Volume 12 • Issue 4 • August 2021

INTERNATIONAL JOURNAL OF

BUSINESS RESEARCH AND MANAGEMENT (IJBRM)

ISSN : 2180-2165

Publication Frequency: 6 Issues / Year

CSC PUBLISHERS
https://www.cscjournals.org

INTERNATIONAL JOURNAL OF BUSINESS RESEARCH AND MANAGEMENT (IJBRM)

VOLUME 12, ISSUE 4, 2021

EDITED BY
DR. NABEEL TAHIR

ISSN Online: 2180-2165

International Journal of Business Research and Management (IJBRM) is published both in traditional paper form and in Internet. This journal is published at the website https://www.cscjournals.org, maintained by Computer Science Journals CSC Journals, Malaysia.

IJBRM Journal is a part of CSC Publishers
Computer Science Journals
https://www.cscjournals.org

INTERNATIONAL JOURNAL OF BUSINESS RESEARCH AND MANAGEMENT (IJBRM)

Book: Volume 12, Issue 4, August 2021
Publishing Date: 01-08-2021
ISSN Online: 2180-2165

IJBRM Journal is a part of CSC Publishers
https://www.cscjournals.org

Published in Malaysia

Typesetting: Camera-ready by author, data conversation by CSC Publishing Services – CSC Journals, Malaysia

CSC Publishers, 2021

TABLE OF CONTENTS

Volume 12, Issue 4, August 2021

Pages

EDITORIAL PREFACE

This is *Fourth* Issue of Volume *Twelve* of the International Journal of Business Research and Management (IJBRM). The International Journal of Business Research and Management (IJBRM) invite papers with theoretical research/conceptual work or applied research/applications on topics related to research, practice, and teaching in all subject areas of Business, Management, Business research, Marketing, MIS-CIS, HRM, Business studies, Operations Management, Business Accounting, Economics, E-Business/E-Commerce, and related subjects. IJRBM is intended to be an outlet for theoretical and empirical research contributions for scholars and practitioners in the business field. Some important topics are business accounting, business model and strategy, e-commerce, collaborative commerce and net-enhancement, management systems and sustainable business and supply chain and demand chain management etc.

The initial efforts helped to shape the editorial policy and to sharpen the focus of the journal. Started with Volume 12, 2021 issues, IJBRM appears with more focused issues relevant to business research and management sciences subjects. Besides normal publications, IJBRM intend to organized special issues on more focused topics. Each special issue will have a designated editor editors – either member of the editorial board or another recognized specialist in the respective field.

IJBRM establishes an effective communication channel between decision- and policy-makers in business, government agencies, and academic and research institutions to recognize the implementation of important role effective systems in organizations. IJBRM aims to be an outlet for creative, innovative concepts, as well as effective research methodologies and emerging technologies for effective business management.

IJBRM editors understand that how much it is important for authors and researchers to have their work published with a minimum delay after submission of their papers. They also strongly believe that the direct communication between the editors and authors are important for the welfare, quality and wellbeing of the Journal and its readers. Therefore, all activities from paper submission to paper publication are controlled through electronic systems that include electronic submission, editorial panel and review system that ensures rapid decision with least delays in the publication processes.

To build its international reputation, we are disseminating the publication information through Google Books, Google Scholar, RePEc, IDEAS, EconPapers, J-Gate, ScientificCommons, Docstoc, Scribd, CiteSeerX and many more. Our International Editors are working on establishing ISI listing and a good impact factor for IJBRM. We would like to remind you that the success of our journal depends directly on the number of quality articles submitted for review. Accordingly, we would like to request your participation by submitting quality manuscripts for review and encouraging your colleagues to submit quality manuscripts for review. One of the great benefits we can provide to our prospective authors is the mentoring nature of our review process. IJBRM provides authors with high quality, helpful reviews that are shaped to assist authors in improving their manuscripts.

Editorial Board Members
International Journal of Business Research and Management (IJBRM)

What Will Be The Productivity Of Employees With Shorter Work Hours?

Violeta Cvetkoska *vcvetkoska@eccf.ukim.edu.mk*
Ss. Cyril and Methodius University in Skopje
Faculty of Economics-Skopje
Skopje, 1000, Republic of North Macedonia

Milanka Dimovska *milankadimovska@gmail.com*
Ss. Cyril and Methodius University in Skopje
Faculty of Economics-Skopje
Skopje, 1000, Republic of North Macedonia

Abstract

We live in a world where we struggle every day to strike a balance between private and professional life. Shortening working hours leads to higher productivity, but what prevents us from achieving perfect balance? The aim of this paper is to examine the problems, causes and changes that may affect the change of working hours, and to answer whether there is a real possibility of introducing shorter working hours than eight hours, while achieving maximum productivity. The research was conducted through four rounds of questionnaires using the method of qualitative forecasting - Delphi. The questionnaires were answered by 11 respondents from one financial institution in North Macedonia in the period between February 20 and May 24, 2019. For each round of the Delphi method the answers were obtained and served as an auxiliary tool for forming the next survey questionnaire. With the results of the last round the successful application of the method was confirmed by achieving consensus among our panel of experts. Although we concluded that there are no conditions for introducing a shorter working day than eight hours, still the respondents believe that by introducing certain changes they could perform the work tasks in a shorter period of time.

Keywords: Qualitative Prediction, Delphi Method, Working Hours, Productivity, Stress.

1. INTRODUCTION

Some researches show that working overload results in thousands of depressed people each year and overtime work makes it difficult to balance between career and family care [1]. Scientists believe that a person is simply neither mentally nor physically capable of working longer than five hours [2]. According to a survey of 1989 UK office workers all aged over 18 as part of research into the online habits and productivity of workers across the nation, the results of this revealed the average answer to be ‘2 hours and 53 minutes’ of actual productivity in the workplace across all respondents. [3]. Experts say the 40-hour working week is not based on the ideal total hours humans can work productively [4]. A wide variety of unproductive activities disrupt workers’ concentration levels [4]. These include smoking breaks, visiting social media sites, making food at work, eating, reading news websites, searching for jobs and more [4]. Most workers are interrupted every three minutes [4]. Meanwhile, it has been revealed that employees can take an average of 23 minutes to return to productive tasks after being interrupted [4]. Employees at work for a long time may experience fatigue or stress that not only reduces his or her productivity but also increases the probability of errors, accidents, and sickness that impose costs on the employer [5]. The point at which fatigue sets in and the nature of the link between working hours and work effort or fatigue is likely to vary across types of work and across workers [5]. Employers often use working time as a proxy for their employees’ productivity and commitment [6]. Those who work particularly long hours are often awarded benefits such as raises or promotions or are spared from dismissals [6]. This makes it individually rational for each worker to work extra hours in an attempt to outcompete colleagues [6]. However, if many workers pursue this strategy, it loses its effectiveness [6]. Through high work commitment, workers may over time develop into professional employees with greater experiences, resulting in greater performances [7].

Given the tendency of each employer with minimum resources to achieve the best possible results, the question arises whether for certain jobs, primarily in the service industry, it will be necessary to introduce additional staff in order to fill the reduced working hours in order to have continuity in the work. Working hours in the Republic of North Macedonia are regulated in accordance with Article 116, paragraphs 1 and 3 of the Law on Labor Relations [8] according to which full working hours must not be longer than 40 hours per week and not less than 36. In the existing literature we have not found a conducted research or pilot project that would give relevant data on the possibility and justification of the introduction of a seven-hour working day in terms of achieving maximum productivity using minimum resources.

The aim of this paper is to analyze what will be the productivity of employees with shorter work hours using the method of qualitative forecasting - Delphi, conducting the research in one financial institution in North Macedonia.

Given the tendency of each employer to achieve maximum results with minimum resources, the question arises whether certain jobs will require additional staff to fulfill the reduced working hours in order to have continuity in work. In order to apply shorter working hours than eight hours, many factors and conditions need to be met. By introducing a legal obligation to work less than eight hours, many institutions in the financial sector in the Republic of North Macedonia will face the challenge of carrying out their regular tasks, i.e., achieving maximum productivity with available human resources, but in a shorter time.

The obtained results show that in such conditions of organizational set-up, staffing and continuous work under stress due to inability to perform the assigned tasks within the given deadline there is no real basis for shorter working hours than eight, given that the tasks cannot be completed in a regular eight-hour workday. The dependence on processing data from other departments and divisions that should arrive further, complicates the fulfillment of deadlines if we take into account that they are usually received before the end of the workday and their completion requires additional time outside the eight-hour day. This problem can be overcome through better automation and connectivity in the circulation of data from other units to the management of the financial institution, continuously during the eight-hour working day, and not by delay in sending the data for processing. Although we concluded that there are no conditions for introducing a shorter working day than eight hours, still the respondents believe that by introducing certain changes they could perform the tasks in a shorter period of time, i.e. seven hours if there was good motivation, process automation, improved accountability and better task planning. Only motivated people can achieve above-average results, adequately completing the task in an optimal and shorter period of time.

In today's conditions, long-term success and competitive advantage of enterprises depend on giving importance to human because many of the resources owned by enterprises can be imitated, except for human resources [9]. Therefore; it is important to ensure that human resources do their activities voluntarily [9]. In other words, the motivation of individuals to work is an important factor in the success of the enterprise [9]. However, the point to be noted here is that human beings do not act only in line with economic motives and that they have a number of needs as a social being [9]. In addition to this, most of today's enterprises acknowledge that well-trained staff is a critical success factor for them [9].

Motivation can counteract the effects of mental fatigue [10]. However, the underlying mechanism by which motivation affects performance in mentally fatiguing tasks is obscure [10].

In our country there is no research or pilot project that would give us relevant data on the possibility and justification of introducing shorter working hours than eight in terms of achieving maximum productivity using a minimum of resources. This research is the first study of this type conducted in a developing country through which we enter into a small segment of the basic problems, causes and changes that would be initiated if the Republic of North Macedonia would think about changing the duration of working hours. The rest of our paper is organized as follows: Section 2 describes the applied methodology. Section 3 presents the evaluation and discussion of the obtained results, while Section 4 concludes the paper.

2. METHODOLOGY

The idea of the authors of this paper was to conduct a research on what will be the productivity of employees with shorter work hours using the Delphi method in one of the financial institutions in the Republic of North Macedonia. In this regard, a request was prepared which was submitted to the financial institution, which remained anonymous and an interview was conducted with one of the directors of the institution. During the conversation with the director, the purpose of the research and the Delphi method were explained in detail. The proposed idea was positively accepted and it was decided to conduct the research anonymously (as required by the method) in order to give the respondents freedom without pressure to answer the questions, realistically expressing their remarks and at the same time to make maximum contribution in the direction of the changes that they want. A few days after the interview, one of the authors was invited for an interview aimed at selecting panel experts. In addition, it was decided that the experts would be from one of the departments, which includes eleven employees. The panel of experts consists of people with a faculty degree in the branch of economics and banking. Their work engagement refers to work tasks in the area of finance and accounting and they are experts in their field based on their knowledge and work experience. The nature of the work tasks from the employees requires maximum concentration and rational use of working hours in order to complete daily work responsibilities within eight hours. Due to the nature of the work tasks assigned to it and the working time required to perform them, the director of the department was not included in the panel of experts. An instruction was sent to the employees in which the method was explained, as well as its application in the analysis of what will be the productivity of employees with shorter work hours.

The process of the Delphi method, consisting of four rounds, took place in the period between February 20 and May 24, 2019.To examine what will be the productivity of employees with shorter work hours, the Delphi method is implemented in the following rounds:

1. Round 1 - This round includes a survey questionnaire of four open-ended, general questions.
2. Round 2 - The answers of the respondents will be summarized and formulated in several specific questions. They will need to be answered further.
3. Round 3 - The questions from round 2 will be submitted to the respondents again, but this time they will be able to see the answers of the other respondents (the respondents remain anonymous and are marked as respondent 1, respondent 2, etc.). Also, if they think it is necessary, they can change the answers of the questions in round 2 and explain why they decided make the change. If there are any changes in their answers, new round/s will be conducted until is achieved a consensus among the respondents.

2.1 Delphi Method

RAND developed the Delphi method in the 1950s, originally to forecast the impact of technology on warfare [11]. The method entails a group of experts who anonymously reply to questionnaires and subsequently receive feedback in the form of a statistical representation of the "group response," after which the process repeats itself [11]. The goal is to reduce the range of responses and arrive at something closer to expert consensus [11]. The idea was to have a “remote” brainstorming session without psychological interference [12]. Delphi is a scientific method to organize and structure an expert discussion aiming to generate insights on controversial topics with limited information [13]. The technique has seen a rise in publication frequency in various disciplines, especially over the past decades[13]. The method helps reach a consensus among the participants based on all posted opinions from different experiences and points of view in order to build a common scenario [14].

Before using the Delphi method, the problem for which predictions are expected should be defined. Then the group is defined, i.e. the experts who will participate in the process are selected. Several circumstances contribute to the validity of the method and the obtained data [15]. It is important to carefully identify and select qualified experts within the area of the study [15]. We live in an ever-changing environment with technology, society, policies, laws, and other areas changing at a fast pace [16]. One always needs to reflect on the context in which panelists provide their assessments in the Delphi study [16]. A prerequisite that the selected experts must meet in order to be included in the predictions is to possess the necessary knowledge, experience and expertise for the specific problem. There are no clearly defined rules regarding this issue (this also refers to the time period in which the survey questionnaires should be sent). What is specific about this method is that the contacts with the experts are made through several rounds of questionnaires, the experts are anonymous and various information are obtained from them.

Scientific evidence to guide Delphi researchers on whether panel members who miss a round can be included in a subsequent round is sparse [17]. Yet, if the results are consistent with the conventional approach of excluding these experts from subsequent rounds, the final outcome may be a better reflection of the opinions of the originally invited panel and false consensus caused by drop-out of those with a different opinion may be reduced [17].

In the first round of this method it is recommended asking open-ended questions, but the we can also start with closed-ended questions. The advantage attributed to open-ended questions is that we can see the different views, understandings, ideas and opinions that the experts will offer on the question. When the first round is over, the responsible person conducts the second round of survey questionnaires based on the answers received from first round, and they are usually closed-ended, in which the specific problem should be assessed. The responsible person not only writes down the answers from all the experts but also notes their frequency. In the third round the experts are sent the questions from the second round again, but this time they will not only be able to change the given grade and state the reasons why they decided to change, they will also see the answers of the other participants who remain anonymous. This process continues until a consensus is reached among the respondents.

The main advantage of the Delphi method is to reach consensus in areas of uncertainty [18]. Some of the other advantages of the method are [19]: flexibility and simplicity, knowledge sharing, cost efficiency, freedom of expression, ease of communication, variations of members, no geographical restrictions. In addition to the advantages, some disadvantages of the Delphi method are [19]: researcher bias, imposing the researcher's prejudices on respondents, anonymity and power of a panel member, etc. The technique has seen a rise in publication frequency in various disciplines, especially over the past decades [13]. In April 2021, the term Delphi method yielded 28,200 search hits in Google Scholar for the past five years alone [13]. Given the increasing level of uncertainty caused by rapid technological and social change around the globe, collective expert opinions and assessments are likely to gain even more importance [13].

3. EVALUATION AND DISCUSSION OF RESULTS

3.1 First Round

A few days after sending the manual to the financial institution the first survey questionnaire was submitted to the respondents (panel of experts) (Appendix No. 1). This survey questionnaire was submitted to them on February 20, for which they had a period of 3 days, until February 22, to answer. It was fully answered by all eleven respondents. This round consisted of four open-ended questions that leave an opportunity for the respondents to give creative thinking.

The answers received of the first question regarding the problems faced by the department in achieving maximum productivity in an eight-hour working day are given in Table 1. From Table 1 we can see that 10 problems in total were listed, so that, insufficient technical support has the highest frequency (4 responses), followed by improper delegation of work tasks, and greater process of automation (2 responses for each respectively), etc.

Problem	Frequency
Insufficient technical support	4
Improper delegation of work tasks	2
Greater process of automation	2
Insufficient experience for new processes / tasks that are usually related with shorter deadlines	1
Lack of staff	1
Planning and coordination of activities	1
Better organization and prioritization	1
Temporary problems due to technology interruptions	1
The process of transferring knowledge / information to colleagues who were not previously involved in the activity	1
Stress	1

TABLE 1: Problems and their frequency.

Productivity is expressed as the relationship between the outputs of a production system (both goods and services) and its resources (inputs) that are consumed in producing the outputs [20]. Productivity comes from your experience, knowledge, and expertise [21]. The improvement in work productivity has become one of the most important goals for sustainable economic growth [22]. As a result, there is a growing interest on what determines work productivity and how to improve it [22]. Identifying the effect of working time on productivity is not straightforward for two main reasons [23]. First, unobservable characteristics of industries, firms, jobs and individuals are likely to influence both working time and productivity, so that the correlation between the two variables is likely to be a biased estimate of the effect of working time on productivity [23]. Second, external shocks could influence both working time and productivity, which again leads to a biased estimation of the effect [23]. Increasing production, and ultimately productivity, depends on well-organized technical, economic and organizational factors as well as the human factor [24]. Two most common measures of productivity are total measure and partial measure [25]. Total measure includes all the input resources used in achieving the desired outputs whereas partial measure focuses on an incomplete list of input factors [25].

If productivity is enhanced by better visual ergonomic working conditions, then managers of workplaces may be able to improve work outcomes by optimizing the physical work environment [26].

The answers obtained regarding the second question, which refers to how often employees perform their duties outside of working hours and for how long, are presented in Table 2. Based on the results presented in Table 2 we can see that there are eight answers in total, so that three respondents answered that they very rarely perform work tasks outside the working hours, due to an incidental and exceptional situation when there is a justified basis. Besides, there are answers that sometimes they perform work tasks outside the working hours at intervals of one to three hours (2 respondents), daily between 30 and 45 minutes before the start of working hours (1 respondent), etc.

Performing work tasks outside working hours	Frequency
Very rarely, due to an incidental and exceptional situation when there is a justified basis	3
Sometimes at intervals of one to three hours	2
Two to three times a week after the end of regular working hours, usually for a period of one hour	2
Rarely, after working hours	2
Once or twice a month	1
Daily between 30 and 45 minutes before the start of working hours	1
Daily at intervals of several hours	1
Two days a week between one and two hours	1

TABLE 2: Frequency of performing work tasks outside working hours.

The third question provides an answer to the reasons why employees in the department perform work tasks outside of working hours (Table 3). Based on the results given in Table 3, twelve reasons are identified for completing work tasks outside the working hours. The highest frequency (6 responses) has the reason short deadlines for completing the tasks and submitting them to the authorities, followed by the nature/job description (4 responses), timely delivery of information and if a technical problem occurs (2 responses for each), etc.

Reasons for completing work tasks outside the working hours	Frequency
Short deadlines for completing the tasks and submitting them to the authorities	6
The nature / job description	4
Timely delivery of information	2
If a technical problem occurs	2
When the work is dependent on other departments/units	1
In case of unpredictable problems that require additional time	1
If one of the colleagues is on vacation and his / her obligations should be performed in addition to his / her own	1
Completion of tasks started during working hours	1
Additional check of work tasks	1
Involvement in new projects / work assignments that are usually short-term	1
Atmosphere and peace after working hours	1
Additional concentration for performing work tasks	1

TABLE 3: Frequency of reasons for completing work tasks outside the working hours.

Regarding the fourth question, which refers to the changes that would be introduced by the employees in the department in order for the daily tasks to be performed on time, and the working day to last seven hours, the obtained results are presented in Table 4. According to the presented results in Table 4, twelve necessary changes are identified for the tasks to be performed on time, so that a greater process of automation has the highest frequency (4 responses), followed by division of work tasks evenly among all employees in the department, facilitated communication and flow of information with colleagues from other department, increase in the team due to increase of the workload (2 responses for each), etc.

Necessary changes for the tasks to be performed on time	Frequency
Greater process of automation	4
Division of work tasks evenly among all employees in the department	2
Facilitated communication and flow of information with colleagues from other department	2
Increase of the team due to increase of the workload	2
Motivating employees through the correct placement of the position that corresponds to their knowledge and engagement	1
Reducing time in communicating with other colleagues about activities not related to work	1
Optimization of time spent in communication, oral and written	1
Additional technical support	1
The way of planning and scheduling tasks	1
Setting a to-do list to prioritize on a weekly basis	1
Improving / enhancing accountability	1
Reduce break time	1

TABLE 4: Frequency of the necessary changes for the tasks to be performed on time.

3.2 Second Round

In order for each employee to identify their answers in round 3 and at the same time preserve their identity and achieve anonymity, each survey was marked in a different color. The second round of surveys was submitted on March 20 and the employees had to respond until March 25. Eleven surveys were sent, and the number of respondents who fully answered the questions is ten. The survey from the second round is presented in Appendix 2. The answers obtained from the first question as well as the mean for each problem are presented in Table 5. Based on the results in Table 5 we can see that the problems, stress, lack of staff and insufficient experience for new processes / tasks that are usually related with shorter deadlines have the highest mean, i.e. ($\bar{x} = 2.70$), ($\bar{x} = 2.70$) and ($\bar{x} = 2.50$) respectively, etc.

Problem description	Grade (1-5)										Mean
Temporary problems due to technology interruptions	3	1	1	1	3	3	2	3	1	4	2.20
Stress	3	1	5	2	4	2	4	3	1	2	2.70
Greater process of automation	3	1	1	2	5	3	2	3	1	3	2.40
Lack of staff	3	1	5	3	1	3	3	5	1	2	2.70
Insufficient technical support	2	1	1	3	3	4	4	1	1	3	2.30
Planning and coordination of activities	2	1	1	2	5	4	3	2	1	2	2.30
The process of transferring knowledge / information to colleagues who were not previously involved in the activity	2	1	1	2	4	4	3	1	1	1	2.00
Improper delegation of work tasks	2	1	1	3	4	4	3	4	1	1	2.40
Insufficient experience for new processes / tasks that are usually related with shorter deadlines	2	1	1	3	4	3	4	3	1	3	2.50
Better organization and setting priorities	2	1	1	2	4	3	3	4	1	2	2.30

TABLE 5: Problems (individual mean and grade).

One of the most stressful periods of a normal day can be during working hours [27]. Stress is often regarded as a subjective feeling of individuals, in which the demands of work or life exceed the belief of the individual in his or her capacity to cope [27]. Work stress can come from a variety of sources and affect people in different ways [27].

It is widely believed that the relationship between a supervisor and his/her employees greatly affects employees' wellbeing and/or productivity [28]. Job stress and job satisfaction are important factors affecting workforce productivity [29]. The high prevalence of office stress and its detrimental health consequences are of concern to individuals, employers and society at large [30]. Environmental quality seems to have a relation to perceived individual stress and productivity [31]. Rest breaks at work are reported to reduce fatigue and job stress [32]. The advent of the smartphone has dramatically altered how we communicate, navigate, work and entertain ourselves [33]. While the advantages of this new technology are clear, constant use may also bring negative consequences, such as a loss of productivity due to interruptions in work life [33]. It is possible that perceived stress in the workplace may motivate workers to "escape" on to their smartphones [33].

To the second question, the employees had to circle one of the offered answers, i.e. whether very rarely (1-once a week), rarely (2-twice a week), sometimes (3-three times a week), often (4-four times a week) or very often (5-five times a week) during the working week perform work tasks outside working hours. The given answer from each employee is presented in Graph 1. According to their answers we can see that all of the employees perform their work tasks outside of the eight-hour working day.

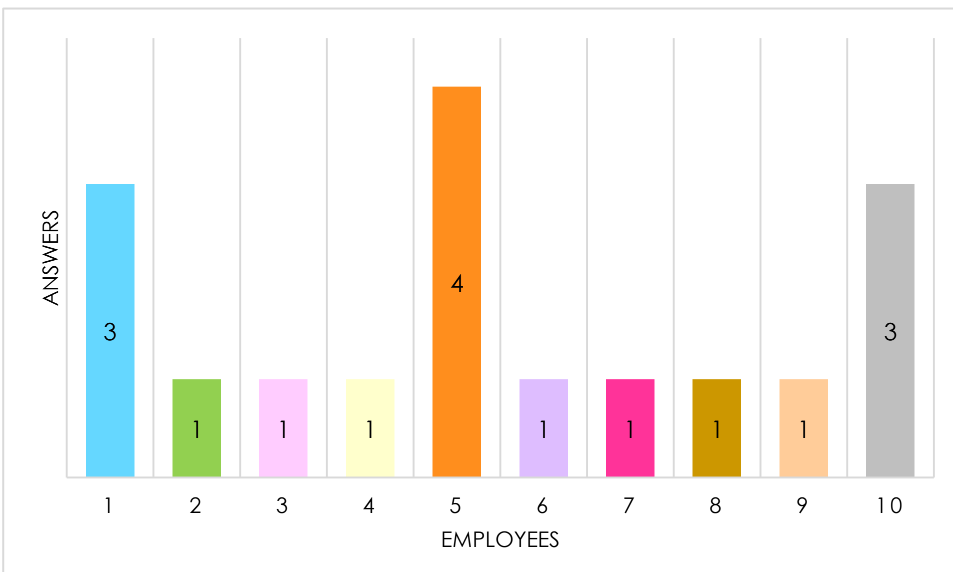

FIGURE 1: Performing work tasks outside working hours.

Many studies have reported noticeable increases in the proportion of employees working either relatively short or relatively long hours [34]. Such trends have been accompanied by an increasing concern regarding work hour mismatches defined as a discrepancy between actual and preferred work hours [34].

The global budget of human time is a societal limit to consider in the sustainability discussion [35]. Global working time allocation among countries is a zero-sum game [35]. Essentially, if long working hours present a danger to health, it should be possible to change them, which is not always the case with other work environmental factors [36].

The answers obtained from the third question as well as the average assessment of each reason are presented in Table 6. Based on the results in Table 6 we can see that the reasons when the work is dependent on other departments/units and atmosphere and peace after working hours have the highest mean, i.e. ($\bar{x} = 3.20$) and ($\bar{x} = 3.00$) respectively.

Description of the reason	Grade (1-5)										Mean
When the work is dependent on other departments/units	5	1	1	3	5	2	5	5	1	4	3.20
In case of unpredictable problems that require additional time	3	1	1	2	5	2	3	1	2	3	2.30
Timely delivery of information	2	1	5	1	5	3	4	3	1	2	2.70
If a technical problem occurs	2	1	5	2	1	3	5	3	1	3	2.60
If one of the colleagues is on vacation and his / her obligations should be performed in addition to his / her own	3	1	5	3	1	2	2	4	1	1	2.30
Short deadlines for completing the tasks and submitting them to the authorities	3	1	5	4	2	4	3	2	1	3	2.80
Completion of tasks started during working hours	2	1	1	1	5	2	1	1	1	3	1.80
Additional check of work tasks	2	1	5	1	5	2	1	1	1	2	2.10
Involvement in new projects / work assignments that are usually short-term	3	1	5	2	5	3	2	1	1	1	2.40
The nature / job description	2	1	5	3	2	3	2	3	1	3	2.50
Atmosphere and peace after working hours	3	1	5	5	5	2	2	3	1	3	3.00
Additional concentration for performing work tasks	1	1	5	1	5	3	5	3	1	1	2.60

TABLE 6: Reasons (individual mean and grade).

There are predictions that in future rapid technological development could result in a significant shortage of paid work [37]. A possible option currently debated by academics, policy makers, trade unions, employers and mass media, is a shorter working week for everyone [37]. Due to the limited availability of automatic generation technology for integrated information including both physical component attributes (such as spatial information) and managerial attributes (such as allocated resources), research efforts focusing on cost-time integrated progress control theory have been sparse [38]. The satisfaction with the working conditions is an important factor that affects the health and productivity of workers [39].

The answers obtained from the fourth question as well as the average grade of each change are presented in Table 7. Based on the results in Table 7 we can see that the changes motivating employees through the correct placement of the position that corresponds to their knowledge and engagement and the change greater process of automation have the highest mean, i.e. ($\bar{x} = 4.40$) and ($\bar{x} = 3.90$) respectively.

Description of change	Grade (1-5)										Mean
Motivating employees through the correct placement of the position that corresponds to their knowledge and engagement	5	1	5	5	5	4	5	5	5	4	4.40
Division of work tasks evenly among all employees in the department	3	1	5	5	2	3	3	5	4	4	3.50
Reducing time in communicating with other colleagues about activities not related to work	2	1	5	2	3	2	4	5	3	1	2.80
Reduce break time	2	1	1	2	1	2	3	4	3	1	2.00
Greater process of automation	4	1	5	3	4	3	4	5	5	5	3.90
Optimization of time spent in communication, oral and written	3	1	5	3	4	2	4	4	3	3	3.20
Additional technical support	3	1	5	3	2	4	3	4	4	4	3.30
The way of planning and scheduling tasks	3	1	5	3	5	3	2	5	5	2	3.40
Setting a to-do list to prioritize on a weekly basis	3	1	1	4	1	3	3	5	5	3	2.90
Improving / enhancing accountability	3	1	5	4	3	3	3	5	4	5	3.60
Facilitated communication and flow of information with colleagues from other departments	2	1	5	2	2	3	1	5	5	5	3.10
Increase of the team due to increase of workload	3	1	5	3	2	2	5	5	5	3	3.40

TABLE 7: Changes (individual mean and grade).

The strongest force behind the spread of more decent working time arrangements — ones that are both productive and socially healthy — remains a full employment economy plus the new institutional structures that facilitate a formal expression for desired flexibility in working time options [40]. Therefore, companies could and should be offered incentives to adopt and spread flexible working time arrangements, such as flextime and working time accounts, which are known to improve employee morale and attitudes [40]. This could, in turn, not only enhance individual work performance, but also improve company productivity, quality and, ultimately, the sustainability of firm performance [40]. Globalization, advancement in technology, rapidly changing work environments, and culturally diverse work groups are becoming the norm in organizations and will likely become more widespread in the future [41].

The competitive, dynamic and changing environment in which companies operate today, pose new challenges that allow them to grow and maintain themselves over time, aspects such as customer satisfaction, innovation, and social responsibility are increasingly used objectives by the companies [42]. However, elements such as quality and productivity continue to be critical factors in business sustainability [42].

3.3 Third Round

In the third round the survey (Appendix 3) was submitted to the respondents on April 25 and the employees had to answer until May 8. Each respondent who has decided to change the grade had to give a brief explanation of taking that step. This time, in addition to their answers, each respondent had the opportunity to see the answers of the other respondents who remain anonymous.

Regarding the first question, there was a change in the grades given in relation to the problems related to temporary problems arising due to technology interruptions, stress, greater process of automation and insufficient technical support. Changes in grades caused changes in the average grade for the given problem. All changes to the first question were made by an employee whose survey color was orange. The changes are shown in Table 8:

Problem description	New rating	Previous rating	New average rating	Previous average rating
Temporary problems due to technology interruptions	2	3	2.10	2.20
Stress	3	4	2.60	2.70
Greater process of automation	4	5	2.30	2.40
Insufficient technical support	2	3	2.20	2.30

TABLE 8: Problems and their average grade.

Regarding the second question, the change that took place was made by the employee whose survey was marked in orange. The previous answer, often (four times a week) I perform work tasks outside of working hours, was replaced by sometimes (three times a week).

In question no. 3 related to the reasons that affect the employees in the department to perform their work tasks outside of working hours, changes were made by the employees whose survey was marked in orange and blue. The changes are shown in Table 9.

Description of the reason	New rating		Previous rating		New average rating	Previous average rating
In case of unpredictable problems that require additional time	x	4	3	5	2.20	2.30
Timely delivery of information	3	4	2	5	2.70	2.70
If a technical problem occurs	3	x	2	1	2.70	2.60
Involvement in new projects / work assignments that are usually short-term	x	4	3	5	2.30	2.40
Additional concentration for performing work tasks	x	4	1	5	2.50	2.60

TABLE 9: Reasons and their average grade.

The reasons given by the employees who decided to change their answers are that the current working conditions influenced their new given grade (refers to all questions in which there was a change in relation to the second round). Regarding the fourth question, the employees remained constant, i.e. did not change their answers.

The financial sector relies heavily on information systems for business [43]. The financial sector requires a great deal of software development [44]. In recent years, financial institutions have pressured their software suppliers to reduce cost, which has obliged them to search for new productive models in order to remain competitive [44]. The great majority of current solutions are focused on the industrialization of software development and the search for a less expensive workforce which is similar to outsourcing [44].

Because in round 3 were identified changes, we have prepared a questionnaire for round where were given all the grades for each respondent and the made changes. The questionnaire was send to the respondents on May 11 and they had time to send back the questionnaire until May 24. Based to the obtained results from the respondents, there were not noticed new changes, which means a consensus was achieved in Round 4.

4. CONCLUSION

In the Republic of North Macedonia there is an initiative to change working hours, i.e. the introduction of seven-hour working day following the example of EU member states, such as France, Denmark, Italy, the Netherlands, Ireland and Belgium. The current working hours, especially in the afternoon period, do not show much creativity and productivity, which leads to an amendment to Article 116, paragraphs 1 and 3 of the Labor Law, in which is written that full-time work must not exceed 40 hours per week and not less than 36 hours per week. On the other hand, the existence of flexible working hours would provide space in the performance of work tasks based on the personal needs for flexibility of the employee. A satisfied employee is an invaluable asset to the organization as a whole. Any investment in the employees and their working conditions results in better results for organizations. Until there is a legal obligation to introduce seven-hour working day, it would be desirable to conduct analyses and research that would look at all aspects of the impact of working hours on employee productivity.

The analysis of productivity through the length of working hours also depends on the type of work tasks performed by the employees in a certain activity. In the study by Man and Ling [45] the long working hours in food service and median working hours in information and communication industry, it was found that wages, working arrangements, job contents and information technology skills, working environment and personal health, and stress and job satisfaction are critical factors to enhance the labor productivity. Stress was listed by our panel of experts as a problem that the department faces in achieving maximum productivity within eight-hour working day.

Despite the fact that we found that the panel of experts could not complete the work tasks within eight hours the respondents through the given answers believe that by introducing certain changes, the work tasks could be performed in a shorter period of time, i.e. seven working hours. Some of these changes are motivational factors, process of automation, improved accountability, better task planning, etc. Motivated people can achieve above-average results, adequately completing the task in an optimal and shorter period of time as required by the supervisor. The problem is how to motivate employees to invest in the work they do given the fact that a particular group of workers may be motivated by one factor without having an impact on another working group. It is important to find out what motivates most employees or to make a combination that will achieve the best results. It gives us hope that if there is a legal obligation to introduce shorter working hours with the right choice of motivational factors that the expected results can be achieved. In addition, each organization should take care that each employee is placed in a position that corresponds to the level of his knowledge and experience, otherwise, if employees are placed in senior positions without a combination of these two dimensions, it will demotivate the team that lead it and the set goals cannot be expected to be achieved.

