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The ***Athens Journal of Social Science (AJSS)*** is an Open Access quarterly double-blind peer reviewed journal and considers papers from all areas of social sciences, including papers on sociology, psychology, politics, media, and economics. Many of the papers in this journal have been presented at the various conferences sponsored the Social Sciences Division of **the Athens Institute**. All papers are subject to **Athens Institute**'s Publication Ethical Policy and Statement.

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The current issue is the second of the twelfth volume of the **Athens Journal of Social Sciences (AJSS),** *published by the Social Sciences Division of Athens Institute.*

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Gregory T. Papanikos
President

Athens Institute

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26-29 May 2025, Athens, Greece

The Psychology Unit of Athens Institute organizes its **19th Annual International Conference on Psychology, 26-29 May 2025, Athens, Greece** sponsored by the Athens Journal of Social Sciences. The aim of the conference is to bring together scholars and students of psychology and other related disciplines. You may participate as stream leader, presenter of one paper, chair a session or observer. Please submit a proposal using the form available (https:// www.atiner.gr/2025/FORM-PSY.doc).

Academic Members Responsible for the Conference

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- Submission of Paper: **28 April 2025**

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5-8 May 2025, Athens, Greece

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- Acceptance of Abstract: 4 Weeks after Submission
- Submission of Paper: **7 April 2024**

Academic Member Responsible for the Conference

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- **Dr. Philip G. Cerny**, Director, Social Sciences Division, Athens Institute & Professor Emeritus, University of Manchester (UK) and Rutgers University (USA).
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- Ancient Corinth and Cape Sounion

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Athens Journal of Social Sciences- Volume 12, Issue 2, April 2025 – Pages 75-86

Patient Engagement in Research and Development Processes of Biotech Firms

By Sabrina Moretti[*] & Francesco Sacchetti[±]

Although the issue of patient engagement has been debated for several years, research in the health sector continues to be mainly conducted on patients, seen as a source of data, and not with patients, considering their active contribution in the research process. The concept of patient engagement implies the need for integration between scientific competence regarding a given illness and knowledge based on the direct experience of the illness itself. In this sense, patients should be involved in the identification of health priorities/outcomes. The concept of patient engagement is interpreted in different ways. This fact can create confusion and impasse in practicing patient involvement in medical research. The aim of this article is to begin a deconstruction of the complexity of this concept. This work is based on data collected through a series of qualitative interviews with R&D directors of biotech companies and representatives of patient associations in Italy. Italian biotechnology companies interpret patient engagement as patient centricity, an organizational model that includes the patient's experiential knowledge in research and development processes. This means passing from an illness-centred model to a patient-centred one, and, consequently, interacting constantly with the regulatory agencies and their request for a result produced accordingly. Nevertheless, many factors contribute to the spread of skepticism regarding patient engagement in many pharmaceutical industries: uncertainty about patients' ability to contribute to research, additional costs, slowdown and interference with the research process, uncertainty about how to resolve conflicts, confusion about how to implement a patient-centred approach, uncertainty about the financial value that patient centricity provides. So, patient engagement is often limited to participation, clinical trials, or education about a new drug using health professionals as proxies. The interrelation between regulatory agencies, patients and industries is shaping the contemporary healthcare research and development landscape. Each of them in various forms is involved in a process of organization and change of perspective. Nevertheless, there are no common or shared protocols or best practices, and the initiatives of companies and patient organizations are generally sporadic and inconsistent, which limits their effectiveness. In the Italian context, as in all Western countries, patient participation is seen as a fundamental process, but its implementation is still a learning by doing performance.

Keywords: *Patient engagement, qualitative method, sociology of health*

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Introduction

Today, the involvement of users in the management of illness and health has become a challenge faced by health services and professionals, leading to a cultural change, especially in the doctor-patient relationship. In recent decades, in fact, there has been the development of care models oriented towards an ever greater enhancement of the role of the person, seen as an active and "expert" subject within the clinical-care process. The active participation of the patient in his or her own health care is recognized as a crucial component of high-quality services, particularly in the treatment of chronic diseases. This change has also been stimulated by the spread of information technology, which has led to a greater sharing of information and decision-making between patients and physicians. Indeed, the innovations linked to the use of smartphones and other mobile devices would make an epochal rethinking of the user's role in the care process not only technically possible, but also economically convenient (Graffigna et al. 2016, Prey et al. 2014).

