field, Italian small and medium-sized companies represent a typical sample population for this kind of study (La Rocca et al., 2011; Giacosa, 2015) as they are widespread in the Italian economic context (Broccardo et al., 2016). There is a rich literature focused also on European SMEs (Lopez-Gracia and Romero-Martinez, 1997; Cardone and Cazorla, 2001; Van Caneghem and Campenhout, 2012) or individual European countries (Ocaña et al., 1994; Lopez-Gracia and Aybar, 2000; Aybar et al., 2001) using some financial variables for analysis (López-Gracia and Sogorb-Mira, 2008; Mac An Bhaird and Lucey, 2010; Degryse et al., 2012).

Much attention has been paid to the combination of investment and financing (Bernstein and Wild, 1998; Fiori, 2003; Giunta, 2007), and the range of financial and economic variables (Mazzoleni, 2012; Meigs et al., 2001; Weston and Brigham, 1978) that impact the degree of a company's indebtedness (Rossi, 2014 a, b; Van Horne, 1972). In particular, our literature review investigated several particularly relevant variables impacting companies' indebtedness (Giacosa, 2015; Broccardo et al., 2016; Mazzoleni and Giacosa, 2017). The following variables have been analysed to assess their impact on suitable funding methods: the growth of the company, the attitude to repaying financial debts, the company's financial situation, the age and size of the company, the intangible assets ratio, and the economic sector.

The growth of a company

The growth of a company represents an important variable correlated with the company's financial structure (Carpenter and Petersen, 2002; Herrera and Minetti, 2007; Fellnhofer, 2015). In particular, financial availability may impact the investment policy (Fagiolo and Luzzi, 2004; Honjo and Harada, 2006; Mahérault, 2000). When a company is undercapitalised, new external financial resources are particularly welcome for permitting the growth of the company (Becchetti and Trovato, 2002; Broccardo, 2014). Growth creates new financial requirements (Ferrero, 1972); financial needs have been defined and quantified (Bianchi, 1975; Campedelli, 1998), to be aligned to the corporate strategy (Ansoff, 1974; Chandler, 1962; Invernizzi, 2008). As a consequence, a revision of the corporate strategy may arise when there is lack of funds collection (Coda, 1988; Corbetta, 1999). For Cressy and Olofsson (1997), companies require external financial resources to grow, and the recourse to debt is more than welcome to prevent the loss of control of the company. Mac An Bhaird and Lucey (2010) demonstrated that a company's growth particularly affects medium/long-term debt level, and growing companies incur a high level of indebtedness (Sogorb-Mira, 2005; Ou and Haynes, 2006; Giacosa, 2015). Other authors confirmed the relation between growth and level of indebtedness (Chittenden et al., 1996; Michaelas et al., 1999; Berggren et al., 2000; Lopez-Gracia and Aybar, 2000; Broccardo et al., 2016).

The attitude to repaying financial debts

It is worth mentioning the importance of a company's ability to repay financial debts (Ferrero et al., 2006; Giacosa and Mazzoleni, 2012) using financial resources generated by its core activity (Broccardo et al 2016; Giacosa, 2011, 2012, 2015). The ability to repay financial debts thanks to the financial resources from the core business has a relevant role (Giacosa, 2011 and 2012) and several indicators evaluate this aspect, including operating revenue in terms of turnover (Ferrero et al.,

2006). Indeed, when the core business produces sufficient financial resources, the company can count on its own ability to repay financial debts; on the contrary, some difficulties may occur if the core business is not strong enough to generate money (Giacosa and Mazzoleni, 2012). This indicator represents a measure of the company's risk (ECB, 2014). The recourse to debt is also influenced by the company's risk level, which could impact the bankruptcy cost (Wijst and Thurik, 1993; Wald, 1999).

The companies' financial situation

Analysis of the companies' financial structure is important (Orrigan, 1968; Paolucci, 2013), but does not constitute an isolated or exhaustive instrument (Mella and Navaroni, 2012; Sostero, 2014). Several researchers combined definitions of a company's financial structure and financial situation (Grandinetti and Nassimbeni, 2007) because they have an important role in terms of business management (Ferrero et al., 2006; Giacosa, 2015). Indeed, financial structure analysis has to be integrated with the financial situation to offer a more comprehensive analysis (Orrigan, 1968) and a complete overview of the financial situation (Paolucci, 2013).

A combination of the financial structure and financial situation allows for an investigation of a company's solvency, that is, its ability to possess sufficient financial resources to repay debts timely (Ferrero et al., 2006; Value, 2001). Several scholars find that companies that invest in fixed capital tend to finance those investments by medium/long-term funds (Degryse et al., 2012; Brealey and Myers, 2000), thereby ensuring a match between the maturities (Heyman et al., 2008; Mitchel, 1991).

The turnover assets

Turnover assets may also impact a company's financial needs (Frielinghaus et al., 2005; La Rocca et al., 2011) because it requires new financial resources for growth opportunities in respect of different environments' constraints (Dallocchio et al., 2011).

This aspect also depends on the company's life cycle (Rija, 2006), as each phase of the cycle requires particular assets permitting its activity (Giacosa, 2012). In addition, the investment growth rate and the marked diversification influence this aspect as they require different turnover assets (Hall et al., 2000; Michelas et al., 1999; Venanzi, 2003). In particular, small and medium-sized companies characterized by high investment growth rate are more indebted than those with limited or no opportunities (Giacosa and Mazzoleni, 2016, 2017).

The age of the companies

Some studies claim that medium/long-term indebtedness is correlated in a negative way with the companies' age (Giacosa and Mazzoleni, 2016; Mazzoleni, 2017). Indeed, newly created companies have difficulties obtaining financial debts as a result of informational asymmetries between potential funders and the companies' management and a greater probability of default (Mac An Bhaird and Lucey, 2010). Generally, mature enterprises rely on financial resources generated internally, requiring lesser external financial resources than young companies with lower or negative cash flows (López-Gracia and Sogorb-Mira, 2008). On the contrary, for other scholars a company's age is not relevant for determining its indebtedness's level (Chittenden et al., 1996).

The size of the companies

Findings on the role of a company's size are not always aligned. For some authors, a company's size does not impact its financial structure and degree of debt (Kim and Sorensen, 1986), while for others the relationship may be relevant (Warner, 1977; Ang et al., 1982; Sogorb-Mira, 2005). For instance, Pettit and Singer (1985) and Berger and Udell (1998) stated that small companies are characterized by greater probability of default than large enterprises are because the small companies resort to debt less frequently than large companies do (Confindustria, 2007). In addition, large-sized companies generate higher internal resources than small and medium-sized ones, decreasing the need for external debt (Mazzoleni and Giacosa, 2017).

In particular, a positive correlation between the size of a company and its level of indebtedness is also confirmed by the Static trade-off theory (Michaelas et al., 1999; Sogorb-Mira, 2005). This arises because of the different levels of agency costs (Sogorb-Mira, 2005), the diversification of different business (Rajan and Zingales, 1994) and information imbalances (Fama and Jensen, 1983). In addition, small and medium-sized companies have a bigger debt recourse than big companies do (Chittenden et al., 1996; Titman and Wessels, 1988) in terms of the Pecking Order Theory. Overall, it seems small companies have a greater recourse to short-term debt than big companies have because of their difficulties in obtaining long-term debts.

The intangible assets ratio

On the one hand, intangible assets are used by variousauthors as an indicator of companies' growth opportunities. In this sense it is believed that greater growth opportunities attract more capital (De Jong, 1999). Broccardo et al. (2016) find a positive relationship between indebtedness and growth opportunity, and Sogorb-Mira (2005) finds a positive relationship between

growth opportunity and medium/long-term debts. On the other hand, a greater ratio of intangible assets results in a lower ratio of tangible assets, which decreases the possibilities of accessing secured debt.

Therefore, a high intangible asset level generally reduces the level of indebtedness (Fama and French, 2002; Graham and Harvey, 2001), while for Sogorb-Mira (2005), there is a negative relationship between short-term debts and intangible assets ratio. On the contrary, Michaelas et al. (1999) stated a positive relationship between them.

The economic sector

Various authors have explored the indebtedness level of companies belonging to different sectors. Indeed, companies belonging to a particular sector may be characterized by different financial structures (Michaelas et al., 1999; Harris and Raviv, 1991). For instance, the industry sector is characterized by a lower degree of bank debt due to a higher level of self-financing (Miglietta, 2004). Nevertheless, for other researchers, careful observation according to specific companies is necessary, and the economic sector variable does not primarily impact that issue (Balakrishnan and Fox, 1993). Some in-depth analysis on manufacturing, service and trade sectors obtained discordant results (Bradley et al., 1984; Frank and Goyal, 2009; Titman and Wessels, 1988). Factors can differ from one sector to another and companies belonging to the same sector tend to finance in the same way due to similar environments and problems (Cassar and Holmes, 2003). In this context, Ibbotson et al. (2001) identify informational asymmetries and cost of equity as similarities, while Chittenden et al. (1996) and Jordan et al. (1998) refer to the will of the owner (who in the case of SMEs is usually also a manager) to maintain control over the business.

METHODOLOGY

The sample

While identifying the sample, the Italian economic context and timeframe (2012–2014) have been taken into consideration. In particular, our sample is composed of unlisted small and medium-sized active companies (in accordance with European Union Recommendation n.361 from 2003 for their definition), belonging to the most relevant economic sectors for the Italian economy: manufacture; trade; construction; transporting and storage; professional, scientific and technical activities; ICT; administrative and support service activities; agriculture, forestry and fishing; utilities; real estate activities; and accommodation, food and beverage. From the sample described above, some exclusion criteria have been applied with reference to availability of the financial statements (all the companies whose financial statements from the years 2012, 2013 and 2014 were not available were excluded), details of some financial statement items (the companies with financial statements that do not provide all the details necessary to calculate indicators introduced in the present analysis

are not considered in the following analysis), presence of outlier values (all the companies in reference to which the outlier values have been identified, have been excluded from the sample). The Aida Bureau Van Dijk database has been used to identify the sample in terms of the Ateco's economic activities adopted by Istituto nazionale di Statistica (ISTAT). Finally, our sample is composed of 12,175 Italian companies; 2% of them are bankrupt and 97% have external debts. This is due to the fact that over the last 15 years, the Italian banking system has largely supported the financial needs of businesses, ensuring a high level of access to credit. This situation has been facilitated by the abundance of financial resources available to the banking system rather than by the ability of banks to assess business projects (Mazzoleni, 2016).