As a first research in the field of working hours using the Delphi methodology in the Republic of North Macedonia, this study opens the door for researchers interested in the field of working hours and productivity to conduct similar research. As a limitation of the study we point out that it was conducted in panel experts of one financial institution, but in the next study we plan to investigate the impact of the COVID-19 virus pandemic on the working hours in the financial industry using a panel of experts from several financial institutions.

5. REFERENCES

[1] "Shortened working week for greater productivity of workers". Internet: https://nezavisen.mk/skratena-rabotna-nedela-za-pogolema-produktivnost-na-rabotnicite/, Apr.7, 2019 [May 15, 2019]. (on Macedonian).

[2] Experts appeal: "Working hours to be limited to four hours per day". Internet: https://www.vrabotuvanje.com.mk/Vest/4668/Ekspertite-apeliraat-Rabotnoto-vreme-da-se-ogranichi-na-4-chasa-dnevno/2/, Jun.17, 2019 [Jun.18, 2019]. (on Macedonian).

[3] "How Many Productive Hours in a Work Day? Just 2 Hours, 23 Minutes…." Internet: https://www.vouchercloud.com/resources/office-worker-productivity, [May 15, 2019].

[4] "The Six-Hour Workday." Internet:https://onlinemasters.ohio.edu/blog/benefits-of-a-shorter-work-week, Mar.21, 2018 [Feb.10, 2019].

[5] J. Pencavel. "The Productivity of Working Hours". Discussion Paper No. 8129, pp.25, Apr.2014.

[6] J. Malte. "The rat race and working time regulation", Politics, Philosophy & Economics 2020, Vol. 19(3) 293–314, pp.293.

[7] W. Authayarat and H.Umemuro. "Workplace Environment Characteristics as Antecedents of Affective Well-being in the Workplace". International Journal of Business Research and Management (IJBRM), Vol.3, Issue 6, pp. 307-324, 2012.

[8] Official Gazette of the Republic of Macedonia, No. 167/2015, p. 25. Internet: https://www.slvesnik.com.mk/Issues/b7e29dcc351b4ac28c389be15955c380.pdf, Sep.28, 2015 [Feb.8, 2019]. (on Macedonian)

[9] B. Ozkeser. (2019, Oct.). "Impact of training on employee motivation in human resources management". Procedia Computer Science [On-line]. Vol.158, pp.802–810. Available: https://doi.org/10.1016/j.procs.2019.09.117 [Jun. 9, 2021].

[10] M.B. Herlambang, N.A. Taatgen and F. Cnossen. (2021, May). "Modeling motivation using goal competition in mental fatigue studies". Journal of Mathematical Psychology [On-line]. Vol.102 (2021) 102540.Available: https://doi.org/10.1016/j.jmp.2021.102540 [Jun.8, 2021].

[11] Delphi method. Internet: https://www.rand.org/topics/delphi-method.html, [Jun.9, 2021].

[12] M. Rivière. "History of the Delphi Method". Internet: https://blog.mesydel.com/history-of-the-delphi-method-28390958aa68, Sep.15, 2017 [Feb.7, 2019].

[13] D. Beiderbeck, N. Frevel and H.A. von der Gracht et al.(2021, May). "Preparing, conducting, and analyzing Delphi surveys: Cross-disciplinary practices, new directions, and advancements". MethodsX [On-line]. Vol. 8 (2021) 101401. Available: https://doi.org/10.1016/j.mex.2021.101401 [Jun.9, 2021].

[14] A. B. Renzi and S. Freitas. (2015, Oct.). "The Delphi method for future scenarios construction". Procedia Manufacturing [On-line]. Vol.3, pp.5785 – 5791. Available: https://doi.org/10.1016/j.promfg.2015.07.826 [Jun.9, 2021].

[15] K.F.-H. Egfjord and K.J. Sund. (2020, Sep.). "A modified Delphi method to elicit and compare perceptions of industry trends". MethodsX [On-line]. Vol. 7 (2020) 101081. Available: https://doi.org/10.1016/j.mex.2020.101081 [Jun.9, 2021].

[16] U. Schmalz, S. Spinler and J. Ringbeck. (2020, Dec.). "Lessons Learned from a Two-Round Delphi-based Scenario Study". MethodsX [On-line]. Vol.8 (2021) 101179. Available: https://doi.org/10.1016/j.mex.2020.101179 [Jun.9, 2021].

[17] A. Boel et al. (2020, Sep.). "Two different invitation approaches for consecutive rounds of a Delphi survey led to comparable final outcome". Journal of Clinical Epidemiology [On-line]. Vol.129,pp.31-39. Available: https://doi.org/10.1016/j.jclinepi.2020.09.034 [Jun.9, 2021].

[18] C. Powell (2003): "The Delphi Technique: Myths and Realities", Journal of Advanced Nursing, 41(4), pp. 376– 382. Retrieved from http://onlinelibrary.wiley.com/doi/10.1046/j.1365- 2648.2003.02537.x/full.

[19] J. R. Avella (2016): "Delphi Panels: Research Design, Procedures, Advantages, and Challenges", International Journal of Doctoral Studies, 11, pp. 305-321. Retrieved from http://www.informingscience.org/Publications/3561.

[20] Aspridis Georgios et al. (2014, Sep.). "Productivity Enhancement Options in the Years of the Economic Crisis". Procedia - Social and Behavioral Sciences [On-line]. Vol.148 ,pp. 516 – 523. Available: https://doi.org/10.1016/j.sbspro.2014.07.074 [Jun.8, 2021].

[21] R.Tator and A.Latson. More time for you: a powerful system to organize your work and get things done.Printed in the United States of America. American Management Association, 2011, pp.23.

[22] Okazaki E, Nishi D, Susukida R, Inoue A, Shimazu A, Tsutsumi A. Association between working hours, work engagement, and work productivity in employees: A cross-sectional study of the Japanese Study of Health, Occupation, and Psychosocial Factors Relates Equity. J Occup Health. 2019;61:182–188. https://doi.org/10.1002/1348-9585.12023 [May 17, 2021].

[23] Marion Collewet and Jan Sauermann, Working hours and productivity, Labour Economics, http://dx.doi.org/10.1016/j.labeco.2017.03.006.

[24] T.Tomekovic. Psihologija rada kadrovi i rad. Vtoro izdanje. Zagreb: SNL, (1980), pp.294.

[25] A. Gill. "Measurement and Comparison of Productivity Performance Under Fuzzy Imprecise Data". International Journal of Business Research and Management (IJBRM), Vol.2, Issue 1, pp. 19-32, 2011.

[26] H.O. Richter, et al. (2019, May). "Visually deficient working conditions and reduced work performance in office workers: Is it mediated by visual discomfort?". International Journal of Industrial Ergonomics [On-line]. Vol.72 ,pp.128-136. Available: https://doi.org/10.1016/j.ergon.2019.05.007 [Jun.9, 2021].

[27] Nurul Afi da Isnaini Janipha et al.(2013, Jan.). " Workplace Stress amongst Consultants in Practice". Procedia - Social and Behavioral Sciences [On-line]. Vol.68, pp.183-191. Available: https://doi.org/10.1016/j.sbspro.2012.12.218 [Jun.8, 2021].

[28] S. Kuroda and I. Yamamoto. (2018, Aug.). "Good boss, bad boss, workers' mental health and productivity: Evidencefrom Japan". Japan & The World Economy [On-line]. Vol.48, pp.106-118. Available: https://doi.org/10.1016/j.japwor.2018.08.002 [Jun.9, 2021].

[29] N. Hoboubi et al. (2016, Jul.). "The Impact of Job Stress and Job Satisfaction on Workforce Productivity in an Iranian Petrochemical Industry". Safety and Health at Work [On-line]. Vol.8, pp.67-71. Available: https://doi.org/10.1016/j.shaw.2016.07.002 [Jun.9, 2021].

[30] J.I. Kerr et al. (2020, Aug.). "The effects of acute work stress and appraisal on psychobiological stress responses in a group office environment". Psychoneuroendocrinology [On-line]. Vol. 121 (2020) 104837. Available: https://doi.org/10.1016/j.psyneuen.2020.104837 [Jun.9, 2021].

[31] J. Kallio et al. (2020, Mar.). “Assessment of perceived indoor environmental quality, stress and productivity based on environmental sensor data and personality categorization”. Building and Environment [On-line]. Vol. 175 (2020) 106787. Available: https://doi.org/10.1016/j.buildenv.2020.106787 [Jun.9, 2021].

[32] S. Park et al. (2019,Nov.). “The Effects of Workplace Rest Breaks on Health Problems Related to Long Working Hours and Shift Work among Male Apartment Janitors in Korea”. Safety and Health at Work [On-line]. Vol.10, pp.512-517. Available: https://doi.org/10.1016/j.shaw.2019.10.003 [Jun.9, 2021].

[33] É. Duke and C. Montag. (2017, Jul.). “Smartphone addiction, daily interruptions and self-reported productivity”. Addictive Behaviors Reports [On-line]. Vol.6, pp.90-95. Available: https://doi.org/10.1016/j.abrep.2017.07.002 [Jun.9, 2021].

[34] S. Kim et al. (2020, Sep.). “Is Work Hour Mismatch Associated with Depression?”. Safety and Health at Work [On-line]. Vol.12, pp.96-101. Available: https://doi.org/10.1016/j.shaw.2020.09.009 [Jun.9, 2021].

[35] L. Pérez-Sánchez et al. (2020, Nov.). “The international division of labor and embodied working time in trade for the US, the EU and China”. Ecological Economics [On-line]. Vol. 180 (2021) 106909. Available: https://doi.org/10.1016/j.ecolecon.2020.106909 [Jun.9, 2021].

[36] U.Janlert. “Long working hours: an avoidable cause of stroke?” Internet: https://doi.org/10.1016/S0140-6736(15)61000-5, Oct.31, 2015 [Jun.9, 2021].

[37] D. Kamerāde, et al. (2019, Jun.). “A shorter working week for everyone: How much paid work is needed for mental health and well-being?”. Social Science & Medicine [On-line]. Vol. 241 (2019) 112353. Available: https://doi.org/10.1016/j.socscimed.2019.06.006 [Jun.8, 2021].

[38] J. Lee et al. (2017, Sep.). “BIM-assisted labor productivity measurement method for structural formwork”. Automation in Construction [On-line]. Vol.84, pp.121-132. Available: https://doi.org/10.1016/j.autcon.2017.08.009 [Jun.9, 2021].

[39] C. Lee and S. Park. (2021). “Changing Factors of Employee Satisfaction with Working Conditions: An Analysis of the Korean Working Conditions Survey”. Safety and Health at Work [On-line]. Article in press. Available: https://doi.org/10.1016/j.shaw.2021.04.003 [Jun.9, 2021].

[40] L. Golden. “The effects of working time on productivity and firm performance: a research synthesis paper”, Conditions of Work and Employment Series No. 33, 2011, INTERNATIONAL LABOUR OFFICE – GENEVA. pp.18.

[41] K. Y. Senter and A. McClelland. “Top Ten Workplace Skills for Future Organizations”. International Journal of Business Research and Management (IJBRM), Vol.6 Issue 2, pp.20-32, 2015.

[42] G. Jimenez et al. (2020, Mar.). “Improvement of Productivity and Quality in the Value Chain through Lean Manufacturing – a case study”. Procedia Manufacturing [On-line]. Vol.41, pp.882-889. Available: https://doi.org/10.1016/j.promfg.2019.10.011 [Jun.8, 2021].

[43] S. Varga et al. (2021, Feb.). “Cyber-threat perception and risk management in the Swedish financial sector”. Computers and security [On-line]. Vol.105 (2021) 102239. Available: https://doi.org/10.1016/j.cose.2021.102239 [Jun.9, 2021].

[44] VR. Montequin et al. (2013, Dec.). "Scorecard For Improving Software Factories Effectiveness In The Financial Sector". Procedia Technology [On-line]. Vol.9, pp.670-675. Available: https://doi.org/10.1016/j.protcy.2013.12.074 [Jun.9, 2021].

[45] Ng Chi Man and Tsang Wan Ling. (2014). "Relationship between Working Hours and Productivity: The Case of Food Services and Information Communication Industries in Hong Kong". Advances in Economics and Business [On-line]. 2(7): 281-292, 2014, DOI: 10.13189/aeb.2014.020704 [May 17,2021].

APPENDIX 1

Dear Sir/Madam,

Your participation in our research will be completely confidential and you will remain anonymous throughout the process. The data collected within this research will not be used individually, but will be part of the sample for the research.

The aim of the research is: What will be the productivity of employees with shorter work hours. The survey below represents the first phase of the Delphi method. This questionnaire is designed to get your personal opinion on a key issue.

The Delphi process will involve examining three separate situations.

Round 1- This phase includes a survey questionnaire of four open-ended, general questions, which are on the next page, for which you have a deadline to answer in a period of 3 days, till 22.02.2019

At a later date:

Round 2 - Your answers, as well as the answers of the others, will be summarized and formulated in several specific questions. You will have to answer the questions by giving a grade from 1 to 5 or by circling one of the offered answers. You will need to answer them further.

Round 3- The questions from round 2 will be submitted to you again, but this time you will also be able to see the answers of the other respondents. If you think it is necessary, you will be able to change the answers to the questions from round 2 and at the same time give an explanation why you decided to change them.

The number of rounds will be repeated until is achieved a consensus among respondents.

Yours faithfully,

Delphi method-***Round 1***

1. List the problems your department faces when achieving maximum productivity in eight-hour working day.

2. How often during the working week do you perform work tasks outside of working hours (before and after working hours) and for how long?

3. List the reasons why you are forced to complete work tasks outside of working hours.

4. What would you change in your eight-hour working day in order to complete the daily tasks on time, while the working day lasts seven hours?

APPENDIX 2

Delphi method-***Round 2***

1. Rate the problems that are present in your department from 1 to 5 (1 = problem that is present, but the department faces it very rarely, 5 = problem that the department often faces).

Problem definition	Grade (1-5)
Temporary problems due to technology interruptions	
Stress	
Greater process of automation	
Lack of staff	
Insufficient technical support	
Planning and coordination of activities	
The process of transferring knowledge / information to colleagues who were not previously involved in the activity	
Improper delegation of work tasks	
Insufficient experience for new processes / tasks that are usually related with shorter deadlines	
Better organization and prioritization	

2. Circle:

   During the working week, the work tasks ___________________ are performed outside working hours (before and after the end of the working hours).

   1) Very rarely (once a week)
   2) Rarely (twice a week)
   3) Sometimes (three times a week)
   4) Often (four times a week)
   5) Very often (five times a week)

3. The reason why you are forced to complete work tasks outside working hours rate from 1 to 5 (1 = reason that is present, but does not affect much to perform work outside working hours, 5 = reason that most affects to carry out work outside working hours).

Description of the reason	Grade (1-5)
When the work is dependent on other departments/units	
In case of unpredictable problems that require additional time	

Timely delivery of information	
If a technical problem occurs	
If one of the colleagues is on vacation and his /her obligations should be performed in addition to his/her own	
Short deadlines for completing the tasks and submitting them to the authorities	
Completion of tasks started during working hours	
Additional check of work tasks	
Additional concentration for performing work tasks	
Involvement in new projects / work assignments that are usually short-term	
The nature / job description	
Atmosphere and peace after working hours	

4. Rate the changes that you would implement in your department in addition to the daily tasks to be performed on time, while the working day lasts seven hours, according to their priority from 1 to 5 (1 = Change with the lowest priority, 5 = Change with highest priority)

Description of change	Grade
Motivating employees through the correct placement of the position that corresponds to their knowledge and engagement	
Division of work tasks evenly to all employees in the department	
Reducing time in communicating with other colleagues about activities not related to work	
Reduce break time	
Greater process of automation	
Optimization of time spent in communication, oral and written	
Additional technical support	
The way of planning and scheduling tasks	
Setting a to-do list to prioritize on a weekly basis	
Improving / Enhancing accountability	
Facilitated communication and flow of information with colleagues from other departments	
Increase of the team due to increase of workload	

APPENDIX 3

Delphi method-***Round 3***

Dear Sir/Madam,

Thank you for your cooperation so far and for the time you have devoted responding the surveys from the previous two rounds of the Delphi method.

In this round, the questions from the previous survey are submitted to you again, but this time, in addition to yours, you will also be able to see the answers of the other respondents. If you think it is necessary, you have the opportunity to change the grade that you previously wrote. In case you change your mind, in the empty space under the table briefly give an explanation why you have decided to change your answer.

You have a deadline to respond to this survey within a period of 14 days, ending on May 8, 2019.

Yours faithfully,

1.

Problem definition	Grade										
	Your rating	Change of rating	Grades given by other respondents								
Temporary problems due to technology interruptions	1		1	1	1	3	3	2	3	4	3
Stress	1		1	5	2	4	2	4	3	2	3
Greater process of automation	1		1	1	2	5	3	2	3	3	3
Lack of staff	1		1	5	3	1	3	3	5	2	3
Insufficient technical support	1		1	1	3	3	4	4	1	3	2
Planning and coordination of activities	1		1	1	2	5	4	3	2	2	2
The process of transferring knowledge / information to colleagues who were not previously involved in the activity	1		1	1	2	4	4	3	1	1	2
Improper delegation of work tasks	1		1	1	3	4	4	3	4	1	2
Insufficient experience for new processes / tasks that are usually related with shorter deadlines	1		1	1	3	4	3	4	3	3	2
Better organization and setting priorities	1		1	1	2	4	3	3	4	2	2

2. Circle:

During the working week, the work tasks ____________________ are performed outside working hours (before and after the end of the working hours).

1) Very rarely (once a week)
2) Rarely (twice a week)
3) Sometimes (three times a week)
4) Often (four times a week)
5) Very often (five times a week)

Your answer	Change of answer	Grades given by other respondents								
1		3	1	1	4	1	1	1	1	3

3.

Description of the reason	Your rating	Change of rating	Grades given by other respondents								
When the work is dependent on other departments/units	1		4	1	3	5	2	5	5	1	5
In case of unpredictable problems that require additional time	2		3	1	2	5	2	3	1	1	3
Timely delivery of information	1		2	5	1	5	3	4	3	1	2
If a technical problem occurs	1		3	5	2	1	3	5	3	1	2
If one of the colleagues is on vacation and his / her obligations should be performed in addition to his / her own	1		1	5	3	1	2	2	4	1	3
Short deadlines for completing the tasks and submitting them to the authorities	1		3	5	4	2	4	3	2	1	3
Completion of tasks started during working hours	1		3	1	1	5	2	1	1	1	2
Additional check of work tasks	1		2	5	1	5	2	1	1	1	2
Involvement in new projects / work assignments that are usually short-term	1		1	5	2	5	3	2	1	1	3
The nature / job description	1		3	5	3	2	3	2	3	1	2
Atmosphere and peace after working hours	1		3	5	5	5	2	2	3	1	3
Additional concentration for performing work tasks	1		1	5	1	5	3	5	3	1	1

Rating (1-5) use whole numbers

4.

Description of change	Your rating	Change of rating	Grades given by other respondents								
Motivating employees through the correct placement of the position that corresponds to their knowledge and engagement	5		4	5	5	5	4	5	5	1	5
Division of work tasks evenly among all employees in the department	4		4	5	5	2	3	3	5	1	3

Rating (1-5) use whole numbers

Reducing time in communicating with other colleagues about activities not related to work	3		1	5	2	3	2	4	5	1	2
Reduce break time	3		1	1	2	1	2	3	4	1	2
Greater process of automation	5		5	5	3	4	3	4	5	1	4
Optimization of time spent in communication, oral and written	3		3	5	3	4	2	4	4	1	3
Additional technical support	4		4	5	3	2	4	3	4	1	3
The way of planning and scheduling tasks	5		2	5	3	5	3	2	5	1	3
Setting a to-do list to prioritize on a weekly basis	5		3	1	4	1	3	3	5	1	3
Improving /Enhancing accountability	4		5	5	4	3	3	3	5	1	3
Facilitated communication and flow of information with colleagues from other departments	5		5	5	2	2	3	1	5	1	2
Increase of the team due to increase of workload	5		3	5	3	2	2	5	5	1	3

Digital Technologies to Fight the Pandemic Crisis: Evidence from The Vatican Museums

Luigi Nasta *lnasta@luiss.it*
Department of Business and Management
Luiss Business School
Rome, 00162, Italy

Luca Pirolo *lpirolo@luiss.it*
Department of Business and Management
Luiss Business School
Rome, 00162, Italy

Abstract

Museums assume a central role in our social orders. In addition to the fact that they preserve our legacy, yet they likewise give spaces in which to encourage instruction, motivation, and exchange. Based on the values of respect and cultural diversity, museums fortify social cohesion, foster creativity, pass on collective memory and act as agents of sustainability. Besides, their role in supporting other industries, for example the tourism sector, is a vital factor to favor local and national economies. During unexpected occurrences, various cultural and professional organizations have already kept on loaning themselves as sources of resilience and backing for networks, growing new frameworks to guarantee access to culture and training. However, it is fundamental to identify how museums and cultural institutions affirm their social role by modifying the channels available when an unpredictable event affects their everyday business.

This article aims to understand how museums adjust to the changes forced by unexpected occurrences, namely COVID-19, especially by exploring how they use social media channels to react and to recover from the repercussions of emergent circumstances.

Keywords: Museums, Digital Technologies, Social Media, COVID-19.

1. INTRODUCTION

COVID-19 has helped to underline the evident limits of a series of cultural approaches that are lacking and now outdated, or at least imprecise and superficial, which have existed for a long time and are deeply rooted in the practices, choices, and strategies of several museum institutions.

In this period of lockdown, characterized by individual isolation and general closure, it was possible to question many museum issues and to rethink about useful strategies for a cultural revival. For many players in the field, the web has proved to be a fundamental tool for interaction and discussion. Various museums and cultural contexts, even though with quite different outcomes, tried to exploit the digital to stay present, keep alive the connection with their audiences, experiment with new possibilities of involvement, question themselves and develop a reviewed strategic analysis. In this regard, all the work carried out by the Network of European Museum Organisations (NEMO) was a useful and constructive monitoring tool, which kept the debate alive, supported the museum community, motivated cultural activities, and policies. In fact, according to a survey conducted by this organization, even though more than 70% of museums have been closed, many of them have been incredibly active, both online and offline, in supporting their communities to cope with the emergency [1]. In general, almost all museums offered digital initiatives and exhibitions, blogs and stories published on Instagram and Facebook, virtual tours, art-education apps, YouTube channels with talks and conferences, short and funny videos on museum collections, re-use of objects creatively, along with documentation on the pandemic and donations of materials needed by hospitals.

The weeks of physical closure of places of culture have stimulated creative responses from cultural institutions which, leveraging digital technologies, have increased their cultural offer by attracting new audiences. Starting from the digital initiatives implemented by the Italian museums during the lockdown weeks, this article aims to offer some contributions on possible future scenarios of cultural use. Central element of the reflection is represented by the role that digital has played in the closing weeks and its possible future declinations. The increased usage of digital technologies induced by COVID-19 is an opportunity for scholars and practitioners to analyze how cultural organizations have acted over a short period, providing useful insights for the long term.

Given this premise, this article examines the acceleration of digital technologies within cultural organizations forced by the COVID-19 pandemic by examining the following research questions:

RQa) How museums used social media to face a critical event?
RQb) How social media can help museums attracting new audiences?
RQc) What are the organizational implications of using digital technologies for museums?

To answer to these research questions, a case study method is used. Qualitative case study is an examination technique that supports the analysis of a phenomenon inside a specific setting through different information sources. Moreover, it embraces the analysis through multiple focal points to uncover numerous aspects of the phenomenon itself.

The article provides an example from the Italian cultural setting: the Vatican Museums. The choice is driven by several reasons: i) the increased demand for museums to deliver digital transformation, pushed by both recent development in technologies and public policies [2]; ii) the Italian cultural context is the ideal setting for the analysis since the Italian government has recently encouraged Italian museums to expand their cultural participation by enabling new alternatives to engage with visitors, both online and onsite; iii) the Vatican Museums is one of the most visited around the world which attract almost seven millions of visitors per year. Thus, this implies that being forced to provide their services only online, the Vatican Museums had to adapt rapidly to the contingent situation to avoid a decrease in the reputation and in the recognition from the audience.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature on how museums used digital technologies during COVID-19. Section 3 deals with the methodology and the Vatican Museums case study. Section 4 presents the findings and the challenges for the future. Section 5 provides conclusions, limitations, and suggestions for future research.

2. LITERATURE REVIEW

2.1 Museums and Digital Technologies During COVID-19

Some authors have faced the topic of technology within museums, especially as tools to achieve effective communication skills. The development of advanced communication tools and a number of users more and more connected thanks to their mobile devices has pushed museums to use increasingly alternative channels through which interact with potential visitors. Facebook, Twitter, Instagram, YouTube are online platforms used to promote and disseminate information on the events and the activities that the museum organizes [3]. At the same time, given the popularity of these platforms, their use contributes to increasing the status of the museums themselves [4].

Previous researchers have investigated the use of social networks in various cultural organizations, including museums [5] [6] [7] [8]. The use of these channels has greatly contributed to museum communication [9] by offering, among other things, the possibility of innovating one of the most important mechanisms in the museum-visitor relationship: the level of satisfaction with the experience. The latter is based on a participatory and experiential approach through which museums strengthen their relationship with visitors, increasing their emotional involvement even after the experience [10] [11].

Thus, the use of digital allows to extend the relationship between museums and visitors. It makes it possible to develop and improve post-visit learning and create the concept of a participatory museum [12]. Therefore, digital technologies have allowed new forms of participation and new levels of visitor's involvement.

Additionally, social media offers new ways of interaction that go beyond physical museum spaces: from 3D representations to video contributions, from electronic databases to digital collections [13] [14] [15]. Through these tools, digital transformation has made it possible to establish direct communication with the target and to bring the experience beyond the walls of the museum.

The use of new technologies by museums is an extremely relevant element in the analysis of the visitor's experience. As already demonstrated by numerous studies on the topic, new technologies (social media, mobile, analytics, etc.) can help both large cultural institutions and smaller ones in providing a service that is increasingly appreciated by those who benefit from the cultural experience [16] [17] [18]. Previous studies, however, have traditionally been based on data and analyzes carried out under normal conditions. This normality has disappeared with the spread of COVID-19 and this entails the need to start a new reflection on the subject that tries to highlight how museums can use these technologies in a totally different context characterized by great uncertainty about the future.

The COVID-19 pandemic has forced many countries into lockdown and has shut all the businesses not considered essential ones. In Italy, the lockdown started on 8 March 2020 and all the cultural institutions were forced to close their doors and to stop providing onsite services. This induced museums to use digital technologies to provide alternative ways to engage with their audiences. Specifically, they use social media abundantly to retain user engagements.

Even before COVID-19, Italian museums were already using social media with the objective of encouraging public participation through information and communication on the main online platforms like Facebook, Instagram, or YouTube. That represents the optimal way to interact with a more digitalized population. However, in the pre-COVID scenario, a strategic and structured adoption of digital was a privilege for a few museums. In fact, as demonstrated by Agostino et al. (2020) [19] in their research on the level of digitization of a sample of Italian museums, only a small percentage of them had a strategic plan dedicated to digital innovation before COVID-19.

The pandemic situation stimulated cultural institutions to rethink about the usage of social media. Indeed, with the lockdown, museums started using social media no longer as tools for communication and information but as means for delivering a public service [20]. Thus, museums, libraries, archives, theaters have created a large number of digital products intended for publication and sharing on the web.

Museums are increasingly inclined to use new means of communication to increase accessibility to collections and interact with their audience. This new approach has shown itself to be a great opportunity for those museums which, during the COVID-19 pandemic, have increased and improved their interaction with the public [21].

Regarding museums, most of the digital content consists of in-depth analyzes on themes or elements of the collections, often presented in appointments on a more or less close regular basis. The museum institutions have made a selection of artifacts, paintings and works of art - from the most well-known or even iconic pieces of the institution, to the less known or curious ones - and made them available on the web, especially through social channels. Depending on the online platform used and the target, museums published posts, photographs, cards or, very often, video contributions.

Often, the video contributions showed the director, staff members or collaborators of the museum illustrating one or more works from the collection, sometimes with a more informative register, in other cases with communication methods and language intended for an expert audience. In some cases, the institutions have offered both videos for children, where the playful element prevailed, and interventions for adults.

Some important museums have chosen to illustrate spaces and materials that are not normally visible to the public such as deposits, and have curators and technicians spoken about the management of the heritage or the preparation of museum spaces.

3. METHODOLOGY

3.1 The Case Study Methodology

The Vatican Museum serves as a case study to discuss how museums use digital technologies during COVID-19.

According to Harrison [22] is a "(…) case study research of particular value where the theory base is comparatively weak and the environment under study is messy".

Both criteria are relevant to this paper. The extant literature on digital technologies usage during COVID-19 by cultural organizations is scarce due to the novelty of the situation that is still ongoing. Thus, the generalization of this phenomenon is not to be given, so that here must be used a case study. By determining that the focus of the paper is the analysis of the usage of digital technologies by cultural organizations during COVID-19, the author was able to select the right case to study.

This paper, following McLeod (2008) [23] and Yin (2006, 2008) [24] [25], uses a mixed methodological approach. Indeed, the paper uses both primary and secondary data. Primary data derives from semi-structured interviews with people operating in the cultural field. Specifically, seven interviews have been conducted during the months of the closure with the following individuals: three museums' directors, two museums' social media managers, a museum's responsible of the digital strategy, and a museum's press relations specialist. The interviews were recorded.

There are several advantages in using the interviews as the method for data collection:

a) It has the potential to overcome the poor response rates of a questionnaire [26];
b) It can facilitate the comparability of the answers by different respondents [27];
c) It gives the possibility to observe the non-verbal indicators, which is useful when discussing specific issues [28].

Secondary data were gathered from various published materials such as social media posts, website materials, newspapers. Specifically, data about the usage of social media by the Vatican Museums have been collected by monitoring the social media channels. We have monitored 295 posts on Instagram published between the 9th of March 2020 and the 1st of January 2021. Additionally, in the same period we have constantly monitored the Instagram Stories of the Vatican Museums account to see how many people interacted with tags and reposts.
The data collected for this work have all a qualitative nature.

3.2 The Vatican Museums and The Usage of Social Media During COVID-19

In coordination with the measures launched by the national authorities, in March 2020 the Vatican Museums were forced to close their doors to the public. For an organization that is generally able to attract almost seven million visitors per year, this has resulted in an estimated loss of millions of euros after months of closure.

During the lockdown weeks, it was decided to bring the beauty of the Vatican Museums directly at home. The pontifical collections continued to be available in one click directly on computers, smartphones, and tablets with the aim of never ceasing to reveal the timeless beauty of so many masterpieces to users around the world. Several virtual tours have been proposed on the official website: from the Sistine Chapel to the Pio Clementino Museum, from the Chiaramonti Museum to the New Wing, from the Raphael's Rooms to the Niccoline Chapel, up to the Room of the Chiaroscuri. The online visitor was able to explore each of these environments, moving in every direction and focusing on even the smallest details of the pieces of art, reproduced in high definition.

Furthermore, daily, the official Instagram account, opened a few months before the pandemic emergency, proposed details of the Vatican masterpieces accompanied by short captions that helped to understand the history and meaning of many works. Therefore, virtual tours have allowed people to keep in touch with the most beautiful pieces that the Museums have to offer. Consequently, the number of accesses to the website as well as to the social channels, such as YouTube and Instagram, grew exponentially during the closing period, also thanks to other initiatives. For example, in collaboration with the Department of Communication of the Vatican City, Vatican News, the Instagram channel posted small videos almost daily with the idea of making it clear that the Museums continued to work despite the closure. Curators, assistants from the various departments and restorers told live what they were doing and how the work had changed during those months. Face to Face, this is the name of the initiative, has allowed the Vatican Museums to keep their followers constantly updated and, with a view to a hoped-for reopening, keep the relationship with potential visitors alive.

Yet these initiatives were not enough to bring the Museums and its works to life. This shows that the use of digital, meant only as an alternative to the physical channel, does not allow the museum to create innovative and sustainable visitor experiences. Despite this, the presence of the Vatican Museums on some of the most important social channels, has started attracting the attention of new groups of visitors who, surprisingly, have filled the rooms and spaces of the Museums after the closure. Indeed, in June 2020, even though the attendance at the Museums was about 66,000 people, a very low number if compared with the ordinary pre-COVID-19 attendance where they fluctuated around 23,000-24,000 per day, 37% of visitors were between the ages of 15 and 26[1]. How was the Vatican Museum able to reach this result?

Two days before the official reopening a group of Roman influencers was invited for an exclusive tour: TV hosts, beauty influencers, founders of famous social pages, travel bloggers, all characters known to the young public who have a total number of over two million of followers on their social channels. To these celebrities were offered free admission in exchange for visibility on their social accounts. Having targeted a young and more digital audience had a positive response: in fact, during the weekend of 30 and 31 May, online bookings had matched those recorded in the previous two weeks, with visitors that were much younger than normal. In addition, thanks to the sharing of posts and stories by the influencers, the Vatican Museums Instagram account quickly reached 100,000 followers, an important number for an account created just a few months earlier.

In June, when the prohibitions on moving between regions disappeared, the Museums addressed an even wider audience with the involvement of more famous people. With Chiara Ferragni, influencer, and founder of the blog The Blonde Salad and Fedez, an Italian rapper, influencer, singer and songwriter, and their videos on Instagram and Tik Tok, the Vatican Museums became trend topics on Google for several days. Subsequently, it was the turn of the actresses Isabella

[1] Data from an article of Il Sole 24 Ore, 22 July 2020

Ferrari and Ludovica Bizzaglia, who did not give up on being immortalized in front of The Last Judgment. These testimonials could enter the Museums one hour before closing and were then allowed to stay there an hour later to fully enjoy the empty rooms.

After these events, going to the Vatican Museums has become a trend. Even Sky, a television platform, did not miss the opportunity: in Rome for the auditions, the judges of X Factor, a popular music program among the young audiences, visited the rooms at sunset and filled their Instagram feeds. In the following months, the social overexposure of the Museums increased with repeated exclusive invitations and tours also to celebrities from other countries. Ester Exposito, a rising star actress of several Netflix series, was invited for a private tour and, twenty-four hours after posting a story on Instagram, the Vatican Museum account gained 4,000 followers and, in the following days, the number of Spanish visitors also increased.

4. FINDINGS AND CHALLENGES FOR THE FUTURE

From the primary and the secondary sources, three main existing challenges are identified:

- The integration of the digital experience in the museum visitor experience;
- The digital competencies of museums' professionals;
- The valorization of the art in the digital era.