While the participation of patients in treatment processes has thus received and is still receiving a lot of attention, their involvement in health research processes is still little discussed. Although there are currently some associations that deal with including patient participation in all areas of health policies[1], direct involvement in scientific research processes is still episodic and essentially limited to the clinical trial phases and post-approval activities (Anand et al. 2017). Even if researchers and clinicians agree on the promotion of patient engagement, there is currently no consensus on the most suitable strategies and tools for achieving this goal. The purpose of this work is to identify the different key players in research and development patient engagement and to understand their different roles and expectations, and how they interact each other's.

To better understand what role the patient can play in research and development processes in the health field it is necessary, first of all, to start with a definition of the concept of *patient engagement* that can guide practices of the stakeholders involved. The meanings related to the concept differ according to the different contexts in which it is used and the peculiarities of the different stakeholders. The operational modalities of patient involvement in scientific research processes depend on the strategies developed in this field by various actors, such as regulatory bodies, research centres, red biotech companies and philanthropic foundations (Callon and Rabeharisoa 2003), and on the interactions they establish with patient associations. Consequently, the practices adopted will derive from the interests, values and objectives of the actors involved, which must necessarily harmonize with each other. This makes it difficult to find a shared vision regarding when and how to structure the involvement of patients and care givers (Duffett 2017), and to identify the methods of recording and measuring the results that it can produce (Boutin et al. 2017, p. 35).

[1]These include the Agency for Healthcare Research and Quality (AHRQ), a US government agency, the Patient-Centered Outcomes Research Institute (PCORI), a United States-based non-profit organization, and the European Medicines Agency's (EMA) Patients' and Consumers' Working Party (PCWP), which is actively working on designing an inclusive public health policy whose priorities will result from the dialogue of all stakeholders with the idea of a bottom-up process.

Objectives and Methodology

The goal of this work is to identify the methods implemented by stakeholders to promote patient involvement, and how Italian companies involve patients in the development process of biotechnological products. This work is based on literature review and data collected through a qualitative field research based on in-depth interviews. We followed a grounded approach in order to highlight emergent categories from our interviewees (Miles & Huberman 1994). The research was carried out in the period 2017–2019 and involved two categories of subjects: the Italian Research and Development directors of the biotechnological industries (5 interviews) and the representatives of patient associations in Italy (21 interviews with a saturation criterion). The main difficulty was to involve pharmaceutical companies, which do not easily allow interviews, so we used personal networks and contacts with industry gatekeepers trying to include different categories of biotechnology companies (diagnostics, pharmaceuticals, medical devices). For the selection of patient associations we considered two dimensions: 1) the size of companies (number of loyalists), and 2) the type of disease to which they refer (e.g., cancer, epilepsy, etc.). Given the exploratory intent of the work – there is little literature in Italy regarding patient engagement in the development process of drugs and devices – we analysed the interviews in the light of the available literature, bringing out the meaning perceived by the various actors, highlighting some emerging categories with respect to patient engagement in this area.

To analyse the concept of patient involvement, this paper focuses on three subjects/stakeholders, who interact with each other: 1) patients (and their associations); 2) regulatory bodies; 3) biotechnology companies (Red Biotech). Following this idea, we would like to provide a description of the main issues concerning the three actors we have identified regarding the practices of patient engagement in medical research and development. Moreover, we seek to deconstruct the complexity linked to this concept.

Patients, Care Givers and Patient's Associations

The concept of patient engagement in health research can have different meanings. An analysis of the literature reveals that some authors define the term "patient" as someone (not necessarily the patient him- or herself) who possesses experiential knowledge (Boivin et al. 2014, Duffett 2017). According to Hoos et al. (2015), the expression "patient involvement", rather than "patient engagement" or "patient empowerment", better communicates the role that the patient should have throughout the research process. In his conception, it is necessary that patients provide advice and guidance in the development and management of the life-cycle of drugs. It is therefore necessary to give an unambiguous definition of what is meant by "patient" and "involvement", which is also able to clearly identify the main interested parties:

> First, the definition of patient needs to be wide in order to capture all relevant populations who can provide valuable insights through different lenses […]. It should also be recognized that, as well as having keen insight and a different perspective,

> caregivers may sometimes be trying to lead 2 lives—their own and that dedicated to the patient. Second, involvement should not stop with consultation but should proactively embed patients and patient needs at the heart of the development and life-cycle of medicines. Patients' views and opinions should be clearly sought and valued as an integral and essential part of the process, with the development of strategies and practical tools that facilitate genuine patient involvement (Hoos et al. 2015, pp. 2–3).