Method

As specified above, the purpose of the research is to identify the determinants impacting the financial structure in small and medium companies. The shared approach in this study is inspired by the basic principles of Grounded Theory (Glaser and Strauss, 1967), for which observation and theorization go hand in hand and are circumscribed by a circular process: the theory is formalized for later stages based on the analysis of the acquired information, continuously influencing the way data is collected through the typical encoding activity of the model. Data collected in the field and using databases are de-structured, compared and analysed in order to highlight elements useful for building the "funding selection model", which represents the conclusion of the research activity.
In particular, after contextualizing the survey in the systems theory (Culasso, 1999; Giacosa, 2011), it was decided to analyse a particular phenomenon (that is, the use of debt for financing the company). For these reasons, the independent variables, also called explanatory variables, have been identified taking into account studies by Giacosa (2015) and Broccardo et al. (2016). Moreover, this study constitutes a further development of previous research (Broccardo et al., 2016), in which only the manufacturing sector was observed. Mazzoleni and Giacosa (2017)'s first work only investigated the average and standard deviation of the variables for each economic sector; it did not verify the relationship between dependent and explanatory variables.

To meet our study's aims, the following RQ was drafted:

RQ: What are the main variables impacting debt in small and medium-sized companies?

We used the econometric software Gretl, for which the OLS model has been developed, with regards to the case studies of the sample. Outliers have been eliminated for not compromising the relevance of the results. The OLS model is as follows:

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_n x_n + \varepsilon$$

where:

y = it represents the variables in the observation

α = it is the constant of the model

β_i = it represents the regression coefficient for the variable x_i

x_i = it represents the nth independent variable

ε = it represents the end of an error, called alternatively "residue error"

n = it represents the number of variables contained in the model

This method allows us not only to identify the factors that have an impact on debt in small and medium-sized companies but also to determine the importance of these factors. The dependent variables (Y) were identified as follows: the relation between total debt and invested capital, the relation between short-term debt and invested

capital, and the relation between medium and long-term debt and invested capital. The variables used by the model are presented in Table 1. Those variables are analysed taking into consideration the previous studies in this field.

To carry out a current analysis, the following steps were considered. Firstly, conducting the research assumes identification of the average values of the variables considered (dependent and explanatory) of each sector. In this way, it is possible to evaluate whether differences between the analysed sectors exist. To this end, the average values achieved by each company in the analysed three-year timeframe were taken into consideration. The choice was caused by the fact that some variables represent average values in three-year period considered (by the way the growth).

The next step was to assess the relationship between dependent (that is total debt/total assets) and independent variables (the company's growth, the ability to repay financial debt using the financial sources generated from operating activity, the turnover assets, the company's age, degree of incidence of intangible investments and economic sector) using the Pearson's correlation. The same analysis was used to evaluate the relationship between explanatory variables and the relationship between short-term debt and capital invested and the relationship between explanatory variables and medium/long-term debt and capital invested. This step is relevant to understanding whether the determinants of the financial structure influence the recourse to both short-term and medium/long-term debt in the same way.

Finally, the research has been deepened using the dependent variables of the OLS Regression separately: the Debts/Total assets, the relationship between short-term debt and total assets and the relationship between medium/long-term debt and total assets on the explanatory variables that have been previously assessed. The accuracy of the model has been checked with reference to R-correct framework; this explains which part of the phenomenon is clarified by the variables introduced in our model. This method allows us to identify the factors that have an impact on a company's debt structure. At the same time, this method requires the satisfaction of a series of preconditions and considers a linear relationship between dependent and explanatory variables.

FINDINGS

The findings have been identified by observing the following aspects:

(1) The presence of some differences between several economic sectors. To reach this purpose the descriptive statistics (average and standard deviation) for each sector are illustrated (Table 2);
(2) The presence of relationships between the explanatory variables included in the model. To this end, the correlations between them are illustrated in Table 3.

We then observe the first aspect relating to the presence of some differences between several economic sectors. It emerges that the variable Total debt/Total Assets (DEBTS/TA) is different for the manufacture, real estate activities and accommodation, food and beverage sectors, while it is similar for the other sectors. Subsequently, it is observed that in the sectors such as trade, construction, transporting and storage, professional scientific and technical activities, administrative and support service activities, the short-

term debt burden constitutes more than 80% of total debts. The sectors with a lower burden of short-term debts over total debts are real estate activities and accommodation, food and beverage. As expected, the differences between the sectors concern not only the variables being an observation subject but refer also to explanatory variables; indeed, differences between sectors in connection with net financial position/Ebitda, cash flow form core business activities, intangible assets/total assets, sales/total assets. We then observe the second aspect relating to the presence of relationships between the explanatory variables included in the model.

As seen in Table 3, correlations between short-term debts and explanatory variables and correlations between medium and long-term debts and the same explanatory variables do not always have the same sign. In particular, the relationship between the age and burden of the short-term debts on the invested capital shows that with increasing companies' age, the burden of short-term debt on invested capital decreases.

On the contrary, the correlation between the burden of medium and long-term debts on the invested capital and age shows that the rise of the companies' age increases the burden of medium and long-term debt on invested capital. The same phenomenon concerns the growth (measured in terms of production value, invested capital and employees), turnover and size of the companies. The results obtained by regression of the dependent variables (Debts/TA, STD/TA, LTD/TA) on the explanatory variables are presented in Table 4.

When the ratio DEBTS/TA constitutes a dependent variable, all of the variables taken into consideration are relevant, which means that all of the explanatory variables determine the burden of debt on the invested capital. When considering the relationship between medium/ long-term debts and total assets as a dependent variable, it emerges that mature companies, companies characterized by greater growth in terms of production value and invested capital, those affected by financial stress and those that record a greater relationship between intangible assets and total assets, make recourse to short-term debt to a lesser extent than the companies with the opposite characteristics. In addition, the short-term indebtedness increases in the following situations: the increasing of the turnover (SALES/TA), growth in terms of employees, the company's size, and with decreasing ability to repay debts (NFP/EBITDA). Current analysis results show that all the sectors are significant with the exception of utilities, manufacture, real estate activities, and accommodation, food and beverage as they make recourse to the short-term debt to a lesser extent than the companies operating in the other sectors. We then consider the relation between medium/long-term debts and total assets as a dependent variable. It emerged that mature companies, the companies that grow in terms of production value and invested capital, the ones that record a reduction in the ability to repay

Table 1. The model's variables.

Investigated area	Description	Formula	Legend
The company's growth	To calculate the company's growth, the CAGR (Compound Annual Growth Rate) indicator has been used; it gives information about average annual growth in the three-year period considered (2012–2014). It has been measured in terms of: Production value Invested capital Number of employees	$CAGR_{PV} = \sqrt{\dfrac{PV_{2014}}{PV_{2012}}} - 1$ $CAGR_{TA} = \sqrt{\dfrac{TA_{2014}}{TA_{2012}}} - 1$ $CAGR_E = \sqrt{\dfrac{E_{2014}}{E_{2012}}} - 1$	$PV2014$ = company's production value in 2014 $PV2012$ = company's production value in 2012 TA_{2014} = company's total assets in 2014 TA_{2012} = company's total assets in 2012 E_{2014} = number of employees in the company in 2014 E_{2012} = number of employees in the company in 2012
The ability to repay financial debt using the financial sources generated from operating activity	The relationship between Net financial position and Earning before interest, taxes, depreciation and amortization (NFP/EBITDA) can be considered the company's financial risk indicator (BCE, 2014). The companies with a high NFP/EBITDA ratio are potentially the companies with financial difficulties as they are not able to honour financial debt contracts using cash flow from day-to-day management.	$\dfrac{NFP}{EBITDA} = \dfrac{\sum_{n=2012}^{2014} NFP_n}{\sum_{n=2012}^{2014} EBITDA_n}$	NFP = Net Financial Position (which considers net financial debts less financial activities); Financial debts derive from the balance sheets and they are composed of bank debts, bonds, other financial debt and payable to shareholders per debt. EBITDA = Earning before Interest, Taxes, Depreciation and Amortization of the company n = year, which can mean 2012, 2013 or 2014
The company's financial situation	Characteristics of the company's financial situation can determine its ability to meet its financial needs in a timely and economical manner	CFA $= \dfrac{\sum_{n=2012}^{2014} \begin{array}{c} Long\ Term\ Liabilities_n \\ +Equity_n \end{array}}{\sum_{n=2012}^{2014} Fixed\ Assets_n}$	CFA = covering fixed assets Long term liabilities n = a company's consolidated liabilities of the year n Equity n = a company's equity of the year n Fixed assets n = a company's investments characterised by transformability in cash greater than of the year n n = year, which can mean 2012, 2013 or 2014
The turnover assets	The turnover assets (TA) enables one to assess the company's ability to return the invested capital in liquid form through turnover. The turnover assets can be measured by comparison with the revenues with invested capital.	$\dfrac{Sales}{TA} = \dfrac{\sum_{n=2012}^{2014} Sales_n}{\sum_{n=2012}^{2014} TA_n}$	$Sales_n$ = a company's sales realized over the year n TA_n = invested capital (total assets) of the year n n = year, which can mean 2012, 2013 or 2014
The company's age	Recourse to debt depends also on the company's age. Mature companies are more likely to depend on accumulated profit than younger enterprises at the beginning stages of operating because the latter need financial	Age = ln (number of years since the company's foundation). In particular, we do not use a dummy variable to define new companies or mature companies; we use age as a continuous explanatory	Age = age of the company ln = natural logarithm

Table 1. Cont'd

		Variable	
	sources that are not available internally if not provided by stakeholders in order to make investments on corporate assets and to meet working capital requirements. The younger companies have more difficulty accessing external financial sources caused by a greater uncertainty and absence of relationships with banking institutions unless they do not have previous experience but have already established relationships with banking institution		
Degree of incidence of intangible investments	The degree of incidence of intangible investment (it means Intangible Assets/Total assets – Intangible assets/Total assets) is a measure of growth opportunities of significant importance for determining the company's financial structure as they enable the company to make significant investments that are financed not only by the internal financial sources.	$$\frac{Intangible\ Assets}{TA} = \frac{\sum_{n=2012}^{2014} Intagible\ Assets_n}{\sum_{n=2012}^{2014} TA_n}$$	Intangible Assets$_n$ = a company's intangible assets over the year n TA$_n$ = invested capital (total assets) of the year n n = year, which can mean 2012, 2013 or 2014
Economic sector	The inclusion of dummy variables on the sectors in our model allows us assess the impact of economic sectors on the company's financial structure.	This variable assumes a value of 1 for some sectors and a value of 0 for other sectors.	