4.1 The Integration of The Digital Experience In The Museum Visitor Experience

The Vatican Museums used social media to keep the connection alive with their audiences. However, with the reopening of the physical spaces happened in June 2020, the museums did not expect an increase in the number of visits led by a younger audience compared to the past. As one of the museums' social media managers pointed out,

> "The social media channels will continue also after the reopening because the immediacy and speed of social communication is unique and must be used in the most appropriate way. In this period, we have been able to see and verify that the social networks have been very useful. Let me give you an example: when we heard that we could reopen, we launched a post on Instagram and there was an impressive interest as soon as the post has been published".

Therefore, we can affirm that social media might help cultural organizations to reach diverse audiences because the narrative style as well as the nature of the contents is closer to what digital users expect. As demonstrated by Agostino et al. (2021) [20], during the pandemic crisis due to the spread of COVID-19, the museums no longer used social media solely as an information tool. These channels became fundamental for narrating the pieces of arts and the activities of the museum with a new language, closer to that of a target that is more responsive to images rather than words, to stories rather than details. This drives to consider what is called the museum digital layer, an experience that is independent from that which can be lived in the physical spaces of the museum, but which is, at the same time, designed to align perfectly with the physical experience [29]. In this way, this new layer uses digital technologies (some visible to the eyes of visitors and others not) to contribute to creating a more satisfying and different participation. The digital layer tells a story that connects all the themes of the museum, and it allows visitors to experience what they would never have seen differently. As shown by Weilenmann et al. (2013) [13], all this to create a more meaningful museum experience that contributes to the realization of the museum's mission.

Considering the digital as an additional space to the physical one, it is possible to notice that the visitor's experience does not begin and end in the museum spaces. As one of the museum's director pointed out,

> "The experience nowadays goes far beyond the walls of the museum itself. In the analysis of the visitor journey, it is possible to identify at least three moments: before, during and after the visit. This means that we can consider the pre-visit phase as an extension of the

> visitor's experience that begins when he decides to carry out a research on the price of the tickets, the opening hours, the different ways to reach the museum. The pre-visit is then followed by the concrete experience in the museum and is subsequently followed by all those actions that are carried out in the next phase: the search for further elements for the understanding of something that has been appreciated inside the museum as well as the interest that the visitor could express in establishing a deeper relationship with the museum, for instance through a membership".

These phases do not concern a single channel, be it physical or digital. A visitor, in fact, could start his journey of discovering a museum in many ways: using social media, discussing it with his family and friends, or seeing, by chance, the museum's advertising. The experience can then continue on Google Maps, on the museum's website or app, on Google search or through the museum's newsletter.

Visitors do not divide the experience into the individual channels they use, rather they consider them as a single path that leads to a defined museum experience. All the elements that are taken into consideration in the process of discovering the museum offering are considered part of a larger journey. This is aligned with Zollo et al. (2021) [18] who demonstrated that new technologies and digitalization are appreciated especially by tech-savvy visitors, who might become advocates of the museum themselves.

To make this a key element for their strategies, museums need to understand how to make the visitor experience as fluid as possible in the transition from the physical to the digital channel and vice versa. This could happen, for example, by ensuring consistency in the messages and activities carried out on the various channels, or by allowing the visitor to buy tickets digitally and then make them available at the museum entrance. More complex activities, on the other hand, concern the possibility of guaranteeing the visitor to experience something different every time he decides to return to the museum, or offering additional digital contents regarding the collections already visited in the physical spaces.

This new approach leads to a greater complexity in the development of experiences to offer to visitors. The focus shifts from the features that each channel should have to how to integrate these channels to make the experience more coherent and enveloping. In that sense, digital opportunities are not a substitute for real experiences [30] [31]. In the context of cultural heritage and of the institutions responsible for its management and for the promotion of its knowledge, digital technologies are and must continue to be, above all, an extraordinary tool to facilitate access to knowledge and stimulate the emotional involvement of the individual. The increased digital literacy of the population today offers the opportunity for museums to increase their presence in the society and to update the ways through which they interact with citizens.

4.2 The Digital Competencies of Museums' Professionals

To face new solutions and ideas of communication and content production, it is necessary to involve new professional figures for running all those digital activities, which concern not only the virtual visit of the museum, but also the management of social channels, the digitization of collections, the management of the online networking, the creation of new solutions for interacting with users [33] [33] [34]. As one of the museum's director pointed out,

> "It is important to train each person so that also does its job digitally, so that the whole museum is able to communicate with both communities, real and virtual".

With a look at the future reopening, highlighting the fact that the best practices and the solutions chosen must be designed to bring visitors back to the museum, this whole experience can certainly be useful as an opportunity for improvement and opening to contemporaneity.

The transformation must also involve investments in tools supporting the visitor journey, both digitally and physically. A skill that will be increasingly relevant, in this sense, concerns the analysis and strategic use of data. As the responsible of the digital strategy pointed out,

> "It is necessary to invest in the training of some profiles such as that of the Digital Strategy Manager whose main skills concern the development of the business plan, the alignment of digital and business strategies, the identification of user needs, the planning of products and services".

Knowing the customers, their habits and needs, and the level of satisfaction with the experience are information that allow to manage risks and improve the service offered. Similarly, monitoring specific performance indicators relating to the organization allows to improve the planning and effectiveness of both online and offline activities. The logistics and organization of the visitor's journey must also be reviewed in the light of all these aspects. The development of technological systems that allow online booking, access quotas and security and control systems for what happens inside the cultural institution are now necessary.

It is evident that the current context is particularly favorable for experimentation both by cultural institutions and by the public which shows interest in new approaches, with preference for those with a greater degree of interaction. Although it is not yet possible to know with certainty how much and in what way this context will change given the lack of reference paradigms, it can be said that flexibility, the ability to reinvent itself and exploit the potential of digital technologies by responding to the needs of the public will be essential in a future that is closer than expected.

4.3 The Valorization of The Art In The Digital Era

Given the results obtained in terms of attracting a fresh and younger audience, in this time of crisis, we can affirm that the popularity of social media can limit economic losses in the short term. But it is also necessary to make a deeper reflection that leads to questioning whether this strategy can work in the long run. First, it is legitimate to ask whether this media overexposure where the work of art is not the subject, but the artistic background of a celebrity, does not risk make museums a trendy and alternative space for consumption. As the press relations specialist pointed out,

> "A young person who decides to visit a museum should not do so to choose the best setting for a photo to be published on his social channels".

The choice of what to visit must be aware and must be dictated by a deeper knowledge of the works, spaces, history, tradition of a certain cultural institution. In this sense, these organizations can and must use the most innovative and digital communication tools to attract new audiences with the awareness that it is through the real experience happening in the physical spaces that they will have to transfer the true values of art and culture. In this sense, the digital experience cannot be separated from the traditional one that occurs in museum spaces. A museum must be able to convert the attention gained on social media into real visits to be able to transfer to visitors, young and old, additional, and different information about their works and the activities performed.

As another museum's director pointed out,

> "This obviously requires a profound transformation of the cultural system which must arise, above all, from the awareness, on the part of policy makers and those responsible for managing institutions, of the need for a change of pace in the contents and ways of proposing value".

5. IMPLICATIONS, CONCLUSIONS AND LIMITATIONS

The recent COVID-19 pandemic has raised important questions about how museums cope with critical events. Some studies have already been proposed, but the main point in this article is to focus on how museums can use digital technologies during the occurrence of a critical event and how to react and to recover from the consequences of it. This article is particularly timely considering that a case study is proposed by analyzing how the Vatican Museums used the social media channels during the pandemic to keep the connection alive with their audience and to bring people back in their physical spaces.

We derive the following theoretical implications from our study. First, we identified that the digital storytelling of the museum must continue to be implemented as a parallel track that runs alongside the story in presence, but it must not be the translation [16] [19] [20]. As evidenced by the Vatican Museums case, to identify which museum practices will be useful for bringing visitors back into the physical spaces after an unexpected critical event, it is necessary to start with a greater attention of museums to the relationship with their reference territory, therefore in the direction of a museum more inclusive and participatory, able to focus on new audiences, younger and more digitalized.

In this renovated setting, the museum must resolve the structural relationship with its own digital dimension, potentially unlimited, accessible to all, conceived as an extraordinary resource for communication and online marketing but also, and above all, as a tool to create new experiential opportunities. Second, the new digital technologies have made it possible to develop undoubtedly effective methods of interaction systems [3] [21]. However, working on the digital dimension of museums does not only mean allowing the public to have access to a gallery of interactive images, to be able to magnify the infinitesimal details of an object or a painting, to follow the path marked by arrows or to play games online. Instead, it means introducing an additional dimension of analysis, alternative, which wants to stimulate the virtual visitor to make a real visit later, and, at the same time, constitutes a completed and defined experience of parallel visit [28]. As evidenced by the Vatican Museums case, the rapid emergence of digital technologies provides new opportunities to interact and engage with museum visitors. Moreover, the renovated experience consists of more layers which are extended and connected. The digital space experience extends the walls of the physical museum and allows to anticipate visitors' needs. Additionally, the digital layer allows museums to offer personalized experiences since the physical space is integrated with digital overlays for groups of people with different needs.

Under these conditions, the museum is intended as a privileged place which, with the combination of physical and digital spaces, can communicate knowledge and information of the highest cultural level and of producing creative and emotional experiences that allow visitors to go beyond its physical, dimensional, and territorial limits.

In this paper, we also outline directions for practitioners that have the potential to better impact programmatic policy and future adaptations of the museum's management. First, the use of digital cannot be separated from a reorganization of the museum that arises from the development of new skills and competencies necessary for the correct implementation of innovative technologies. This translates, specifically, into the search for new professionals capable of effectively contributing to the integration of digital in physical museum spaces. Second, museum spaces must be reviewed with a view to a more effective integration with digital technologies. They should be now more flexible, customizable according to the specific needs of different visitor groups. Finally, during the occurrence of critical events, museums must be able to reaffirm their social role through greater proximity to local communities and their reference territory. This means adopting a more local dimension that leads to a greater understanding of the needs of the nearby visitor on which it is possible to experiment with more innovative and engaging forms of experiences thanks to the use of digital as an additional and integrated layer with the physical museum spaces.

Despite its contributions, this study is also subject to several limitations, from which derive opportunities for further research. First, we focused our study on only one case from the Italian setting that is the Vatican Museums, thus incurring potential bias and generalizability issues. Future researchers may therefore wish to study several cases from different countries to address this issue. Second, we only considered Instagram to identify and study the effects of social media channels during COVID-19. Further researchers may wish to examine other social networks (e.g., TikTok) and their potential unique dynamics. Third, the Vatican Museums are considered one of the largest cultural organizations in the world especially for their ability to attract millions of visitors to their spaces every year. Further researchers may wish to examine if these findings are applicable also to smaller museums which are the majority in countries such as Italy.

6. REFERENCES

[1] Agostino, D., Arnaboldi, M., & Lampis, A. (2020). Italian state museums during the COVID-19 crisis: from onsite closure to online openness. Museum Management and Curatorship, 35(4), 362-372.

[2] Curtis, S. (2019). Digital transformation—the silver bullet to public service improvement?. Public Money & Management, 39(5), 322-324.

[3] Mas, J. M., Arilla, R., & Gómez, A. (2021). Facebook as a Promotional Tool for Spanish Museums 2016–2020 and COVID Influence. Journal of Promotion Management, 1-20.

[4] Fletcher, A., & Lee, M. J. (2012). Current social media uses and evaluations in American museums. Museum Management and Curatorship, 27(5), 505-521.

[5] Whelan, G. (2015). Understanding the social value and well-being benefits created by museums: A case for social return on investment methodology. Arts & Health, 7(3), 216-230.

[6] Chung, T. L., Marcketti, S., & Fiore, A. M. (2014). Use of social networking services for marketing art museums. Museum Management and Curatorship, 29(2), 188-205.

[7] Carvalho, J., & Raposo, R. (2012, May). The adoption of social media by museums as a communication tool: helping museums get into the game. In 9th European museum advisors conference (Vol. 10).

[8] Nah, S., & Saxton, G. D. (2013). Modeling the adoption and use of social media by nonprofit organizations. New media & society, 15(2), 294-313.

[9] Pett, D. (2012). Uses of social media within the British Museum and museum sector. Archaeology and digital communication: Towards strategies of public engagement, 83-102.

[10] Affleck, J., & Kvan, T. (2007). Discursive interpretation of cultural heritage through new media. New heritage: new media and cultural heritage.

[11] Bonacini, E. (2012). The museum participatory on the web: forms of participation user's to cultural production and to the creation of cultural value. Il Capitale Culturale: Studies on the Value of Cultural Heritage, (5), 93-125.

[12] Simon, N. (2010). The participatory museum. Museum 2.0.

[13] Weilenmann, A., Hillman, T., & Jungselius, B. (2013, April). Instagram at the museum: communicating the museum experience through social photo sharing. In Proceedings of the SIGCHI conference on human factors in computing systems (pp. 1843-1852).

[14] Jafari, A., Taheri, B., & Vom Lehn, D. (2013). Cultural consumption, interactive sociality, and the museum. Journal of Marketing Management, 29(15-16), 1729-1752.

[15] Lepouras, G., Katifori, A., Vassilakis, C., & Charitos, D. (2004). Real exhibitions in a virtual museum. Virtual Reality, 7(2), 120-128.

[16] Leoni, L., & Cristofaro, M. (2021). To adopt or not to adopt? A co-evolutionary framework and paradox of technology adoption by small museums. Current Issues in Tourism, 1-22.

[17] Trunfio, M., Campana, S., & Magnelli, A. (2020). Measuring the impact of functional and experiential mixed reality elements on a museum visit. Current Issues in Tourism, 23(16), 1990-2008.

[18] Zollo, L., Rialti, R., Marrucci, A., & Ciappei, C. (2021). How do museums foster loyalty in tech-savvy visitors? The role of social media and digital experience. Current Issues in Tourism, 1-18.

[19] Agostino, D., Arnaboldi, M., & Lorenzini, E. (2020). Verso un «new normal» dei musei post-COVID 19: quale ruolo per il digitale?. Economia della Cultura, 30(1), 79-83.

[20] Agostino, D., Arnaboldi, M., & Lema, M. D. (2021). New development: COVID-19 as an accelerator of digital transformation in public service delivery. Public Money & Management, 41(1), 69-72.

[21] Corona, L. (2021). Museums and Communication: The Case of the Louvre Museum at the Covid-19 Age. Humanities and Social Science Research, 4(1), p15-p15.

[22] Harrison, A. (2002). Case study research. In: Essential skills for management research, edited by David Partington, Sage Publications, 158-180.

[23] McLeod, S. A. (2008). Simply psychology: case study method in psychology. Retrieved June, 12, 2015.

[24] Yin, R. K. (2006). Mixed methods research: Are the methods genuinely integrated or merely parallel. Research in the Schools, 13(1), 41-47.

[25] Yin, R. K. (1994). Case study research: Design and methods, applied social research. Methods series, 5.

[26] Louise Barriball, K., & While, A. (1994). Collecting Data using a semi- structured interview: a discussion paper. Journal of advanced nursing, 19(2), 328-335.

[27] Bailey, K. (2008). Methods of social research 4th edin. Simon and Schuster, New York

[28] Gordon, R. L. (1975). Interviewing: Strategy, techniques, and tactics (Rev. ed.). Homewood, Ill.

[29] Devine, C., & Tarr, M. (2019). The Digital Layer in the Museum Experience. In Museums and Digital Culture (pp. 295-307). Springer, Cham.

[30] Chiu, C. K., Tseng, J. C., & Hsu, T. Y. (2017). Blended context-aware ubiquitous learning in museums: environment, navigation support and system development. Personal and Ubiquitous Computing, 21(2), 355-369.

[31] Hou, H. T., Wu, S. Y., Lin, P. C., Sung, Y. T., Lin, J. W., & Chang, K. E. (2014). A blended mobile learning environment for museum learning. Journal of Educational Technology & Society, 17(2), 207-218.

[32] Giannini, T., & Bowen, J. P. (2019). Transforming Education for Museum Professionals in the Digital Age. In Museums and Digital Culture (pp. 457-480). Springer, Cham.

[33] Pirolo, L., & Nasta, L. (2021). The changing face of museum tour guides. In Massi, M., Vecco, M., & Lin, Y. (Eds.), Digital Transformation in the Cultural and Creative Industries:

Production, Consumption and Entrepreneurship in the Digital and Sharing Economy, Routledge.

[34] Silvaggi, A., & Pesce, F. (2018). Job profiles for museums in the digital era: research conducted in Portugal, Italy and Greece within the Mu. SA project. Journal of Cultural Management and Policy, 8(1), 56-69.

The Feasibility of Plastic Bag Usage for Newly Established South African Small, Medium and Micro Enterprises Amidst Increases in Sin tax: An Online Desktop Study

Juan-Pierré Bruwer *infobusinessresolution@gmail.com*
Business Re-Solution
Wellington, 7655, South Africa

Lindiwe Mabesele *MabeseleL@cput.ac.za*
Independent Researcher
Cape Town, 8000, South Africa

Timeeka Brown *216139198@mycput.ac.za*
Independent Researcher
Cape Town, 8000, South Africa

Courtney Charles *216229499@mycput.ac.za*
Independent Researcher
Cape Town, 8000, South Africa

Ingrid Coulter *208110062@mycput.ac.za*
Independent Researcher
Cape Town, 8000, South Africa

Edlin Williams *216229820@mycput.ac.za*
Independent Researcher
Cape Town, 8000, South Africa

Nadine Witbooi *nadinewitbooi@outlook.com*
Independent Researcher
Cape Town, 8000, South Africa

Abstract

Small, Medium and Micro Enterprises (SMMEs) contribute socio-economic value to the South African economy and assist with the alleviation of poverty, the distribution of wealth and the creation of jobs. Regardless of the latter, prior research shows that these business entities have among the highest failure rates in the world with 71% of start-up South African SMMEs failing within their first year of operation. Apart from operating in a non-conducive economic environment and being influenced by the “liability of newness”, these business entities are adversely affected by taxation. Apart from having to pay direct taxation, some South African SMMEs are also subject to indirect taxation, especially those that sell goods. One such taxation is that of Sin tax; taxation levied on goods that are harmful to human health and/or the environment such as tobacco products, alcohol products and plastic bags. Particularly, Sin tax has been levied on plastic bags (US$ 0.015) since 1 April 2013, but the demand for it has not significantly decreased since then. Since newly established South African SMMEs are susceptible to the “liability of newness”, it is disconcerting to note that these business entities have to pay Sin tax on plastic bags before selling them. Although Sin tax levied on plastic bags has a negative influence on South African SMME profitability, it may be that further increases in this levy may affect newly established South African SMMEs’ profitability to such an extent that the buying and selling of plastic bags are no longer feasible – the objective of the study. This non-empirical study took on the form of an online desktop review whereby secondary data were scrutinised; making the study qualitative in nature. From the research conducted, it appears that further increases in Sin tax levied on plastic bags will render the use of plastic bags by newly established South African SMMEs not feasible.

Keywords: Sin Tax, Profitability, SMMEs, Cape Metropole, Plastic Bags, Usage.

1. INTRODUCTION

In 1996, the concept of Small, Medium and Micro Enterprises (SMMEs) were formally recognised by the South African government, for the first time. This was made possible through the publication of the National Small Business Act No. 102 of 1996; defining an SMME as "*a distinct and separate entity, including any relevant subsidiaries or branches, that conduct business with one or more natural persons owning and/or managing these entities which function in sectors or sub-sectors of a national economy*" [1, 2]. Moreover, this Act classified SMMEs in terms of their size ("micro-enterprises", "very small enterprises", "small enterprises" and "medium enterprises") based on the number of full-time employees employed, the annual turnover and/or gross asset value [3].

Over more than two decades since the inception of the National Small Business Act No. 102 of 1996, the definition of an SMME remained the same, despite undergoing three amendments[1]. In the most recent *Revised Schedule 1 of the National Definition of Small Enterprises in South Africa of 2019*, an update was made to the size classification criteria of SMMEs to be in line with international standards (See Annexure A), based solely on their number of full-time employees employed and their total annual turnover. Moreover, the "micro-enterprises", "small enterprises" and "medium enterprises" are formally recognised as SMME-sizes [4, 75].

Since the mid-1990s, the South African government has emphasized the development of SMMEs. This is particularly the case since more than 80% of all businesses operating in South Africa are described as SMMEs; responsible for contributing towards an estimated 40% of all economic activities in the country [5]. For this reason alone, the national government views SMMEs as drivers of the South African economy as they assist with the alleviation of poverty; the equal distribution of wealth and the creation of jobs [2, 6, 7].

Notwithstanding the foregoing, South African SMMEs have one of the highest failure rates in the world [8]. According to previous research studies [9, 10, 11], on average, 71% of start-up South African SMMEs fail after being in operation for only one year; 75% of operational South African SMMEs fail after being in existence for only 3 years. Though the latter dispensation is likely related to the "liability of newness" [49] (expanded on in Section 2), prior research [12, 13] suggests that the high South African SMMEs failure rate is caused by the non-management of economic factors and related risks in a volatile economic environment. Not only do these phenomena directly affect these business entities' attainment of relevant objectives, but it also directly affects their actual existence [14]. Examples of economic factors and related risks include a lack of financing, a lack of basic business skills, extreme competition, fluctuations in supply and demand of products and/or services, and changes in interest rates [15]. Another key factor that affects SMME sustainability is that of taxation [13].

Taxation is defined as a mandatory contribution to a nation's government, as required by law [16, 47]. This contribution can be seen as a levy, as imposed by the relevant government on products, services and/or transactions which, in turn, allow for the generation of income by natural entities (e.g. employees) and non-natural entities (e.g. businesses) [17]. In a South African dispensation, types of taxation include capital gains tax, income tax, value-added tax, skills development levies

[1] The first two amendments were the National Small Business Amendment Act No. 26 of 2003, and the National Small Business Amendment Act No. 29 of 2004.

and provisional tax [18]. One type of taxation that has a direct influence on many South African SMMEs is that of customs and excise duties – often referred to as Sin tax[2] [19].

Sin tax, as levied on plastic bags, was first introduced on 1 April 2013 to manage the problem of plastic bags ending up as windblown litter on the streets as well as in waste facilities [22]. It should be noted that before this date, plastic bags were almost always distributed to consumers free of charge [82]. Although the consumption levels of plastic bags should have decreased as a result of Sin tax levies imposed on them, plastic bags are still widely used in South Africa [4, 23, 24, 48].

When taking into account that newly established South African SMMEs are susceptible to the "liability of newness", it is disconcerting to note that these business entities have to pay US$0.015 per plastic bag, in the form of Sin tax, without making any sale [43]. Although South African SMMEs will probably "stick to the trend" of the use of plastic bags for the foreseeable future, research shows that increases in Sin tax, as levied on plastic bags, have an adverse influence on their profitability and overall existence [18, 19]. Thus, with these entities potentially having to absorb further levies imposed on plastic bags, by the national government, it appears that the feasibility of newly established South African SMMEs using plastic bags becomes less. For this reason, the primary objective of this study was to ascertain whether further increases in Sin tax, as levied on plastic bags, may significantly affect the feasibility of newly established South African SMMEs' to use plastic bags, at least in a theoretical dispensation. For the remainder of this paper, relevant discussion takes place under the following headings: 1) research design 2) conceptual framework, 3) discussion, and 4) implications, and 5) conclusion.

2. RESEARCH DESIGN

This research study was non-empirical and constituted exploratory research. Exploratory research is defined as a type of research that places "*emphasis on the discovery of ideas and insights*" [71] "*into a hypothetical or theoretical idea*" [72]. Furthermore, an inductive approach was followed to aid in the "*development of a theory as a result of the observation of empirical data*" [73]. Also, the study was also nascent since its primary aim has, at the time of publication, attracted restricted research and/or theorising [83, 84]. Prior research does suggest that South African SMMEs' profitability (including the existence of these business entities) is adversely influenced by Sin tax levied on plastic bags [18, 19]; hence the theory developed within the ambit of this study pertained to whether further increases in Sin tax levies on plastic bags may abolish the feasibility of newly established South African SMMEs to use plastic bags.

A qualitative research methodology was adopted for this study as it involved the use of secondary data – "*the analysis of existing dataset*[s]*, which* [have] *previously been collected by another researcher*[s]*, usually for a different research question*" [74]. Specifically, online desktop research (also known as online desk research) was conducted. Generally, this type of research has to do with the reviewing of "*secondary data* [that were] *gathered from pre-existing sources*" to shed light on a particular phenomenon, which can include, *inter alia* libraries, journals and websites [25, 70]. Limitations of online desktop research include, but are not limited to the scope of selected secondary data, and author subjectivity [81]. The authors did, however, take reasonable steps to minimise the foregoing limitations by searching for secondary data containing an array of keywords which included, either separately and/or conjoined: "sin tax", "small business", "SMME", "plastic bag", "profitability", "profit", "taxation" and "excise tax", "South Africa".

[2] Sin tax is regulated by the Customs and Excise Act No. 91 of 1964, and is levied on products that are physically, socially and/or environmentally harmful [19, 20]. Examples of products that are subject to Sin tax include tobacco products, alcohol products and plastic bags [19]. In fundamental nature, the main purpose of Sin tax is to deter the use of products that are harmful to the wellbeing of humans, society and the environment [18, 21].

For the sake of clarity, the primary reason why an online desktop research approach was chosen above a systematic literature review approach is that limited research has been conducted on the research matter at hand. Otherwise stated, since a systematic literature review is generally used to "*identify, assess, and interpret all available research evidence* [on a set topic] *with the purpose to provide answers for specific research questions*" [80], it did not best fit the design of this (exploratory) research study. Moreover, with the topic being nascent, a foundation for further research was established through scouting reputable secondary sources which, in turn, were reviewed to assist with the conceptualisation and contextualisation of terminologies, as well as the attainment of the primary research objective.

3. CONCEPTUAL FRAMEWORK

2.1 Liability of Newness and Its Advancement: A Premise

Arthur Stinchcombe, an American Sociologist, is credited for the development of the concept "liability of newness" while studying the life cycles of newly established business entities [76]. The term "liability of newness" was conceptualised during the mid-1960s and has to do with the tendency of newly established business entities to have higher failure rates than their established counterparts [49].

The argument behind this phenomenon is that newly established business entities often need to: 1) implement (and learn) new roles and tasks which, 2) need to be invented with limited resources on hand by, 3) internal stakeholders who do not often share commonalities and/or points of view along with, 4) limited existing and/or potential leads to clients [50]. Essentially, the "liability of newness" is embedded in the fact that newly established businesses generally entities lack knowledge (skills), experience, opportunities and/or financial resources which, in turn, adversely affect their performance [76, 77, 78].

Over the years, research has been conducted on newly established business entities, especially small businesses, and although the "liability of newness" is still recognised as a viable concept, while possible solutions have been provided to overcome it [51], it is more relevant than ever in the 21st century [52]. Apart from newly established businesses having to overcome economic environments, political environments and technological environments [77], they also need to have sufficient levels of '*legitimacy'*, they need to have a sound reputation that precedes them, to enable them to have access to relevant resources and support [53]. In turn, reputation is extremely relevant in a day and age that is synonymous with the fourth industrial revolution [54].

Notwithstanding the foregoing, the severity of the "liability of newness" is also directly affected by *inter alia* the economic environment in which newly established business entities operate [56] [57]. For this reason, it can be argued that the "liability of newness" is more severe for newly established business entities in developing economies, with non-conducive economic environments, when compared to that of developed economies [55].

2.2 South African SMME Sustainability and The South African Economic Environment

With South Africa being a developing economy [58], it is not surprising that the national government has encouraged SMME sustainability in a national dispensation [3]. Notwithstanding the socio-economic value that South African SMMEs add to the national economy in terms of creating jobs, alleviating poverty and boosting the national economy, research shows that these business entities have among the worst failure rates in the world [3]. Since the early-2000s the failure rate of South African SMMEs remained at an estimated 75% failing within 36 months of operation [9,11]. The latter view is supported by the high South African unemployment rate; serving as evidence that SMMEs are not achieving their legally imposed socio-economic objectives to a large extent [13, 26].

More often than not, the excessive SMME failure rate is blamed on the non-management of economic factors and subsequent risks [15], as summarised in Table 2. In particular, and related to the foregoing, interventions implemented by governments through *inter alia* government policy, political stability or instability in markets in other countries, foreign trade policy, tax policy, labour law and trade restrictions, affect SMME sustainability [27].

Micro-Economic Factors	Macro-Economic Factors
Lack of management skills	Government regulations
Lack of finance	High interest rates
Lack of access to credit	Inadequate infrastructure development
Lack of marketing skills	Unreliable supply of water and electricity
Insufficient product demand	High crime levels
High labour turnover	High unemployment rate
Size of business	
Location of business	
Decreased profits	

TABLE 2: Economic Factors identified to adversely influence SMME sustainability in the early-2000s. Source: [13].

Reverting to the "liability of newness", it is worth noting that macro-economic factors play a significant role in the "existence" of newly established business entities [77]. This is mainly due to the uncontrollable nature of these factors; business entities have to either 'adapt or die' [78, 79]. One manner in which the severity of macro-economic factors in a country can be depicted is through means of evaluating its economic environment.

The term "economic environment" refers to the overall well-being of a country's economy [60, 61, 62]. Generally, a country's economic environment is measured through six key economic indicators, namely that of the GDP, GDP per capita, Gini-index, Inflation rate, estimated population size, and unemployment rate [3].

When taking into account findings made by prior research [3] South Africa is believed to have a non-conducive economic environment. To test the latter, a summary of the six key economic indicators, to measure the economic environment, are shown for 2017 to 2019[3] in Table 3 below.

Economic indicator	2017	2018	2019
GDP (nominal)	US$ 348.9 billion	US$ 366.3 billion	US$ 350.0 billion
GDP per capita (nominal)	US$ 6 271.16	US$ 6 509.03	US$ 6 130.30
Gini-index	± 0.65		
Inflation rate	5.28%	4.62%	4.14%
Estimated population size	57 009 756	57 792 518	58 558 270
Unemployment rate	27.70%	27.03%	29.10%

TABLE 3: Six key South African economic indicators from 2017 - 2019. Source: [59].

From the statistics evident in Table 3 the following observations can be made:

- GDP (nominal): Between 2017 and 2018, the GDP (nominal) increased by US$ 16.4 billion (▲ 4.48%), while between 2018 and 2019 the GDP (nominal) decreased by US$ 16.3 billion (▼ 4.66%). In effect, the GDP (nominal) increased by US$ 0.1 billion (▲ 0.03%) over the three-year period.
- GDP per capita (nominal): Between 2017 and 2018 the GDP per capita (nominal) increased by US$ 237.87 (▲ 3.65%), and between 2018 and 2019 the GDP per capita (nominal) decreased by US$ 378.73 (▼ 6.18%). In effect, the GDP per capita (nominal) decreased by US$ 140.86 (▼ 2.25%) over the three-year period. The inference can therefore be made that

[3] Considering the influence that Coronavirus-2019 (COVID-19) has had on global economies, data for 2020 were excluded from the table.

either the productivity of the average South African citizen became less, and/or that the unemployment rate increased between 2017 and 2019.

- Gini-index: In layperson's terms, 35% of all the wealth in South Africa was shared among 65% of the population, while 65% of the wealth in South Africa was shared among 35% of the population. Alternatively stated, wealth was not fairly distributed in South Africa and the inference can be made that the average South African faced poverty as a stark reality.
- Inflation rate: If a product had a cost of US$ 100 at the end of 2016, this same product would, due to inflation, cost US$ 105.28 at the end of 2017, US$ 110.14 at the end of 2018, and US$ 114.70 at the end of 2019. The inference can therefore be made that the cost of living increased, year-on-year, over the three-year period.
- Estimated population size: The estimated number of South African citizens increased by 782 762 (▲ 1.35%) between 2017 and 2018; increased by 765 752 (▲ 1.31%) between 2018 and 2019. In effect, over the three-year period, the South African population increased by 1 548 514 (▲ 2.72%) citizens.
- Unemployment rate: Although the unemployment rate effectively increased by 1.4% between 2017 and 2019, the estimated number of unemployed South African citizens amounted to 15 791 702 in 2017, 15 621 318 in 2018, and 17 040 457 in 2019. In effect, the estimated number of unemployed South African citizens increased by 1 248 754 (2.19% of the South African population) over the three-year period.

Taking into account the above, clear tangent planes emerge that the South African economic environment is unconducive for small businesses to operate in; justifying the argument that the "liability of newness" is more severe for newly established business entities in developing economies with non-conducive economic environments.

2.3 A Brief Overview of South African Taxation

Taxation is an integral part of a country's development, interwoven with numerous other areas, from good governance and formalising the economy and even spurring growth through promoting SMMEs [28]. In layperson's terms, taxation has to do with the levying of payment on goods and/or services and/or income to benefit a taxing authority [63]. More often than not, countries have two categories of taxation, namely that of direct taxation (taxation is levied directly on money earned by entities) and indirect taxation (taxation is levied indirectly on money earned by entities) [21, 29]. Although direct taxation generally yields more taxation income from employed individuals and/or business entities, indirect taxation is largely payable by almost all citizens in a country [64].

In a South African dispensation, direct taxation on business entities (close corporations, private companies and public companies) are taxed at 28% of their taxable income while direct taxation on individuals (including business entities that are sole traders and partnerships) is taxed between 18% and 45% of their taxable income [30, 31, 32]. In the most recent fiscal year, direct taxation on business entities and individuals amounted to US$ 43 393 million; 55% of all taxation income generated [65]. In turn, indirect taxation, in South Africa, is inclusive of Value Added Tax, a fuel levy, customs and excise taxation (Sin tax), property taxes, and a skill development levy [33, 34]. In the most recent fiscal year, the indirect taxation yielded US$ 35 504 million; 45% of all taxation income generated [65]. In the same fiscal year, Sin tax yielded US$ 2 501 million [45].

2.4 Sin Tax and Profitability

Sin tax can be seen as a part of a group of consumption taxes (indirect taxation) that are put in place to raise funds while also curbing the consumption of specific taxed goods [18, 35, 36]. Although Sin tax should ideally have a positive influence on the behaviour of people surrounding the utilisation of products that are harmful to the environment and/or their own health, price elasticity tends to hamper the latter [23, 37, 38, 66]. In an international dispensation, Sin tax is generally charged on alcoholic products (e.g. beer, wine, and whiskey) as well as tobacco products (e.g. cigarettes, e-cigarettes, and cigars) [67, 68].

Although price elasticity may be viewed as a favourable phenomenon from a business perspective, it should be noted that consumers of Sin tax-linked products are more likely to purchase goods from larger retailers for cheaper (in bulk) and/or on credit rather than pay inflated prices charged by smaller business entities [15]. To this end, SMMEs – especially newly established ones – may incur an imminent reduction in sales which, in turn, may adversely affect their profitability; their ability to cover direct taxation [39, 40].