According to Hoos's idea, researchers should develop strategies and practical tools that enable them to assess patients' views and opinions. Engagement should not be limited to a simple initial consultation, but should be deeply embedded in the development and life-cycle of products, such as drugs or medical devices, through direct and constructive interactions with patients. With this in mind, research should make itself available to patients through a deep understanding of their medical conditions, the challenges they face in everyday life, their goals, their disease symptoms, the side effects of therapies and treatments, and the unmet needs concerning therapy and quality of life.

Duffet prefers to use the term "engagement", and defines it as the co-production process of the research: "the term 'patients' will refer to patients, family, and caregivers that have personal experience or have been affected by the health condition being addressed […] the term 'engagement' means when patients co-build research programs through meaningful and equal partnerships with clinicians, scientists and other research team members. This type of patient engagement should occur throughout the entire lifecycle of research" (Duffett 2017, p. 114). According to this conception, patients provide a type of knowledge and competence based on experience, which should be evaluated and then added to scientific knowledge (Rabeharisoa et al. 2014, Boivin et al. 2014, Duffett 2017). So, the knowledge of patients becomes complementary and important, because it is based on the experiences related to the management of the disease and the impact it has on quality of life.

It is necessary that health research centres define working methods and practices able to integrate patient knowledge in the various phases of the research and development process of a medical product. The methods and forms of involvement are currently quite heterogeneous, and there is no clear consensus on how and when the patient must enter directly into the research process. Duffet (2017) identifies different levels of involvement, ranging from a very superficial presence that sees the patient participate in meetings, but with a passive role, to the situation in which patients are the main researchers in clinical trials (Table 1).

In the event that the patient actively participates within the research groups, the problem of patient training arises. It is necessary to activate a process of co-construction of knowledge. The training should include some basic knowledge on health research methods to enable patients to participate and understand the discussions, but at the same time it should keep in mind that the role of patients must be different from that of researchers, because they must be the providers of unique knowledge that differs from the strictly scientific (Marlett et al. 2015).

In Italy, there are still few initiatives that foresee the involvement of the patient in the scientific research cycle. From the interviews carried out with patient associations, it emerges that a sensitivity towards this topic has not yet developed. The associations are mainly concerned with attracting the attention of public opinion in order to raise funds for developing research concerning the diseases they represent. In particular, it emerges that the associations consider the indirect involvement of patients more appropriate, through the mediation of physicians, who possess sufficient scientific knowledge to participate in discussions with researchers and, at the same time, have a privileged relationship with patients, because they follow them in the course of their illness. For associations, patient engagement mainly concerns the doctor-patient interaction.

However, there are some sporadic initiatives in which the patient has the role of representative or consultant. In the first case, representatives of the associations participate in meetings. This participation serves to inform rather than to make patients an active part of the process. In the second case, the consultancy is carried out in the initial phases of the research, through the administration of questionnaires, to bring out new ideas or research insights, or in the phase of evaluation of the effect of already approved pharmaceutical products, whose objective is basically that of disclosing these results.

Table 1. *Levels of Engagement in Research (Duffett 2017, p. 115)*

Levels of engagement in research	Description	Example
Representative	Present but not an active participant	A patient or patient group that is invited to be present at a meeting but primarily as a passive role and without equal authority as others present.
Consultant	Providing input and views on a select aspect of research but still external to the research team	A patient participates in a focus group or completes a survey about an aspect of the research, but no other involvement with research team or decisions made.
Partnership	Equal partnership with research team, given opportunity to provide meaningful contributions and co-building of research	A patient is fully incorporated into the research team and contributes to the development of the research questions, clinical trial design, trial execution, and dissemination of results. The patient is acknowledged for contributions as a co-investigator.
Leadership	Actively controlling, directing, and managing the research	A patient is the lead investigator, responsible for developing the research either solely or as co-principle investigator with traditional researchers.
Advocate	Focus on patients' rights, lobbying for changes, often with a specific agenda	A patient or patient organization that lobbies the government for increased funding for research.