PV2014 = company's production value in 2014, PV2012 = company's production value in 2012, TA2014 = company's total assets in 2014, TA2012 = company's total assets in 2012, E2014 = number of employees in the company in 2014, E2012 = number of employees in the company in 2012.

debts (NFP/EBITDA) and those with a greater burden of intangible assets on total assets rely on medium/long-term debts more frequently than the companies with the opposite characteristics. However, the relation between medium/long-term debt and invested capital decreases in the following situations: an increase of the invested capital rotation, of the companies' size, of the financial stress and of the growth in terms of employees and invested capital. In all the sectors, with the exception of real estate and construction, we can observe a positive relation between medium/long-term debts and invested capital.

DISCUSSION

Mature companies tend to make recourse to medium/long-term debts (Broccardo et al., 2016) for a number of reasons, such as difficulties accessing medium/long-term bank debt and the need to gain market shares (Van der Wijst and Thurik, 1993; Chittenden et al., 1996). In addition, new companies may have difficulties accessing medium and long-term debts; therefore, they tend to make recourse to short-term debt (Kon and Storey, 2003; Black et al., 1996; Berger and Udell, 1990). On the contrary, mature companies may use greater financial sources due to greater internal cash flows and long-term developed relations with the bank system. However, other scholars have found that a company's age is not relevant in the determination of its indebtedness's level (Chittenden et al., 1996).

Secondly, in general, the companies with greater growth rates in terms of both production value and invested capital imply a reduction of debt burden on invested capital, which is in line with the findings of Chittenden et al. (1996), Michaelas et al. (1999) and

Table 2. Average and standard deviation of the variables for each economic sector.

Sector	Manufacture		Trade		Construction		Transporting and storage		Professional, scientific and technical activities		ICT	
Variables	Average	Std D.	Average	Std D.	Average	Std D.	Average	Std D.	Average	Std D.	Average	Std D.
NFP/EBITDA	1.62	2.58	2.36	3.07	1.62	3.01	0.73	1.74	0.50	2.21	0.44	1.95
CFA	1.95	1.01	1.98	1.22	2.11	1.45	1.62	1.03	2.93	2.80	2.84	2.70
Age	3.30	0.50	3.11	0.58	3.17	0.58	3.14	0.60	2.97	0.60	3.03	0.55
CAGR PV	0.03	0.08	-0.21	0.19	0.10	0.30	-0.19	0.21	-0.11	0.23	-0.06	0.24
CAGR TA	0.03	0.07	0.03	0.09	0.01	0.14	0.02	0.11	0.04	0.17	0.04	0.14
Intangible Assets/TA	0.02	0.03	0.03	0.05	0.02	0.06	0.02	0.02	0.04	0.07	0.08	0.10
Sales/TA	1.13	0.37	1.77	0.81	0.93	0.41	1.67	0.75	1.34	0.61	1.23	0.53
Size	7.13	0.24	7.09	0.26	7.04	0.25	7.08	0.26	7.06	0.25	7.08	0.26
CAGR Employees	0.02	0.10	0.04	0.25	0.00	0.10	0.05	0.42	0.04	0.13	0.03	0.14
Debts/TA	0.64	0.17	0.76	0.17	0.78	0.16	0.77	0.19	0.77	0.18	0.76	0.17
STD/TA	0.48	0.15	0.62	0.19	0.63	0.18	0.62	0.19	0.62	0.21	0.59	0.18
LTD/TA	0.16	0.09	0.13	0.10	0.15	0.11	0.15	0.11	0.14	0.12	0.17	0.11

Sectors	Agriculture, forestry and fishing		Utilities		Real estate activities		Accommodation, food and beverage		Administrative and support service activities	
Variables	Average	Std D.	Average	Std D.	Average	Average	Average	Std D.	Average	Std D.
NFP/EBITDA	3.71	4.40	0.97	1.68	3.71	3.71	1.34	2.54	0.35	2.48
CFA	1.11	0.49	1.33	0.56	1.11	1.11	1.01	0.37	2.35	2.09
Age	3.50	0.68	3.06	0.47	3.50	3.50	3.26	0.59	3.02	0.54
CAGR PV	0.02	0.33	0.01	0.27	0.02	0.02	0.09	0.46	-0.19	0.24
CAGR TA	0.02	0.08	0.01	0.10	0.02	0.02	0.01	0.07	0.04	0.15
Intangible Assets/TA	0.01	0.01	0.02	0.02	0.01	0.01	0.06	0.08	0.04	0.07
Sales/TA	1.21	0.77	1.15	0.55	1.21	1.21	1.27	0.87	1.81	1.03
Size	7.11	0.25	7.09	0.24	7.11	7.11	7.01	0.25	7.08	0.27
CAGR Employees	0.02	0.11	0.02	0.07	0.02	0.02	-0.01	0.09	0.03	0.11
Debts/TA	0.76	0.17	0.74	0.18	0.76	0.76	0.66	0.24	0.77	0.18
STD/TA	0.60	0.21	0.54	0.20	0.60	0.60	0.41	0.24	0.64	0.20
LTD/TA	0.16	0.12	0.20	0.16	0.16	0.16	0.25	0.19	0.13	0.11

Source: Mazzoleni and Giacosa (2017).
NFP/EBITDA: Companies' net financial position over EBITDA, CFA: (covering fixed assets): degree of covering fixed assets with medium/long term sources of funding, Age: age of the company, CAGR PV: company's growth in terms of production value, CAGR TA: company's growth in terms of total assets, Sales/TA: sales over total assets of the company, Intangible Assets/TA: comparison between intangible assets over total assets, CAGR Employees: growth in terms of employees, Size: company's size, Debts/TA: Impact of debts on total assets, STD/TA: Impact of short term debts on total assets, LTD/TA: Impact of long term debts on total assets.

Table 3. Variation and the co-variation matrix.

	LTD/ TA	STD/ TA	CAGR employees	Size	Sales/TA	Intangible assets/TA	CAGR TA	CAGR PV	Debts/TA	Age	CFA	NFP/EBITDA
NFP/ EBITDA	0.1976	0.2108	0.0099	0.026	0.1265	0.0135	0.0754	0.112	0.348	0.0327	0.1944	1
CFA	0.1414	0.0365	0.005	0.0094	0.1032	0.1503	0.0481	0.0948	0.1246	0.022	1	
AGE	0.0989	0.3115	0.0759	0.1168	0.2171	0.1884	0.078	0.1712	0.2763	1		
DEBTS/TA	0.1614	0.8323	0.0385	0.0679	0.3002	0.1327	0.0099	0.2646	1			
CAGR PV	0.2065	0.3595	0.0589	0.0112	0.7141	0.0758	0.1405	1				
CAGR TA	0.0678	0.0264	0.1586	0.0211	0.0635	0.0076	1					
Intangible Assets/TA	0.0811	0.0788	0.006	0.0332	0.0662	1						
Sales/TA	0.2023	0.39	0.0477	0.0474	1							
Size	0.1117	0.0005	0.0291	1								
CAGR Employees	0.0682	0.0733	1									
STD/TA	0.4083	1										
LTD/TA	1											

NFP/EBITDA: companies' net financial position over EBITDA, CFA: (covering fixed assets): degree of covering fixed assets with medium/long term sources of funding, Age: age of the company, CAGR PV: company's growth in terms of production value, CAGR TA: company's growth in terms of total assets, Sales/TA: sales over total assets of the company, Intangible Assets/TA: comparison between intangible assets over total assets, CAGR Employees: growth in terms of employees, Size: company's size, Debts/TA: Impact of debts on total assets, STD/TA: Impact of short term debts on total assets, LTD/TA: Impact of long term debts on total assets

Berggren et al. (2000). The growth in terms of production value means greater recourse to medium/long-term debts and lesser recourse to short-term debts, while the growth in terms of invested capital implies a lower recourse to short-term debts and does not seem to be a determinant for medium/long-term indebtedness (Lopez-Gracia and Aybar, 2000; Sogorb- Mira, 2005). The growth in terms of production value, in general, means lesser recourse to external financial resources as the company is able to generate greater internal resources. Instead, Cressy and Olofsson (1997) and Mac An Bhaird and Lucey (2010) stated that growing enterprises incur a high level of indebtedness.

High turnover implies an increase of total indebtedness. In particular, increase of turnover leads to an increase of short-term debt and a decrease of medium/long-term debt. This is in line with the findings of Confindustria (2007) and Partner Equity Markets (2009).

Subsequently, the bigger companies depend on external financial resources less than small or medium companies do. In particular, they tend to use overall short-term debt rather than medium/long-term debt because they have already implemented their own production structure and do not need medium/long-term financing in the way small companies do (Broccardo et al., 2016). Moreover, the ability to repay debt using internal sources shows a positive correlation with both short and medium/long-term debt (Wijst and Thurik, 1993; Wald, 1999). Conducted analysis shows that increasing the indicator increases the indebtedness. This is the opposite in large companies in which an increase of the company's risk level leads to a decrease in indebtedness. These results are in line with studies carried out on SMEs in Britain (Michelas et al., 1999).