2.5 South African Sin Tax On Plastic Bags

Sin Tax was formally introduced to South Africa through the publication of the Customs and Excise Act No. 91 of 1964 [69]. In this legislative document, a 'Tariff Book' is referred to that is usually updated on an annual basis, by the Minister of Finance, on levies charged on alcoholic products, tobacco products and plastic bags [45]. Sin tax has been charged on plastic bags since 1 April 2013 (before this date plastic bags were not sold by retailers but rather freely distributed to consumers after relevant purchases were made); over the years, this levy gradually increased by a few cents [4, 22, 42]. As of 1 April 2020 (and at the time of publication), the official levy on plastic bags stood at US$0.015 per plastic bag; generating an average of US$ 14.74 million in indirect taxation income [43, 46]. A summary of the changes in plastic bag levies from 2013 to 2020 is shown in Table 3 below.

Year	**Plastic bag levy change[4]**
2013	+US$0.004 per bag
2014	+NIL per bag
2015	+NIL per bag
2016	+US$ 0.0012 per bag
2017	+NIL per bag
2018	+US$0.0024 per bag
2019	+NIL per bag
2020	+US$0.0079 per bag

TABLE 3: Summary of South African plastic bag levy changes
Source: [45].

The levy on plastic bags applies to the manufacturers from which South African business entities (including SMMEs) purchase plastic bags; after which it is passed on to consumers who may need to pay for it, at a price from the business entity, that may vary from business to business [44]. Taking into account that SMMEs generally do not have sufficient resources on hand, opt to recoup costs incurred to obtain plastic bags directly from customers (which includes the cost price of plastic bags as well as the Sin tax attached to it) [41].

4. DISCUSSION

Taking into account the phenomenon of "liability of newness" [49], including the facts that 71% of startup South African SMMEs seize to exist after 1 year of operation [9, 10, 11], and the non-conducive economic environment South African SMMEs have to operate in [59], it is highly likely that these business entities do not overcome having limited resources on hand to optimise its operations. As such, it becomes ostensible that the "liability of newness" may be more significant to South Africa than any other country, considering that South African SMMEs have among the worst failure rates in the world [3, 55].

[4] It should be noted that although US$0.015 per plastic bag does not appear significant in a developed economy, US$ 1, as the time of publication, was equivalent to R16.39 (South African Rand); 60% of South Africans live below the poverty line which transpires to US$ 450.00 per annum / US$ 37.50 per month [3].

Taking into account the above, South African SMMEs are influenced by an array of economic factors and subsequent risks (while operating in a non-conducive economic environment) which includes a lack of financing, a lack of basic business skills, extreme competition, fluctuations in supply and demand of products and/or services, changes in interest rates, as well as taxation [13, 15]. In essence, the South African economic environment is indicative of high unemployment and high costs of living – macro-economic factors which makes it difficult for newly established business entities (and existing ones) to make ends meet [59, 78].

Notwithstanding the fact that South African SMMEs are subject to direct taxation [30, 31, 32] business entities that sell alcoholic products, tobacco products and plastic bags are also subject to indirect taxation in the form of Sin tax [39, 40, 45]. Despite the South African government generating an estimated US$ 78 517 million from total taxation in the most recent fiscal year, the income derived from Sin tax is a little more than 3.1% of the foregoing amount [45]. Of this US$78 519, the levies on plastic bags made up only US$ 14.74 million (0.18% the size of income generated by Sin tax, in general) [43, 46]. To this end, the inference can be made that since 1 April 2013, the South African government has put in the effort to levy Sin tax, an indirect taxation, on plastic bags that, largely, did not discourage its purchase and/or usage thereof, while inadvertently placing an additional tax burden on both South African individuals and business entities alike.

5. IMPLICATIONS

From the study conducted, the following three key observations are made: 1) Sin tax, as levied on plastic bags, do not generate significant income for the South African government, 2) the usage of plastic bags in South Africa has not been greatly discouraged through Sin tax, and 3) Sin tax levied on plastic bags already has an adverse influence on the profitability of South African SMMEs (both existing and newly established). When taking into account the non-conducive economic environment in which South African SMMEs have to operate, it becomes apparent that further Sin tax increases on plastic bags may abolish the feasibility of newly established (and possibly established) South African SMMEs to make use of plastic bags. Environmentally friendly (recycled and/or compostable) yet affordable (cost-friendly) alternatives for plastic bags may become the foreland of these business entities. In addition, policymakers may consider putting a cap on Sin tax, as levied on plastic bags, at US$ 0.015 per bag to avoid any further increases to negate any additional adverse repercussions on the profitability and/or existence of South African SMMEs, especially taking into account that 60% of the South African population has to make ends meet on less than US$37.50 per month.

6. CONCLUSION

Throughout this online desktop study, the main aim was to ascertain whether further levy increases on plastic bags may significantly affect the feasibility of newly established South African SMMEs' to use plastic bags. To achieve the latter, relevant discussion took place surrounding the "liability of newness", South African SMMEs, their sustainability and the South African economic environment, a brief overview of South African taxation, Sin tax and profitability, and South African Sin tax on plastic bags.

From the research conducted, it became apparent that Sin tax, as levied on plastic bags, places a burden on South African SMMEs and its citizens even though the mandate of such levies – to reduce the purchasing and/or use of plastic bags – is not achieved to a large extent. Moreover, the literature reviewed suggests that further increases in plastic bag levies may nullify the feasibility of newly established (and possibly established) South African SMMEs to make use of plastic bags, at least in a theoretical sense.

Considering the limitations of this online desktop research study, the deductions made in this study cannot be generalisable. They are, however, to the best knowledge of the authors, relevant and applicable in a South African SMME dispensation.

7. ACKNOWLEDGEMENTS

The authors of this paper wish to acknowledge the following individuals who assisted with the preliminary steps pertaining to this study: Ajay Alexander, Bronwyn Fortuin, Byron Fortuin, Tyron Petersen and Jenene Williams for their input in obtaining literature sources relevant to this study.

8. REFERENCES

[1] South Africa. “National Small Business Act No. 102 of 1996”. Pretoria: Government Printer, 1996.

[2] T. Chimucheka. “Overview and Performance of the SMMEs Sector in South Africa”. Mediterranean Journal of Social Sciences, vol. 4, pp. 783 – 795, 2013.

[3] J-P. Bruwer. “The relationship(s) between the managerial conduct and the internal control activities of South African fast moving consumer goods SMMEs”, Doctoral degree, Cape Peninsula University of Technology, Cape Town, 2016.

[4] South African Reserve Bank. “Tax Chronology of South Africa: 2015 Supplement to the South African Reserve Bank Quarterly Bulletin”. Internet: https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/6922/Tax%20Chronology.pdf, Jul. 16, 2019 [2015].

[5] E.M. Rankhumise. “Lessons and Challenges faced by Small business owners in running their businesses”, IAMB conference, 25-27 January, Las Vegas: United States of America, 2010.

[6] A.P. Kesper. “Making a living in the city - success and failure of small enterprises in the Johannesburg Inner City”. Africa Insight, vol. 31, pp. 50-58, 2001.

[7] H. Bhorat, Z. Asmal, K. Lilenstein, and K Van der Zee. “SMMEs in South Africa. Understanding the Constraints on Growth and Performance”. Washington DC: World Bank, 2018.

[8] O. Fatoki, and A.A Smit. “Constraints to credit access by new SMEs in South Africa: A supply-side analysis”. African Journal of Business Management, vol. 5, pp. 1413 - 1425, 2011.

[9] O. Fatoki. “The impact of Entrepreneurial Resilience on the Success of Small and Medium Enterprises in South Africa”. Sustainability, vol. 10, pp. 1-12, 2018.

[10] N. Chiliya, and M.R. Lombard. “Impact of the level of education and experience on profitability of small grocery shops in South Africa”. International Journal of Business Management and Economic Research, vol. 3, pp. 462 – 470, 2012.

[11] B. Renault, J. Agumba, and N. Ansary. “An exploratory factor analysis of risk management practices: A study among small and medium contractors in Gauteng”. Acta Structilia, vol. 25, pp. 1-39, 2018.

[12] R. Carter, and H. Van Auken. “Small firm bankruptcy. Journal of Small Business Management, vol. 44, pp. 493 - 512, 2006.

[13] B. Masama, and J-P. Bruwer. “Revisiting the Economic Factors which Influence Fast Food South African Small, Medium and Micro Enterprise Sustainability”. Expert Journal of Business and Management, vol. 6, pp.19-28, 2018.

[14] T. Chimucheka, and F. Mandipaka. “Challenges Faced By Small, Medium And Micro Enterprises In The Nkonkobe Municipality”. International Business & Economics Research Journal, vol. 14, pp. 309 - 316, 2015.

[15] D.B. Tshabalala, and E.M. Rankhumise. “What Impact Do Economic Issues Have on the Sustainability of Small, Medium and Micro Entrepreneurs?” Journal of Management Policy and Practice, vol. 12, pp. 108 - 114, 2011.

[16] I. Cheyo. 2015. “Introduction to public finance and taxation theory”. Internet https://www.linkedin.com/pulse/intoduction-public-finance-taxation-theory-lauden-cheyo, Aug. 2, 2019. [2015]

[17] Oxford. “Taxation”. Internet: https://www.lexico.com/en?search_filter=dictionary, Apr. 24, 2019.

[18] B. Hendricks, G. Hendricks, R. Johnson, A. Manuel, R. Maritz, L. Theron, and J-P. Bruwer. “The influence of customs and excise duties on the profitability of micro, small and medium enterprises profitability: The case of liquor stores in the Cape Metropolis”. Journal of Economics, vol. 6, pp. 87-101, 2015.

[19] M. Salie, N. Strauss, M. Davids, Y. Smit, S. Boshoff, and J-P. Bruwer. “The effects of sin tax on the profitability of SMME convenience stores in the Cape Metropole”. Topclass Journal of Business Management and Innovations, vol. 1, pp. 25 - 36, 2014.

[20] South Africa. “Customs and Excise Act No. 91 of 1964”. Pretoria: Government Printer, 1964.

[21] T. Ncanywa, and N. Mgwanqa. “The impact of a fuel levy on economic growth in South Africa. Journal of Energy in Southern Africa”, vol. 29, pp. 41-49, 2018.

[22] T.J. Brauteseth. “National Assembly Question for Written Reply. Question Number: 1367 [NW1731E]”. Internet: http://www.treasury.gov.za/publications/other/MinAnsw/2014/Reply%20to%20PQ%201367%20[NW1731E].pdf, Oct. 26, 2020 [2014]

[23] M.J. Moore, and P.J. Cook. “The economics of alcohol abuse and alcohol-control policies; price levels, including excise taxes, are effective at controlling alcohol consumption; raising excise taxes would be in the public interest”, Health Affinity (Millwood), vol. 21, pp. 120 - 133, 2002.

[24] J. Dikgang, A. Leiman, and M. Visser. “Analysis of the plastic-bag levy in South Africa”. Environmental Policy Research Unit, vol. 66, pp. 59 – 65, 2018.

[25] A.K. Muchonjo, G. Wanyembi, and C. Makori. “An Investigation into Ipredation in Cyberspace towards Developing a Framework for Preventing Ipredators’ Attacks”, IOSR Journal of Computer Engineering, vol. 19, pp. 28-36, 2017.

[26] S. Smits. “Unemployment rate at 29%”. Mail&Guardian, Jul. 20, 2019.

[27] M. Pfister. “Taxation for Investment and Development: An Overview of Policy Challenges in Africa”. OECD Development Centre, 2009.

[28] P.J. Smit, G.J.J. Cronje, T. Brevis, and M.J. Vrba. “Management principles: A contemporary edition”, 5th ed., Juta, Cape Town, 2013.

[29] R.W. Bahl, and P.J. Smoke (Eds.). “Restructuring local government finance in developing countries: lessons from South Africa”. Edward Elgar Publishing, 2003.

[30] SBP. “Counting the cost of red tape for business in South Africa. SBP: Johannesburg”. Internet: http://www.sbp.org.za/uploads/media/Tourism_Red_Tape.pdf, Dec. 12, 2019 [2005].

[31] UCT. “Recent Findings on Tax-Related Regulatory Burden on SMMEs in South Africa”. University of Cape Town, Upper Campus, 2007.

[32] Deloitte. “Taxation and Investment in South Africa”. Internet: https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-southafricaguide-2017.pdf, Dec. 12, 2019 [2017].

[33] D. Chamberlain, and A. Smith. “Recent findings on tax-related regulatory burden on SMMEs in South Africa – literature review and policy options”. Development Policy Research Unit: Cape Town, 2006.

[34] S. Smulders, and M. Stiglingh. “Annual Tax Compliance Costs for Small Businesses: A Survey of Tax Practitioners in South Africa. Department of Taxation: University of Pretoria”. South African Journal of Economic and Management Studies, vol. 3, pp. 1 - 29, 2008

[35] P. Lorenzi. “Sin taxes”. Society, vol. 41, pp. 59-65, 2004.

[36] J.A. Kay. “Tax Policy: A Survey”. The Economic Journal, vol. 100, pp. 18 – 75, 1990.

[37] C.A. Garner. “Consumption Taxes: Macroeconomic Effects and Policy Issues”. Federal Reserve Bank of Kansas City. Economic Review, 2005.

[38] R.M. Roslin, and T.C. Melewar. “Hypermarkets and the Small Retailers in Malaysia: Exploring Retailers' Competitive Abilities”, Journal of Asia-Pacific Business, vol. 9, pp. 329 – 343, 2008.

[39] D. Mahadea, and M.K. Pillay. “Environmental conditions for SMME development in a South African province”. South African Journal of Economic and Management Studies, vol. 11, pp. 431 – 448, 2008.

[40] O. Imoleayo. “The Impact of Product Price Changes on the Turnover of Small and Medium Enterprises in Nigeria”. Broad Research in Accounting, Negotiation, and Distribution, vol. 1, pp. 60 – 79, 2010.

[41] B. Phakathi. “Government looking to introduce new policy on single use plastic bags”. Internet: http://www.businesslive.co.za/bd/national/2019-07-04-government-looking-to-introduce-new-policy-on-single-use-plastic/, Jul. 24, 2019 [2019].

[42] A. Chothia. “SA’s plastic bag tax diverted. Business Report”. Internet: https://www.iol.co.za/business-report/economy/sas-plastic-bag-tax-diverted-2045284, Dec. 14, 2019 [2016].

[43] Department of National Treasury. “Revenue trends and tax policy” Internet: http://www.treasury.gov.za/documents/national%20budget/2019/review/Chapter%204.pdf, Jul. 16, 2019 [2018].

[44] R. Hasson, A. Leiman, and M. Visser, M. “The Economics of Plastic Bag Legislation in South Africa”. South African Journal of Economics, vol. 75, pp. 66 -83, 2007.

[45] J-P. Bruwer. “The sustainability of South African Small Medium and Micro Enterprises (SMMEs) operating in the retail industry amidst the ever-increasing excise taxation on tobacco products, alcohol products and plastic bags: A literature review”. Internet: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3559059, Oct. 27, 2020 [2020].

[46] L. De Kock. “#Budget2020: Plastic bag levy increase the new sin tax?”. Internet: https://www.bizcommunity.com/Article/196/703/201095.html, Oct. 27, 2020 [2020].

[47] D. Akoto. "Assessing the Effectiveness of the Tax System in Ghana as a Tool for Economic Development". Journal of Finance and Economics, vol. 8, pp. 127 - 134, 2020.

[48] J. O'Brien, and G. Thondhlana. Plastic bag use in South Africa: Perceptions, practices and potential intervention strategies. Waste Management, vol. 84, pp. 320 - 328, 2019.

[49] J. Wiklund, and D. Shepherd, D. "The age-effect of financial indicators as buffers against the liability of newness". Journal of business venturing, vol. 25, pp. 423 - 437, 2010.

[50] J. Bruderl, and R. Schussler. "Organizational mortality: The liabilities of newness and adolescence". Administrative science quarterly, vol 35, pp. 530 - 547, 1990.

[51] J. Wiklund, T. Baker, T., and D. Shepherd. "The age-effect of financial indicators as buffers against the liability of newness". Journal of business venturing, vol. 25, pp. 423 - 437, 2010

[52] I.D. Minto-Coy. "From the periphery to the centre: start-up and growth strategies for minority diaspora entrepreneurs". International Journal of Entrepreneurship and Small Business, vol. 36, pp. 189 - 215, 2019.

[53] H. Barth, and G. Zalkat. "Immigrant Entrepreneurship in Sweden: The Liability of Newness". Sustainability, vol. 12, pp. 6478 - 6495, 2020.

[54] R. Überbacher, R. Brozzi, and D.T. Matt. "Innovation in craftsmanship family Smes in times of digitalization". Piccola Impresa/Small Business, vol. 1, pp. 1-10, 2020

[55] M. Guerrero, F. Liñán, and F.R. Cáceres-Carrasco. "The influence of ecosystems on the entrepreneurship process: a comparison across developed and developing economies". Small Business Economics, vol. 20, pp. 1-27, 2020

[56] D.M.A Patti, R. Mudambi, P. Navarra, and D. Baglieri. "A tale of soil and seeds: the external environment and entrepreneurial entry". Small Business Economics, vol. 47, pp. 955 - 980, 2016.

[57] B. Hatipoglu, and K. Inelmen. "Effective management and governance of Slow Food's Earth Markets as a driver of sustainable consumption and production". Journal of Sustainable Tourism, vol. 30, pp. 1-19, 2020.

[58] J.C. Nyawo, and P. Mashau. "Significance of South African learning institutions in comparison to the global economy". Ubuntu: Journal of Conflict and Social Transformation, vol. 8, pp. 33 – 54, 2019.

[59] J-P. Bruwer, C. Hattingh, and I. Perold. "Probable measures to sustain South African Small Medium and Micro Enterprises' existence, post COVID-19: A literature review. Internet: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3625552, Oct. 28, 2020 [2020].

[60] J. Guilhoto, M. Marjotta-Maistro and G. Hewings. "Economic Landscapes: What are They? An Application to the Brazilian Economy and to Sugar Cane Complex". Berlin: Springer, 2002.

[61] B. Tatiana, and S. Valeryia. "Special economic zones as an instrument to enhance international cooperation in the economic conditions imposed sanctions". International Journal of Innovative Technologies in Economy, vol. 2, pp. 24 - 26, 2015.

[62] Z.M. Buryk. "Regulations of national economy based on sustainable development". National Economic Reform: experience of Poland and prospects for Ukraine, vol. 1, pp.98-115, 2016.

[63] C.A. Meh. "Entrepreneurship, wealth inequality, and taxation". Review of Economic Dynamics, vol. 8, pp. 688 - 719, 2005.

[64] E.S. Esmaeel. “The impact of direct-indirect taxation on consumer”. IOSR Journal of Engineering, vol. 3, 8 – 13, 2013.

[65] SARS. “Annual Report 2018-19”, Internet: https://www.sars.gov.za/AllDocs/SARSEntDoclib/AnnualReports/SARS-AR-24%20-%20Annual%20Report%202018-2019.pdf , Oct. 28, 2020 [2019].

[66] H. Allcott, B.B. Lockwood, and D. Taubinsky. “Regressive sin taxes, with an application to the optimal soda tax”. The Quarterly Journal of Economics, vol. 134, 1557 - 1626, 2019

[67] K. Kaiser, C. Bredenkamp, and R. Iglesias. “Sin tax reform in the Philippines: transforming public finance, health, and governance for more inclusive development”. World Bank Publications, 2016

[68] H. Javadinasab, I. Masoudi Asl, A. Vosoogh-Moghaddam, and B. Najafi. “Comparing selected countries using sin tax policy in sustainable health financing: Implications for developing countries”. The International Journal of Health Planning and Management, vol. 35, pp. 68-78, 2020.

[69] South Africa “Customs and Excise Act. No. 91 of 1964”. Pretoria: Government Printer, 1964.

[70] Z. Mbandlwa, and N. Dorasamy. “The impact of substance abuse in South Africa: a case of informal settlement communities”. Journal of Critical Reviews; Vol. 7, pp. 1 - 15, 2020.

[71] A.G. Churchill, “Marketing research methodological foundations”, New York: The Dryden Press, 1995.

[72] S. Adhikary. “Internship report on “factor influencing customers to open account at EXIM Bank Limited”. Bachelor’s degree, Daffodil International University, Bangladesh, 2017.

[73] M. Saunders, P. Lewis, and A. Thornhill. “Research Methods for Business Students”. 6th ed. Harlow: FT Prentice Hall, 2012.

[74] J. Heaton. “Secondary data analysis”. The AZ of Social Research, Sage, London, 2003.

[75] South Africa. “Revised Schedule 1 of the National Definition of Small Enterprise in South Africa”. Internet: https://www.gov.za/sites/default/files/gcis_document/201903/423041gon399.pdf [Apr. 24, 2019].

[76]. G. Abatecola, R. Cafferata, and S. Poggesi. “Arthur Stinchcombe’s “likability of newness”: contribution and impact of the construct”. Journal of Management History, vol. 18, pp. 402 – 418, 2012.

[77] A. Soto-Simeone, C. Sirén, and T. Antretter. “New Venture Survival: A Review and Extension”. International Journal of Management Reviews, vol. 0, pp. 1 – 30, 2020.

[78] M. Josefy, J. Harrison, D. Sirmon, and C. Carnes. “Living and dying: Synthesizing the literature on firm survival and failure across stages of development”, Academy of Management Anals, vol. 11, pp. 770 – 799, 2017.

[79] J. Eastin, R. Grundmann, and A. Prakash. “The two limits debates: “Limits to Growth” and climate change”. Futures, vol. 43, pp. 16 – 26, 2011.

[80] R.S. Wahono. “A systematic literature review of software defect prediction”. Journal of Software Engineering, vol. 1, pp. 1-16, 2015.

[81] V. Vukmirović. “Entrepreneurship Education among University Students as a Predictor of Female Entrepreneurial Undertakings”. Journal of Women's Entrepreneurship and Education, vol. 3, pp. 86-102, 2019.

[82] J. Dikgang, A. Leiman, and M. Visser. “Elasticity of demand, price and time: lessons from South Africa’s plastic-bag levy. Applied Economics, vol. 44, pp. 3339 – 3342, 2011.

[83] A.C. Edmondson, and S.E. McManus. “Methodological fit in management field research”, Academy of Management Review, vol. 32, pp. 1246-1264, 2007.

[84] M. Cristofaro. “Unfolding irrationality: how do meaningful coincidences influence management decisions?”. International Journal of Organizational Analysis, 2020.

Annexure A: Classification of South African SMMEs

Sector	Size	Number of full-time employees employed	Total annual turnover
Agriculture	Medium	51-250	<=R35 million
	Small	11-50	<=R17 Million
	Micro	0-10	<=R7 Million
Mining and quarrying	Medium	51-250	<=R210 Million
	Small	11-50	<=R 50Million
	Micro	0-10	<=R15 Million
Manufacturing	Medium	51-250	<=R170 Million
	Small	11-50	<=R50 Million
	Micro	0-10	<=R10 Million
Electricity, Gas and Water	Medium	51-250	<=R180 Million
	Small	11-50	<=R60 Million
	Micro	0-10	<=R10 Million
Construction	Medium	51-250	<=R170 Million
	Small	11-50	<=R75 Million
	Micro	0-10	<=R10 Million
Retail, motor trade and repairs services	Medium	51-250	<=R80 Million
	Small	11-50	<=R25 Million
	Micro	0-10	<=R7.5 Million
Wholesale	Medium	51-250	<=R220Million
	Small	11-50	<=R80 Million
	Micro	0-10	<=R20 Million
Catering, accommodation and other trade	Medium	51-250	<=R40 Million
	Small	11-50	<=R15 Million
	Micro	0-10	<=R5 Million
Transport, storage and communication	Medium	51-250	<=R140 Million
	Small	11-50	<=R45 Million
	Micro	0-10	<=R4.5 Million

Finance and business services	Medium	51-250	<=R85 Million
	Small	11-50	<=R35 Million
	Micro	0-10	<=R7.5 Million
Community, Social and personal service	Medium	51-250	<=R70 Million
	Small	11-50	<=R22 Million
	Micro	0-10	<=R5 Million

Source: [4].

The Theoretical Link Between Cash Flow Statement Usage and Decision Making In South African Small, Medium and Micro Enterprises

Juan-Pierré Bruwer *infobusinessresolution@gmail.com*
Business Re-Solution
Wellington, 7655, South Africa

Lindiwe Mabesele *MabeseleL@cput.ac.za*
Independent Researcher
Cape Town, 8000, South Africa

Vincentia Benting *216042593@mycput.ac.za*
Independent Researcher
Cape Town, 8000, South Africa

Joël Cloete *216095050@mycput.ac.za*
Independent Researcher
Cape Town, 8000, South Africa

Chante Jacobs *chantejacobs962@gmail.com*
Independent Researcher
Cape Town, 8000, South Africa

Jade Marais *jademaraia38@gmail.com*
Independent Researcher
Cape Town, 8000, South Africa

Kgosi-e-tsile Rabolao *216087457@mycput.ac.za*
Independent Researcher
Cape Town, 8000, South Africa

Marianne Spangenberg *216170761@mycput.ac.za*
Independent Researcher
Cape Town, 8000, South Africa

Abstract

South African Small, Medium and Micro Enterprises (SMMEs) are of great importance to the national economy due to their socio-economic value-adding abilities. Despite being responsible for contributing generously to the national Gross Domestic Product (GDP) and providing employment opportunities to more than half of the national workforce, research shows that up to 80% of these business entities fail after being in operation for three years. The latter dispensation is often blamed on unmanaged economic factors and subsequent risks; including that of poor cash flow management. To assess the cash flow situation of a business entity, a cash flow statement is generally used. According to academic literature, South African SMMEs do not make adequate use of cash flow statements which, in turn, may have negative repercussions on business decision making within South African SMMEs. The inadequate use of cash flow statements can be attributable to the isomorphic changes which these business entities undergo, particularly mimetic isomorphism. Therefore, the primary research objective of this study was to determine whether South African SMMEs' limited utilisation of cash flow statements, as brought about by mimetic isomorphism, has an adverse influence on their business decision making in a theoretical dispensation. This study was non-empirical and qualitative and made use of an online desktop review approach by scrutinising secondary data to, in turn, develop propositions for further empirical testing. From the research conducted it appears that South African SMMEs' limited utilisation of cash flow statements may adversely influence business decision making within these business entities, at least in a theoretical sense.

Keywords: SMMEs, South Africa, Business Decision Making, Cash Flow Statement, Cash Flow.

1. INTRODUCTION

According to the *National Small Business Act No. 102 of 1996*, South African Small, Medium and Micro Enterprises (SMMEs) are defined as separate small and distinct business entities that are owned and/or managed by one or more owner(s) that conduct their business in any sector and/or sub-sector that is relevant to the national economy [1, 2, 3]. Since their formal recognition by the national government, in 1996, South African SMMEs have been subsequently promoted to assist in the attainment of three core socio-economic objectives, namely: 1) job creation, 2) poverty alleviation and 3) equal wealth dissemination [4, 5]. Over the years, the number of these business entities have grown to such an extent that 98% of all South African business entities in operation are regarded as SMMEs [6]. Hence, it is not surprising that South African SMMEs have been reported to contribute 50% to the Gross Domestic Product (GDP) while also providing 60% of all employment opportunities to the total South African workforce [4, 7].

Despite the socio-economic contributions made by South African SMMEs to the national economy, as well as the support provided to these business entities by the national government[1], research suggests that these business entities have among the highest failure rates in the world [8, 9]. During the early-2010s, it was reported that 40% of newly established SMMEs fail in their first year of operation, 60% in their second year of operation, and 90% in their first 10 years of operation [10, 11]. In more recent times, however, research suggests that between 70% and 80% of South African SMMEs fail within the first three years of their existence [10, 12, 86]. More often than not, the blame for the high South African SMME failure rate is shifted on the non-management of economic factors and related risks in a non-conducive economic environment [13, 14, 64]. Examples of the latter include, among others, the lack of basic business skills, poor management skills, increases in taxation, fluctuations in supply and demand, excessive red tape, high unemployment rates and high inflation rates [15, 16, 17, 18, 39]. Another critical reason why SMMEs fail is due to poor cash flow management [65].

The phenomenon of cash flow management has to do with the planning, leading, organising and controlling of money that both enter and leave a business entity [19, 20]. Taking into account that money is the lifeblood of any business entity, it becomes ostensible as to why economic, efficient and effective cash flow management practices were found to positively contribute towards business sustainability [21, 22, 23, 24]. One manner in which proper cash flow management can be executed is through the use of financial performance measurement tools, one of which is the cash flow statement.

The cash flow statement provides an overview surrounding the cash-on-hand situation of a business entity concerning its operating activities, investment activities and financing activities [25, 26]. It is also possible that the cash flow statement can be used to assist management to make sound business decisions [27, 28]. Unfortunately, research suggests that South African SMMEs do not properly utilise cash flow statements, as bank statements are primarily consulted when business decisions are made by management [29, 30].

The limited use of the cash flow statement by South African SMMEs can be coupled to the neo-institutional theory – a phenomenon where every business entity strives to become like one

[1] The South African government actively offers support to South African SMMEs through agencies such as inter alia that of the Centre for Small Business Promotion, Ntsika enterprises Promotion Agency and Khula Enterprise Finance company [64].

another while being influenced by similar external forces and undergoing relevant isomorphic changes [69, 70]. Among the isomorphic changes that a business undergoes, as underpinned by the theory, is that of mimetic isomorphism [73, 74, 75]. In layperson's terms, mimetic isomorphism pertains to those changes which a business entity undergoes through copying-and-pasting practices and/or operations from successful business entities, as-is [71, 72].

In fundamental nature, the perception exists that South African SMME management may not necessarily make sound business decisions to fortify and/or improve the sustainability of their relevant business entities, especially where existing practices and/or operations from successful business entities are copied-and-pasted, as-is. This may be why these business entities make limited utilisation of cash flow statements as a decision-making tool. To this end, the area of concern that was researched within the ambit of this paper reads as follows: "*South African SMMEs' limited utilisation of cash flow statements, as possibly spurred on by mimetic isomorphism, may have an adverse influence on relevant business decision making*". As such, the primary objective of this study was to determine whether South African SMMEs' limited utilisation of cash flow statements may, theoretically, adverse influence their relevant business decision making.

To achieve the foregoing, non-empirical research was conducted which took on an online desktop research approach. In quintessence, secondary data were gathered from academic databases through the inclusion of keywords and, subsequently, reviewed [85]. For the sake of transparency, this study was nascent as the primary aim thereof has attracted limited research and/or theorising to date [90, 91]. Therefore, the authors anticipated that since South African SMMEs do not utilise cash flow statements – a financial statement that can assist management in making sound business decisions – it may have a negative influence on relevant business decision making.

2. RESEARCH DESIGN

For this research study, exploratory research was conducted as the emphasis was placed on the discovery of ideas and insights into a theoretical idea [82, 83]. Furthermore, the research topic was nascent as limited research has been conducted on it and/or limited current theorising on it has taken place [90, 91]. For this reason, non-empirical research was conducted, taking on an inductive approach to assist in the development of a theory, stemming from the observation of empirical data [84]. The theory that was developed pertained to South African SMMEs' limited utilisation of cash flow statements and its influence on relevant decision making [22, 53].

In terms of the research methodology, qualitative research was conducted since it entailed the collection and reviewing of secondary data, as collected and analysed by other researchers [85]. In particular, an online desktop research approach was followed as secondary data were gathered from sources such as libraries, journals and websites after which they were reviewed [81]. Two major inherent limitations of online desktop research include that of author subjectivity and secondary data scope [31]. For the sake of transparency, the authors took reasonable steps to mitigate the latter limitations by first searching for secondary data containing keywords which included: "cash flow", "cash flow statement", "financial statement", "SMME", "sustainability", and "South Africa". Specifically, these keywords were searched for in a South African SMME dispensation as far as possible. Throughout the authors ensured that strong statements were supported by more than one secondary source.

The two main reasons as to why an online desktop research approach was selected over a literature review approach are that this study was exploratory and that the topic was nascent. In fundamental nature, the authors wanted to establish a foundation for future empirical research. To achieve this, reputable secondary sources were collected and reviewed which enabled the authors to both conceptualise and contextualise relevant terminology, while also allowing for the achievement of the primary research objective.

3. LITERATURE REVIEW

3.1 The neo-institutional Theory

The neo-institutional theory, initially dubbed *institutional isomorphism*, was developed by Paul DiMaggio and Walter Powell during the early-1980s through analysing institutional processes and institutional forces [68]. This theory was developed from the observation that although every business entity is unique, all business entities eventually strive to become similar to one another as they undergo isomorphic change, while simultaneously being influenced by similar external forces [69, 70]. Generally, these external forces pertain to three aspects, namely: 1) coercive isomorphism (forces which stem from other organisations on which the business is dependent, for example, government agencies and legislation), 2) mimetic isomorphism (forces which stem from uncertainty, for example, trends set by competitors and popular tools used by successful organisations), and 3) normative isomorphism (forces which stem from professional organisations, for example, lawyers, accountants, and medical professionals) [71, 72].

Since its initial development, to date, the neo-institutional theory has proven to be highly relevant and valid. The latter sentiment is supported by studies where this theory was used to assist in the conducting of research applicable to crowdfunding initiatives, corporate social responsibility, and governance [73, 74, 75]. Notwithstanding the latter, it is therefore not surprising that prior research shows that business decisions made by management, which affect how business objectives are achieved, are influenced by mimetic isomorphism which, in turn, comprises: 1) frequency-based imitation (modal trends), 2) trait-based imitation (popular trends), and 3) outcome-based imitation (new and/or successful trends) [87].

When practices and/or operations are copied-and-pasted from successful business entities to a small business, it does not guarantee the attainment of business objectives in the foreseeable future [76]. This is particularly the case since every business is a clear and vivid reflection of its management – what works well in one business does not necessarily guarantee similar results when used directly in another business [92]. Alternatively stated, business entities that undergo mimetic isomorphism generally skip “trial-and-error practices” by copying-and-pasting tried-and-tested practices that were customised for a particular business entity with unique business objectives [77].

Within the ambit of this study, while using the above as a basis, it becomes apparent that small businesses may imitate a popular trend – e.g. to not use cash flow statements – despite its potential adverse influence on the attainment of relevant business objectives. In other words, customisation is key; what works in one successful business entity is not guaranteed to work in another business entity [88].

.

3.2 South African SMME Sustainability

Various definitions exist for the term “sustainability”. For the sake of this study, the term “sustainability” is defined from an accounting perspective as the ability of a business entity to achieve its economic objectives (e.g. profitability, solvency and liquidity), social objectives (e.g. e.g. community building and charity) and/or environmental objectives (e.g. minimising wastage and minimising carbon footprints) in the foreseeable future [64, 66, 93]. In quintessence, sustainability, within the ambit of this study, is synonymous with the triple bottom line – a business needs to take responsibility for its people (its stakeholders), its planet (the environments which it affects), and its profit (the attainment of economic objectives) [12, 32, 33, 34, 67].