Innovation and Regulation

Innovation, especially in the health sector, creates questions, ethical dilemmas, and sometimes unwanted and even harmful unintended impacts. Historically, the response to such perspectives has been to govern innovation with its products and impacts after they have already become part of society. If the impacts on society, health or the environment are deemed undesirable, one has the option of changing or introducing regulation to control them in order to protect society. Regulation turns out to be a powerful governance tool in this regard, and as a result, the pharmaceutical sector, like many areas of innovation, is quite tightly regulated (Owen 2012, p. 2).

End-user involvement in innovation through processes such as open innovation (Chesborough 2003, to name but one) is now well-established, and participatory agenda-setting and value-sensitive design have been established to varying degrees within research programmes across the EU (e.g. in the Netherlands[2] and the UK United Kingdom[3]). For example, the Alzheimer's Society in the UK has built up a research network of about 200 carers and dementia sufferers who collaborate in setting research priorities, prioritizing grant applications and participating in grant selection panels (Wilsdon et al. 2005).

The realization of economic and social value has long been considered a responsibility of scientific institutions (Guston 2004). More recently, this point has developed into the emergence of what have been termed social challenges (Lund Declaration 2009) towards which science and innovation are targeted. This general trend towards science and innovation driven by social challenges has a broader structure than just the generation of commercial value, and concerns the concept of responsibility.

Responsible innovation reflects the desire for a more institutionalized and consistently applied, cooperative, values-based approach, in which the principle of participatory agenda setting, through the involvement of citizens and stakeholders in the formulation of grand challenges, is institutionalized and formalized as part of a more generalized governance, on a pan-European scale (Owen 2012, p. 8).

The underlying principle aims to achieve a better alignment of research and innovation with societal needs.

> Responsible Research and Innovation (RRI) refers to the comprehensive approach of proceeding in research and innovation in ways that allow all stakeholders that are involved in the processes of research and innovation at an early stage (A) to obtain relevant knowledge on the consequences of the outcomes of their actions and on the range of options open to them and (B) to effectively evaluate both outcomes and options in terms of societal needs and moral values and (C) to use these considerations (under A and B) as functional requirements for design and development of new research, products and services. The RRI approach has to be a key part of the research and innovation process and should be established as a collective, inclusive and system-wide approach (European Commission 2013, p. 3).

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[2]In the first decade of the 21st century, through an innovative design of an electronic patient registration system or a truly intelligent electric counter, researcher anticipated or prevented moral concerns by managing them at the design stage, reconciling efficiency, privacy, sustainability and security (van den Hoven 2013).

[3]Richard Jones (2008) reports on an experiment in which, through a process of public deliberation, the aims of research were discussed. The results were used to construct a call for research funding in the area of nanotechnology for medicine and healthcare. The public dialogues provided clear guidance on the relative priorities of six potential areas of application of nanotechnology for health care, informing and shaping the nature of the funding call itself, so that it could better respond to societal values.

From this perspective, several national health services nowadays consider it increasingly important to actively involve patients in the identification of healthcare priorities, pursuing as an ideal the position that reads: "nothing about patients, without patients" (Pushparajah 2018, p. 7).

In 2006, the European Medicines Agency (EMA) established the Patients' and Consumers' Working Party (PCWP), which has recently reaffirmed its commitment to improving patient engagement to ensure that the patients' views and needs are considered at every stage of the life-cycle of the development of medicines (EMA 2014). The EMA and the Heads of Medicines Agencies (HMA) strategies, for the period up to 2020, emphasize the need for patient-focused innovation, and state that "in order to stimulate development, there is a need to facilitate the translation of scientific advance into innovative medicinal products that meet regulatory standards, accelerate patients' access to innovative therapies with added valued for patients and are affordable to the EU Member States' health systems" (EMA and HMA 2015, p. 10). One of the three EMA focus areas, with the Committee for Medicinal Products for Human Use (CHMP), is the involvement of patients in the evaluation of the benefits and risks of medicines, and also provides guidance to EMA scientific committees on incorporating patients' views during these evaluations (EMA 2014).

Real patient experiences are increasingly being integrated into the regulatory output of the European Medicines Agency. Furthermore, current patient involvement in the EMA consists of patients participating as members, substitutes or observers in activities involving experts or activities requiring representatives of organisations. There is an increasing number of initiatives to educate patients to become partners with healthcare stakeholders, and to provide useful information that can help shape the life-cycle development of medicines, from early research to the sales activities that follow marketing authorisation[4]. This demonstrates EMA's interest in strengthening a closer collaboration with patients (Pushparajah 2018) in order to institutionalize exchange structures between researchers, clinicians and patients as advocated by Callon and Rabeharisoa (2003, p. 198).