Additionally, taking into account a covering of fixed assets by medium/long-term debt we can observe a negative correlation: the companies that use medium/long-term debt in order to finance their long-term investments are correlated in a lesser extent to indebtedness (Giacosa, 2015; Giacosa and Mazzoleni, 2012). This phenomenon concerns both short and medium/long-term debts.

Finally, the burden of intangible assets on total assets is positively correlated with indebtedness, which means that the companies that take advantage of greater opportunities of growth more often make recourse to debt (De Jong, 1999; Sogorb-Mira, 2005). In particular, Sogorb-Mira

Table 4. Relationship between dependent and explanatory variables.

Explanatory variable/dependent variable	DEBTS/TA	STD/TA	LTD/TA
constant	0.992399***	0.530533***	0.456661***
Age	0.0558404***	0.0725215***	0.0162477***
CAGR PV	0.0405687***	0.0778245***	0.0371694***
CAGR TA	0.0495352***	0.0386526**	0.0154660
Sales/TA	0.0695043***	0.0778262***	0.00862669***
Size	0.0328023***	0.0193641***	0.0511496***
NFP/EBITDA	0.0255846***	0.0184862***	0.00708635***
CFA	0.0132618***	0.00798577***	0.00526412***
Intangible Assets/TA	0.141331***	0.0554299	0.201766***
CAGR Employees	0.011504**	0.0348739***	0.0234477***
Manufacture	0.0224687***	0.0424783***	0.0197845***
Construction	0.117051***	0.116297***	0.000452043
Transporting and storage	0.0604922***	0.0357360***	0.0249695***
Professional, Scientific and technical activities	0.0938326***	0.0728635***	0.0207286***
ICT	0.0952424***	0.0609467***	0.0332994***
Administrative and support service activities	0.0549635***	0.0453539***	0.0169264***
Agriculture	0.0301116***	0.0281178**	0.00196180
Utilities	0.0555602***	0.00426355	0.0619497***
Real estate Activities	0.107375***	0.143475***	0.0352589
Accommodation, food and beverage	0.0273999*	0.123758***	0.0959867***
Interaction CAGR PV*CAGR TA	0.275043***	0.311047***	0.0393318***
Adjusted R^2	**0.380276**	**0.359191**	**0.131888**
F(20, 12154)	**369.70*****	**348.74*****	**77.47726*****

2005) stated that there is a negative relationship between short-term debts and intangible assets; this is in contrast with Michaelas et al. (1999) for whom a positive relationship exists.

Furthermore, the companies whose investments concern most of all the intangible assets often resort to long-term debts (the relation between burden of intangible assets on total assets and medium/long term-debts is positive, while the relation between short-term debts is not relevant) (Titman and Wessels, 1988; Graham and Harvey, 2001). Therefore, the study on the sectors demonstrates that the sectors are an important variable in determining the level of indebtedness of SMEs.

CONCLUSION, IMPLICATIONS AND LIMITATIONS

The present research identifies the relationship between variables introduced by the literature on the level of indebtedness. The economic sector to which a company belongs has an impact on its level of indebtedness; in addition, the sectors that require higher up-front investments make more use of short-term debt than of medium/long-term debt more than the other sectors do. The company's age has an impact on the need for short and medium/long-term external resources, reflecting the price policy and the importance of establishing stable relationships with external funders. There is less recourse to external resources where the growth is considered in terms of production value and invested capital; there is greater recourse to financial resources if we consider the growth in terms of the number of employees. High turnover leads to an increase of total indebtedness, especially of short-term debts. In general, big companies make less use of external financial resources than SMEs do; in particular, they use short-term rather than medium/long-term debt. The company's ability to repay debt shows a positive correlation with the level of indebtedness. In fact, if the company generates sufficient sources to repay its debts, its ability to meet financial commitments in a timely manner increases. This increases the use of debts because the company is more likely to utilise new, external financial sources from banking institutions and other funders when it is confident about its ability to repay its financial liabilities. The presence of financial imbalances leads to higher financial indebtedness in both the short and medium/long-term, while the degree of intangible assets over total assets is correlated in a positive way with indebtedness, showing that the companies characterized by greater growth opportunities recourse more often to external resources, especially to short-term debts. The present research has some interesting theoretical and practical implications:

(1) From a theoretical point of view, it is possible to assess the findings of a wide range of decisions concerning a company's variables about the level of debt. (2). From a practical point of view, stakeholders may be interested in the study because the accuracy of our proposed model has been investigated in two ways: in terms of the sample size – the model was applied to a large number of companies from different sectors – and in terms of the specific characteristics of each sector. Therefore, stakeholders can investigate the advantages or disadvantages of their current or future investment in a company.

The research has some limitations:

(1) Regarding the sample, we only considered Italian companies belonging to several sectors. Consequently, a comparison with another context would allow one to verify the "country system" variable on the company's indebtedness.
(2) Regarding the research method, we did not consider qualitative variables, which could better explain the level of indebtedness. The model does not include specific variables permitting consideration of the changes over time of the debts-to-invested capital ratio. For instance, the customers' and employees' satisfaction levels, the product's range uniqueness and the level of its personalization, the managers' experience and their training, the owners' financial support etc. In addition, we did not use the economic cycle as a dummy variable (Ghorbel and Trabelsi, 2013), even though it can impact the business activity, in terms of financial availability from the bank system and other financial entities plus the companies' opportunities based on their business and performance (Giacosa and Mazzoleni, 2012; Giacosa, 2015).

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Ang JS, Chua JH, McConnell JJ (1982). The Administrative Costs of Corporate Bankruptcy: A Note. J. Financ. 37(1):219-26.
Ansoff IH (1974). La strategia d'impresa, FrancoAngeli, Milano.
Aybar AC, Casino MA, Lopez GJ (2001). Jerarquia de preferencias y estrategia empresarial en la determinacion de la estructura de capital de la pyme: un enfoque con datos de panel, Instituto Valenciano de Investigaciones Economicas, WP EC, 2001 06.
Baginski SP, Hassel JM (2004). Management decision and financial accounting reports, Thomson South-Western, Mason.
Balakrishnan S, Fox I (1993). Asset Specificity, Firm Heterogeneity and Capital Structure. Strateg. Manage. J. 14(1):3-16.
Becchetti L, Trovato G (2002). The Determinants of Growth for Small and Medium Sized Firms. The Role of the Availability of External Finance. Small Bus. Econ. 19(4):291-306.
Berger AN, Udell GF (1990). Collateral, loan quality, and bank risk. J. Monetary Econ. 25:21-42.
Berger AN, Udell GF (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. J. Bank. Financ. 22:613-673.
Berggren B, Olofsson C, Silver L (2000). Control aversion and the search for external financing in Swedish SMEs. Small Bus. Econ. 15(3):233-242.
Bernstein L, Wild JJ (1998). Financial Statement Analysis, McGraw-Hill, New York.
Bianchi T (1975). La finanza aziendale, in Ardemani E. (a cura di), Manuale di Amministrazione Aziendale, Isedi, Milano.
Black J, De Meza D, Jeffreys D (1996). House prices, the supply of collateral and the enterprise economy. Econ. J. 106:60-75.
Bradley M, Jarrell AG, Kim E (1984). On the Existence of an Optimal Capital Structure: Theory and Evidence. J. Financ. 39(3):857-878.
Brealey RA, Myers SC, Sandri S (1999). Principi di finanza Aziendale. 3d ed. McGraw-Hill, Milano.
Brealey RA, Myers SC (2000). Principles of Corporate Finance. 6th ed., McGraw-Hill, New York.
Broccardo L (2014). Management Accounting System in Italian Smes: Some Evidences and Implications. Adv. Manage. Appl. Econ. 4(4):1-16.
Broccardo L, Halili E, Manzi LMM, Mazzoleni A (2016), "Why the Company's Debts Degree Vary, when considering the Company as a System?", Euromed Conference, Warsaw, Poland, September.
Campedelli B (1998). Analisi aziendale: strumenti concettuali, metodologici e di valutazione dell'impresa, Giappichelli, Torino.
Capasso A, Gallucci C, Rossi M (2015). Standing the test of time. Does firm performance improve with age? An analysis of the wine industry. Bus. History 57(7):1037-53.
Cardone RC, Cazorla PL (2001). New Approaches to the Analysis of the Capital Structure of SMEs: Empirical Evidence from Spanish firms. Working Paper 01 10, Business Economics Series 03, January, Universidad Carlos III de Madrid.
Carpenter R, Petersen B (2002). Is the Growth of Small Firms Constrained by Internal Finance? Rev. Econ. Stat. 84(1):298-309.
Cassar G, Holmes S (2003). Capital structure and financing of SMEs: Australian evidence. Account. Financ. 43(2):123-47.
Chandler A (1962). Strategy and Structure: Chapters in the History of American Industrial Enterprise, Mit Press, Cambridge.
Chittenden F, Hall G, Hutchinson P (1996). Small Firm Growth, Access to Capital Markets and Financial Structure: Review of Issues and an Empirical Investigation. Small Bus. Econ. 8:59-67.
Coda V (1988). L'orientamento strategico dell'impresa, Utet, Torino.
Confindustria (2007). Finanza e sviluppo, gli strumenti a disposizione delle PMI, Confindustria, Roma.
Corbetta G (a cura di) (1999). La gestione strategica, in Brunetti G., Coda V., Favotto F., Analisi, previsioni, simulazioni economico-finanziarie d'impresa, Etas, Milano.
Cress R, Olofsson C (1997). The financial conditions for Swedish SMEs: Survey and research agenda. Small Bus. Econ. 9(2|):179-94.
Culasso F (1999). Sistema impresa e gestione per processi, Giappichelli, Torino.
Dallocchio M, Tzivelis D, Vinzia MA (2011), Finanza per la crescita sostenibile, Etas, Milano.
De Bonis R, Pozzolo AF, Stacchini M (2012). The Italian banking system: Facts and interpretations, Economics & Statistics Discussion Paper, No. 068/12.
Degryse H, De Goeij P, Kappert P (2012). The impact of firm and industry characteristics on small firms' capital structure. Small Bus. Econ. 38(4):431-447.
De Jong A (1999). An empirical analysis of capital structure decisions in Dutch firms. PhD. Dissertation, CentER, Tilburg University.
De Socio A, Maza LÁ, Silveira V, Bürker M (2014). Financial structure and profitability of European companies, Bank for the Accounts of Companies Harmonized.
Domenichelli O (2013). Le determinanti della struttura finanziaria delle imprese: profili teorici ed empirici. Giappichelli, Torino.
Durand D (1952). Costs of Debt and Equity Funds for Business: Trends and Problems of Measurement. Conference on Research in Business Finance, National Bureau of Economic Research, New York. pp. 215-262.
Esperança JP, Gama APM, Gulamhussen MA (2003). "Corporate debt

policy of small firms: An empirical (Re) examination. J. Small Bus. Enterpr. Dev. 10(1):62-80.