When taking into account that business operations cannot continue to take place without first achieving its relevant economic objectives [12], the inference can be made that the attainment of economic objectives is more important than the attainment of any other objectives, especially in a small business dispensation. For this reason, it is fair to assume that the “weak sustainability rate” of South African SMMEs pertain to how these business entities fail to achieve their economic objectives.

Despite receiving support from the national government since 1996, South African SMMEs still have significant sustainability issues. During the early-2000s it was reported that 70% of South African SMMEs failed within their first three years of existence [35]. Closer to the early 2010s, research found that 75% of these business entities were failing after being in operation for only three years [36]. Closer to 2020, the reported failure rate of South African SMMEs was unchangeable – regarded to be among the worst failure rates in the world [37, 38, 40]. For this reason, the inference can be made that the [economic] sustainability of South African SMMEs has not significantly improved over more than two decades.

The prevailing factors that are blamed for contributing to the weak SMME [economic] sustainability are largely the same today than what it was during the early-2000, which include *inter alia* insufficient product demand, high labour turnover, excessive government regulations, high interest rates, stiff competition, high crime levels, high unemployment and unreliable supply of water and electricity [39]. Notwithstanding the above, another prevailing factor that is believed to contribute to the high failure rate of South African SMMEs is that of poor cash management, which leads to poor business decision making; ultimately affecting the existence of a business entity [78, 58].

Considering the phenomenon of mimetic isomorphism, it may be that South African SMMEs mimic an approach(es) to manage risks and/or the addressing of prevailing factors from successful business entities. Taking into account the high failure rate of South African SMMEs, which has not yet improved over more than two decades, it may be that mimetic isomorphism is doing more harm than good; particularly noting the poor cash management of these business entities.

3.3 Cash Management and The Cash Flow Statement

Within the ambit of this study, the term "cash management" is conceptualised as the process of keeping track of the amount of money that enters and leaves a business entity, which can be used to assist in the achievement of relevant business-related objectives in the foreseeable future [41, 42, 43, 44]. Since cash is regarded as the lifeblood of any business entity, the inference can be made that a business entity's management should be financially literate [45]. In layperson's terms, this means that a business' management should possess the ability to make informed and effective business decisions while taking into account the proper use and management of a business entity's cash [26].

To assist relevant stakeholders in the management of cash flow in a business entity, a cash flow statement is generally used. The cash flow statement is a financial statement that, if properly utilised, can provide management with information pertaining to 1) the amount of money received from customers, 2) the money payable to liabilities[2], 3) the net assets[3] that are on hand, and 4) the net investments of a business entity [46]. The cash flow statement is generally demarcated into three categories, namely that of operating activities, financing activities, and investing activities – as summarised below [5, 26, 46, 47, 48]:

- Operating activities: Those business activities, of a cash nature, that relate to the day-to-day cash income and cash expenses. The net effect is calculated by deducting cash expenses from cash income.
- Financing activities: Those business activities that relate to the repayment or acquisition of long- term loans, the issuing of debentures, and/or the issuing of shares. The net effect is calculated by considering the changes made to non-current liabilities and owners' equity.

2 A liability is a present obligation, resulting from the transfer of an economic resource, in the past that cannot be practically avoided [79].

3 An asset is a present economic resource that is controlled by a business entity, resulting from a past event, which has the potential to generate income [80].

- Investing activities: Those business activities surrounding the acquisition of non-current assets, for example, vehicles, property, and/or long-term investments. The net effect is calculated by considering changes in non-current assets (and investments).

In essence, the cash flow statement displays the cash generated and/or utilised in the three aforementioned categories [49, 50]. Moreover, this financial statement adds to the functionality of the "bigger picture" of a business entity's financial performance and financial position by classifying cash inflow and cash outflow [25, 26, 51, 52]. When taking into account that proper cash management favourably contributes towards a business' [economic] sustainability [22, 53, 54] and that the cash flow statement can assist management to make better business decisions [94], the inference can be made that when South African SMMEs make use of the cash flow statement, it should have a positive influence on relevant business decision making.

3.4 Cash Flow Statements and Business Decision Making In South African SMMEs

Notwithstanding the above, prior research suggests that the bulk of these business entities do not make use of poor cash management practices [48, 55, 56]. Otherwise stated, the manner in which South African SMME management manage their business entities' cash flow leaves much to be desired [57, 58]. This view is substantiated by local studies [29, 30, 63] where it was found that management of South African SMMEs predominantly relies on bank statements to make relevant business decisions, despite having access to cash flow statements. This is quite cumbersome as the bank statement does not necessarily take into account all transactions gone on by a business entity; does not consider real-time liquidity [63].

When business entities utilise financial performance measures, such as the cash flow statement, it should enhance business decision making through emphasising economy, effectiveness and efficiency by providing reliable, timely, relevant and useful information [59, 60, 61]. According to at least one local study, South African SMME sustainability was found to be stifled due to poor decision making stemming from incomplete financial information contained in the bank statement [57]. This can be attributable by the fact that the bank statement – which provides only historic [financial] data – is widely used by South African SMMEs to make business decisions associated with profitability (the ability to make more income than expenses), solvency (the ability to have own more assets than liabilities), liquidity (the ability to have sufficient money on hand to pay creditors), and efficiency (the ability to earn money as quickly as possible) [62, 63, 89]. More often than not, a bank statement only provides information pertaining to cash inflows and cash outflows, in a historic dispensation.

Henceforth, it is highly probable that South African SMME management, as influenced by mimetic isomorphism, choose to use the bank statement as opposed to the cash flow statement to make relevant business decisions. As the failure rate of South African SMMEs has not significantly improved over the span of two decades, it may be that the decision of these business entities to ignore the cash flow statement has a direct negative influence on the achievement of business objectives; relevant business decision making.

4. DISCUSSION

Considering that 98% of all operating South African business entities are SMMEs [6], including the cardinal socio-economic value these enterprises add to the South African economy [4,5], it becomes disconcerting to note the high South African SMME failure rate. Over the past two decades, the failure rate of South African SMMEs has been found to be among the worst in the world [40] - between 70% and 80% of these business entities fail after being in operation for only three years. An array of economic factors have been blamed (and are still blamed) for the latter dispensation, one of which is that of poor cash management [65].

Taking into account the neo-institutional theory, three external forces are highlighted that influence business entities in their pursuit to become sustainable, namely coercive isomorphism, mimetic isomorphism, and normative isomorphism [71, 72]. Though most economic factors are encapsulated in coercive isomorphism and normative isomorphism, the phenomenon of poor cash management may highly likely pertain to mimetic isomorphism [76, 77]. This view is supported by the fact that small business entities tend to copy-and-paste existing practices and/or operations from at least one successful business entity without considering repercussions on its operations [88, 92].

Among the tools (financial statements) which small business management can use to make economic business decisions is that of the cash flow statement – a financial statement that provides clarity on how cash flows in and out of a business entity [5, 26, 46, 47, 48]. In the case of South African SMMEs, although a large proportion of these business entities have access to the cash flow statement, they do not make use of it to make business decisions but rather prefer using the bank statement [29, 63]. Even though the cash flow statement can assist management with better decision making [57, 58, 94] and that it is freely available to small businesses for use [62, 63], since the majority of South African SMMEs make use of bank statements to make business decisions [30], it becomes highly probable that this behaviour is encouraged by mimetic isomorphism – where existing practices and/or operations are merely copied from at least one successful business entity in the hopes of becoming sustainable [69, 70]. In layperson's terms, it may be that the decision of South African SMMEs to ignore the cash flow statement as a financial statement has an adverse influence on their [economic] sustainability. To this end, the following three propositions are provided for further empirical testing:

- Proposition 1: Where South African SMMEs utilise the cash flow statement to make relevant business decisions, it has a statistically significant positive influence on their [economic] sustainability.
- Proposition 2: Where South African SMMEs utilise the cash flow statement to make relevant business decisions, it has no statistically significant influence on their [economic] sustainability.
- Proposition 3: Where South African SMMEs utilise the cash flow statement to make relevant business decisions, it has a statistically significant negative influence on their [economic] sustainability.

Considering that the cash flow statement provides more clarity surrounding the "bigger picture" of a business entity's financial performance and financial position [51, 52] there is a possibility that when South African SMME management makes use of cash flow statements to make relevant business decisions, it may have a positive influence on their [economic] sustainability. The findings made in this study suggests that mimetic isomorphism, in the sense of using bank statements instead of the cash flow statement to make business decisions [87, 88] (*status quo*), should be challenged.

5. CONCLUSION

For this study, the focus was placed on achieving the primary objective of determining whether South African SMMEs' limited utilisation of cash flow statements, as brought on by mimetic isomorphism, has an adverse influence on their business decision making, at least in a theoretical dispensation. This was achieved through adopting an online desktop research approach whereby secondary sources were collected and reviewed to allow for relevant discussions to take place pertaining to the neo-institutional theory, South African SMME sustainability, cash management and the cash flow statement, and cash flow statements and business decision making in South African SMMEs.

Stemming from the research conducted, although most South African SMMEs have access to cash flow statements, almost every South African SMME prefers to use the bank statement to make business decisions. This is disconcerting as it appears that SMMEs are highly susceptible to mimetic isomorphism – these business entities prefer to replicate what other (successful) businesses do (copying-and-pasting their practices and/or operations) as opposed to doing their own thing. Considering that between 70% and 80% of South African SMMEs fail within their first three years of operation, the non-utilisation of cash flow statements, to make business decisions, may actually be a major contributor towards the high failure rate of these business entities. In fundamental nature, from the research conducted, the authors propose that the manner in which South African SMMEs undergo mimetic isomorphism, in relation to using the bank statement to make business decisions as opposed to the cash flow statement, should be challenged in order to facilitate possible new avenues to fortify and/or improve their [economic] sustainability. Although the utilisation of the bank statement as a tried-and-tested practice has worked for many of these business entities, research suggests that better business decisions can be made if the cash flow statement is used on a trial-and-error basis.

For the sake of transparency, considering the limitation of secondary data scope, applicable to online desktop research, the authors reasonably ensured that sufficient secondary data were gathered, from a variety of sources, after which they were reviewed. By doing so, the authors believe that a fair conclusion was reached in relation to the nascent research topic. In addition, the limitation of author subjectivity was also kept to a minimum through the inclusion of as many topic-related secondary data as possible, despite the limited research that has been conducted on the research topic, in a holistic manner.

In terms of practical implications, if the cash flow statement is used by small business management, it can allow for better cash management which, in turn, may have a direct positive influence on the manner in which business decisions are made; possible improvements in their [economic] sustainability.

Using the above as a basis, and apart from the three propositions proposed to be further empirically researched, avenues for further research include, but are not limited to 1) the influence of current cash management processes on the [economic] sustainability of South African SMMEs, 2) the intrinsic effect of cash flow statement usage on South African SMME [economic] sustainability, and 3) the feasibility of using bank statements as a business decision-making tool in South African SMMEs.

6. ACKNOWLEDGEMENTS
The authors of this paper wish to acknowledge Auston Owies who assisted with the preliminary steps of this study.

7. REFERENCES
[1] South Africa. “Small Business Act No 102 of 1996”, Pretoria Government Printer, 1996.

[2] C. Joubert, N. Schoeman, and J. Blignaut. “Small, Medium and Micro-Sized Enterprises (SMMEs) and the Housing Construction Industry: A Possible Solution to South Africa's Socio-Economic Problems”, South African Journal of Economic and Management Sciences, vol. 2, pp. 21 - 33, 1999.

[3] A. Berry, M. Blottnitz, R. Cassim, A. Kesper, B. Rajaratnam and D.E Seventer. “The Economics of SMMEs in South Africa”. Internet: http://www.tips.org.za/506.pdf, Mar. 16, 2019 [2002].

[4] J-P. Bruwer. “The sustainability of South African Small Medium and Micro Enterprises (SMMEs) operating in the retail industry amidst the ever-increasing excise taxation on tobacco products, alcohol products and plastic bags: A literature review”. Internet: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3559059, Oct. 27, 2020 [2020].

[5] J-P. Bruwer. “Sustainability of South African FMCG SMME retail business in the Cape Peninsula”. Master’s thesis, Cape Peninsula University of Technology, Cape Town, 2010.

[6] D. Ansara, R. Endres, and B. Mothibatsela. “Opinion: Open for business? How SMMEs in South Africa can thrive”, Internet: https://www.fin24.com/Opinion/opinion-how-smmes-in-south-africa-can-thrive-20191118, Nov. 22, 2019 [2019].

[7] Statistics South Africa. “Quarterly labour force survey”. Internet: http://www.statssa.gov.za/publications/P0211/P02114thQuarter2018.pdf, Nov. 10, 2020 [2019].

[8] J. Abor, and P. Quartey. “Issues in SME Development in Ghana and South Africa”. International Research Journal of Finance and Economics, vol. 39, pp. 218-228, 2010.

[9] H. Maduku, and I. Kaseeram. “Mainstreaming Willingness among Black Owned Informal SMMEs in South Africa”. Journal of Emerging Trends in Economics and Management Sciences, vol. 10, pp. 140-147, 2019.

[10] O. Fatoki. "An Investigation into the Financial Management Practices of New Micro-enterprises in South Africa", Journal of Social Science, vol. 33, pp. 179-188. 14, 2012.

[11] M. Cant. "Challenges Faced By SME’s In South Africa: Are Marketing Skills Needed?", International Business & Economics Research Journal (IBER), vol. 11, pp. 1107 – 1116, 2012.

[12] J-P. Bruwer, and P. Coetzee. “A literature review of the sustainability, the managerial conduct of management and the internal control systems evident in South Africa small, medium and micro enterprises”, Problems and Perspectives in Management, vol. 14, pp. 201 - 211, 2016.

[13] L. Van Scheers. “SMEs’ marketing skills challenges in South Africa”. African Journal of Business Management, vol. 5, pp. 5048-5056, 2011.

[14] B.T. Masama. “The Utilisation of Enterprise Risk Management in Fast-Food Small, Medium and Micro Enterprises Operating in the Cape Peninsula”, Master’s thesis. Cape Peninsula University of Technology, Cape Town, 2017.

[15] B. Jooste. “SMEs are feeling the pinch”. Internet: www.iol.co.za/index.php?set_id=13&art_id=vn 20081013054601261C397975. Jun., 13, 2019 [2008].

[16] J. Okpara. “Factors constraining the growth and survival of SMEs in Nigeria Implications for poverty alleviation”. Management Research Review, vol. 34, pp, 156 - 171, 2011.

[17] F. Ngwenya. “The small and medium-sized enterprises as a vehicle for employment creation in South Africa”, Clute Institute International Conference, Bangkok, Thailand, March, 2012.

[18] J-P Bruwer, and J. Smith. “The Role of Basic business Skills development and Their Influence on South African Small, Medium and Micro Enterprise Sustainability”, vol. 10, pp. 48 – 62, 2018.

[19] M.R. Abdurahman, J. Addinall, E. Chandler, N. Daniels, L. English, J. Green, Z. Shade, and J-P Bruwer. “Utilisation of budgets in clothing small medium and micro enterprises (SMMEs) within the Cape Metropole”, African Journal of Business Management, vol. 6, pp. 7529 – 7532, 2012.

[20] J-P. Bruwer, and D. Holtzhausen. “Accounting for non-accountants (re)”. Cape Town: Oxford University Press Southern Africa, 2019.

[21] A. Roberts. “Disgruntled Entrepreneurs”. Internet: http://secure.financialmail.co.za/99/0917/trends/dtrend.htm, Jun. 24, 2019 [1999].

[22] D. Morin, and J.L. Maux. “Black and white and red all over: Lehman Brothers’ inevitable bankruptcy splashed across its financial statements”. International Journal of Business and Social Science, vol. 2, pp. 39-65, 2011.

[23] T.S. Hatten. “Principles of small business management”. South-Western Cengage Learning, 2012.

[24] T. Beck, J-P. Bruwer, R. Beck, M. Chalmers, J. Maseko, P. Pele, and T. Walker, T. Applied Accounting (re). Cape Town: Oxford University Press Southern Africa, 2019.

[25] The South Africa Institute of Charted Accountants (SAICA). “AC 118: Cash Flow Statements”. Johannesburg: Juta, 1996.

[26] C. Sowden-Service. “Gripping GAAP: Your Guide to International Financial Reporting Standards”. Durban: LexisNexis, 2020.

[27] C. Sowden-Service. “Gripping GAAP”. Durban: CSS Publishers, 2006

[28] E. Mbumbo, H. Benedict, and J-P Bruwer. “The influence of management’s accounting skills on the existence of their South Africa small, medium and micro enterprises”. International Journal of Education Economics and Development, vol. 10, pp.323 – 334, 2019.

[29] A. Kemp, A. Bowman, B. Blom., C. Visser, D. Bergoer, D. Fullard, G. Moses, S-L. Brown, J. Bornman, and J-P. Bruwer. “The usefulness of cash budgets in micro, very small and small retail enterprises operating in the Cape Metropolis”, Expert Journal of Business and Management, vol. 3, pp. 1 – 12, 2015.

[30] J-P. Bruwer, and Y. Smit. “Accounting Information Systems – A value – adding phenomenon or a mere trend? The situation in Small and Medium Financial Service Organisations in the Cape Metropolis”, vol. 3, pp. 38 – 52, 2015.

[31] V. Vukmirović. “Entrepreneurship Education among University Students as a Predictor of Female Entrepreneurial Undertakings”. Journal of Women's Entrepreneurship and Education, vol. 3, pp. 86-102, 2019

[32] A. Spiliakos. “What does “Sustainability” means in Business?”. Internet: https://online.hbs.edu/blog/post/what-is-sustainability-in-business, Nov. 15, 2019 [2019].

[33] A. Beattie. “The 3 Pillars of Corporate Sustainability”. Internet: https://www.investopedia.com/articles/investing/100515/three-pillars-corporate-sustainability.asp , Nov. 11, 2019 [2019].

[34] A. Petersen, and J-P. Bruwer. “How document usage can positively influence South African Small. Medium and Micro Enterprise sustainability, in theory”. International Conference of Business and Management Dynamics, 2 – 4 September, Swakopmund, Namibia, 2019

[35] D. Venter, S. Van Eeden, and S. Viviers. “A Comparative Study of Selecting Problems Encountered by Small Businesses in the Nelson Mandela, Cape Town and Egoli Metropoles”. Journal of South African institute for management statistics, vol. 12, pp. 13 - 23, 2003.

[36] M.C. Cant, and J.A. Wiid. “Establishing the challenges affecting South African SMEs”. International Business & Economics Research Journal, vol. 12, pp. 707-716, 2013.

[37] J-P. Bruwer, C. Hattingh, and I. Perold. “Probable Measures to Aid South African Small Medium and Micro Enterprises’ Sustainability, Post-COVID-19: A Literature Review”. Internet: https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=3625552, Nov. 10, 2020 [2020].

[38] B. Masama, and J-P. Bruwer. "The alignment of risk management initiatives, as used by fast food South African SMMEs, to the COSO ERM". Southern African Accounting Association, Johannesburg, 26 – 28 June, South Africa, 2019.

[39] B. Masama, and J-P. Bruwer. "Revisiting the economic factors which influence fast food South African small, medium and micro enterprise sustainability", Expert Journal of Business Management, vol. 6, pp.19–28, 2018.

[40] J.S. Wiese. "Factors determining the sustainability of selected small and medium-sized enterprises". Master's thesis, North-West University, Potchefstroom, South Africa, 2014.

[41] J.O. Winjum. "The Role of Accounting in the Economic Development of England 1500-1750", Centre for International Education and Research, 1972.

[42] D.D. Godwin. "Antecedents and consequences of newlyweds' cash flow management". Financial Counseling and Planning, vol. 5 no. 1. pp. 161-190, 1994.

[43] L. Jooste. "An evaluation of the usefulness of the cash flow statement within South African Companies by means of cash flow ratios". Doctoral thesis, University of Pretoria, Pretoria, 2005.

[44] L. Jooste. "An evaluation of the usefulness of cash flow statements to predict financial distress". Acta Commercii, vol. 7, pp. 1 - 13, 2007.

[45] M. Abioro. "The impact of cash management on the performance of manufacturing companies in Nigeria", Uncertain Supply Chain Management, vol. 1, pp. 177-192, 2013.

[46] S. Du Plooy, H. Goodey, W. Lötter, D. Nortjé, and C. Meyer. "X-Kit Undergraduate – Financial Accounting". Cape Town: Maskew Miller Longman (Pty) Ltd, 2005.

[47] B. Ismaila. "Financial performance measurement of manufacturing small and medium enterprises in Pretoria: a multiple exploratory case study". Master's thesis. University of South Africa, Pretoria, 2011.

[48] C. Maduekwe, and P. Kamala. "Performance measurement by small and medium enterprises in cape metropolis, South Africa", vol. 14, pp. 46 - 55, 2016.

[49] A. Belobo, and F. Pelser. "Cash flow management: Assessing if impact of the operational performance of small and medium size enterprises at Mafikeng Local Municipality in South Africa to the global financial crisis", Mediterranean Journal of Social Science, vol. 5, pp. 226 – 234, 2014.

[50] C. Correia, D. Flynn, E. Uliana, M. Wormald, and J. Dillon. "Financial management. 8th Edition". Cape Town: Juta, 2015.

[51] R. Kirkham. "Liquidity Analysis Using Cash Flow Ratios and Traditional Ratios: The Telecommunications Sector in Australia". Journal of New Business Ideas & Trends, vol. 10, pp. 1 – 13, 2012.

[52] C. Murphy. "Understanding the cash flow statement". Internet: www.investopedia.com/investing/what-is-a-cash-flow-statement/, Nov. 22, 2019.[2019]

[53] CIMA. Management Accounting Official Technology. The Charted Institute of Management Accountants, 2005.

[54] S.P. Marivate. "The impact of entrepreneurial skills on the viability and long term survival of small businesses: a case of the City of Tshwane, South Africa", European Journal of Business, Economics and Accountancy, vol. 2, pp. 53 - 72, 2014.

[55] G. Fisher. “Tom Boardman Lessons Learnt”. Entrepreneur, 34 (January), pp.41-45, 2009.

[56] G. Uwonda, N. Okello, and G. Okello. “Cash flow management utilization by Small Medium Enterprises (SMEs) in Northern Uganda”, Merit Research Journal of Accounting, Auditing, Economics and Finance, vol. 1, pp. 67 - 80, 2013.

[57] S. Kengne. “Inhibiting Factors in the Strategic Financial Management Decision Making Process: Evidence from South Africa SMMEs”, Mediterranean Journal of Social Sciences, vol. 6 pp. 113-124, 2015.

[58] S.T. Enow, and P. Kamala. “Cash management practices of small, medium and micro enterprises in the Cape Metropolis, South Africa”. Investment Management and Financial Innovations, vol. 13, pp. 230 - 235, 2016.

[59] N.E. Daniel. “The effective measurement of SME e-commerce performance in the Western Cape”. Master’s Dissertation, Cape Peninsula University of Technology, South Africa, 2011.

[60] C. Maduekwe. “The usage of management accounting tools by small and medium enterprises in Cape Metropole, South Africa”. Master’s thesis. Cape Peninsula University of Technology, Cape Town, 2015.

[61] M. Matsoso, and O. Benedict. “Financial Performance Measures of Small Medium Enterprises in the 21st Century”. Journal of Economics, vol. 7, pp. 144 - 160, 2016.

[62] S. Myeni. “Cash flow management strategies in Small and Medium Sized Occupational Health Enterprises”. Doctoral thesis, Walden University, United States of America, 2018.

[63] C. Ngary, Y. Smit, W. Ukpere, and J-P Bruwer. “Financial Performance Measures and Business Objectives Attainment in Fast Food SMMEs in the Cape Metropolis: A preliminary Liability and Suitability analysis”. Mediterranean Journal of Social Sciences, vol. 5, pp. 909 - 921, 2014.

[64] J-P. Bruwer. “The relationship(s) between the managerial conduct and the internal control activities of South African fast moving consumer goods SMMEs”, Doctoral degree, Cape Peninsula University of Technology, Cape Town, 2016.

[65] M.C. Cant, and A. Ligthelm. Small business problems in the South African context: a proactive entrepreneurial approach. In 7th Asia-Pacific Decisions Science Institute Conference, July, 2002.

[66] A. Petersen. “The effectiveness of internal control activities to combat occupational fraud risk in fast-moving consumer goods Small, Medium and Micro Enterprises (SMMEs) in the Cape Metropole”, Master’s thesis. Cape Peninsula University of Technology, Cape Town, 2018.

[67] M.J. Milne, and R. Gray. “W(h)ither ecology? The triple bottom line, the global reporting initiative, and corporate sustainability reporting”, Journal of Business Ethics, vol. 118, pp. 13-29, 2013.

[68] P.J. DiMaggio, and W.V. Powell. “The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields”. American sociological review, vol. 48, pp. 147-160, 1983.

[69] Q. Hu, P. Hart, and D. Cooke. “The role of external and internal influences on information systems security – a neo-institutional perspective”, Journal of Strategic Information Systems, vol. 16, pp. 153-172, 2007.

[70] R. Suddaby. "Challenges for institutional theory", Journal of Management Inquiry, vol. 19, pp. 14 - 20, 2010.

[71] H.A. Haveman. "Follow the leader: Mimetic isomorphism and entry into new markets", Administrative science quarterly, vol. 38, pp. 593 - 627, 1993.

[72] J. Benders, R. Batenburg, and H. Van der Blonk. "Sticking to standards; technical and other isomorphic pressures in deploying ERP-systems". Information & Management, vol. 43, pp. pp.194 – 203, 2006.

[73] O.M. Lehner, and T. Harrer. "Crowdfunding revisited: a neo-institutional field-perspective". Venture Capital, vol. 21, pp.75 - 96, 2019.

[74] G. Karyawati, B. Subroto, T. Sutrisno, and E. Saraswati. "Explaining the complexity relationship of CSR and financial performance using neo-institutional theory". Journal of Asian Business and Economic Studies, vol. 2020, pp. 1 – 10, 2020.

[75] A. Badewi, and E. Shehab. "The impact of organizational project benefits management governance on ERP project success: Neo-institutional theory perspective". International Journal of Project Management, vol. 34, pp. 412 - 428, 2016.

[76] L.E. Brouthers, E. O'Donnell, and J. Hadjimarcou. "Generic product strategies for emerging market exports into triad nation markets: A mimetic isomorphism approach." Journal of management Studies, vol. 42, pp. 225 – 245, 2005.

[77] P.L. Jensen, O. Broberg, and N. Møller. "Ergonomics, engineering, and business: Repairing a tricky divorce". In 17th World Congress on Ergonomics, International Ergonomics Association, 2009.

[78] A. Kemp, A. Bowman, B. Blom, C. Visser, D. Bergoer, D. Fullard, G. Moses, S-L. Brown, J. Bornman, and J-P. Bruwer. "The usefulness of cash budgets in micro, very small and small retail enterprises operating in the Cape Metropolis." Expert Journal of Business and Management, vol 3, pp. 1 – 12, 2015.

[79] D. Coetsee. "The underlying concepts of the definition of a liability in financial reporting: A doctrinal research perspective". South African Journal of Accounting Research, vol. 2020, pp. 1-22, 2020.

[80] J. Mähönen. "Comprehensive approach to relevant and reliable reporting in Europe: A Dream impossible?", Sustainability, vol. 12, pp. 5277 - 5314, 2020

[81] Z. Mbandlwa, and N. Dorasamy. "The impact of substance abuse in South Africa: a case of informal settlement communities". Journal of Critical Reviews; Vol. 7, pp. 1 - 15, 2020.

[82] A.G. Churchill, "Marketing research methodological foundations", New York: The Dryden Press, 1995.

[83] S. Adhikary. "Internship report on "factor influencing customers to open account at EXIM Bank Limited". Bachelor's degree, Daffodil International University, Bangladesh, 2017.

[84] M. Saunders, P. Lewis, and A. Thornhill. "Research Methods for Business Students". 6th ed. Harlow: FT Prentice Hall, 2012.

[85] J. Heaton. "Secondary data analysis". The AZ of Social Research, Sage, London, 2003.

[86] A. Petersen, J-P. Bruwer, and R. Mason. "Source Document Usage and the Financial Sustainability of South African Small, Medium and Micro Retailers". Expert Journal of Business and Management, vol. 8, pp. 110 – 119, 2020.

[87] P.R. Haunschild, and A.S. Miner. "Modes of interorganizational imitation: the effects of outcome salience and uncertainty". Administrative Science Quarterly, vol. 42, pp. 472 – 500, 1997.

[88] H.A. Haveman. "Follow the leader: Mimetic isomorphism and entry into new markets". Administrative science quarterly, vol. 38, pp. 593-627, 1993.

[89] J. Bebbington, R. Gray, and R. Laughlin. "Financial accounting: practice and principles". Cengage Learning EMEA, 2001.

[90] A.C. Edmondson, and S.E. McManus. "Methodological fit in management field research", Academy of Management Review, vol. 32, pp. 1246-1264, 2007.

[91] M. Cristofaro. "Unfolding irrationality: how do meaningful coincidences influence management decisions?". International Journal of Organizational Analysis, 2020.

[92] M.E. Gerber. "The E-Myth Revisited: Why Most Small Businesses Don't Work and What to do About it", Collins Business, New York, NY, 1995.

[93] M. Haffar, and C. Searcy. "Target- setting for ecological resilience: Are companies setting environmental sustainability targets in line with planetary thresholds?". Business Strategy and the Environment, vol. 27, pp. 1079-1092, 2018.

[94] S.N. Cory, and B.R. Envick. Teaching sound financial decision making: Can the GAAP cash flow statement mislead?. In Allied Academies International Internet Conference, Vol. 12, pp. 14 - 18, 2010.

Subsidiary Decision-making Autonomy: A Systematic Literature Review of The Determinants

Simone Ambroselli *ambrosel@istat.it*
Istat
Italian National Institute of Statistics
Rome, 00184, Italy

Abstract

Over the past decades, subsidiary's autonomy has emerged as a focal point of research concerning Multinational Corporations (MNCs). The concept of autonomy has influenced the four research streams identified by the scholars within the subsidiary-management literature, Strategy-Structure, Headquarters-Subsidiary Relationships, Subsidiary Roles and Subsidiary Development, albeit with a different degree of intensity. However, despite the high number of contributions concerning this theme, only a few have dealt with the elements determining the autonomy of firms belonging to MNCs and a complete systematization of the empirical studies containing sets of variables able to explain subsidiary autonomy is still lacking. Aiming at contributing to fill this gap, a Systematic Literature Review methodology has been implemented to guarantee a rigorous procedure. The main findings of this paper are the identification of the explanatory elements for the autonomy, named differently by scholars during the forty years of this review, such as determinants, variables, or factors, and a further contribution in clustering them according to common characteristics. Research findings contribute to consolidate and synthetize the results into a comprehensive framework, providing the basis for further directions of future research concerning firm autonomy within business groups.

Keywords: MNCs, Firm Autonomy, Determinants, Systematic Literature Review.

1. INTRODUCTION

Over the past decades, subsidiary's autonomy has emerged as a focal point of research concerning Multinational Corporations (MNCs) (see among others, Garnier, 1982; Hedlund, 1986; Ghoshal and Bartlett, 1990; Birkinshaw et al., 1998; Taggart and Hood, 1999; Young and Tavares, 2004; Manolopoulos, 2006; McDonald et al., 2008; Cavanagh et. al, 2017; Seus, 2021). Broadly speaking, "autonomy may be defined as the degree to which one may make significant decisions without the consent of others" (Brock, 2003: 58). In his book "Centralization and Autonomy", Brooke (1984) proposed that autonomy refers to an organization "in which units and sub-units possess the ability to take decisions for themselves on issues which are reserved to a higher level in comparable organizations" (Brooke, 1984: 9) while in the field of business groups studies, Young and Tavares (2004) developed an improved understanding of the notion of autonomy.

Scholars generally identified the end of the 1970s as the starting point for the subsidiary management literature stream (Gates and Egelhoff, 1986; Birkinshaw and Hood, 1998). Within the subsidiary management literature, four research streams have been identified (Paterson and Brock, 2002; Pisoni et al., 2013; Cavanagh et al., 2017): Strategy-Structure, Headquarters-Subsidiary Relationships, Subsidiary Roles and Subsidiary Development. The concept of autonomy has influenced all these research streams albeit with a different degree of intensity. In fact, they broadly follow a temporal order moving from centralization aspects related to headquarters (HQs) to subsidiaries and therefore more towards to the autonomy concept. The most relevant contributions to this paper, both theoretical and empirical, are ascribable to the last three streams.

Much of the contributions related to the Headquarters-Subsidiary Relationships stream are mainly quantitative-based (Hedlund, 1981; Garnier, 1982; Gates and Egelhoff, 1986) even if focused in some cases on the concept of centralization. Subsidiary Roles stream of research started from the seminal work by White and Poynter (1984). According to their findings, subsidiaries may have different roles within the MNC network and several contributions in the literature followed this first attempt to update and propose new roles for the subsidiaries (see among others, Bartlett and Ghoshal, 1986; Jarillo and Martinez, 1990; Birkinshaw and Morrison 1995). Finally, interesting contributions related to the autonomy concept derive from the subsidiary's initiative and development research stream (Birkinshaw and Hood, 1998; Birkinshaw et al., 1998; Ambos et al., 2010; Dörrenbächer and Gammelgaard, 2016).

However, despite the high number of contributions concerning this theme, only a few have dealt with the elements, named by scholars in different ways such as determinants, variables, factors, characteristics, measures or antecedents, useful in explaining the autonomy of firms belonging to MNCs and a complete systematization of the empirical studies containing sets of them is still lacking. For the sake of clarity, it is important to highlight that two recent and useful contributions have been made by Pisoni et al. (2013) and Dut (2013). However, different aims, methods and search strategies adopted limit the overlapping risks. In the former case, scholars did not adopt a systematic approach while the latter followed a narrow systematic approach focusing on highly ranked journals publishing research on subsidiaries and MNCs and limiting the period from January 2000 to June 2013. Moreover, these two contributions and other conceptual (Manolopoulos, 2006) and empirical (Gammelgaard et al. 2012) investigations have provided their own way of grouping the elements that can explain the autonomy according to their research purposes, but these results need to be improved to build a broader framework.

The contributions of the paper are in expanding the knowledge on the field of studies concerning MNCs and autonomy by looking at the literature findings over a period of forty years (1980-2019) and updating the model for interpreting the determinants of subsidiary decision-making autonomy. Therefore, the purpose of this paper is to answer the following research questions: *What are the elements that explain the autonomy of firms belonging to MNCs? How these elements can be grouped?*

Aiming at contributing to fill this gap, a Systematic Literature Review (SLR) methodology has been implemented to assess the variables useful to explain the degree of decision-making autonomy of a subsidiary. This approach guarantees a replicable, scientific, and transparent process (Tranfield et al., 2003) in comparison to samples selected via purely subjective criteria, as underlined by Newbert (2007).