A New Organizational Perspective

Pharmaceutical product development is an extremely complex practice through which Red Biotech companies are trying to develop a new organizational and business perspective based on patient centricity. This moves away from a disease-centric approach (Higgins et al. 2017) by seeking to provide opportunities to more closely meet patients' needs and improve their lives from a more meaningful perspective for them and their families (Yeoman et al. 2017).

[4]The Italian experience of EUPATI, a patient-led network coordinated by the European Patient Forum (EPF), is worth mentioning in this respect. The main objective is to provide scientifically reliable and comprehensive information to patients on pharmaceutical R&D, with the aim of increasing the ability of "expert patients" to be effective advocates and advisors in pharmaceutical development when sitting at the table with regulators, companies and other stakeholders.

In addition, working with patients fosters innovation and allows their goals to be met from the beginning of the process, with outcomes more closely aligned to their needs and desires. In this process, policy makers and funders seek to control costs and require comparative quality and effectiveness evidence, forcing healthcare providers to focus on patient impact, structuring patient-centricity as a product life-cycle sustainability issue for the company.

From the companies' point of view, there are two main meanings concerning patient involvement: the first concerns the handing over of biological samples for experimentation (cells, blood, etc.); the second concerns the sharing of the patient's needs and experience of disease. The second meaning is the one we have focused on, and there are areas that benefit less from this potential for involvement.

For example, in the field of diagnostics, patient engagement is a very marginal concept for reasons related to the specificity and purpose of the product. In business development, research lines,

> we do discovery tests for early diagnosis; we are working on the colon, on gene expression; we do independent research, but on what is mandated. We are early to develop some things: the easiest to use, the most effective, the most sensitive [...] we improve all the technology, but the guideline is set by AIFA and EMA. [...] We make gene analysis kits to see if there are mutations. The oncologist has the answer from the anatomopathologist, and says: 'You can make this drug'. Since the cycles cost €50,000 per year, you can't do it to every patient. For example, colon carcinoma, if it metastasises, has these drugs, then you have to see if there are mutations. If there are mutations, the drug is like water, we throw it away. So, if we don't do this discrimination, the cost to the health system becomes unsustainable (R&D director of diagnostics interview).

Other areas, however, benefit, or would benefit, from patient involvement in an extraordinary way, as in the area of medical devices. There are various types of devices: some provide therapy, others support the patients and their daily activities, and often have curative treatment functions. In this case, the feedback of the use of the device by the patient, and the possibility of being able to understand what the incremental improvements are with respect to the quality of daily life, is very important. Moreover, in general, one should not underestimate the motivational drive of direct contact between the researcher and the sufferer.

> I would find it very useful to talk to patients and their families: in the case where the patients were children, I learnt a lot. Not only did I learn what, outside of what is written in the articles what the real manifestations of that pathology are in someone's life, but I also got inspiration and motivation for my own work. [...] It's a highly motivating factor to have someone in front of you who says: I'm better off with these things here, I've improved this, regardless of the results on the tests that then go to the regulatory authorities (R&D director medical devices interview).

In the field of drug and gene therapy development, patient centricity has its most significant application impact. According to our interlocutors, it is in fact an organizational structure that is now indispensable both for the possibility of developing targeted drugs and for understanding the possibilities of developing and approving new lines of research. In particular, the discussion – now structural – with patients within the advisory boards of the EMA has been highlighted several times:

> […] have seen it several times, by their definition now, especially on rare diseases, they try to involve a patient representative even in discussions with sponsors, as we might be going to the EMA for advice. They talk about what are potential definitions of primary endpoints of a study, then there is a translator who in simple words says: 'Look at this study. The main objective is to improve coordination activities, motor activities,' and asks: 'Do you think this has a significant impact on your life? This kind of improvement?' [Seeing] pre- and post-therapy, the patient gives his opinion and says: 'This is a great improvement' when the agency would have classified that improvement as clinically non-significant (pharmaceutical R&D director interview).