European Central Bank (ECB) (2014). "Assets Quality Review", Phase 2 Manual, 63.

Fagiolo G, Luzzi A (2004). .Do Liquidity Constraints Matter in Explaining Firm Size and Growth? Some Evidence from the Italian Manufacturing Industry. Sant'Anna School of Advanced Studies, Working Paper Series, 8.

Fama EF, French KR (2002). Testing trade off and Pecking Order Predictions About Dividends and Debt. Rev. Financ. Stud. 15(1):1-33.

Fama E, Jensen M (1983). Separation of Ownership and Control. J. Law Econ. 26(2):301-325.

Fazzari S, Hubbard G, Peterson B (1988). Financing Constraint and Corporate Investments. Brooking Papers on Economic Activity, 1(1):141-95.

Fellnhofer K (2015). Literature review: investment readiness level of small and medium sized companies. Int. J. Managerial Financ. Account. 7(3/4):268-284.

Ferrero G (1968). Istituzioni di economia d'azienda, Giuffrè, Milano.

Ferrero G (1972). Le analisi di bilancio, Giuffrè, Milano.

Ferrero G (1987). Impresa e management, Giuffrè, Milano.

Ferrero G, Dezzani F, Pisoni P, Puddu L (2006). Analisi di bilancio e rendiconti finanziari, Giuffrè, Milano.

Ferri S, Messori M (2000). Bank-firm Relationship and Allocative Efficiency in Northeastern and Central Italy and in the South. J. Bank. Financ. 24(6):1067-1095.

Fiori G (2003). Finalità, metodologie e limiti delle analisi di bilancio tramite indici, in Caramiello C., Di Lazzaro F., Fiori G., Indici di bilancio, Giuffrè, Milano.

Frank M, Goyal V (2009). Capital Structure Decisions: Which Factors Are Reliably Important? Financ. Manage. 38(1):1-37.

Frielinghaus A, Mostert B, Firer C (2005). Capital structure and the firm's life stage. South Afr. J. Bus. Manage. 36(4):9-18.

Fu TW, Ke MC, Huang YS (2002). Capital growth, financing source and profitability of small businesses: Evidence from Taiwan small enterprises. Small Bus. Econ. 18:257-267.

Galbiati P (1999). La struttura finanziaria delle imprese, Egea, Milano.

Ghorbel A, Trabelsi A (2013). The impact of global financial crisis on the dependence structure of equity markets and on risk management. Int. J. Managerial Financ. Account. 5(1):1-32.

Garofalo G (1987). La struttura finanziaria: aspetti istituzionali e teorici, La Sapienza, Roma.

Giacosa E, Guelfi S (2003). L'economia delle aziende della net economy, Giappichelli, Torino.

Giacosa E (2011). L'economia delle aziende di abbigliamento, Giappichelli, Torino.

Giacosa E (2012). La comunicazione economico finanziaria d'impresa, Giappichelli, Torino.

Giacosa E (2015). Fabbisogno finanziario ed indebitamento nelle piccole medie imprese, FrancoAngeli, Milano.

Giacosa E, Mazzoleni A (2012). Il progetto di risanamento dell'impresa in crisi, Giappichelli, Torino.

Giacosa E, Mazzoleni A (2016). A decision model for the suitable financing for small and medium enterprises. Int. J. Managerial Financ. Account. 8(1):39-74.

Giacosa E, Mazzoleni A (2017). Company's indebtedness trend for its growth and survival. Afr. J. Bus. Manage. 10(14):304-315.

Giunta F (2007). Analisi di bilancio. Riclassificazioni, indici e flussi, Centro Stampa Il Prato, Firenze.

Glaser B, Strauss A (1967). The discovery of Grounded Theory. Aldine Publishing Company, Chicago.

Golinelli GM (1994). Struttura e governo dell'impresa. 2nd ed., Cedam, Padova.

Graham JR, Harvey CR (2001). The theory and practice of corporate finance: Evidence from the field. J. Financ. Econ. 60:187-243.

Grandinetti R, Nassimbeni G (2007). Le dimensioni della crescita aziendale. FrancoAngeli, Milano.

Hall G, Hutchinson P, Michaelas N (2000). Industry Effects on the Determinants of Unquoted SMEs Capital Structure. Int. J. Econ. Bus. 7(3):297-312.

Hall G, Hutchinson P, Nicos M (2004). Determinants of the capital Structures of European SMEs. J. Bus. Financ Account. 37(5-6):711-

728.

Hamilton RT, Fox MA (1998). The Financing Preferences of Small Firm Owners. Int. J. Entrep. Behav. Res. 4(3):239-248.

Harris M, Raviv A (1991). The Theory of Capital Structure. J. Financ. 46(1):297-355.

Herrera AM, Minetti R (2007). Informed Finance and Technological Change: Evidence from Credit Relationship. J. Financ. Econ. 83(1):225-269.

Heyman D, Deloof M, Ooghe H (2008). The financial structure of privately held Belgian firms. Small Bus. Econ. 30(3): 301-313.

Honjo Y, Harada N (2006). SME Policy, Financial Structure and Firm Growth: Evidence from Japan. Small Bus. Econ. 27(4):289-300.

Ibbotson RG, Sindelar JL, Ritter J (2001). The new corporate finance. Where theory meets practice, 3rd ed., Irwin McGraw-Hill, New York.

Invernizzi G (a cura di) (2008). Strategia aziendale e vantaggio competitivo, McGraw-Hill, Milano.

Jordan J, Lowe J, Taylor P (1998). Strategy and Financial Policy in UK Small Firm. J. Bus. Financ. Account. 25(1/2):1-27.

Kim WS, Sorensen EH (1986). Evidence on the Impact of the Agency Costs of Debt on Corporate Debt Policy. J. Financ. Quant. Anal. 21(2):131-144.

Kon Y, Storey DJ (2003). A Theory of Discouraged Borrowers, Small Bus. Econ. 21:37-49.

La Rocca M (Eds.) (2007). Politiche finanziarie d'impresa, Egea, Milano.

La Rocca M (2008). Corporate governance, struttura finanziaria e valore, Egea, Milano.

La Rocca M, La Rocca T, Carióla A (2011). Capital Structure Decisions during a Firm's Life Cycle. Small Bus. Econ. 37:107-130.

Lopez-Gracia J, Aybar Arias C (2000). An Empirical Approach to the Financial Behaviour of Small and Medium Sized Companies. Small Bus. Econ. 14:55-63.

Lopez-Gracia J, Romero Martinez M (1997). "Estudio Comparado de la Estructura Financiera de la Pyme en la Union Europea", Actualidad Financiera, 11:49-59.

López-Gracia J, Sogorb-Mira F (2008). Testing trade off and pecking order theories financing SMEs. Small Bus. Econ. 31(2):117-136.

Mac An Bhaird C, Lucey B (2010). Determinants of capital structure in Irish SMEs. Small Bus. Econ. 35:357-375.

Maggioni V, Potito L, Viganò R (Eds.) (2009). Corporate governance: governo, controllo e struttura finanziaria, Il Mulino, Bologna.

Mahérault L (2000). The influence of going public on the investment policy. Fam. Bus. Rev. 13(1):71-79.

Mazzoleni A (2012). La comunicazione economico-finanziaria delle imprese con il sistema bancario, McGraw-Hill, Milano.

Mazzoleni A (2016). Il finanziamento all'impresa. La scelta tra debito e capitale, FrancoAngeli, Milano.

Mazzoleni A, Giacosa E (2017). Company's Indebtedness Trends in Small and Medium Sized Firms within the Company Systems Theory. Int. J. Bus. Soc. Sci. 8(5):35-52.

Meigs RF Williams JR, Haka SF, Bettner MS (2001). Financial Accounting, Irwin McGraw-Hill, New York.

Mella P, Navaroni M (2012). Analisi di bilancio: indici e flussi, Maggioli, Santarcangelo di Romagna.

Michaelas N, Chittenden F, Poutziouns P (1999). Financial Policy and Capital Structure Choice in UK SMEs: Empirical Evidence from Company Panel Data. Small Bus. Econ. 12:113-130.

Miglietta N (2004). La struttura finanziaria obiettivo nel sistema impresa. Giappichelli, Torino.

Miles JA, Ezzel JR (1980). The Weighted Average Cost of Capital, Perfect Capital Markets, and Project Life: A Clarification. J. Financ. Quant. Anal. 15(3):719-730.

Miller MR (1977). Debt and Taxes. J. Financ. 32(2):261-275.

Mitchel K (1991). The call, sinking fund and term to maturity features of corporate bonds: An empirical investigation. J. Financ. Quant. Anal. 26:201-222.

Modigliani F, Miller HM (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. Am. Econ. Rev. 48(3):261-297.

Montalenti P (2009). Crisi finanziaria, struttura dell'impresa, corporate governance. ODC, Roma.