For what concern the present study, research strings queried on two databases (EBSCO and Scopus) combine three basic elements, i) the determinants of ii) autonomy in decision-making iii) within MNCs. A total of 28 empirical contributions have been systematized. In order to cover the different facets of the topic under analyses and guarantee a comprehensive and rigorous research strategy, keywords have included a wide set of words related to those three basic elements.

The present work contributes to consolidating and synthetizing the results into a comprehensive framework and exploiting prior literature findings in order to identify the elements and the mechanisms that influence the phenomenon under analyses (Edmondson and McManus, 2007). The main findings are the identification of the explanatory elements of the autonomy used by scholars during the forty years of this review, and a further contribution in clustering them according to common characteristics. Both theoretical and practical implications emerged from this study and a conceptual framework has also been presented to support future research on the field.

The paper is organized as follows: section two illustrates the different streams of research concerning autonomy within MNCs. The research methodology is summarized in section three while section four reports the research results. Section five identifies and discusses the main findings of the articles in the sample in terms of groups of variables and highlights the contributions. Section six concludes suggesting directions for further research.

2. THEORETICAL BACKGROUND

This section contains the conceptual background of the concept of autonomy within the subsidiary management literature stream of research.

Concerning subsidiary autonomy related literature, Young and Tavares (2004) in their seminal work proposed the following comprehensive definition: “the constrained freedom or independence available to or acquired by a subsidiary, which enables it to take certain decisions on its own behalf” (Young and Tavares 2004: 228). Starting mainly from this contribution, decision-making at a subsidiary level became the common denominator of other definitions of autonomy proposed in the literature (see among others, McDonald et al, 2008; Ambos et al. 2010; Gammelgaard et al. 2011). In a more concise way, the subsidiary autonomy has been also defined as “the extent to which the subsidiary can make decisions about its business operations” (Schüler-Zhou and Schüller, 2013: 330).

In a recent work to document the rise of autonomy in subsidiary management literature, Cavanagh et al. (2017) conducted a systematic literature review focusing on key articles published in leading international business and management journals until 2016. Besides Young and Tavares (2004) article, the second seminal paper they used as starting point for their research was by Paterson and Brock (2002) that is focused on subsidiary management literature stream of research. According to the latter contribution, four research streams have been identified: Strategy-Structure, Headquarters-Subsidiary Relationships, Subsidiary Roles and Subsidiary Development. Subsidiary autonomy received less or much attention according to the different streams and periods.

In the Strategy-Structure model, the ability of the subsidiary to undertake strategic decisions and actions is generally neglected because strategy is designed and determined by the MNC headquarters. According to Birkinshaw and Hood (1998) within this literature stream the basic assumption, mainly based on (Vernon, 1966) and (Johanson & Vahlne, 1977), is that “the subsidiary is an instrument of the MNC and, consequently, … it acts solely with regard to head-office-determined imperatives (Birkinshaw and Hood, 1998: 775).

Interesting contributions related to the Headquarters-Subsidiary Relationships emerged during the 1980s. Much of these contributions, even if focused in some cases on the concept of centralization, were mainly quantitative (Gates & Egelhoff, 1986; Garnier, 1982; Hedlund, 1981) and investigated the dyadic relationship between the subsidiary and the head office (Pisoni et al., 2010). According to Brock (2003), autonomy and (de)centralization are two related constructs but autonomy refers to *the extent* of decision-making authority of an organization while centralization concerns *the locus* of decision-making authority in an organization that means “the extent to which decision-making is concentrated in a single point or diffused throughout the organization” (Brock, 2003; 61). Consequently, the variables able to measure both the concepts may be the same and for the purpose of this paper, centralization and decentralization have been added in keywords list.

Subsidiary roles research stream has been widely explored by scholars. Starting from the seminal contribution of White and Pointer (1984), the unit of analysis shifted from the headquarters to the subsidiaries. According to their findings, subsidiaries may have different roles within the MNC network and several contributions in the literature followed this first attempt to update and propose new roles for the subsidiaries (see among others, Bartlett and Ghoshal, 1986; Jarillo and Martinez, 1990; Birkinshaw and Morrison 1995, Ambos et al. 2020). These studies are strictly related to the theories in which subsidiaries are treated as nodes within a complex network of relationships, both inside and outside the MNC (Hedlund, 1986; Ghoshal and Bartlett, 1990; Forsgren et. al., 1999; McDonald et al., 2008). In the perspective of ‘Transnational organization’ of an MNC (Bartlett and Ghoshal, 1989) the resources of an MNC, seen as a portfolio of differentiated, but interdependent subsidiaries, are distributed geographically and each subsidiary control part of them (Rugman et al., 2011).

Finally, interesting contributions related to the autonomy concept derive from the subsidiary's initiative and development research stream (Birkinshaw and Hood, 1998; Birkinshaw et al., 1998; Ambos et al., 2010; Dörrenbächer and Gammelgaard, 2016). In his seminal work, Birkinshaw (1997) defined the initiative as "a discrete, proactive undertaking that advances a new way for the corporation to use or expand its resources" (Birkinshaw, 1997: 207) and identified four types of subsidiaries initiatives: global, local, internal and global-internal hybrid. In fact, as showed by Raziq et al. (2014) distinguishing types of initiatives is important to evaluate the impact on autonomy of different types of subsidiary initiatives as HQs may prefer some of them to others and, therefore, have different consequences for the autonomy of the subsidiaries.

Manolopoulos (2006) made a conceptual investigation on the concept of autonomy in the subsidiary management research. He defined the subsidiary autonomy as "the degree to which an MNC subunit may make significant decisions, referring to the whole spectrum of inter-and intra-firm relationships, with or without the consent of the HQs" (Manolopoulos, 2006: 49). According to his findings, subsidiary autonomy extent depends on the subsidiary's relationships with the HQs, the other subunits of the MNE group, and its embedded environment. Therefore, the variables able to explain the subsidiary autonomy generally concern the characteristics of the parent company, the subsidiary, and the institutional environment (De Jong and Dut, 2010; Pisoni et al. 2010). According to Gammelgaard et al (2011, 2012), autonomy is connected to intra-organizational relationships, both vertical linkages (parent-subsidiary) and lateral linkages (subsidiary-subsidiary) (Birkinshaw and Morrison, 1995), and inter-organizational relationships that are the links that the subsidiary has with its environment.

However, despite the high number of contributions concerning the concept of autonomy, only a few have dealt with the elements that determine the autonomy of firms belonging to MNCs. In many cases, autonomy level has been directly derived from surveys to managers (Birkinshaw et al. 2008; McDonald et al., 2008; Ambos et al., 2010; Golini et al., 2016) and synthetized by point scales values while, in other cases, autonomy or related concepts have been considered as an explaining variable for other topics, mainly R&D (see among others, Taggart, 1998; Iwata et al. 2006; Manolopoulos et al. 2007, Kim and Kim 2020). Moreover, scholars generally tend to consider MNCs as a whole to be investigated globally also for other interesting related concepts as shown recently, for example, for Corporate Social Responsibility and decision-making process (Dixit et al., 2020) or corporate governance aspects and performance (Alhaj, 2019).

For what concern the present study, the main recent and useful contributions have been made by Pisoni et al. (2013) and Dut (2013). The former paper presents an interesting literature review of the main contributions concerning the evaluation of the variables that indicate the level of autonomy of subsidiaries of internationalizing companies. The latter contains a systematic approach to reviewing relevant theoretical and empirical studies in the context of subsidiary's decision-making autonomy.

Pisoni et al. (2013) summarized the most important variables used by scholars to explain the subsidiary autonomy. They considered 33 papers from 1971 and 2012 and the number of contributions for decade was quite homogeneous (six papers for the 1970s, eight for 1980s, nine for 1990s and seven for 2000s). Papers related to the Headquarters-Subsidiary Relationships literature stream were fourteen, but they contributed mostly in terms of different variables proposed to explain and measure the concept (sixteen out of twenty), demonstrating as the early research were mainly empirical and quantitative. Main theoretical implications of this research have been the adoption of a three-way grouping of the variables, subsidiary, parent and environmental characteristics, and the suggestion of a way to contribute on this field by focussing on different phases of the value chain and roles carried out by the subsidiaries. According to their findings, the most common variables used by scholars have been "subsidiary size" (13 empirical studies) and "subsidiary age" (10) followed by the "percentage of subsidiary social capital owned by the headquarters" (7) and "subsidiary performance" (7). Generally, those variables were publicly available on financial statements and/or commercial database explaining mostly their success in empirical studies. Only three variables considered by those authors were referred to exogenous aspects, such as, "economic development of subsidiary country" (3), "political stability in the subsidiary's country" (1), and "degree of uncertainty with respect to local environment" (1) while two concerned the distance (physic and geographic). The rest of the variables were the following: "degree of concentration in the subsidiary's market" (3), "mode of establishment" (2), "subsidiary market share" (1), "level of information owned by the subsidiary" (1), "subsidiary dependence on headquarters' product range" (1), "belonging to large international network(s) (1)", "technology transferred from the headquarters" (1) and "pursuit of strategic aims at subsidiary's local market level" (1), "% of purchase from headquarters" (1), "% of subsidiary export" (1) and "Industry" (1).

Dut (2013) adopted a narrower systematic approach to reviewing relevant theoretical and empirical studies on the field focusing first on highly ranked journals publishing research on subsidiaries and MNEs and limiting the period from January 2000 to June 2013. The selection was made according to a set of keywords, such as, subsidiary decision-making autonomy, subsidiary centralization/decentralization, decision-making autonomy, autonomy, decision-making authority, control, multinational, MNE, and subsidiary. The result was of eighteen empirical studies focused on the determinants of subsidiary decision-making autonomy, and thirteen studies on the consequences of subsidiary decision-making autonomy. The author evaluated the existing theories used in the context of subsidiary's decision-making autonomy, such as the integration responsiveness framework (Prahalad and Doz, 1987), resource dependence theory (Pfeffer and Salancik, 1978), business network theory (Andersson & Forsgren, 1996), agency theory (Jensen and Meckling, 1976), institutional theory (Meyer and Rowan, 1977), information-processing theory (Galbraith, 1973), providing a theoretical framework useful for developing further research on the topic.

For the purpose of this research, our interest is on the studies aiming at explaining the drivers that determine differences in decision-making autonomy. Based on the most common characteristics of the independent variables used in these empirical studies, he classified the determinants of decision-making autonomy in five clusters distinguishing between the "determinants that relate to the strategic role of the subsidiary, organizational complexity, decision- and control structure, general MNE characteristics, and industry- and country-level features" (Dut, 2013: 31). According to his findings, variables related to the strategic roles have been used in 13 studies (out of 18) and have been related to the concept of internal embeddedness (or its opposite, external embeddedness) of the subsidiary in the MNC, proxied by variables, such as, subsidiary's level of integration in value chain, subsidiary's level of host market orientation, percentage of subsidiary's purchases from parent, percentage of subsidiary's sales to parent, subsidiary's level of market share (market scope), subsidiary's scope of activities, level of reverse transfer of knowledge to parent, innovativeness and mandate. Measuring the organizational complexity (16 studies) has been anchored to size variables, MNC or subsidiary, degree of product or geographic diversification, subsidiary's research competence (R&D over sales), subsidiary's marketing capabilities, subsidiary's level of product specialization, and information owned by subsidiary. Eleven studies have also considered aspects related to decision and control, such as, number of parent's representatives on subsidiary's board, extent of parent ownership in foreign subsidiaries, mode of entry (greenfield over acquisition), subsidiary management, and monitoring of headquarters. Other general characteristics of the MNC (14 studies) have been fully exploited both on subsidiary side such as performance, language competence, location, age and exports, and parent side such as, international experience, legal status (state ownership), product division structure, area division structure, and international division structure. Finally, variables on industry and country level have been considered for 13 studies, in terms of sectors, functions, home and host environments, local's managers perceptions, and cultural distance.

The conceptual framework derived from this section guided me in the development of the research strategy.

3. METHODS

The present section describes in depth the methodology adopted for this study.

In order to assess the elements useful to explain the degree of decision-making autonomy of a subsidiary, this study grounded on a Systematic Literature Review (SLR). This approach was chosen as it is more objective by adopting a replicable, scientific, and transparent process (Tranfield et al., 2003) in comparison to samples selected via purely subjective criteria, as underlined by Newbert (2007). Scholars generally identified the end of the 1970s as the starting point for the subsidiary management literature stream (Birkinshaw and Hood, 1998; Pisoni et al., 2013). Therefore, the field is in its maturity and it is possible to use the SLR to exploit prior literature findings and identify the elements and the mechanisms that influence the phenomenon under analyses (Edmondson and McManus, 2007). According to the aim of the paper, SLR appears also as the most suitable research design to consolidate and synthetize the results into a comprehensive framework (Cristofaro, 2019).

The research methods of our work basically conform to those adopted in several recent reviews on various management topics (Newbert, 2007; Cafferata et al., 2009; Mari and Poggesi, 2013; Abatecola et al., 2013; Hoque, 2014; Leoni, 2015; Hansen and Schaltegger, 2016; Di Tullio et al. 2018; Hristov et al., 2021). The systematic approach for the review relied on the following set of criteria:

1. Search the Business Source Complete (EBSCO) and Scopus databases;
2. Search for peer-reviewed published journal articles in English, only;
3. Ensure substantive relevance by requiring that selected articles contained at least one of the following primary keywords in their abstract: ‘autonomy’, ‘centralization’ and ‘decentralization’;
4. Ensure substantive relevance by requiring that selected articles contained at least one of the following additional keywords in their abstract: ‘business group*’, ‘mne*’, ‘mnc*’, ‘corporation*’, ‘subsidiary*’, ‘parent-subsidiary*’, ‘holding*’, ‘headquarter*’ and ‘head office*’; the asterisk at the end of a search word allows for different suffixes (i.e., subsidiary or subsidiaries);
5. Ensure substantive relevance by requiring that selected articles contained at least one of the further additional keywords in their abstract: ‘factor*’, ‘determinant*’, ‘variable*’, ‘characteristic*’, ‘measure*’ and ‘antecedent*’;
6. Consolidate results from EBSCO and Scopus and eliminate duplicate articles;
7. Ensure substantive context by reading all remaining abstracts in order to evaluate their connection with the research topic;
8. Ensure substantive and empirical relevance by reading all remaining articles in their entirety in order to obtain papers aligned to the research goals with an adequate empirical content (i.e., statistical analyses);
9. Build the final dataset applying a reference and citation tracking (snowballing technique) in order to include any other possible relevant publications.

As shown in the previous section, subsidiary-autonomy concept emerged within the Headquarters-Subsidiary Relationships literature stream during the 1980s and, consequently, databases have been queried for a total period of forty years (1980-2019). Concerning criterion 2, restricting the present search to journal articles published in ‘scholarly’ journals, increased the quality of the articles returned “due to the rigorous peer review process to which articles published in such journals are subjected prior to publication” (Newbert, 2007: 125).

Phase	Description	EBSCO Result	Scopus result	Total
3	All articles containing the primary keywords in their abstract	13,898	6,500	20,398
4	All articles containing at least one of the additional keywords in their abstract	532	431	936
5	All articles containing at least one of the additional keywords in their abstract	170	154	324
6	Consolidation and removal of duplicates			225
7	Reading of abstracts			59
8	Full-text reading			25
9a	Snowballing technique			+5
9b	Removing similar articles			- 2
			Final dataset	**28**

TABLE 1: The Systematic Literature Review process: summary of selection criteria.

The logic underlying the research grounds on the combination of three basic elements: autonomy in decision-making, MNC's subsidiaries and variables able to explain the presence or the development of the autonomy (see Appendix 1 for the complete strings of research). During the forty years considered for this review, some of the above-mentioned topics have been named differently (i.e., MNC or MNE), new areas of investigation emerged (i.e., business groups, parent-subsidiary relationships) and some fields of research have had alternating fortunes (headquarters vs subsidiaries, centralization/decentralization vs autonomy). In addition, explanatory elements for the autonomy have been named differently according for example to the statistical methods adopted (factor, measure, variable). Therefore, the keywords to ensure substantive relevance (steps 3-5) include a wide set of words to cover the different facets of the topics and guarantee a comprehensive research strategy.

Articles found in both the databases have been removed (step 6) before reading abstracts (step 7) and full articles (step 8). Results of step 8 do not include two articles based on the same data and with similar results of other two already included in the selection. Five articles have been added based on reference and citation tracking (step 9a). After that, two selected articles have been removed to make way for two much more complete articles by the same authors (step 9b).

At the end of the process, only articles that contain a set of variables (or similar terms, as descripted in step 5) able to explain the decision-making autonomy (step 3) of a unit belonging to an MNC (step 4) have been considered. Articles that did not meet these conditions were deleted from the dataset.

Table 1 shows the number of articles returned from this methodology at each step from steps 3 through 9b, with a final sample size of 28. According to recent literature contributions, this sample could be compared in size with the outputs of Pisoni et al. (2013), 33 papers, and Dut (2013), 18 papers. It should be noted that in the former case, scholars did not adopt a systematic approach while the latter followed a narrow systematic approach focusing first on highly ranked journals publishing research on subsidiaries and MNEs and limiting the period from January 2000 to June 2013.

In summary, the systematic approach returned me 28 articles in the final sample that have been analysed in the following sections.

4. RESULTS

Descriptive analyses of the articles in the sample are shown in this section. Papers have been analysed according to several aspects including year of publication, journals and research area, citations, main theme, research method and typology of the variables.

The final sample consisted of 28 contributions from 1981 to 2019. As described in the previous section, results of step 8 initially identified 27 papers but contributions from Alharbi et al. (2016) and Pisoni et al. (2010) have been excluded as virtually similar, for what concern the purposes of this research, to Singh et al. (2016) and Pisoni et al. (2013). Two authors, Hedlund and Welge, produced several contributions concerning autonomy and MNCs during the end of the 1970s and the beginning of the 1980s. According to the results of the snowballing technique (step 9b) the most complete papers of the two authors has been found in the volume ‘The Management of Headquarters–Subsidiary Relations in Multinational Corporations’ (Otterbeck, 1981). Due to the relevance of these two contributions the other two selected papers by the same authors have been removed (Hedlund, 1980; Welge, 1982).

The main elements of the selected articles are summarized in Appendix 2. The SLR of this study covered a period of forty years. For what concern our research themes, most of the contributions has been found in the last ten years (14 articles) following two decades in which only 4 papers have been selected each. The rest of 6 studies has been conducted during the 1980s. The year with the highest number of contributions has been the 2013 (5 articles). For the rest, one or two papers maximum have been found for each year. In details, Figure 1 shows the article distribution on a five-years basis.

Research method distribution is presented in Figure 2. Three main methods have been found, studies based on surveys, archival data and multi-case studies. Generally published documents and archival data were also used to supplement the results of questionnaires and interviews. Contribution of Gates and Egelhoff (1986) combined archival data and interviews and for the purposes of this study was considered as a wide multi-case study.

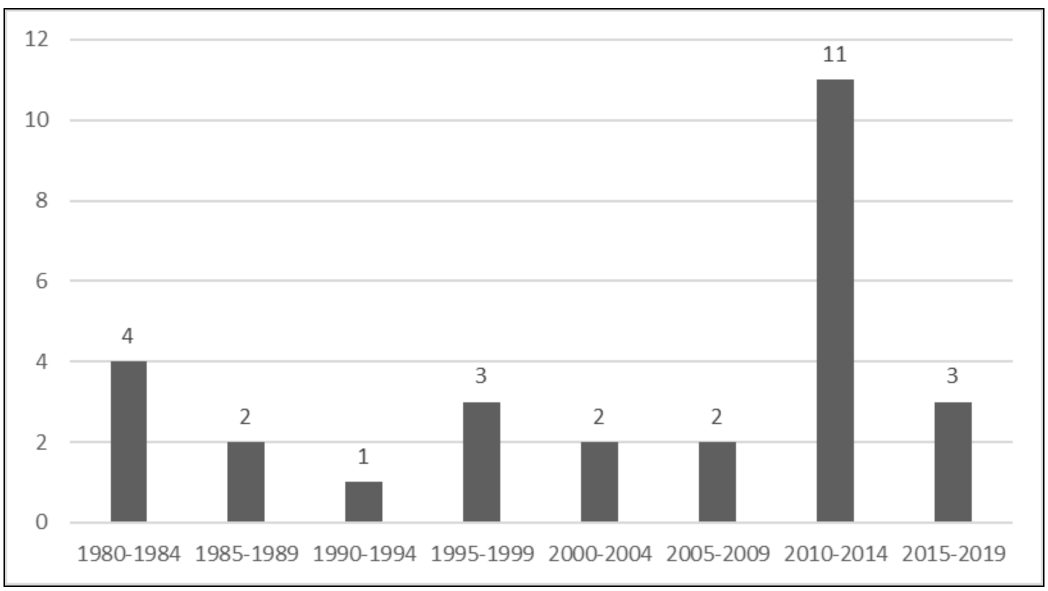

FIGURE 1: Article distribution on a five-years basis.

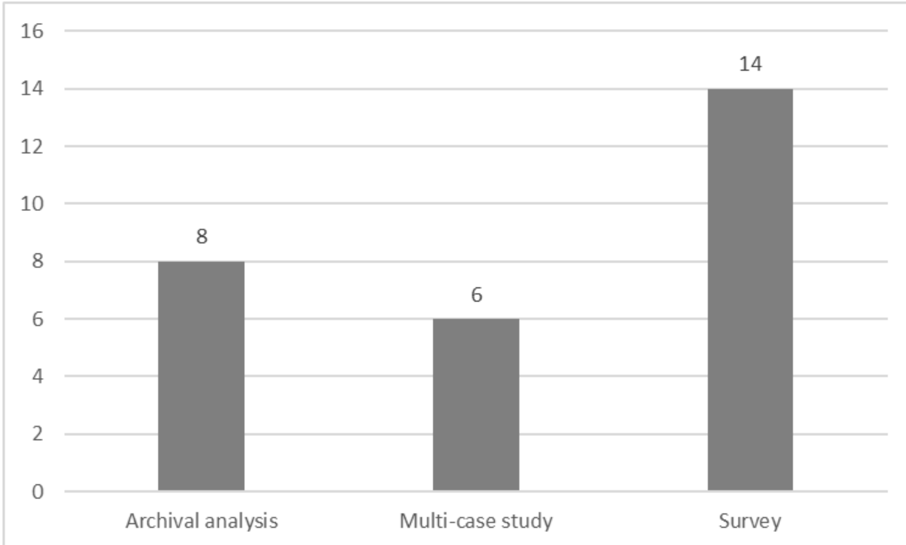

FIGURE 2: Article distribution by research method.

In terms of authors, 63 scholars contributed to conduct the selected studies. On average, just over two authors per article (maximum 4 in two cases) while six papers have been written by one author. It is interesting to note that 'sole' contributions have characterized mainly the first decade (4 contributions out of six) while starting from 2000 papers have been always drafted by two authors at least. Authors appear in one article only except for N. Hood who contributed to two papers (Young et al, 1985; Taggart and Hood, 1999).

Concerning the geographical distribution, it is possible to evaluate both home and host countries. In terms of home Countries, MNCs have been based on 22 different countries but the number is potentially higher considering that two contributions generically refer to EU and 6 to various Countries. MNCs from US are the most investigated (6 times) followed by UK, Germany and Italy (4 cases), Japan and Sweden (3) and Belgium, China, Denmark, Finland, France, the Netherlands and Switzerland (2). Rest of the Countries appears one time (Australia, Austria, Canada, Greece, Ireland, Norway, Portugal, Spain, Taiwan). Therefore, studies of the determinants of the subsidiary autonomy have been mainly produced for Europe and North America MNCs while studies from Asia and Oceania are present to a limited extent. Subsidiaries have been examined in 32 different countries while in 7 cases host countries have been not identified: in 4 cases hosts were based on many and various countries while in the other 3 cases the reference was to geographic areas (2 EU and 1 Mercosur). Concerning host countries, also other areas appear such as South and Central America (Argentina, Brazil, Mexico), Middle East (Saudi Arabia) and central eastern Europe (Bulgaria, Estonia, Czech Republic, Poland, Slovak Republic).

Except for Hedlund (1981) and Welge (1981), 26 papers have been published in 22 different journals (Table 2) covering various research areas and disciplines. International Business Review has the highest frequency (3) followed by Journal of International Business Studies (2) and Strategic Management Journal (2) while all the other journals appear one time. Based on the related journals, papers have been divided into four main areas of interest (Hristov et al., 2021): international business, general management, strategic management and marketing. International business research area contains the highest number of contributions (9) published in 6 different journals.

Journal	**Frequency**
International business	***9***
International Business Review	3

Journal of International Business Studies	2
Columbia Journal of World Business	1
Journal of Transnational Management	1
Management International Review (MIR)	1
Multinational Business Review	1
General management	***6***
Academy of Management Journal	1
Asian Business & Management	1
Benchmarking: An International Journal	1
European Management Journal	1
Journal for East European Management Studies	1
Problems and Perspectives in Management	1
Strategic management	***3***
Strategic Management Journal	2
Long Range Planning	1
Marketing	***2***
Journal of Global Marketing	1
Journal of International Marketing	1
Others	***6***
Human Resource Management Journal	1
Information & Management	1
International Labour Organization Working papers	1
Journal of Accounting, Auditing and Finance	1
Journal of Manufacturing Technology Management	1
University of Tartu - Faculty of Economics & Business Administration Working Paper Series	1

TABLE 2: Distribution of the articles by journal and research area.

The articles with more than 20 citations in the database Scopus are in Table 3 (source Scopus - July 2021). Kobrin (1991) with his integration index has the highest number of citations. Having no direct data on citations in the database for most of the contributions produced in the 1980s, articles have been searched within references to obtain a *proxy* value.

Authors	**Citations**	**Year of publication**	
Kobrin	400	1991	
Gates and Egelhoff	146	1986	*
Fenton-O'Creevy, Gooderham and Nordhaug	114	2008	
Hedlund	95	1981	*
Taggart and Hood	77	1999	
Young, Hood and Hamill	46	1985	*
Garnier	35	1982	*
Williams and van Triest	33	2009	
Picard and Boddenwyn	29	1998	
Vachani	28	1999	
Mirchandani and Lederer	21	2004	
Belizon, Gunnigle and Morley	20	2013	

* *Search within references*

TABLE 3: Number of citations per article (more than 20) in Scopus.

From a terminological point of view, the unit of analysis of the articles of the sample have been named very heterogeneously. In total, 32 unit of analysis have been found for the 28 studies and subsidiaries and MNCs have registered the highest frequencies, 10 and 7 cases, respectively. In 4 cases two levels of selection have been used: MNCs and subsidiaries. 'Firms' reference has been used 6 times mainly combined with other words such as manufacturing (4) and listed (1). 'Companies' and 'MNEs' have been sampled 2 times each while 'Affiliates', 'Branches', 'Corporations', 'Dyads' and 'Groups' have been used one time each. By 'Dyads', Homburg and Prigge (2014) have considered the headquarters-subsidiary relationship as the unit of analysis. Very interesting the fact that only the most recent selected article (Belenzon et al., 2019) based the selection on corporate 'Groups'.

During the last forty years, scholars used various ways to indicate the explanatory elements for the subsidiary's autonomy and in 8 cases they used more than one word. Concerning the keywords adopted for the searching strategy (see Section 3, point 5) the results are the following: 'variables' (12 times), 'determinants' and 'factors' (10), 'measures' and 'characteristics' (2) and 'antecedents' (1). According to these findings, the term 'variable' has been used in Table 5 and in the rest of the article. An overview of the results in terms of variables, findings, main aspects and theories for all the selected articles are summarized in Appendix 2.

Articles have been grouped according to the main aspects underlying the studies: autonomy, centralization/decentralization and mixed references (Table 4). In the first case, papers referring to the 'autonomy' concept, 15 studies have been found starting from 1981 to 2014 while for the second cluster, 8 contributions from 1981 to 2018. Finally, mixed references and further related concepts such as integration and control, have been found in 5 studies.

According to the results of the review, a total of 251 variables useful for the purposes of this research has been found (Appendix 2). On average, authors used about 9 variables to explain subsidiary's autonomy with a minimum of 3 variables (Miozzo and Yamin, 2012; Fenton-O'Creevy et al., 2008) and a maximum of 22 (Garnier, 1982). Considering only contributions produced during the first two decades, mainly characterized by empirical papers, the average number of variables analysed by scholars increases (12) and, besides of Garnier (1982), other 5 studies dealt with more than 10 variables: 21, Hedlund (1981); 15, Gates and Egelhoff (1986) and Picard and Boddewyn (1998); 11, Young et al. (1985) and Taggart and Hood (1999). During the last 20 years, articles contained on average 7 variables; contributions with the highest frequencies have been the following: 18, De Jong and Dut (2010); 13, Chiao and Ying (2013); 11, Schüler-Zhou and Schüller (2013).

Authors	**Year**	**Main aspect**
Hedlund	1981	Autonomy
Garnier	1982	Autonomy
Yunker	1983	Autonomy
Taggart and Hood	1999	Autonomy
Vachani	1999	Autonomy
Männik, Hannula and Varblane	2004	Autonomy
Mirchandani and Lederer	2004	Autonomy
De Jong and Dut	2010	Autonomy
Belizon, Gunnigle and Morley	2013	Autonomy
Chiao and Ying	2013	Autonomy
Pisoni, Fratocchi and Onetti	2013	Autonomy
Raziq, Borini, Perry and Battisti	2013	Autonomy
Schüler-Zhou and Schüller	2013	Autonomy
Gilbert and Heinecke	2014	Autonomy

Homburg and Prigge	2014	Autonomy
Welge	1981	Coordination/Decentralization
Young, Hood and Hamill	1985	Coordination/Decentralization
Gates and Egelhoff	1986	Centralization
Williams and van Triest	2009	Decentralization
Loppacher, Cagliano and Spina	2010	Centralization
Miozzo and Yamin	2012	Centralization
Aoki and Miyajima	2012	Decentralization
Liu, Luo, and Yue	2018	Decentralization
Kobrin	1991	Integration
Picard and Boddewyn	1998	Centralization/Autonomy
Fenton-O'Creevy, Gooderham and Nordhaug	2008	Autonomy/Centralization
Singh, Wood, Alharbi and Darwish	2016	Control/Autonomy
Belenzon, Hashai and Patacconi	2019	Autonomy/Decentralization

TABLE 4: Clusters by main concept.

Finally, variables have been grouped according to their typology (Table 5). Apart from 4 specific variables concerning human resources (Belizon et al., 2013), 12 clusters of variables have been formed: age, size, industry, entry mode, nationality of the parent and ownership, control and coordination tools, internal embeddedness, diversification, geographical aspects, external environment, other variables for the subsidiary level and other variables for the MNC level (Appendix 3).

Articles	**Cl. 1**	**Cl. 2**	**Cl. 3**	**Cl. 4**	**Cl. 5**	**Cl. 6**	**Cl. 7**	**Cl. 8**	**Cl. 9**	**Cl. 10**	**Cl. 11**	**Cl. 12**	**Total**
Hedlund (1981)		x					x	x	x	x	x	x	7
Welge (1981)	x	x		x	x								4
Garnier (1982)	x	x		x		x	x		x	x	x	x	9
Yunker (1983)		x						x	x	x		x	5
Young, Hood and Hamill (1985)	x	x	x	x	x	x	x				x		8
Gates and Egelhoff (1986)	x	x	x		x		x	x		x		x	8
Kobrin (1991)							x					x	2
Picard and Boddewyn (1998)		x							x	x			3
Taggart and Hood (1999)	x	x	x		x		x	x			x	x	8
Vachani (1999)								x	x			x	3
Männik, Hannula and Varblane (2004)		x	x		x								3
Mirchandani and Lederer (2004)		x			x			x					3
Fenton-O'Creevy, Gooderham and Nordhaug (2008)	x						x			x			3
Williams and van Triest (2009)		x	x		x					x		x	5
De Jong and Dut (2010)	x	x			x		x	x		x	x	x	8
Loppacher, Cagliano and Spina (2010)						x				x		x	3

Miozzo and Yamin (2012)			x			x				x			3
Aoki and Miyajima (2012)		x			x	x							3
Belizon, Gunnigle and Morley (2013)	x	x	x			x				x			5
Chiao and Ying (2013)	x	x	x	x			x			x	x	x	8
Pisoni, Fratocchi and Onetti (2013)		x		x						x			3
Raziq, Borini, Perry and Battisti (2013)	x	x	x	x						x		x	6
Schüler-Zhou and Schüller (2013)	x	x	x		x		x			x	x	x	8
Gilbert and Heinecke (2014)									x				1
Homburg and Prigge (2014)		x					x		x	x	x		5
Singh, Wood, Alharbi and Darwish (2016)	x	x	x		x				x		x		6
Liu, Luo, and Yue (2018)		x											1
Belenzon, Hashai and Patacconi (2019)			x			x			x	x	x		5
Total	12	21	12	6	11	7	11	7	9	17	10	13	-

Cl. 1 = Age; Cl. 2= Size; Cl. 3 = Industry; Cl. 4 = Entry mode; Cl. 5 = Nationality of the parent and ownership; Cl. 6 = Control and coordination tools; Cl. 7 = Internal embeddedness; Cl. 8 = Diversification; Cl. 9 = Geographical aspects; Cl. 10 = External environment; Cl. 11 = Other variables for the subsidiary level; Cl. 12 = Other variables for the MNC level.

TABLE 5: Articles and clusters of variables.

Subsidiary age has been one of the most used variables: 12 papers have considered this information in the set of variables able to explain subsidiary's autonomy (in one case it is indicated in terms of "year of establishment"). Data concerning the size, mainly expressed in terms of employment, have been used in 21 articles. Sales and foreign operations also have been used but to a letter extent. Unlike the age that has always been referred to the affiliates, the size variables used by scholars have been also associated to the parent company, the entire MNC or expressed in relative size (subsidiary relative size, subsidiary's sales expressed as a percent of parent's overall sales). Industry (or sector or activities) is generally an easy variable to find and scholars have used it in 12 articles mainly referring to subsidiaries but, in two cases, also to the parent company level. The mode of establishment (or the reasons for entering foreign markets) has been applied in 6 cases while control and coordination type variables in 7 studies. Concerning the latter, 3 papers have explicitly referred to the board's composition. The concept of diversification, mainly in terms of products and divisions, has been considered 7 times while geographical aspects have been used in 9 cases. Nationality of the parents and ownership aspects have been processed together even if the former always concerns the parent while the latter may refer to the subsidiary, the parent or outside ownership (local, foreign and institutional investors). The result consisted of 11 articles adopting these kinds of variables. Very interesting are the results concerning internal embeddedness: twenty different variables (generally named as intrafirm flows, internal networks, transfers or dependence) have been used by scholars to synthesize internal relationships covering 11 articles. External environment variables have been used in 17 studies and cover a wide and heterogeneous range of information such as cultural aspects, host country characteristics and risks and external embeddedness of the subsidiary.