Here we see a reorganization of scientific institutions (Callon and Rabeharisoa 2014) in which the advisory system prioritizes the patient's disease experience – i.e., the knowledge that companies and regulatory agencies lack, by practising responsible evaluation within the framework of social alignment. In this way, the advisory board not only has the function of advising a company on the type of clinical study that needs to be done to approve the drug for marketing, but also has a control function on the primary endpoints that could be developed and on which the product will be evaluated.

It also emerges how the R&D directors recognize the strategic role of patient knowledge sharing to achieve better results, but also point out several negative bureaucratic elements to the full achievement of this new patient-centred organization.

A further aspect to be considered is that of company size, so we will limit ourselves to saying that for small- and medium-sized enterprises, the costs of engagement are relevant both from an economic point of view and in terms of time and personnel resources to be employed. In particular for small enterprises – where the motivational aspect of the engagement on the researcher is potentially stronger – the inhibiting aspect linked to the fulfilments related to the respect of privacy, to the bureaucratic procedures in general, and in particular to those concerning the exploitation of the rights on the research results in the case of public-private partnerships, has been repeatedly stressed.

However, there is general support for the importance of a cultural change within organizations and companies to be in line with new regulatory requirements on patient involvement and to ensure that the pharmaceutical products and medical devices developed meet the timely needs of their patients.

Another aspect to be emphasized for patient centricity approaches is the economic sustainability of the research and development process. In a highly competitive environment, and with advances in medical knowledge, a "One Drug Fits All" development, which worked until a few decades ago, is no longer sustainable. A drug today is more "active" than it was in the past, and it has become more difficult to identify a new one with a significant active difference in its efficacy. Companies, particularly small and medium-sized ones, are therefore shifting their activities towards personalized medicine and the development of drugs for rare genetic diseases involving smaller groups of patients with specific characteristics and unmet needs. This further highlights the advantages for companies with respect to patient involvement in drug life-cycle development, but also the complexity of the factors at play in reshaping the future scenarios of the sector.

Conclusion

The concept of patient engagement expresses the need to integrate scientific knowledge of the disease with knowledge based on experience. This means that patients should be involved both in the choice of research priorities and in the subsequent stages of implementing the process and producing the results.

However, it remains difficult to define such involvement explicitly, as there is a great variability due to the different meanings attributed to the concept and to the different needs of the involved stakeholders. Patients, regulatory agencies and companies are three players on the health landscape who have different epistemic cultures.

Individually, patients have no negotiation power (weak users) (Altieri 2009) and their associations in Italy are more focused on satisfying the direct need for which they were created (linked to specific pathologies and an idea of engagement mainly focused on direct need and on the doctor-patient relationship, rather than on the research process).

For some years, the regulatory agencies, and in particular EMA, have activated procedures that provide for the active participation of patients in their normative production. Patients participate in discussions with other stakeholders with equal authority. In this way, the experiences and needs of patients have entered the regulatory outcomes of EMA.

Companies interpret patient engagement as patient centricity, highlighting the fact that patient involvement can bring them benefits in various aspects. Although there are still many problems for the realization of this involvement, in some sectors, companies are moving towards an organizational model centred on the patient rather than on the disease, by activating an interaction with regulatory agencies. In our research, it emerges that the field/type of product the company deals with, the size of the company, and the personal motivation of researchers are relevant in the implementation of patient centricity.

The development of health research is shaped by the interrelationships between these three types of stakeholders, who are called upon to reorganize themselves according to a new perspective. This reorganization process should adhere to the principle of social alignment, in which the importance of the ethical dimension emerges in the field of scientific progress, which must include an impulse to align the development of science, technology and innovation with the needs of society, through an inclusive and participatory dynamic.

In essence, a cultural change has taken place that has implications on the identity, objectives and practices of the actors involved, be they individuals or organizations. Regulatory agencies act as the engine of this cultural change by demanding patient-centred outcomes and regulating patient engagement. It should also be considered that the engagement institutionalization process has forced companies to review their organizational structure. Furthermore, this occurs at a historical moment in which the sustainability of large-scale trials with respect to the incremental efficacy of drugs is being questioned. This combination of factors is producing an effective shift, especially of small-to-medium-sized biotech companies, towards personalized medicine and orphan diseases, in which the number of referral patients is reduced.

Nevertheless, in the Italian context, and in the Western world in general, it is difficult to find common protocols or best practices that guide the application of patient engagement. Companies and patient organizations do not yet have a shared vision on either the very concept of "patient engagement" in health research, or the processes that must be activated at the organizational level. There is a general belief that patient engagement is an important aspect that cannot be overlooked, but its implementation is still a "learning by doing" performance, and this fact limits its effectiveness.