Moritz A, Block JH, Heinz A (2015). Financing Patterns of European SMEs: An Empirical Taxonomy. EIF Working Paper, 2015/30.

Myers SC (1974). Interactions of Corporate Financing and Investment Decisions - Implications for Capital Budgeting. J. Financ. 29(1):1-25.

Ocaña C, Salas V, Valles J (1994). Un Anahsis Empirico de la Financiacion de la Pequena y Mediana Empresa Manufacturer Espanola: 1983-1989. Moneda y Credito 199:57-96.

Oliveira B, Fortunato A (2006). Firm Growth and Liquidity Constraints: A Dynamic Analysis. Small Bus. Econ. 27(2):139-156.

Orrigan JO (1968). A Short History of Financial Ratio Analysis. Account. Rev. 43(2):284-294.

Ou C, Haynes GW (2006). Acquisition of additional equity capital by small firms Findings from the national survey of small business finances. Small Bus. Econ. 27(2/3):157-168.

Paolucci G (2013). Analisi di bilancio, FrancoAngeli, Milano.

Partner Equity Markets (2009). Il mercato di borsa per le PMI: Aim Italia. Edizioni Il Sole 24 Ore, Milano.

Pettit R, Singer R (1985). Small Business Finance: A Research Agenda. Financ. Manage. 14(3):47-60.

Rajan RG, Zingales L (1994). What Do We Know About Capital Structure? Some Evidence from International Data. National Bureau of Economic Research, Working Papers 4875.

Rija M (2006). L'investimento istituzionale nel capitale di rischio delle piccole e medie imprese. FrancoAngeli, Milano.

Rivaud-Danset D, Dubocage E, Salais R (2001). Comparison between the financial structure of SMES and that of large enterprises (LES) using the BACH database. Economic Paper available on: http://europa.http://europa.eu.int/economy_finance.

Rossi M (2014a). The use of capital budgeting techniques: an outlook from Italy. Int. J. Manage. Practice 7(4)297-312.

Rossi M (2014b). Capital budgeting in Europe: confronting theory with practice. Int. J. Managerial Financ. Account. 6(4):341-356.

Rossi M, Lombardi R, Nappo F, Trequattrini R (2015). The capital structure choices of agrifood firms: evidence from Italian SMEs. Int. J. Manage. Practice 8(3):172-186.

Singer P (2000). "Alla ricerca della struttura finanziaria ideale", Esperienze d'impresa, Vol. 1.

Sogorb-Mira F (2005). How SME Uniqueness Affects Capital Structure: Evidence From A 1994 1998 Spanish Data Panel. Small Bus. Econ. 25(5):447-457.

Sostero U (2014). L'analisi economico finanziaria di bilancio. Giuffré, Milano.

Titman S, Wessels R (1988). The determinants of capital structure choice. J. Financ. 43(1):1-19.

Vause B (2001). Guide to Analysing Companies. The Economist Profile Books, London.

Van Caneghem T, Van Campenhout G (2012). Quantity and quality of information and SME financial structure. Small Bus. Econ. 39(2):341-358.

Van der Wijst N, Thurik R (1993). Determinants of Small Firm Debt Ratios: An Analysis of Retail Panel Data. Small Bus. Econ. 5:55-65.

Van Horne JC (1972). Financial management and policy. 2nd ed., Prentice Hall International, London.

Venanzi D (2003). Le decisioni di struttura finanziaria delle imprese italiane. Morlacchi, Perugia.

Venanzi D (2010). Il puzzle della struttura finanziaria. Pearson Prentice Hall, Milano.

Wald JK (1999). How firm characteristics affect capital structure: An international comparison. J. Financ. Res. 22(2):161-87.

Warner JB (1977). Bankruptcy Costs: Some Evidence. J. Financ. 32(2):337-347.

Weston JF, Brigham EF (1978). Managerial Finance. The Dryden Press, Hinsdale.

Wijst NR (1993). Determinants of Small Firm Debt Ratios: An Analysis of Retail Panel Data. Small Bus. Econ. 5(1):55-65.

Zazzaro A (2008). I vincoli finanziari alla crescita delle imprese. Cacucci, Bari.

Full Length Research Paper

Financing the consumers and new dynamics in time of crisis: An analysis of a well-known furniture and multinational store in Bari, Italy

Pierluigi Passaro*, Arianna Di Vittorio and Dario Schirone

Department of Economics, Management and Business Law, University of Bari Aldo Moro, Italy.

In 2007, an international crisis began due to the dissemination of bad debts, which spilled over to 2008. The global economy is still facing its consequences. This crisis is serious and its consequences are particularly long and painful. In a research of 2011, the economist John Taylor named "the great deviation" as "the recent period when macro-economic policies are based more on interventionist, less based on rules and less predictable". Taylor's appreciation of the failure of these policies has long been discussed, but the pain that governments' and banks' mistakes have caused us is widely pervasive. In the last years, the American domain has slowed down but no other country seems to be ready to take its place. Hence, it derives a state of continuous economic uncertainty inside the financial markets. One example is the need, in full compliance with the economic crisis, not to deprive oneself of the money supply, but rather to purchase, resorting "to the consumer loan." Indeed, the consumer loan is not only used to purchase goods, but also for obtaining service. This study will examine consumers' purchases financed by a well-known multinational furniture, Bari store at Apulia region. Descriptive statistics are used to analyze consumption, inrcome and consumption choices by examining the data collected at the time of loan subscription and stored in a special database. Results show that the borrowing is surprisingly higher with higher income levels.

Key words: Consumer loans, finance, Italy.

INTRODUCTION

The recent global and economic-financial crisis, which was certainly very serious, was caused by some important imbalances which no one noticed in time. According to everybody's perception, it could be solved

or will not degenerate into such deep situation. Instead it exploded in the year 2008 in the United Stated with the subprime crisis, producing negative effects; it subsequently spread like wild fire in the world financial

*Corresponding author. E-mail: pierluigi.passaro@uniba.it.

system.

Globalization means that the economic system is neither national nor continental, but operates on global scale. The banking and financial world has been in a certain way anticipators of globalization phenomenon (Botsch et al., 2010).

In the real economy, the process of globalization is considered as a process of enhancing relationships among economic, legal, social, and cultural systems all over the world. The monetary aspects and their impact on real economy and regulatory activities are combined inside the processes of liberalization of international commerce.

The 20th anniversary done during the fall of the Berlin Wall in 2009 represents the "official" beginning of globalization process, though its plan began before now.

The process of globalization is the trend of making economy global. The economy has supranational powers, derived from an increasing share of economic activity among geographically distant people. After the second world war the international trade grew constantly at high rates, increasing the degree of international and national economies.

The crisis rapidly increased and as already mentioned, it originated from some fundamental imbalances which neither the financial nor the economic system was able to sustain. An example is the constant growth of the value of some assets, like the American real estate; its aim is to grant mortgages given by banks to allow most citizens to own their houses. Another imbalance, which originated this phenomenon, is the continuous high prices, making mortgagers unable to repay their loans. This is linked also to economic cycle. This led to the first non-fulfillments, so called "default" in technical language (Murray and Rothbad, 2006).

Financial institutions which give out loans found themselves unable to fulfill their own obligations. This crisis exploded very rapidly.

The so called real economy was inevitably touched, more specifically production of food, durable assets or family investments which depend on the good functioning of the financial system. If this later gets stuck, the adverse effect on the production of goods and services becomes evident in a short time.

Moreover, companies in every sector rapidly lacked credit, which was diminishing; also there was lower demand for goods and services because consumers, families, citizens, savers, and holders of financial activities found themselves with lower value properties due to the crisis. This affected the companies as well. Consequently, consumers quickly brought down their standard and level of consumption and delayed in purchasing goods after reviewing their own consumption habits. This obviously had a negative impact on the producers of these goods and services.

However, due to this crisis, support was given to banks and other financial institutions, and subsequently the real economy.

Offering support to banks is necessary because if they collapse, an unimaginable tragedy would occur, the world economy would stop, including the production of goods and services which form part of our habits and daily needs.

Governments have been criticized for not intervening or supporting the banks. This criticism is understandable, because banks' collapse would mean the collapse of the world economic system (Augello and Guidi, 2007; Soros, 2012).

In other words, due to lack of confidence in banks, there has been a blockade of the economic system which has been reset and gradually brought to normal due to massive interventions by the United States, Europe, and single members of the European Union. This is very important, because without these kinds of interventions, the situation would have gone worst.

Later on, intervention in favor of the real economy took place, but in a much modest way. It was hoped that things would become normal. This is due to normal market economy mechanisms, availability of resources in the states, and if the fiscal or budgetary policy problem is the financing of the public deficit.

When the crisis broke out, the budgetary policies, normally defined as fiscal, in support of the real economy, had to deal with the state of the public accounts. In some cases, they were already sufficiently compromised, such as in Italy. They were in need of selective intervention. This contributed to the reactivation of the production mechanism, without running the risk of having "rain" intervention, which instead of translating into business applications, could have led to further savings, the only thing they did not need at that time.

Having a good business and supporting the weaker people in the society is a wise choice taking into account that it is necessary to use the few available resources to try to prevent the most damaging effects of the crisis.

Nowadays, the situation is not excellent, even if the signals coming from the economy of the world make us think that the worst is past, that it has touched the bottom and that we are going towards economic restoration.

THE NEW GUIDELINES OF CONSUMERS: THE DEMAND FOR CONSUMER CREDIT IN TIMES OF CRISIS

It is important to understand the situation being described in this paper: to define the process of change that consumers have gone through in the current crisis, with regard to the mode of acquisition of the property, as well as the various forms of consumer credit.

What emerges is a picture of a consumer with traits showing that he/she is affected by the past: he/she is

careful in spending well his/her money and hopes for what the world can offer. But above all, driven by the condition of the economic crisis, consumers combine their shopping bag, differentiated services for price and quality, with a selective spirit and high expectations. Such an approach variously combined of alternatives obliges one to rethink the logic of relational schemes and marketing (Bird and Mc Evan, 2016). So it is possible to outline five types of different consumers in the Great Depression of the New Millennium (Murray, 2006).