Finally, 13 variables concerning the subsidiaries have been grouped as 'others' and other 26 have been labelled as 'others for MNC'. In the first case, the most frequent concepts have concerned the performance of the subsidiaries (4 articles).

To sum up, this section, Appendix 2 and Appendix 3 describe the results of this study in terms of contents and characteristics of the articles derived from the SLR.

5. DISCUSSION

This section summarises the key aspects of the articles in the sample according mostly to the clusters of variables presented in the last section (Table 5 and Appendix 3) that represent one of the main contributions of the present study.

From the research project 'Managing the relations between headquarters and foreign operations in Multinationals' conducted by the Institute of International Business at the Stockholm School of Economics (Otterbeck) from 1975 to 1982, two studies have been considered for this review, Hedlund (1981) and Welge (1981). The overall research project had two main objectives: producing studies for other areas than US and explaining internal mechanisms of multinationals overcoming their formal structures and products.

Hedlund (1981) seminal in-depth study on six Swedish MNCs contained different methods and comparative analysis with MNCs from other Countries for measuring the degree of autonomy. Concerning the determinants of subsidiary autonomy, the research contained the first attempt, for what concern the purposes of the present study, to group the variables according to some characteristics. In this case, the author had the intuition of distinguishing characteristics proper of the MNC system as a whole from those of the subsidiaries. Furthermore, he added another group of variables related in his view to the uncertainties that are referrable to the external environment (such as market conditions, political conditions, labour markets). According to the clusters presented in the previous section, the study is chronologically the first considered for the 'autonomy' macro-theme while in terms of groups of variables the article resulted very rich containing variables of 7 typologies. In fact, it is possible to further distinguish inside the macro-characteristics the author adopted. Size and other variables are considered for both the MNC level and the subsidiary level but, according to the framework adopted in the present study, some characteristics are more specifically attributed to geographical, diversification and internal embeddedness aspects. The latter aspect mainly explained by 'inter-unit dependency' resulted very important to explain the subsidiary autonomy.

Welge (1981) in his study of six German chemical MNCs introduced a parallel between coordination intensity and centralization/decentralization concepts. According to their typology, four kinds of variables have been recognized, age, size, mode of establishment and ownership. The latter three have been recognized as important factors of influence concerning the interrelations between internal context and headquarter-subsidiary design.

For what concern the autonomy aspect, Garnier (1982) study has been based on a large set of variables belonging to a great variety of typologies (9 in total) finding that degree of interchange of products, ownership, workflow integration, and size factors can be considered as the best predictors of the degree of autonomy. Control and coordination variables such as the number of parent company's representatives on affiliate's board, have been used. The use of two variables to measure the internal embeddedness, 'percentage of affiliate's sales going to parent' and 'percentage of affiliate's purchases coming from parent', represented a very interesting innovation to investigate intra-flows from both sides, parent and subsidiary.

Mainly size aspects, also in terms of number of country presence, constitute the set of variables adopted by Yunker (1983) in her study concerning autonomy and corporate and environment characteristics.

Young et al. (1985) in their study on foreign-owned multinational subsidiaries in the UK considered 11 variables able to influence the degree of centralization/decentralization of decision-making within MNCs. It is possible to recognize 8 different kinds of variables: size, age, ownership aspects, mode of establishment, industry, internal flows, coordination tools, subsidiary performance and other MNC characteristics. According to their findings, greater centralisation is linked to subsidiary size, integration and multinationality of the parent company.

Although focused on centralization, the study of Gates and Egelhoff (1986) has been the first in citing Hedlund (1981) and Garnier (1982) and using part of their results in defining their set of variables. The result is of 15 variables distinguished according to the proposed framework in 8 different types including nationality and ownership, diversification, environmental aspects and intra-company relationships. Concerning the results, the authors found a relationship between centralization and measures of company-level complexity and less for what concern the subsidiary-level variables.

The study of Kobrin (1991) on the concept of global integration has been mainly focused on intrafirm flows. In particular, flows have been considered according to three perspectives: affiliate to parent, affiliate to affiliate and parent to affiliate.

Although the article of Picard and Boddewyn (1998) was explicitly focused on international-marketing decision-making some interesting elements have been found for autonomy and centralization aspects. In particular, the authors distinguished the company variables from those related to environmental aspect. Concerning the latter, they found 12 different features to be considered.

After the study of Yunker (1983) new articles related to the macro-theme 'autonomy' appeared after 16 years. Taggart and Hood (1999) and Vachani (1999) are very different studies. The former, is assimilable to the contributions produced in the 1980s while the latter is more focused on only one aspect, the global diversification. Taggart and Hood (1999) used 11 variables that according to the clusters defined in the previous section are attributable to 8 typologies: age, size, diversification ('market scope'), industry, other for subsidiaries ('complexity of R&D activity at the subsidiary'), other for MNCs ('export propensity'), ownership and internal flows. For the latter aspect, although based on other premises and sources, as done by Kobrin (1991), relationships among sister companies have been considered. Vachani (1999) specifically examined the linkage between components of global diversification and subsidiary autonomy and diversification and geographical related variables have been mainly used.

Männik et al. (2004) and Mirchandani and Lederer (2004) focused on autonomy but in relations to other specific aspects: knowledge and technology transfers, for the first, and information systems planning, for the second. From both, very few variables have been found and also the following contribution in chronological order by Fenton-O'Creevy et al. (2008) on human resources and centralization vs autonomy resulted only three variables useful for the present paper.

Proposing a new model for MNC decentralization in which the allocation of decision rights to subsidiaries is explained by aspects of both internal corporate culture as well as external national cultures has been the purpose of the contribution of Williams and van Triest (2009), while Loppacher et al. (2010) mainly considered cultural aspects and global supply strategies to explain Global Supply headquarters-subsidiary control systems.

The 'autonomy' stream continued in 2010 with a contribution of De Jong and Dut (2010) in which is shown as home and host country environments and subsidiary characteristics determine variations in the autonomy of subsidiaries. A wide and heterogeneous range of variables has been used: size, ownership, age, diversification, other subsidiaries and MNCs variables and internal and external embeddedness.

Miozzo and Yamin (2012) and Aoki and Miyajima (2012) contributed respectively on research on centralization and service sector MNCs and decentralization and control tools. In terms of variables, the first used industry, control and coordination tools and environmental aspects ('host country regulations') while the second explicitly considered the boards ('number of directors' and 'outside director ratio') and foreign shareholders.

The year 2013 presents five contributions concerning autonomy. Belizon et al. (2013) contribution examined the factors affecting Human Resources Management (HRM) autonomy using variables such as age, size and industry. Chiao and Ming (2013) study investigated the antecedents of the subsidiary autonomy from a network perspective by considering 13 variables of 8 clusters: internal and external embeddedness, size, entry mode, age, industry, subsidiary performance and MNC experience. The authors' findings showed as external network range and strength have positive effects on subsidiary autonomy while the range and the strength of internal network affect subsidiary autonomy negatively. Apart from their fundamental review concerning autonomy and determinants, Pisoni et al. (2013) also contributed by proposing a model to measure the level of autonomy of subsidiaries of internationalizing companies assessing the impact of the following variables: size, reasons for entering the foreign market and local environment ('country development'). Raziq et al. (2013) model has considered 9 variables (6 groups according to the framework of this study) finding as subsidiary age and size do not affect subsidiary strategic autonomy, but subsidiary size may affect subsidiary operational autonomy. Schüler-Zhou and Schüller (2013) have analysed the parent–subsidiary relationship of Chinese subsidiaries located in Germany by distinguishing subsidiary and parent variables. Size, age, ownership, industry and local environment have been the main variables used in their contribution.

Gilbert and Heinecke (2014) used only variables defined at regional level while Homburg and Prigge (2014) introduced the dyads, that is the HQs-subsidiary relationship, as the unit of analysis. Cultural aspects, geographical distance, size, competence of the MNC, importance of the subsidiary and intra-group relationship ('dependence') have been the aspects considered in their study.

The concepts of control and autonomy have been recently investigated by Singh et al. (2016) by considering variables of different type: age, size, industry, nationality and ownership, geographical aspects and other subsidiary's characteristics.

Liu et al. (2018) have analysed centralization by using parent and consolidated variables. It is the first study in which is explicitly mentioned the concept of consolidation by using accounting values (consolidated financial statements and parent companies' financial statements) according to a double-disclosure perspective for the parent and the whole group.

Finally, Belenzon et al. (2019) have analysed the organizational distance, measured by the number of intermediate subsidiaries separating the subsidiary from headquarters, to explain the subsidiary autonomy within a corporate group. Industry, boards interlocks, environmental ('same ethnicity') and geographical aspects have also been considering. Very interesting has been also the choice to consider the 'overlap affiliate name' among the moderating aspects of the model.

In this section, all the 28 articles in the sample have been discussed in terms of variables and their typology.

6. CONCLUSIONS

Conclusions, implications, limits and a conceptual framework useful for future research are provided in this section.

The present paper aimed at contributing to fill the gap in the management literature concerning the assessment of the elements useful to explain the degree of decision-making autonomy of a subsidiary. During the last forty years, authors named differently these explanatory elements: variables (see among others, Vachani, 1999, Männik et al., 2004, Aoki and Miyajima, 2012, Singh et al. 2016), determinants (see inter alia, Taggart and Hood, 1999, Kobrin 1991, Miozzo and Yamin, 2012), factors (e.g., Garnier, 1982, Picard and Boddewyn, 1998, Belenzon et al. 2019), measures (Gates and Egelhoff, 1986), characteristics (Raziq et al., 2013) and antecedents (Chiao and Ying, 2013). A Systematic Literature Review (SLR) methodology over a period of forty years (1980-2019) has been implemented and the search strategy has been based on selecting articles containing primary keywords in order to define the main aspects, namely autonomy (early contributions for what concerns the purposes of this research, by Hedlund, 1981, and Garnier, 1982) and centralization (older contributions by Welge, 1981, and Young et al., 1985), and two additional keywords able to guarantee substantive relevance extracting articles concerning MNCs and the explanatory variables of the phenomena under analysis.

The advancements of this study mainly consist in (i) a complete systematization of the studies containing variables able to explain the autonomy of firms belonging to MNCs, (ii) the identification of these variables and (iii) a further contribution in clustering them according to common characteristics. Concerning the first, the systematic approach returned a total of 28 articles mainly produced during the 1980s and in the last ten years. The latter result demonstrates an increasing scholarly interest for the theme for which more and more authors are committed to expand the knowledge on the subject also in terms of new geographical areas involved as both host and home countries (Miozzo and Yamin, 2012; Raziq et al. 2013, Homburg and Prigge, 2014; Singh et al., 2016; Liu et al. 2018). Papers have been also grouped according to the main aspect underlying the studies: autonomy, centralization/decentralization and mixed references. Concerning the second and the third contributions, a complete framework of variables used by scholars in these last forty years in explaining the subsidiary autonomy has been provided. A deluge of different and heterogeneous variables has been found and an attempt of updating the model for interpreting the determinants of subsidiary decision-making autonomy has been made deriving 12 clusters according to their typology: age, size, industry, entry mode, nationality of the parent and ownership, control and coordination tools, internal embeddedness, diversification, geographical aspects, external environment, other variables for the subsidiary level and other variables for the MNC level.

Future research directions could consider these results in terms of proposed variables and clusters of variables as a starting point. The latter seems to be the most promising aspect also in the light of the possibility of investigating the topic according to a multilevel approach. On the basis of what emerged in this study, the variables useful to explain the degree of decision-making autonomy of the subsidiaries can be referred to: (1) single subsidiaries; (2) the parent company; (3) the whole MNC (or business group); (4) the internal relations of the units belonging to the MNCs (or business groups); and (5) the relations with the external environment.

		Level of research				
	Cluster of variables	**Subsidiary**	**Parent**	**MNC**	**Internal relationships**	**External environment**
Cl. 1	Age					
Cl. 2	Size					
Cl. 3	Industry					
Cl. 4	Entry mode					
Cl. 5	Nationality of the parent and ownership					
Cl. 6	Control and coordination tools					
Cl. 7	Internal embeddedness					
Cl. 8	Diversification					
Cl. 9	Geographical aspects					
Cl. 10	External environment					
Cl. 11	Others for subsidiary					
Cl. 12	Others for MNC					

TABLE 6: Clusters of variables and possible level of analysis.

As shown in Table 6, the 12 clusters of variables are very heterogeneous with respect to the unit of analysis to be considered. Ownership and control and coordination aspects could be investigated for all identified levels, while several variables have been found as strictly referrable to the internal relationships and the external environments.

This study provides several implications for scholars and practitioners. In terms of theoretical contribution, this study highlights the need to revise the research stream on the determinants of the subsidiary autonomy according to a new comprehensive framework based on variables grouped by typology. Studies on several aspects concerning companies such as performance, productivity and CSR, could benefit from the results of this article especially focussing on the presence of internal and external variables able to influence the degree of autonomy of a subsidiary. According to this perspective also regulators, administrative bodies and public research institutes could profit of the results of this study for policies and analysis of MNCs in their countries.

Although a SLR guarantees the use of rigorous, transparent and replicable criteria, the present contribution presents some limitations concerning the search strategy and the analysis of the results. Even if the use of two databases, in this case Business Source Complete (EBSCO) and Scopus, limits the risks of not including some published studies on the field, it is not possible to consider the sample as exhaustive. However, according to the comprehensive nature of these two databases, the sample can be considered as representative of the full population of articles on the theme. Primary and additional keywords derive from the previous knowledge of the author. Although the research strings have been extensively articulated to obtain a wide range of papers, some authors may have covered similar topics by using different keywords. The application of the snowballing technique has limited this kind of risk but not completely eradicated. Finally, offering new ways of clustering the variables derived from the review, results have been analysed according to the researcher’s knowledge and some interpretation problems may have affected the assignment of individual variables to the appropriate groups.

Future research could focus on overcoming some of the above-mentioned limitations. In particular, for what concerns the research of other arguments strictly related to the autonomy of affiliated-group companies, studies could focus on ‘business groups’ and ‘boundaries of the firm’ literature streams. Furthermore, the present paper has certainly contributed to providing a systematic framework useful to produce new studies able to positively answer to the question posed by Garnier (“Is it possible to predict beforehand the degree of autonomy of a specific manufacturing subsidiary? (Garnier, 1982: 906)) also for other industries and other geographical areas. Concerning the variables and the proposed clusters (Table 6), the most interesting prospects for future research seem to be mainly related to the internal embeddedness and control and coordination tools analyses. Furthermore, the level related to the internal relations seems to be the most suitable to be investigated due to its nature able to cover several groups of variables in terms of dual or multiple data analysis. Finally, investigating practitioners’ perspectives and evaluating the variables according to their publicly availability should offer other interesting themes to consider for future research.

7. REFERENCES*

[1] Aoki, H., Miyajima, H. (2012). “Benchmarking business unit governance in turbulent times: the case of Japanese firms”, Benchmarking: An International Journal, 19, 548-566.

[2] Belenzon, S., Hashai, N., and Patacconi, A. (2019). “The architecture of attention: Group structure and subsidiary autonomy”. Strategic Management Journal, 40(10), 1610-1643.

[3] Belizon, M. J., Gunnigle, P., and Morley, M. (2013). “Determinants of central control and subsidiary autonomy in HRM: the case of foreign- owned multinational companies in Spain”. Human Resource Management Journal, 23(3), 262-278.

[4] Chiao, Y. C., and Ying, K. P. (2013). “Network effect and subsidiary autonomy in multinational corporations: An investigation of Taiwanese subsidiaries”. International Business Review, 22(4), 652-662.

[5] de Jong, G. and Dut, V.V. (2010). “The impact of the institutional environment on the autonomy of MNCs’ subsidiaries”. Problems and Perspectives in Management, 8(2), 53-63.

[6] Fenton-O'Creevy, M., Gooderham, P., and Nordhaug, O. (2008). "Human resource management in US subsidiaries in Europe and Australia: centralisation or autonomy?" Journal of International Business Studies, 39(1), 151-166.

[7] Garnier, G. H. (1982). "Context and decision making autonomy in the foreign affiliates of US multinational corporations". Academy of Management Journal, 25(4), 893-908.

[8] Gates, S. R. and Egelhoff, W. G. (1986). "Centralization in Headquarters–Subsidiary Relationships". Journal of International Business Studies, 17(2), 71-92.

[9] Gilbert, D. U., and Heinecke, P. (2014). "Success factors of regional strategies for multinational corporations: Exploring the appropriate degree of regional management autonomy and regional product/service adaptation". Management International Review, 54(5), 615-651.

[10] Hedlund, G. (1981). Autonomy of Subsidiaries and Formalization of Headquarters–Subsidiary Relationships in Swedish MNCs. In Otterbeck, L., The Headquarters-Subsidiary Relationship in Multinational Corporations. Aldershot: Gower.

[11] Homburg, C., and Prigge, J. K. (2014). "Exploring subsidiary desire for autonomy: A conceptual framework and empirical findings". Journal of International Marketing, 22(4), 21-43.

[12] Kobrin, S. J. (1991). "An empirical analysis of the determinants of global integration". Strategic Management Journal, 12(S1), 17-31.

[13] Liu, Y., Luo, T., and Yue, H. (2018). "Allocation of decision rights between the parent company and its subsidiaries". Journal of Accounting, Auditing & Finance, 33(3), 355-381.

[14] Loppacher, J. S., Cagliano, R., and Spina, G. (2010). "Key factors in global supply headquarters- subsidiary control systems". Journal of manufacturing technology management.

[15] Männik, K., Hannula, H., and Varblane, U. (2004). "Country, Industry and Firm Size Effects on Foreign Subsidiary Strategy. An Example of Five CEE Countries". University of Tartu Economics and Business Working Paper.

[16] Miozzo, M. and Yamin, M. (2012). "Institutional and Sectoral Determinants of Headquarters-subsidiary Relationships: A Study of UK Service Multinationals in China, Korea, Brazil and Argentina". Long Range Planning, 45(1), 16-40.

[17] Mirchandani, D.A. and Lederer, A.L. (2004). "IS planning autonomy in US subsidiaries of multinational firms". Information & Management, 41(8), 1021-1036.

[18] Picard, J., Boddewyn, J. J., and Grosse, R. (1998). "Centralization and autonomy in international-marketing decision making: a longitudinal study (1973-1993) of US MNEs in the European Union". Journal of Global Marketing, 12(2), 5-24.

[19] Pisoni, A., Fratocchi, L., and Onetti, A. (2013). "Subsidiary autonomy in transition economies: Italian SMEs in Central and Eastern European countries". Journal for East European Management Studies, 336-370.

[20] Raziq, M. M., Borini, F. M., Perry, M., and Battisti, M. (2013). "Subsidiary characteristics and impact on subsidiary strategic and operational autonomy". Journal of Transnational Management, 18(3), 219-241.

[21] Schüler-Zhou, Y. and Schüller, M. (2013). “An empirical study of Chinese subsidiaries' decision-making autonomy in Germany”. Asian Business & Management, 12(3), 321-350.

[22] Singh, S., Wood, G., Alharbi, J., Darwish, T.K. (2016). “Control mechanisms of MNEs: an empirical study”. Multinational Business Review, 24(3), 279-300.

[23] Taggart, J. H. and Hood, N. (1999). “Determinants of autonomy in multinational corporation subsidiaries”. European Management Journal, 17(2), 226-236.

[24] Vachani, S. (1999). “Global diversification's effect on multinational subsidiaries' autonomy”. International Business Review, 8(5-6), 535-560.

[25] Welge, M. (1981). “The Effective Design of Headquarter-Subsidiary Relationships in German MNCs”. In Otterbeck, L., The Headquarters-Subsidiary Relationship in Multinational Corporations. Aldershot: Gower.

[26] Williams, C. and van Triest, S. (2009). “The impact of corporate and national cultures on decentralization in multinational corporations”. International Business Review, 18(2), 156-167.

[27] Young, S., Hood, N., Hamill, J. (1985). “Decision-Making in Foreign owned Multinational Subsidiaries in the United Kingdom” (No. 992395053402676). International Labour Organization.

[28] Yunker, P. J. (1983). “A Survey Study of Subsidiary Autonomy, Performance Evaluation and Transfer Pricing in Multinational Corporations”. Columbia Journal of World Business, 18(3), 51-64.

[29] Abatecola, G., Mandarelli, G., and Poggesi, S. (2013). “The personality factor: how top management teams make decisions. A literature review”. Journal of Management & Governance, 17(4), 1073-1100.

[30] Alhaj, N. (2019). " The Impact of Corporate Governance on Improving Overall Performance of the Companies". International Journal of Business Research and Management (IJBRM), 10(2), 13-28.

[31] Alharbi, J., Gelaidan, H., Al-Swidi, A., and Saeed, A. (2016). “Control mechanisms employed between headquarters and subsidiaries in multinational enterprises (MNEs)”. Review of International Business & Strategy, 26, 493-516.

[32] Ambos, T.C., Andersson, U., and Birkinshaw, J. (2010). “What are the consequences of initiative-taking in multinational subsidiaries?” Journal of International Business Studies 41(7), 1099-1118.

[33] Ambos, T.C., Fuchs S.H., and Zimmermann, A. (2020). "Managing interrelated tensions in headquarters–subsidiary relationships: The case of a multinational hybrid organization." Journal of International Business Studies, 1-27.

[34] Andersson, U., & Forsgren, M. (1996). “Subsidiary embeddedness and control in the multinational corporation”. International business review, 5(5), 487-508.

[35] Bartlett, C.A. and Ghoshal, S. (1986). “Tap your subsidiaries for global reach”. Harvard Business Review, 64(6), 87–94.

[36] Bartlett, C.A. and Ghoshal, S. (1989). Managing across borders: The transnational Solution. Harvard Business School Press, Boston.

[37] Birkinshaw, J. (1997). “Entrepreneurship in multinational corporations: The characteristics of subsidiary initiatives”. Strategic Management Journal, 18(3), 207-229.

[38] Birkinshaw, J.M. and Morrison, A.J. (1995). “Configurations of Strategy and Structure in Subsidiaries of Multinational Corporations”. Journal of International Business Studies, 26(4), 729-753.

[39] Birkinshaw, J. and Hood, N. (1998). “Multinational Subsidiary Evolution: Capability and Charter Change in Foreign-Owned Subsidiary Companies”. The Academy of Management Review, 23(4), 773-795.

[40] Birkinshaw, J. and Hood, N., Jonsson, S. (1998). “Building Firm-Specific Advantages in Multinational Corporations: The Role of Subsidiary Initiative”. Strategic Management Journal, 19(3), 221-241.

[41] Brock, D.M. (2003). “Autonomy of individuals and organizations: Towards a strategy research agenda”. International Journal of Business and Economics, 2(1), 57-73.

[42] Brooke, M. Z. (1984). Centralization and autonomy: A study in organization behaviour. Praeger Publishers.

[43] Cafferata, R., Abatecola, G. and Poggesi, S. (2009). “Revisiting Stinchcombe's Liability of Newness: A Systematic Literature Review”. International Journal of Globalisation and Small Business, 3(4), 374-392.

[44] Cavanagh A., Freeman S., Kalfadellis P. and Herbert K. (2017). “Assigned versus assumed: Towards a contemporary, detailed understanding of subsidiary autonomy”. International Business Review Review, 26(6) 1168–1183.

[45] Cristofaro, M. (2019). “The role of affect in management decisions: A systematic review”. European Management Journal, 37(1), 6-17.

[46] Di Tullio, P., Valentinetti, D. and Rea, M. (2018). "Integrating The Business Model Puzzle: A Systematic Literature". International Journal of Business Research and Management (IJBRM), 9(1), 1-46.

[47] Dixit, D., Sinha, A.S. and Shrivastava, R. (2020). “Process and Content Model of CSR Decision-making–A Stakeholder Approach”. International Journal of Business Research and Management (IJBRM), 11(1), 1-15.

[48] Dörrenbächer, C. and Gammelgaard J. (2016). “Subsidiary Initiative Taking in Multinational Corporations: The Relationship Between Power”. Organization Studies, 37(9), 1249-1270.

[49] Dut, V.V. (2013). “Subsidiary decision-making autonomy in multinational enterprises”. Doctoral Thesis, University of Groningen. Groningen, the Netherlands.

[50] Edmondson, A. C., and McManus, S. E. (2007). “Methodological fit in management field research”. Academy of management review, 32(4), 1246-1264.

[51] Forsgren, M., Pedersen, T. and Foss, N. J. (1999). “Accounting for the strengths of MNC subsidiaries: the case of foreign-owned firms in Denmark”. International Business Review, 8(2), 181–196.

[52] Galbraith, J. (1973). Designing complex organizations. Reading, Mass.

[53] Gammelgaard, J., McDonald, F., Tüselmann, H., Dörrenbächer, C., and Stephan, A. (2011). "Effective autonomy, organisational relationships and skilled jobs in subsidiaries". Management Research Review.

[54] Gammelgaard, J., McDonald, F., Stephan, A., Tüselmann, H., and Dörrenbächer, C. (2012). "The impact of increases in subsidiary autonomy and network relationships on performance". International Business Review, 21(6), 1158-1172.

[55] Ghoshal, S. and Bartlett, C.A. (1990). "The Multinational Corporation as an Interorganizational Network". The Academy of Management Review, 15(4), 603-625.

[56] Golini, R., Patricia, D. and Scherrer-Rathje, M. (2016). "Exploiting the potential of manufacturing network embeddedness: an OM perspective". International Journal of Operations & Production Management, 36(12), 1741-1768.

[57] Hansen, E. G., and Schaltegger, S. (2016). "The sustainability balanced scorecard: A systematic review of architectures". Journal of Business Ethics, 133(2), 193-221.

[58] Hedlund, G. (1980). "Autonomy of subsidiaries and formalization of headquarters–subsidiary relationships in Swedish MNC's". Strategic Management Journal, 1(1), 23-36.

[59] Hedlund, G. (1986). "The hypermodern MNC—A heterarchy?" Human Resource Management (1986-1998), 25(1), 9-35.

[60] Hoque, Z. (2014). "20 years of studies on the balanced scorecard: trends, accomplishments, gaps and opportunities for future research". The British accounting review, 46(1), 33-59.

[61] Hristov, I., Appolloni, A., Chirico, A., and Cheng, W. (2021). "The role of the environmental dimension in the Performance Management System: A systematic review and conceptual framework". Journal of Cleaner Production, 126075.

[62] Iwata, S., Kurokawa, S., and Fujisue, K. (2006). "An analysis of global R&D activities of Japanese MNCs in the US from the knowledge-based view". IEEE transactions on engineering management, 53(3), 361-379.

[63] Jarillo, J.C. and Martínez, J.I. (1990). "Different roles for subsidiaries: The case of multinational corporations in Spain". Strategic Management Journal, 11(7), 501-512.

[64] Jensen, M. and Meckling, W. (1976). "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure". Journal of Financial Economics, 3(4), 305-360.

[65] Johanson, J., and Vahlne, J. E. (1977). "The internationalization process of the firm—a model of knowledge development and increasing foreign market commitments". Journal of international business studies, 8(1), 23-32.

[66] Kim, B.G., and Kim, G.B. (2020). "An Empirical Analysis on the Determinants of Foreign Subsidiary's Local Embeddedness: Focusing on Korean MNCs in China". The Journal of Asian Finance, Economics, and Business 7.1, 205-215.

[67] Leoni, L. (2015). "Servitization and Productization: two faces of the same coin". RESER 2015.

[68] Manolopoulos, D. (2006). "The Concept of autonomy in the subsidiary management research: A conceptual investigation". Journal of Transnational Management, 11(4), 45–62.

[69] Manolopoulos, D., Papanastassiou, M., and Pearce, R. (2007). “Knowledge-related competitiveness and the roles of multinationals’ R&D in a peripheral European economy: Survey analysis of Greece”. Management International Review, 47(5), 661-682.

[70] Mari, M., and Poggesi, S. (2013). “Servicescape cues and customer behavior: a systematic literature review and research agenda”. The Service Industries Journal, 33(2), 171-199.

[71] McDonald F., Warhurst S. and Allen, M. (2008). “Autonomy, Embeddedness, and the Performance of Foreign Owned Subsidiaries”. Multinational Business Review, 16(3), 73-92.

[72] Meyer, J. W., and Rowan, B. (1977). “Institutionalized organizations: Formal structure as myth and ceremony”. American journal of sociology, 83(2), 340-363.

[73] Newbert, S. L. (2007). “Empirical research on the resource- based view of the firm: an assessment and suggestions for future research”. Strategic management journal, 28(2), 121-146.

[74] Otterbeck, L. (1981). The management of headquarters: subsidiary relationship in multinational corporations. Gower.

[75] Paterson, S. and Brock, D. (2002). “The Development of Subsidiary- Management Research: Review and Theoretical Analysis”. International Business Review, 11(2), 139-163.

[76] Pfeffer, J. and Salancik, G.R. (1978). The External Control of Organizations: A Resource Dependence Perspective. Harper and Row, New York.

[77] Pisoni, A., Onetti, A., and Fratocchi, L. (2010). “Internationalization of Italian firms in Central and Eastern European countries: Headquarters–subsidiary relationship”. Journal of East-West Business, 16(2), 89-117.

[78] Prahalad, C. K., and Doz, Y. L. (1987). The multinational mission: Balancing global integration with local responsiveness. New York, NY.

[79] Raziq M. M., Borini F. M. and Perry M. (2014). “Subsidiary initiatives and subsidiary autonomy: Evidence from New Zealand and Brazil”. International Entrepreneurship and Management Journal, 10(3), 589-605.

[80] Rugman, A. M., Verbeke, A. and Yuan, W. (2011). “Re-conceptualizing Bartlett and Ghoshal's Classification of National Subsidiary Roles in the Multinational Enterprise”. Journal of Management Studies, 48(2), 253-277.

[81] Seus, F. (2021). "Perception Gaps in Headquarters-Subsidiary Relations". KIT Scientific Working Paper, 158.

[82] Taggart, J. H. (1998). “Strategy shifts in MNC subsidiaries”. Strategic Management Journal, 19(7), 663-681.

[83] Tranfield, D., Denyer, D., and Smart, P. (2003). “Towards a methodology for developing evidence- informed management knowledge by means of systematic review”. British journal of management, 14(3), 207-222.

[84] Vernon, R. (1966). “International investments and international trade in the product cycle”. Quarterly Journal of Economics, 80, 190-207.

[85] Welge, M. K. (1982). “Planning in German multinational corporations”. International Studies of Management & Organization, 12(1), 6-37.

[86] White, R.E. and Poynter, T.A. (1984). “Strategies for foreign owned subsidiaries in Canada”. Business Quarterly, 49(2), 59-69.

[87] Young, S. and Tavares, A. (2004). “Centralisation and Autonomy: Back to the Future”. International Business Review, 13(2), 215-237.

**References 1-28 are results from the SLR.*

APPENDIX 1 – SLR: STRINGS OF RESEARCH

EBSCO
Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - Business Source Complete

Search Alert: "AB ((autonomy or centralization or decentralization)) AND AB (("business group*" or MNE* or MNC* or corporation* or subsidiary* or "parent-subsidiary*" or holding* or headquarter* or "head office*")) AND AB ((factor* or determinant* or variable* or characteristic* or measure* or antecedent*)) Scholarly (Peer Reviewed) Journals; Published Date: 19800101-20191231; Publication Type: Academic Journal; Document Type: Article; Language: English AND Apply equivalent subjects on 2020-04-05 05:05 AM"

Limiters - Scholarly (Peer Reviewed) Journals; Published Date: 19800101-20191231; Publication Type: Academic Journal; Document Type: Article; Language: English
Expanders - Apply equivalent subjects
Search modes - Boolean/Phrase

SCOPUS
ABS ((autonomy OR centralization OR decentralization)) AND ABS (("business group*" OR mne* OR mnc* OR corporation* OR subsidiary* OR "parent-subsidiary*" OR holding* OR headquarter* OR "head office*")) AND ABS ((factor* OR determinant* OR variable* OR characteristic* OR measure* OR antecedent*)) AND PUBYEAR > 1979 AND PUBYEAR < 2020 AND (LIMIT-TO (SRCTYPE , "j")) AND (LIMIT-TO (SUBJAREA , "BUSI")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English"))

The asterisk at the end of a search word allows for different suffixes.