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A Retrospective Overview of 20 Years of Social Entrepreneurship Research. A Bibliometric Analysis

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The field of Social Entrepreneurship (SE) has generated a significant number of literature on numerous issues, therefore, it is necessary to conduct a comprehensive review of existing studies in this area of study in order to provide a general overview and information on key actors in the field. This study presents a bibliometric analysis of two decades of research in the field of SE in order to ascertain the most important actors. The study further presents information on seven clusters, offering insights into prevailing research patterns within the field of SE. These clusters may be used as a foundation for identifying prospective avenues of future study. The results indicate that there is a lack of representation in terms of research output in the area of social entrepreneurship among institutions in developing countries. This study advocates for further investment in research on Social Entrepreneurship within developing economies, with the aim of identifying innovative and sustainable solutions to the social challenges prevalent in such countries.

Keywords: *social entrepreneurship, social problems, sustainable solutions, bibliometrics, citation analysis*

Introduction

Current developments provide clear evidence that social problems experienced in the world continue to deteriorate (Bacq 2017). One major social problem the world is currently grappling with is the eradication of poverty. Patel (2018) reported that the number of people living in poverty in East Asia and Sub-Saharan Africa increased from 278 million in the year 1990 to 413 million in the year 2015. Current statistics also indicate that the number of people living in extreme poverty rose by 70 million to more than 700 million people and the global extreme poverty rate reached 9.3 percent, up from 8.4 percent in 2019 (World Bank 2023). Unemployment is another social problem confronting world economies. In relation to that, Plecher (2020) indicates that there are about 174.1 million unemployed persons worldwide. The deterioration of global socioeconomic problems is further demonstrated by the outbreak of the Coronavirus (COVID-19) pandemic, which has devastated global economies and infected and killed millions of people globally. These worsening social conditions and efforts made to eliminate its consequences have resulted in the popularity of social entrepreneurship (SE). In view of these developments SE has become well established

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in most businesses today and an important area of entrepreneurship research (Sassmannshausen and Volkmann 2013).

Austin et al. (2006, p. 2) defined SE as an "innovative, social value-creating activity that can occur within or across non-profit, business, or government sectors". Robinson (2006) also defined SE as establishing a profit-driven organization with a social mission or a non-profit entity with a business-oriented focus, aiming to achieve both financial and social objectives. Based on these explanations, social entrepreneurship (SE) can be considered as a form of entrepreneurship that is driven by a social purpose with the aim of improving both humanity and society (Koe and Shamuganathan 2010).

The field of SE is still considered to be in its infant or nascent stages but is evolving (Dionisio 2019). The field is likewise regarded challenging and developing, with limited research on the discipline's position and legitimacy (Granados et al. 2011, Rey-Marti et al. 2016). Notwithstanding these limitations, there is a wealth of literature available on many facets within the field of SE, necessitating the need to take inventory of studies that has been conducted in the field of SE to enable the identification of new pathways and problems for the future (Low and MacMillan 1988). As a result, this article conducts a bibliometric study of research in the field of SE in a twenty-year (20) period in order to provide an overview of the subject in general and information on the key authors, nations, organizations, and sources in the area of SE. The paper also presents information on seven clusters which provided an idea of current research trends in the field of SE and can serve as a basis of determining future research directions. The study also offers an overview of the institutions, countries, and co-writer analysis of writers in addition to bibliographic coupling of documents, keywords analysis, citation, co-citation, authors, organizations, countries and sources. Although prior bibliometric studies have been conducted in the subject of SE (Ahmad and Bajwa, 2022, Campos et al. 2020, Coronel-Pangol et al. 2023, Dionisio 2019, Gonçalves et al. 2016, Granados et al. 2011, Hota et al. 2020, Kraus et al. 2014, Persaud et al. 2018, Rey-Martí et al. 2016, Sassmannshausen and Volkmann 2013, Şengüllendi 2021, Trabskaia et al. 2023, Talukder and Lakner 2023), this study aims to address the existing gaps in the literature by conducting additional analyses that can contribute to a deeper understanding of the field (Dionisio 2019, Hota et al. 2020). Furthermore, it responds to the call for a follow-up study after a certain period of time (Hota et al. 2020).