Thoughtful neo-consumer

This is a consumer that is not certain, he must weigh his choices for long, thinks, reflects, compares and then takes his decisions convinced that he has taken the best one. The time devoted to reflection in the pre-purchase phase is all gained time. It leads to purchase satisfaction, actual saving, and informed choice. This consumers develops qualities of nomadism, looks, moves (even just online), compares and then chooses the best (Carriero, 2016; Lombardi, 2011).

Expert consumer

The expert consumer is the opposite of the digital native-reflexive consumer. He is a fan of the network, a social addict and might even be called consumer 2.0. He compares himself with the other browsers of web chats and talks online, and asks for the strengths and weaknesses of a service or product he would like to purchase. He is a consumer strongly devoted to relationships even to new digital relationships. Talking about consumption, it is useful to find new friends, meet and grow new relationships (Fabris, 2008; Forum Ania Consumatori, 2017).

Smart consumer

Discounts, promotions, bargain hunting, cherry picking, swapping, and coupling are the clever strategies that are implemented by consumers to circumvent the market, especially in times of crisis. He is the king of smart shopping (Parmigiani, 2010; Puleyo, 2012).

The loyal consumer

This is a consumer that is confused by the flood of offers, promotions, and sales. To reduce all this complexity, he leans on the brands, those brands that he has known for a long time and that have satisfied him. He will faithfully return to buy those brands in order not to commit gross errors. The reflexive consumer, expert digital consumer, and smart consumer oppose the peace and serenity of the consumer loyal to his favorite brands (Cavallo and Paltrinieri, 2010; Villanacci, 2016).

Anti-consumer

The last cluster of the consumer is the ethical consumers; he is a critic, sensitive to environmental and social sustainability (Angelini, 2008). He does not necessarily refer to the market, but to his practices of anti-consumption (consuming less, self-producing, exchanging goods, recycling) (Cariani, 2010; Borghi, 2009; Baudrillard, 2014; Ricotti, 2010).

Having outlined the five types of consumers in the Great Depression of the New Millennium, it is also important to dwell on the key issues on which the marketing professionals are called upon to act.

First among these is the reference to the fundamental operation of socio-economic organization, to understand how to redesign the role and powers of the marketing function within it. Markets change and thus the drivers of value, offered to customers. The marketing function is called to redesign its organizational role to reinvigorate and update "natural" connections, first of all production and sales and those "necessary" finance and administration (Mattiacci, 2013; Morini, 2010).

It is important to rethink the organizational roles (and the relative job descriptions) to articulate; brand managers, customer relationship management (CRM) managers, and shoppers are the only examples of the many possible roles on which the function can be based. They are the external interfaces of companies and relate with other entities (Borello and Mannorri, 2007).

Another key issue is the understanding of the value for customers. The emergence of the concept of value as a central element in the choice of purchase and consumption is a basic phenomenon, though, is in constant evolution. The proliferation of brands and products constantly shuffles the values promised by the various offerings and, consequently, the expectations of customers. It calls for question through exploratory research and constant monitoring of competitors. The basis of the perceived value of the offering company is therefore necessary.

Returning to the "classical" concepts of discipline, it makes us to escape the trap of marketing myopia, defect of vision that makes us see only what appears usual to us and crystallizes us in the usual best known representation of the world, and therefore more reassuring (Nardone, 2010; Vella, 2010).

Another important issue is the creation of value for customers. Digital technology has broken every barrier sector for years, becoming the most dynamic and marked factor cross of renewal; communication tools have

multiplied and so their functionality, breaking down old patterns of thought: let us think of the archaic distinction between above and below the line, undermining the effectiveness of the media and changing its role, and so on (Mazzola, 2011; Rinaldi, 2016).

Realizing the ancient prophecy of Nicholas Negroponte (2004), the distribution channels of digitizable products are changing: from physical locations for the transfer of fund-objects (music stores); they become virtual places to facilitate the exchange of flows (iTunes and similar platforms); customers cease to be exogenous and anonymous data, but they are now recorded and made objects of attention in the post-sale service.

The transfer of the promise of value inherent in the product by the provider to the customer is more complex than before; technology, as outlined so far, significantly modifies the cash flows; therefore the thought, proliferation, increased number of players and offer alternatives at every level make management more complex and shift the focus on the negotiation skills of managers.

The improvement of new managers' skills should be related to main issues: first, the linguistic system of business accounts, economic, financial, and also assets. It is widely recognized that decades ago have sometimes seen values of marketing proceed, either those created, or those invested on a parallel track to others. The increased specialization of marketing activities, in fact, required investments in new tools and activities, whose specific yardsticks of effectiveness are often misunderstood by non-technical and, above all, "do not speak" to the system. The current conditions, which require a great foresight in the selection and management of investments, require that you work to build an effective dialogue between the various measurement systems of a company. This will require, on one hand, the recovery of accounting skills on the part of the marketing manager; on the other hand, a training in languages and typical parameters of the market in favor of the other functional areas (Mora, 2012; Ostidich, 2012). The second issue concerns the techniques of creativity. The word creativity in marketing, has always been the exclusive preserve of advertising; its exercise has been "outsourced" to advertising agencies and then outsourced (Grant, 2009; Foglio, 2008).

The much faster dynamics that today affects both the value proposition to customers and the instrumentation for its transfer requires organizations to make a continuous exercise in creativity, because the opportunities for change in the value proposition and in its moving to the valley are more frequent.

MATERIALS AND METHODS

This work is based on research methodology questions using SPSS statistical method. It is all about the consumer purchases financed by a well-known multinational furniture store located in Bari (Apulia Region) in 2016. The aim is to measure consumers' behavior towards purchasing of goods that are not necessary. Based on the data collected it was possible to characterize Bari store consumers' income, consumption choices and attitude to access to different special sales with particular regards to funding.

RESULTS AND DISCUSSION

The data are useful to defined Bari store's customers using different funding systems offered by the company during 2016 consumer loan campaigns (Figures 1 and 2).

The results show that the customers utilizing consumer credit have a share of 60%. They are males (approximately 60%), aged between 41 and 65 years, married (more than 55%), home owners (less than 55%) with a monthly income ranging between 1,100.00 and 2,000.00 €/month (more than 65%).

The analysis shows that in 2016, more than 2 million Euros (corresponding to approximately 3% of the total business turnover) have been used to finance Bari store utilizing the different credit loans typologies offered during the yearly promotional campaigns.

Collected data highlight that (Figure 3) rate 0 is offered three times in 2016; it has no activation costs and it is increasingly attractive. In Bari store, this typology represents more than 50% of the total amount financed; it is used to finance a single customer's total expenses equal to approximately 2.400,00 Euros, with an average duration of more than 30 months.

Standard is the "classic" mode of funding. The customers, paying the nominal annual rate and the annual percentage rate "gain" the possibility to pay the full amount (no cash is due) and to choose how long the loan will be. Offered only once in Bari store, this typology represents more than 30% of the total amount paid. It is used to finance a single customer's total expenses equal to approximately 1.000,00 Euros, with an average duration of more than 20 months.

Zero interest is the highest chosen by consumer loan typology even if it has been proposed only once in the year 2016. In Bari store, this typology represents more than 13% of the total amount paid. It is used to finance a single customer's total expenses equal to approximately 1.800,00 Euros, with an average duration of more than 18 months.

Business credit, offered at least twice a year, is the mode of funding granted to companies and it is not different from the standard mode. In order to guarantee the granted credit, this form of financing may be required by companies with at least two years of activities on the same territory and in the same economic sector. In Bari store, this typology is rarely used. It represents less than 2% of the total amount paid. It is used to finance business activities higher than 5,500.00 Euros, with an
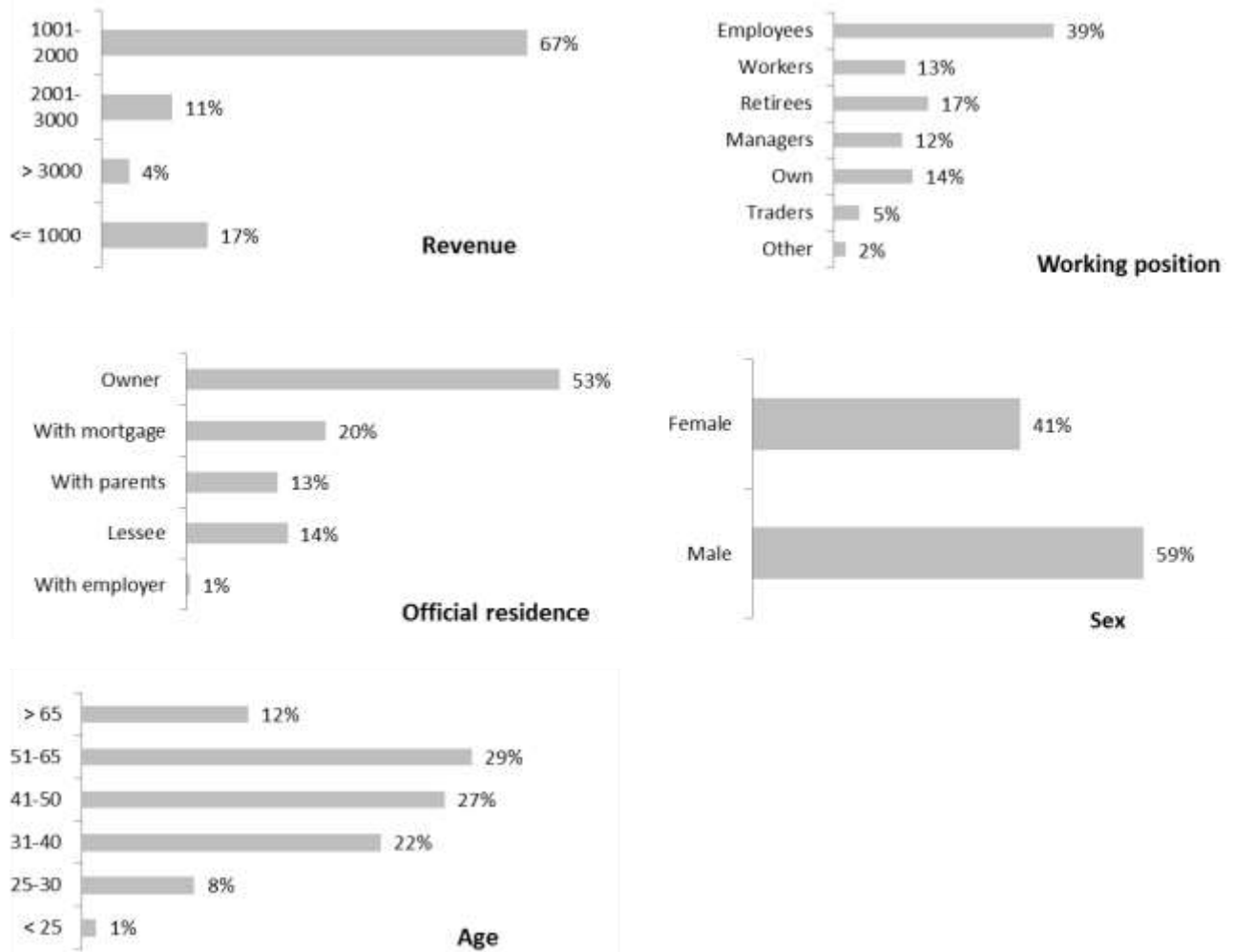
Figure 1. Bari's store Customer utilizing consumer credit profile.
Sources: Personal author's elaboration.