APPENDIX 2 – AN OVERVIEW OF THE SELECTED STUDIES (part I)

Author (s)	Aim	Country	Observation period	Sample and research method	Variables
Hedlund (1981)	Evaluating the autonomy of the subsidiaries and the formality of headquarters-subsidiary relationships.	Home: Sweden; Host: various.	1976-1980	6 MNCs; 24 subsidiaries. Multi-case study.	MNC system as a whole: complexity of technology; international experience; inter-unit dependency; geographical heterogeneity; market concentration; size; degree of diversification; mode of entry on international markets. Characteristics of the subsidiary: uncertainty of subsidiary's environment; cross-shipments of goods; technology transfers from HQs to sub; technology transfers from sub to HQs; size of subsidiary (turnover); relative size of subsidiary; intensity of competition; market share; performance. Areas of uncertainty: market conditions; political conditions; supply conditions; capital markets; labour markets.
Welge (1981)	Exploring the way MNCs design the coordination intensity of HQs-subsidiary relationships.	Home: Germany; Host: France, India, US.	1976-1980	6 MNCs; 15 subsidiaries. Multi-case study.	Size (employment); size (sales); age; mode of establishment; ownership.
Garnier (1982)	It is proposed that a limited number of key variables can explain the degree of autonomy of any foreign unit.	Home: US Host: Mexico, France.	-	144 manufacturing firms. Survey.	Age of local affiliate, Method of acquisition, General policy on participation to foreign affiliates' equity, Percentage of responding affiliate's equity held by parent, Number of parent company's representatives on affiliate's board, Size of foreign affiliate, Size of multinational group, Relative size, Number of products or product lines, Market to be served, Percentage of local affiliate's products identical to parent's, Degree of integration of activities of members within group R&D budget (as of sales), Percentage of affiliate's sales going to parent, Percentage of affiliate's purchases coming from parent, Performance of affiliate (deficits), Comparative rate of return, Percentage of group's total revenues earned abroad, Number of countries in which group has affiliates, Perception of local laws on foreign investment, Perception of local government's attitude, Perception of differences in executives' attitudes and values, Perception of value of local system of education
Yunker (1983)	Shedding empirical light on multinational corporate policy formulation and accommodation for three policy	Home: US	1980-1981	52 corporations. Survey.	World sales of the corporation, number of subsidiaries, number of countries in which the company operates, foreign subsidiary ratio, foreign sales ratio, short-run profit orientation, perceived environmental variability.

	areas: subsidiary autonomy, performance evaluation and transfer pricing.				
Young, Hood and Hamill (1985)	Examining the issue of decision-making within the subsidiaries of foreign multinational enterprises (MNEs) operating in the United Kingdom.	Home: various; Host: UK.	1984	154 companies. Survey.	Nationality, percentage of ownership, subsidiary age, mode of establishment, subsidiary size, relative size of the subsidiary, industry, degree of inter-subsidiary production integration, subsidiary performance, multinationality of parent company, organizational structure of parent company
Gates and Egelhoff (1986)	Attempting to add clarity to the situation by re-testing many of the existing hypotheses with data from a recent study of centralization in 50 large US, UK and European MNCs.	Home: US, UK and EU countries. Host: Brazil and Europe.	-	50 MNCs. Multi-case study.	Company level: Size of foreign operations; size of MNC; Foreign product diversity; Product modification differences; Extent of outside ownership; Extent of foreign acquisitions; Industry; Nationality; Age of company abroad. Subsidiary level: Relative size of subsidiary; Size of subsidiary; Product change; Competitive climate change; Intracompany imports (purchases) by subsidiary; Age of subsidiary.
Kobrin (1991)	The primary concern of this paper is the structural characteristics of an industry that generate returns to transnational integration: manufacturing scale economies and technological intensity.	Home: US	1982 1986	56 manufacturing industries containing US-based firms. Archival analysis.	Integration index: Intrafirm flows - affiliate to parent; affiliate to affiliate; parent to affiliate. Determinants: technological intensity, manufacturing scale, advertising intensity and internationalization.
Picard and Boddewyn (1998)	Answering the question: who makes the standardization vs. adaptation decisions in MNCs.	Home: US Host: EU.	1973 1983 1993	78 manufacturing firms. Survey.	Company variables: size of the MNC, percentage of investments (relative size), percentage of product sold in EU which are produced in EU and ownership percentage. Environmental variables: economic recession, nationalistic feelings, national government regulations, differences in consumer incomes, differences in tastes/habits, language barriers, shortage of communication media, lack of uniform transportation facilities and regulations, differences in technical standards, different currencies, consumeristic movements, competition from EU firms.
Taggart and Hood (1999)	Evaluating the level of autonomy vested in German- and Japanese-owned manufacturing subsidiaries in the British Isles and consider how	Home: Germany, Japan. Host: British Isles.	1995	725 manufacturing affiliates. Survey.	Subsidiary age, employment level, sales, export propensity, market scope, nature of production operations at the subsidiary, proportion of outputs sent to sister subsidiaries for further processing and/or final assembly, proportion of material inputs coming from other group plants, proportion of material

	this has evolved over time.				inputs sourced in the local economy, complexity of R&D activity at the subsidiary.
Vachani (1999)	Examining the linkage between components of global diversification and subsidiary autonomy, which has been identified as a critical aspect of organization design.	Home: US	1990	63 MNCs. Survey.	Related product diversification (RDP), Unrelated product diversification (UPD), Related geographic diversification (RGD), Unrelated geographic diversification (UGD), Product division, Area division, International division, Hybrid division, Outcome (versus process).
Männik, Hannula and Varblane (2004)	Analysing the contribution of FDI to knowledge and technology transfer into five CEE economies on the choice of the subsidiaries' strategies.	Host: Estonia, Hungary, Poland, Slovakia, Slovenia.	2000-2001	433 manufacturing branches. Archival analysis.	Country, industry, firm-size and foreign ownership
Mirchandani and Lederer (2004)	Extending the prior research by testing hypotheses with variables that may predict subsidiary autonomy for information systems planning.	Home: various. Host: US.	-	55 US subsidiaries. Multi-case study.	Foreign product diversity, Product modification differences, Extent of local ownership, Subsidiary's sales expressed as a percent of parent's overall sales, Size of the subsidiary, Degree of product change in subsidiary Competitive climate change faced by subsidiary, Intracompany purchases, subsidiary age.
Fenton-O'Creevy, Gooderham and Nordhaug (2008)	Exploring determinants of subsidiary autonomy in setting HRM practices within US parented MNEs, in Europe and Australia.	Home: US Host: Ireland, Australia, Switzerland, Spain, Netherlands, France, Sweden, Denmark, Finland, Portugal, Belgium, Norway, Italy, Germany, Austria.	1999	441 foreign subsidiaries. Archival analysis.	Control variables: industry, relative size of the subsidiary, subsidiary age.
Williams and van Triest (2009)	Developing and testing a model of multinational corporation (MNC) decentralization in which the allocation of decision rights to subsidiaries is explained by aspects of both internal corporate culture as well as external national cultures.	Home: various (15) Host: various (18).	-	119 managers of subsidiaries. Survey.	Independent variables: Corporate innovativeness, Shared values, Home and host country cultures. Control variables: industry, home (US or not), size.

De Jong and Dut (2010)	Presenting a first attempt to explain how variations in the home - and host country environments, next to and on top of parent company - and subsidiary characteristics, determine variations in the autonomy of subsidiaries.	Home: Europe Host: Europe	2005	263 subsidiaries 18 MNCs. Archival analysis.	Proxy of subsidiaries autonomy based on ten dummy variables: R&D, Manufacturing, Marketing, Sales, Market scope (foreign markets), Network (subsidiary engages in network activities within the MNC), Outsourcing, Cooperation (the subsidiary cooperates with external organizations), Export-import, Subsidiary establishment (the subsidiary has its own subsidiary). Explanatory variables: strategic approach of the MNC (LME or CME countries); degree of institutional embeddedness of the subsidiary in the host country. Control variables: MNC characteristics, in particular the degree of product diversification and company size; subsidiaries characteristics, subsidiary age, economic performance, extent of ownership and subsidiary size.
Loppacher, Cagliano and Spina (2010)	Shedding some light on how key variables affect Global Supply headquarters-subsidiary control systems and their complementary behaviours across culturally similar business units.	Home: Italy Host: Mercosur area.	2003-2005	7 MNCs. Multi-case study.	Global Supply headquarters-subsidiary control systems, cultural proximity, global sourcing and purchasing strategies, globalization process evolution.
Miozzo and Yamin (2012)	Pointing to distinctive factors impinging on headquarters-subsidiary relationships in service multinationals	Home: UK Host: Argentina, Brazil, China, Korea	-	8 MNEs. Multi-case study.	development of co-ordination tools, the sector of operation and host country regulations
Aoki and Miyajima (2012)	Examining how corporate headquarters control business units, the governing of which has emerged as a vital issue as business portfolios have grown increasingly complex due to diversification, globalization, and corporate group expansion via spinoffs and mergers and acquisitions.	Home: Japan	2007	92 listed firms. Survey.	Number of directors, outside director ratio, foreign shareholders, institutional investors, average size of subsidiaries

Belizon, Gunnigle and Morley (2013)	Examining the factors affecting HRM subsidiary autonomy within multinational companies (MNCs).	Home: US, Denmark, Finland, Sweden, France, Germany, Austria, Belgium, Switzerland, Italy, The Netherlands, Japan, Australia, Canada, UK. Host: Spain.	2007-2009	242 foreign MNEs. Survey.	Typology of capitalism, global mandates, HR body, HR data reported, IT system for HR, HR shared services, Age of the subsidiary, Sector of operations, Size of the subsidiary.
Chiao and Ying (2013)	Considering the lack of empirical evidence on the subsidiary autonomy of firms from Asian developing countries, which are usually smaller in size and have limited international experience, this study investigates the antecedents of subsidiary autonomy from a network perspective.	Home: Taiwan	2002	1,473 manufacturer firms. Archival analysis.	Independent variables: Internal network range, Internal network strength, External network range, External network strength. Control variables: MNC size, MNC experience, Entry mode, Subsidiary performance, Subsidiary age, Differences of social customs and business practices, Local market competitiveness, Political and economic instability, Industry - Mental and machinery, Industry - Chemicals and plastics, Industry - Food, textile and others.
Pisoni, Fratocchi and Onetti (2013)	Shedding new light on the variables that indicate the level of autonomy of subsidiaries of internationalizing companies assessing the impact of three variables on the subsidiary's autonomy: the size; the strategic aim in the local market.	Home: Italy Host: Romania, Bulgaria, Poland, Slovak Republic, Hungary, Czech Republic, Slovenia.		72 subsidiaries. Survey.	Subsidiary size, reasons for entering foreign market - looking for new markets, reasons for entering foreign market - reduction of labour costs, country development.
Raziq, Borini, Perry and Battisti (2013)	Examining the relationship of MNE subsidiary characteristics (age and size) to subsidiary strategic and operational autonomy	Home: various. Host: New Zealand, Brazil		332 subsidiaries. Survey.	Subsidiary age, subsidiary size. Control variables: parent MNE industry, home Country environment, subsidiary entry mode, subsidiary industry, investment origin, subsidiary age and subsidiary relative size.
Schüler-Zhou and Schüller (2013)	Analysing the parent–subsidiary relationship of Chinese subsidiaries, taking those located in Germany as an example.	Home: China Host: Germany		45 subsidiaries. Survey.	Subsidiary: size, year of establishment, ownership, market orientation, sector and business activity, strategic resource capability, reverse knowledge transfer, local environment; Parent: size, ownership structure (State) and business activity.

Gilbert and Heinecke (2014)	Examining the factors that drive the success of multinational corporations (MNCs) in their pursuit of regional strategies	Global	96 companies. Archival analysis.	Regional management autonomy measured by: regional strategy development, regional market development, regional market coordination, regional operation administration.
Homburg and Prigge (2014)	Shedding light on subsidiaries' desire for autonomy, the authors investigate its consequences and determinants by drawing on reactance theory to develop an integrative framework focusing on marketing decision-making in subsidiaries.	Global: 29 countries	133 dyads. Survey.	Cultural characteristics: power distance; Individualism. Subsidiary characteristics: size, competence, dependence, importance and geographical distance.
Singh, Wood, Alharbi and Darwish (2016)	Exploring variations in the extent of control mechanisms, according to country of origin and organizational characteristics, in a challenging country of domicile	Home: various. Host: Saudi Arabia.	147 subsidiaries. Survey.	Four categories of dependent variables signifying level and variety of controls: 'Centralised' Controls (CC), which includes the level of autonomy in the subsidiary to decide its own strategies; 'Formal' Controls (FC), 'Output' Controls (OC), 'informal controls' (IF). Independent variables: subsidiary employment; employees worldwide; number of expatriates in subsidiary; subsidiary age; Industry; Country of the MNC; nationality of the subsidiary (Saudi or third country); ownership status of the subsidiary (majority-owned or joint venture); subsidiary function.
Liu, Luo, and Yue (2018)	Examining the determinants of allocation of decision rights between the parent company and its subsidiaries, and the economic consequence of suboptimal power structure	Home: China	16,062 firms. Archival analysis.	Parent's sales revenues, parent's operating expenses, parent's operating assets, consolidated sales revenues, consolidated operating expenses, consolidated operating assets. Control variables: size, age, financial leverage, SOE, Industry diversification. External environmental uncertainty: volatile sales pattern across time.

Belenzon, Hashai and Patacconi (2019)	Examining the relationship between strategic decision-making at the subsidiary level and organizational structure.	Home: UK, France, Germany, Spain, Italy, Norway, Sweden, Finland, Denmark, Ireland, Belgium, Netherlands, Switzerland, Portugal and Greece. Host: Europe and US		53,944 groups. Archival analysis.	Organizational distance; moderating aspects: same industry, family managers, same ethnicity, board interlocks, overlap affiliate name, and same geographical region.

APPENDIX 2 – AN OVERVIEW OF THE SELECTED STUDIES (part II)

Author (s)	Contribution	Methods	Findings	Explanatory elements: names	Theory
Hedlund (1981)	Evaluating the results according to different ownership structures (wholly owned/minority joint ventures) and location (developed country/less developed country).	OLS; correlation.	Autonomous subsidiaries and informally managed HQs-subsidiary relationships explanations: some importance for factors such as the inter-unit dependency in the companies and the size of the MNCs and its subsidiaries; particularly important is the degree of integration in terms of product-flows. The latter is more powerful for operational than for strategic decisions.	Determinants	Not specified
Welge (1981)	Exploring differences with respect to coordination intensity between headquarters and subsidiaries and interpret these differences.	Correlation	Low coordination intensity of headquarters-subsidiary relations paired with internal decentralization of decisions is most likely to be correlated with above-average economic and social effectiveness.	Factors	Not specified
Garnier (1982)	Contributing to the debate concerning the division of decision-making authority between the headquarters and the various operational units.	Correlation matrix; regression.	It was found that four groups of factors—namely, degree of interchange of products, ownership, workflow integration, and size of the multinational group—are the best predictors of the degree of autonomy.	Variables Factors	Not specified
Yunker (1983)	Investigating corporate characteristics which might have an effect on the various policy dimensions.	Survey; descriptive statistics; correlation.	Corporate policy in various areas is systematically related to corporate characteristics and environment.	Variables; factors	Not specified
Young, Hood and Hamill (1985)	The paper deals both with the question of "who makes?" or "at what level?" are decisions made within the MNE; and also, with the decision-making process - the "how" of decision-making.	Survey; descriptive statistics.	The factors leading to greater centralisation were linked to subsidiary size, integration and multinationality - broadly the significance of the subsidiary and of international operations generally to the corporate whole. Greenfield facilities seemed to be more closely controlled, but again there is a link with integration; the more centralised American companies and more centralised chemical, mechanical and electrical engineering industries revealed a number of these same	Factors	Not specified

			characteristics. With multinational growth, therefore, the implication would be that centralisation would increase and this is evident from the findings.		
Gates and Egelhoff (1986)	It examines how the degree of centralization inherent in the headquarters-foreign subsidiary relationship varies in response to a variety of company-wide and subsidiary level conditions.	Correlation matrix	The relationship between centralization and various measures of company-level complexity is quite consistent across both measures and studies. The relationship between centralization and the six subsidiary-level variables produces a somewhat different picture.	Measures; variables	Contingency theory
Kobrin (1991)	Contributing to transnational integration and globalisation debate.	OLS	Technology is the primary determinant of cross-border integration and the importance of manufacturing scale has been overestimated.	Determinants	Transnational theory
Picard and Boddewyn (1998)	Investigating the factors affecting centralization in international-marketing decision-making.	t-tests; factor analysis.	The company-specific factor most linked to the decentralization of international marketing decisions is the relative weight of subsidiaries' own production in their total sales.	Factors	Not specified
Taggart and Hood (1999)	Specific attention was devoted to the linkages between level of autonomy and a range of operational and strategic variables, and to whether there is a causative relationship between the variables and level of autonomy.	Survey; OLS regression.	Subsidiaries with higher levels of autonomy were significantly more export intensive, and they were involved in much higher levels of R&D complexity than their low-autonomy counterparts. They also tended to be older and smaller, to use higher levels of production technology, and to be more locally responsive and less tightly integrated into the parent's international network.	Determinantsvariables.	Not specified
Vachani (1999)	This research contributes to research on multinational management by developing a theoretical framework that distinguishes between the effects of the four components of total global diversification on organizational design. It demonstrates the value of making this distinction by empirically	OLS regression model; regression.	The predicted effect of RPD in reducing subsidiary autonomy was observed to be significant for multinationals with product, international and functional division structures but not for multinationals with area and hybrid structures. Related geographic diversification was significant in raising autonomy in product and area division structures. UGD had the effect of reducing subsidiary autonomy as hypothesized.	Components; measures; variables.	Information-processing theory

	establishing the effect of the four components of TGD on an important aspect of multinational control, subsidiary autonomy.				
Männik, Hannula and Varblane (2004)	The task of the current paper is to bring out the distinctions of the autonomy across business functions by country, industry sector, firm size and foreign ownership; then to make the generalisations of different subsidiary types.	Principal component factor analysis, ANOVA and MANOVA.	Unequivocal for all the Countries Subsidiaries from the more developed CEE countries had the highest scores for the autonomy, especially in terms of management and financial autonomy. Minority foreign owned subsidiaries are more autonomous than majority owned, even taken into account all other variables. Not unequivocal More productive manufacturing industries have more autonomous subsidiaries More autonomous subsidiaries exist among large firms.	Variables	Not specified
Mirchandani and Lederer (2004)	The current study has extended the research on decision-making autonomy to information systems planning autonomy.	Pearson correlations.	The study found support for the hypothesis that the percentage of intracompany purchases correlated negatively with IS planning autonomy (H8). Also at a statistically significant level, it contradicted the hypotheses that foreign product diversity (H1), extent of local ownership (H3), and age of the subsidiary (H9) correlate positively with IS planning autonomy.	Characteristics	Corporate governance theory Agency theory

Fenton-O'Creevy, Gooderham and Nordhaug (2008)	Examining the effects of the strategic role of the subsidiary and the institutional environment in which the subsidiary is located, in relation to the degree of centralization of control of HRM policies imposed by corporate headquarters.	Centralized control index; Negative binomial regression.	Findings indicate both strategic and institutional context to be important determinants of subsidiary autonomy. The strongest determinant of subsidiary autonomy in regard to HRM is strategic, in the sense of whether the subsidiary is serving a purely domestic market or whether it is serving international markets. Subsidiaries with a domestic market orientation have a significantly greater measure of local HRM autonomy than those with international market responsibilities. Findings also indicate that the institutional location of the subsidiary and the degree to which it confronts labour unions are significant determinants of subsidiaries' HRM autonomy.	Determinants	Institutional theory
Williams and van Triest (2009)	We propose and test a new model of MNC decentralization, one based on management control theory applied in an international context.	Correlation regression models	US MNCs tend to be more centralized in our sample. Being in a services industry is likely to produce more decentralization.	Factors Determinants	Management control theory
De Jong and Dut (2010)	Our results emphasize that the institutional environment in combination with parent-company and subsidiary characteristics simultaneously determine the autonomy of subsidiaries. Although individual characteristics have been addressed elsewhere, ours is one of the first that explicitly focuses on the institutional environment and that offers an integrative perspective of subsidiary autonomy.	Exploratory factor analysis and cluster studies; logit and probit models; negative binomial regression.	MNCs located in CMEs will grant more autonomy to their subsidiaries than MNCs located in LMEs. The degree of institutional embeddedness of subsidiaries in the host-country environment negatively affects the autonomy level of the subsidiaries granted by an MNC.	Variables Determinants	Institutional theory
Loppacher, Cagliano and Spina (2010)	Enabling better understanding of the impact of and interactions between key driving factors in global supply headquarters-subsidiary control systems in cases of strong cultural similarities.	Case study	Although cultural similarities strongly influence MNCs' GS headquarters-subsidiary control systems, other factors, such as purchasing and globalization sourcing strategy centralization and globalization process evolution, lead	Variables	Not specified

			companies to implement complementary formal control systems that are consistent with the sharply personalized profile set by cultural proximity		
Miozzo and Yamin (2012)	Our contribution is a conceptual framework that identifies the particular determinants of headquarters-subsidiary relationships in service multinationals	Case study	A first determinant of headquarters-subsidiary relationships is that globalisation is triggering greater subsidiary integration in service multinationals through the application of corporate practices and global sourcing, reinforcing central co-ordination. Headquarters-subsidiary relationships, however, are strongly contingent on two additional set of determinants, namely, the characteristics of the service industry and host country regulations in which the multinational operates.	Determinants	Not specified
Aoki and Miyajima (2012)	To examine the characteristics of the new decentralized organizational arrangements, the methods that company headquarters uses to control business units, both in-house divisions and wholly owned subsidiaries, and the potential costs associated with new decentralized organizations.	OLS	Governance of decentralized business units was clearly different for internal organizations and subsidiaries. The granting of corporate status to an internal business unit via spinoff had real consequences that could undermine strategic objectives.	Variables	Agency theory
Belizon, Gunnigle and Morley (2013)	The identification of those factors influencing the extent of local autonomy over HR practices in foreign-owned MNCs in Spain.	Structural equation model	Lower levels of HR subsidiary autonomy have been found in MNCs coming from countries with more flexible labour market regimes. Higher levels of HR subsidiary autonomy have been found in the MNCs originating in countries more similar to Spain regulation wise	Factors Determinants	Institutional theory
Chiao and Ying (2013)	Considering a subsidiary's internal and external networks simultaneously, this study intends to explore how internal and external range and strength, including a subsidiary's technology, raw	Regression	External network range and strength have positive effects on subsidiary autonomy. Conversely, the range and the strength of internal network affect subsidiary autonomy negatively.	Antecedents	Business network theory

	material and component suppliers, and distribution networks, affect the autonomy of a subsidiary.				
Pisoni, Fratocchi and Onetti (2013)	This paper aims to contribute to research on the headquarter-subsidiary relationship by analysing variables influencing subsidiaries' autonomy.	Spearman's rank correlation coefficients	Which regarded the relationship between subsidiary autonomy and its size in terms of number of employees, we unexpectedly found a negative correlation that differed significantly from 0. Subsidiaries looking for penetrating the local market are generally more autonomous than the ones pursuing cost-cutting strategies. Autonomy reflects local country characteristics, but not the economic development.	Variables	Not specified
Raziq, Borini, Perry and Battisti (2013)	The study contributes to the theory of subsidiary characteristics and their association with subsidiary strategic or operational autonomy and to the empirical evidence of MNE subsidiaries in Brazil and New Zealand where there is comparatively little prior evidence examining the significance of subsidiary autonomy.	Regression	It is found that subsidiary age and size do not affect subsidiary strategic autonomy, but subsidiary size may affect subsidiary operational autonomy. It is concluded that subsidiary size affects subsidiary operational autonomy if the subsidiary has as local market focus.	Characteristics	Resource dependence theory
Schüler-Zhou and Schüller (2013)	This study uses two different theoretical perspectives to explain the parent–subsidiary relationship within Chinese MNCs – namely, institutional theory and resource-dependence theory.	Multiple regression	State ownership is found to be negatively related to decision-making autonomy. Positive relationship between reliance on a subsidiary and level of autonomy. This study also points out the important role of subsidiary age, subsidiary ownership and a subsidiary's market orientation in determining the level of subsidiary autonomy.	Factors Variables	Institutional theory Resource-dependence theory
Gilbert and Heinecke (2014)	Exploring the interactions between regional success factors and MNC performance based on a longitudinal study that includes both primary and secondary data on a large sample of Fortune Global 500	Structural equation modelling	Low degrees of regional management autonomy and high levels of regional product/service adaptation are appropriate for MNCs to be regionally successful.	Factors	Contingency theory

	firms.				
Homburg and Prigge (2014)	Despite the acknowledged relevance of a subsidiary's desire for autonomy, its nature is unclear. This ambiguity is particularly important because, though studies have investigated the role of subsidiaries' de facto autonomy, hey have often neglected to examine the subsidiary's desire for autonomy. Our study contributes to international marketing research.	Multifactorial confirmatory factor analysis model	The results show that the head-quarters' control mechanisms for marketing decision-making (in terms of centralization) and the relevance of the marketing decision-making to the subsidiary (in terms of importance) strongly amplify the subsidiary's desire for autonomy. By contrast, the headquarters' competence in marketing decision-making significantly reduces a subsidiary's resistance to control and thus weakens its desire for autonomy.	Determinants	Reactance theory
Singh, Wood, Alharbi and Darwish (2016)	The relationship between HQ and subsidiaries, and the degree of autonomy accorded to the latter is a very mature area of research. However, this is one of few studies of this nature conducted for the region of Middle East – and the only one we are aware of for Saudi Arabia – and sheds new light on the impact of contextual circumstances on how closely firms monitor their subsidiaries.	Regression	MNEs from highly financialized Liberal Market Economies (LMEs) will be associated with a greater reliance on formalized control mechanisms. MNE subsidiaries employing large numbers of domestic managerial staff are more likely to be centralized. The presence of third country managers has a negative influence on all types of controls; in other words, their presence leads to a reduction in the quantum of control exercised by the HQ over its subsidiary. The larger the size of the parent and subsidiary, the greater the degree of control exercised by the parent. The larger the size of the parent the greater the control exerted on its subsidiaries by all four categories of controls.	Variables	Agency theory

Liu, Luo, and Yue (2018)	By providing empirical evidence based on a large sample of group companies, we shed light on how decision rights should be allocated within the group company. Making use of China's double disclosure, we develop a novel proxy for the allocation of decision rights between a parent company and its subsidiary. Our study extends this line of research and documents the relation between internal information and power structure.	Decentralization index and regression model	Groups operating in more uncertain business environments tend to be decentralized, i.e., they are more likely to assign decision rights to the subsidiaries due to the demand for specific knowledge for decision-making. Groups with high-quality internal information prefer a centralized structure because the effective communication within the group can facilitate decision-making by the parent company. The evidence strongly supports the prediction that the power structure within a group is significantly affected by both external and internal environments	Determinants	Agency theory
Belenzon, Hashai and Patacconi (2019)	Providing a framework for understanding how managerial attention is distributed in corporate groups: specifically, we propose that "organizational distance"—the number of intermediate subsidiaries separating a focal subsidiary from headquarters—is a useful construct to gauge the level of strategic autonomy that the focal subsidiary will enjoy.	Regression; correlation.	Organizational distance is positively related to the perceived level of autonomy that subsidiary managers enjoy. Subsidiaries are more likely to exhibit managerial practices that support autonomy and decentralized decision-making as organizational distance increases. Differences in responsiveness to changing industry conditions between subsidiaries and matched standalone firms decline with organizational distance. Organizational distance and independent survey measures of subsidiary autonomy are strongly positively correlated.	Factors	Attention-based view of the firm

APPENDIX 3 – GROUPING THE VARIABLES

Age

Age of company abroad
Age of local affiliate
Age of subsidiary
Age of the subsidiary
Subsidiary age
Age
Year of establishment

Size

Average size of subsidiaries
Company size
Consolidated operating asset
Consolidated operating expenses
Consolidated sales revenues
Employees worldwide
Employment level
Firm-size
Foreign sales ratio
Foreign subsidiary ratio
MNC size
Number of subsidiaries
Parent size
Parent's operating assets
Parent's operating expenses
Parent's sales revenues
Percentage of investments (relative size)
Relative size
Relative size of the subsidiary
Sales
Sales (dummy)
Size
Size (employment)
Size (sales)
Size of foreign affiliate
Size of foreign operations
Size of MNC
Size of multinational group
Size of subsidiary
Size of subsidiary (turnover)
Size of the MNC
Size of the subsidiary

Geographical aspects

Geographical distance
MNC geographical heterogeneity
Number of countries in which group has affiliates
Number of countries in which the company operates
Number of expatriates in subsidiary
Organizational distance
Percentage of group's total revenues earned abroad
Percentage of product sold in EU which are produced in EU
Regional market coordination
Regional market development
Regional operation administration
Regional strategy development
Related geographic diversification
Same geographical region
Unrelated geographic diversification

External environment

Capital markets
Competition from EU firms
Competitive climate change
Competitive climate change faced by subsidiary
Consumeristic movements
Cooperation (the subsidiary cooperates with external organizations) (dummy)
Country development
Cultural - individualism
Cultural - power distance
Cultural proximity
Degree of institutional embeddedness of the subsidiary in the host country.
Differences in consumer incomes
Differences in tastes/habits
Differences in technical standards
Differences of social customs and business practices
Different currencies
Economic recession
External network range
External network strength
Home and host country cultures
Home Country environment
Host country regulations
Labour markets
Lack of uniform transportation facilities and regulations

Subsidiary employment
Subsidiary relative size
Subsidiary size
Subsidiary’s sales expressed as a percent of parent’s overall sales
World sales of the corporation

Industry

Industry
Nature of production operations at the subsidiary
Parent business activity
Parent MNE industry
Sector and business activity
Sector of operations
Subsidiary industry
The sector of operation

Entry mode

Entry mode
Method of acquisition
Mode of establishment
Reasons for entering foreign market - looking for new markets
Reasons for entering foreign market - reduction of labour costs
Subsidiary entry mode

Nationality of the parent and ownership

Country
Country of the MNC
Home (US or not)
Multinationality of parent company
Nationality

Extent of local ownership
Extent of outside ownership
Extent of ownership
Foreign ownership
Foreign shareholders
Institutional investors
Ownership
Ownership percentage
Ownership status of the subsidiary (majority-owned or joint venture)
Ownership structure
Percentage of ownership

Language barriers
Local environment
Local market competitiveness
Market conditions
National government regulations
Nationalistic feelings
Perceived environmental variability
Perception of differences in executives' attitudes and values
Perception of local government's attitude
Perception of local laws on foreign investment
Perception of value of local system of education
Political and economic instability
Political conditions
Same ethnicity
Shared values
Shortage of communication media
Supply conditions
Typology of capitalism
Uncertainty of subsidiary's environment

Others for subsidiary

Competence
Complexity of R&D activity at the subsidiary
Economic performance
Importance
Market orientation
Nationality of the subsidiary (Saudi or third country)
Overlap affiliate name
Performance of affiliate (deficits)
Subsidiary establishment (the subsidiary has its own subsidiary) (dummy)
Subsidiary function
Subsidiary intensity of competition
Subsidiary market share
Subsidiary performance

Others for MNC

Advertising intensity
Comparative rate of return
Corporate innovativeness
Cross-shipments of goods
Export propensity
Export-import (dummy)
Extent of foreign acquisitions

Control and coordination tools

Board interlocks
Family managers
Number of directors
Number of parent company's representatives on affiliate's board
Outside director ratio

Development of co-ordination tools
General policy on participation to foreign affiliates' equity
Global mandates
Global Supply headquarters-subsidiary control systems
Organizational structure of parent company
Percentage of responding affiliate's equity held by parent

Internal embeddedness

Degree of integration of activities of members within group R&D budget (as of sales)
Degree of inter-subsidiary production integration
Dependence
Internal network range
Internal network strength
Intracompany imports (purchases) by subsidiary
Intracompany purchases
Intrafirm flows - affiliate to affiliate
Intrafirm flows - affiliate to parent
Intrafirm flows - parent to affiliate
MNC inter-unit dependency
Network (subsidiary engages in network activities within the MNC) (dummy)
Percentage of affiliate's purchases coming from parent
Percentage of affiliate's sales going to parent
Proportion of material inputs coming from other group plants
Proportion of material inputs sourced in the local economy
Proportion of outputs sent to sister subsidiaries for further processing and/or final assembly
Reverse knowledge transfer
Technology transfers from HQs to sub
Technology transfers from sub to HQs

Diversification

Area division
Degree of product change in subsidiary
Foreign product diversity
Hybrid division
International division

Global sourcing and purchasing strategies
Globalization process evolution
Internationalization
Investment origin
Manufacturing (dummy)
Manufacturing scale
Market scope (dummy)
Marketing (dummy)
MNC complexity of technology
MNC experience
MNC international experience
MNC market concentration
Outcome (versus process)
Outsourcing (dummy)
R&D (dummy)
Short-run profit orientation
Strategic approach of the MNC (LME or CME countries)
Strategic resource capability
Technological intensity

Specific for HR

HR body
HR data reported
HR shared services
IT system for HR

Market scope (foreign markets)
Market to be served
MNC degree of diversification
MNC product diversification
Number of products or product lines
Percentage of local affiliate's products identical to parent's
Product change
Product division
Product modification differences
Related product diversification
Unrelated product diversification

INSTRUCTIONS TO CONTRIBUTORS

As a peer-reviewed journal, *International Journal of Business Research and Management (IJBRM)* invite papers with theoretical research/conceptual work or applied research/applications on topics related to research, practice, and teaching in all subject areas of Business, Management, Business research, Marketing, MIS-CIS, HRM, Business studies, Operations Management, Business Accounting, Economics, E-Business/E-Commerce, and related subjects. IJRBM is intended to be an outlet for theoretical and empirical research contributions for scholars and practitioners in the business field.

IJBRM establishes an effective communication channel between decision- and policy-makers in business, government agencies, and academic and research institutions to recognize the implementation of important role effective systems in organizations. IJBRM aims to be an outlet for creative, innovative concepts, as well as effective research methodologies and emerging technologies for effective business management

To build its International reputation, we are disseminating the publication information through Google Books, Google Scholar, J-Gate, RePEc, IDEAS, ScientificCommons, Docstoc and many more. Our International Editors are working on establishing ISI listing and a good impact factor for IJBRM.

The initial efforts helped to shape the editorial policy and to sharpen the focus of the journal. Started with Volume 12, 2021, IJBRM appears in more focused issues. Besides normal publications, IJBRM intend to organized special issues on more focused topics. Each special issue will have a designated editor (editors) – either member of the editorial board or another recognized specialist in the respective field.

We are open to contributions, proposals for any topic as well as for editors and reviewers. We understand that it is through the effort of volunteers that CSC Journals continues to grow and flourish.

IJBRM LIST OF TOPICS
The realm of International Journal of Business Research and Management (IJBRM) extends, but not limited, to the following:

- Interdisciplinary Research Relevant to Business,
- Business & Economics Education
- Business Accounting
- Business Law
- Business Model and Strategy
- Business Processes
- Case Studies
- Cross-Culture Issues in Business
- Customer Relationship Management
- Decision Support and Knowledge-based Systems
- E-commerce, Collaborative Commerce and Net-enhancement
- Economics Business and Economic Systems
- Finance & Investment
- General Business Research
- General Management
- Global Business
- Globalisation, Business and Systems
- Knowledge Management and Organisational Learning
- Labor Relations & Human Resource Management
- Management Information Systems
- Management Systems and Sustainable Business
- Managing Systems

- Marketing Theory and Applications
- Modelling Simulation and Analysis of Business Process
- Organizational Behavior & Theory
- Production and Operations Systems
- Production/Operations Management
- Public Administration and Small Business Entreprenurship
- Public Responsibility and Ethics
- Strategic Management and Systems
- Strategic Management Policy
- Supply Chain and Demand Chain Management
- Technologies and Standards for Improving Business
- Technology & Innovation in Business Systems
- Technopreneurship Management
- Trust Issues in Business and Systems
- Value Chain Modelling Analysis Simulation and Management
- Value-based Management and Systems

CALL FOR PAPERS

Volume: 12 - Issue: 5

i. Submission Deadline : August 31, 2021

ii. Author Notification: September 30, 2021

iii. Issue Publication: October 2021

CONTACT INFORMATION

Computer Science Journals Sdn BhD

B-5-8 Plaza Mont Kiara, Mont Kiara

50480, Kuala Lumpur, MALAYSIA

Phone: 006 03 6204 5627
Fax: 006 03 6204 5628
Email: cscpress@cscjournals.org

CSC PUBLISHERS © 2021
COMPUTER SCIENCE JOURNALS SDN BHD
B-5-8 PLAZA MONT KIARA
MONT KIARA
50480, KUALA LUMPUR
MALAYSIA

PHONE: 006 03 6204 5627
FAX: 006 03 6204 5628
EMAIL: CSCPRESS@CSCJOURNALS.ORG