September	October	November	December	January	February	March	April	May	June	July	August
Zero Interst (28/08-29/10)		Rate 0 (30/10-03/01)		Pay after Easter		Rate 0 (04/03-01/05)		Rate 0 (until 05/06)	Pay in October (until 05/07)	Standard "choose your installment"	
		Business credit					Business credit				

Figure 2. Promotional 2016 credit loans campaigns.

average duration of more than 20 months.

Usually, the company analyzed offers another typology of consumer credit, credit to young people; it is given to less than 24 years old customers with interest rate lower than that of the standard. In Bari store, considering the average age of specific store customers (41 to 65 years old), it was not included in 2016 annul campaign.

Conclusion

The aim of this work is to describe Bari store customers' habits in terms of their consumptions, and their life style, in this period of crisis. This is shown in the consumption models adopted by individuals, and to examine the meaning of consumption to them.
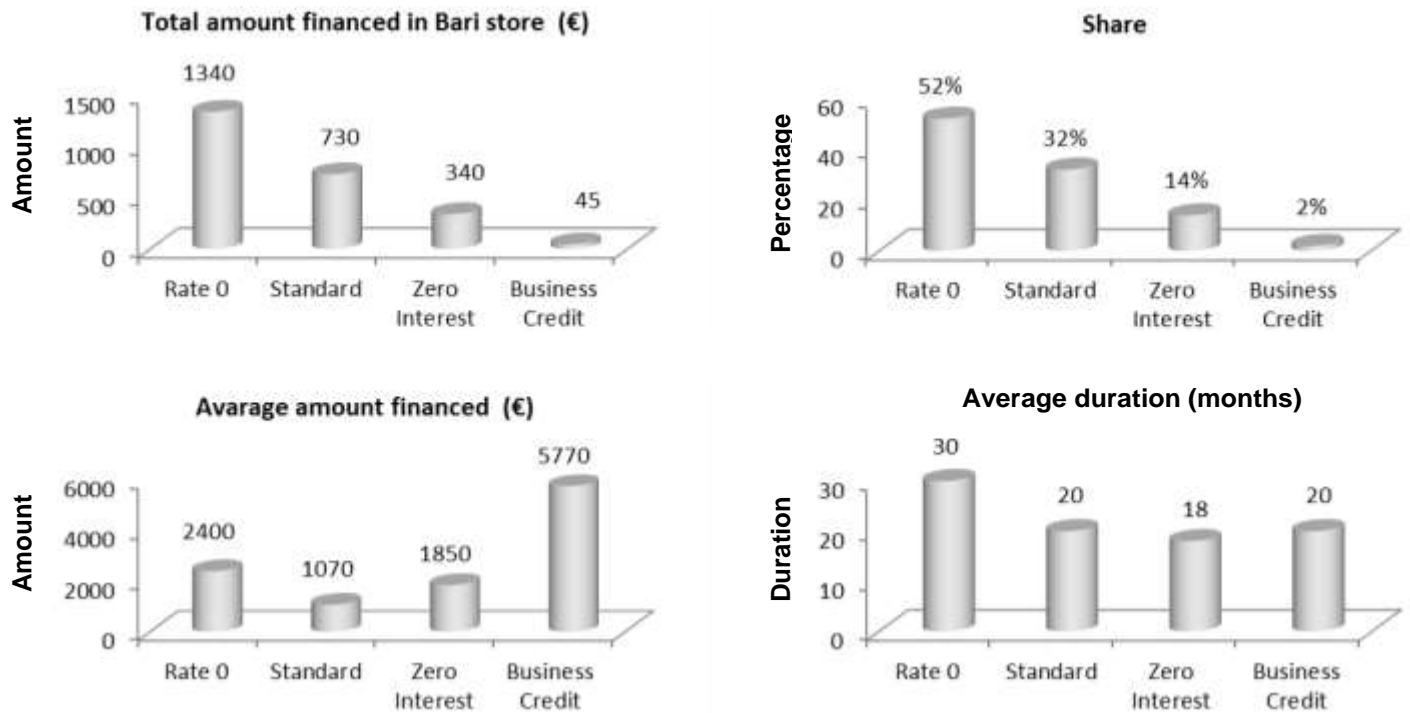
Figure 3. Credit loan details in Bari store in 2016 campaign.
Sources: Personal author's elaboration.

From the proposed analysis, it turns out that the consumers from Bari, with their habits and debt capability correspond to the national one. Both types of consumers, finding themselves in tight economic circumstances, have neither stopped consuming nor have changed their culture in relation to the system of goods present in market, as some authors have asserted; but they have adopted a series of strategies and critical attitudes to measure their own monthly outflows, and thus to protect their wallets.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Angelini A (2008). Cambio di rotta. Lo sviluppo sostenibile, Armando, Roma.
Augello MM, Guidi MEL (2007). L'economia divulgata. Stili e percorsi italiani (1840-1922). Vol. II- Teorie e paradigmi, Franco Angeli, Milano.
Baudrillard J (2014). La società dei consumi, Il Mulino, Bologna.
Bird A, Mc Evan M (2016). I driver della crescita, Franco Angeli, Milano.
Borello E, Mannori S (2007). Teoria e tecnica delle comunicazioni di massa, Firenze University Press, Firenze.

Borghi E (2009). La sfida dei territori nella green economy, Il Mulino, Bologna.
Botsch A, Carlini R, Watt A (2010). Dopo la crisi. Proposte per un'economia sostenibile, Dell'Asino, Roma.
Cariani R (2010), Ecodistretti 2009. Made "green" in Italy: le politiche ambientali dei sistemi produttivi locali e dei distretti industriali, Franco Angeli, Milano.
Carriero G (2016). Autonomia privata e disciplina del mercato. Il credito al consumo e la tutela del risparmiatore, Giappichelli, Torino.
Cavallo M, Paltrinieri R (2010). Consumo sostenibile e progetti nel territorio, Carocci, Roma.
Fabris G (2008). Societing, il marketing nella società postmoderna, Egea, Milano.
Foglio A (2008). Il marketing ecologico, Franco Angeli, Milano.
Forum Ania Consumatori (2017). La vulnerabilità economica delle famiglie italiane. Tra difficoltà e nuovi equilibri, Franco Angeli, Milano.
Grant J (2009). Il manifesto del green marketing, Brioschi, Milano.
Hirsch F. (2001), I limiti sociali allo sviluppo, Bompiani, Milano.
Lombardi R (2011). Verso una nuova Eco-nomia, Maggioli, Santarcangelo di Romagna.
Mattiacci A (2013). Idee per un nuovo marketing dopo la crisi, in "Performance & Management", n.26.
Mazzola EM (2011). La città sostenibile è possibile, Gangemi, Roma.
Mora M (2012). L'ambiente nell'economia moderna, Libreriauniversitaria.it.
Morini M (2010). Tecniche per un marketing sostenibile, Riuniti, Roma.
Murray NR (2006). La grande depressione, Rubbettino, Catanzaro.
Nardone C (2010). Crisi e sostenibilità, Il Bene Comune, Campobasso.
Negroponte N (2004). Essere digitali, Sperling & Kupfer, Milano.
Ostidich D (2012). Quello che è mio è tuo. Il consumo collaborativo e altre forme di consumo relazionale, Il Sole 24 Ore, Milano.
Parmigiani M (2010). Siamo tutti stakeholder, Maggioli, Santarcangelo di Romagna.

Puleyo L (2012). La gender equality nell'economia dell'azienda, Franco Angeli.

Ricotti P (2010). Sostenibilità e green economy. Quarto settore. Competitività, strategie e valore aggiunto per le imprese del terzo millennio, Franco Angeli, Milano.

Rinaldi E (2016). Perché educare alla finanza? Una questione sociologica, Franco Angeli, Milano.

Soros G (2012). La crisi globale e l'instabilità finanziaria. Hoepli, Milano.

Vella M (2010). Oltre il motivo del profitto. Storia, economia, gestione e finanza delle imprese cooperative italiane, Maggioli, Santarcangelo di Romagna.

Villanacci G (2016). Credito al consumo, Edizioni Scientifiche Italiane, Napoli.

African Journal of
Business Management

Related Journals Published by Academic Journals

- Journal of Geography and Regional Planning
- Journal of Economics and International Finance
- Journal of Hospitality Management and Tourism
- International Journal of Sociology and Anthropology
- Journal of Public Administration and Policy Research
- African Journal of Marketing Management