The results of this study have significant potential for professionals and scholars engaged in the field of social entrepreneurship. For example, the findings may assist researchers in identifying subjects within the field of social entrepreneurship that can provide guidance in exploring other study areas within the discipline. The findings of this study may also assist scholars in acquiring knowledge on the prominent institutions, nations, and writers in the field of social entrepreneurship. This information will be valuable in the pursuit of collaborative opportunities or academic exchanges in the future. Ultimately, the findings of this study may assist scholars in discerning significant and pertinent topics and research avenues within the field of SE. This, in turn, can facilitate more investigation and exploration in the future. The study addresses the following research questions:

i. How has the field of social entrepreneurship developed in terms of publications?
ii. What are the most productive journals in the field of social entrepreneurship?
iii. Who are the most prolific authors in the field of social entrepreneurship?
iv. What are the most cited papers in the field of social entrepreneurship?
v. What is the current research focus in the field of social entrepreneurship?

The subsequent sections of the paper are structured in the following manner. Section two of this paper presents information on the historical perspective of SE and is proceeded by a review of literature. The next section outlines the methodology used for the research, while sections that follow presents information on the findings, limitations and recommendation for practice, policy and future studies as well as the summary and conclusion of the study.

Social Entrepreneurship: A Historical Perspective

The concept of social entrepreneurship traces its roots back to the 1970s although non-profit organisations in the United States and Europe have been engaged in social entrepreneurial endeavours for an extended period. This concept emerged as a response to the challenge of ensuring the long-term viability of social impact. This is in line with the assertion of Dees (1998) who opined that although the terminology used in the field of social entrepreneurship (SE) may be relatively recent, the concept itself has been present for a considerable time.

The term social entrepreneur was first used by Joseph Banks in 1972 in his seminal work entitled "The Sociology of Social Movements." In the aforementioned study, Banks utilised the term to effectively convey the imperative of utilising managerial proficiency in addressing not only societal challenges but also business-related impediments (Ashoka 2009). Drucker (1979) p. 453 also introduced the notion of social enterprise in his seminal work when he argued that even the “most private of private enterprise is an organ of society and serves a social function. Additionally, Drucker (1979) advocated a need for a social sector in addition to the private sector of business and the public sector of government to satisfy social needs and provide a sense of citizenship and community.

The origins of social entrepreneurship practises may also be traced back to the 1980s, which coincided with the establishment of Ashoka, which is an influential organisation that offered global support to social entrepreneurs (Ashoka 2009). In line with that assertion, Welch and Krueger (2013) indicated that the term social entrepreneurship was initially introduced in 1980 and gained increasing recognition in both academic and non-academic spheres during the late 1990s.

The concept became popular with the development of the "social entrepreneurship initiative" by Harvard Business School in 1993 which is widely recognised as a pivotal moment in the field of social entrepreneurship (The Centre for Strategic Research and Development of Georgia 2013). Mort and Weerawardena (2007) further assert that significant progress was made in the domain of social entrepreneurship during the year 2006. Within the realm of scholarly inquiry, three notable academic papers were published, namely a special issue on SE in the Journal of World Business, a publication by Nicholls (2006) by the Oxford University Press and finally, a Palgrave Macmillan printed book edited by Mair which addressed SE theory and research. Furthermore, Mair's edited volume, published by Palgrave Macmillan delves into the realm of social entrepreneurship, exploring its theoretical underpinnings and empirical investigations. The global acknowledgement of social entrepreneurship experienced a notable increase following the award of the Nobel Peace Prize to Mohammad Yunus in 2006, who was rewarded for his development of the Grameen Bank (Noruzi et al. 2010). Zahra et al. (2008) presented a novel framework that identifies four essential characteristics that have facilitated the global expansion of social entrepreneurship (SE) which encompasses several aspects, such as the worldwide inequities in wealth, shifts in firms' corporate social responsibility practises, market failures, the constraints of governmental institutions, and advancements in technology.

Although the scholarly discourse around the history of SE exhibits a lack of consensus, social entrepreneurship has gained astronomical growth. This phenomenon can be attributed to both novel approaches in addressing unresolved societal issues and the lack of efficacy in governmental measures aimed at resolving these issues (Bornstein and Davis 2010, Mair and Marti 2006). Moreover, scholarly literature suggests that the increased focus on social entrepreneurship (SE) can be attributed to various economic, social, and political transformations, as well as ongoing challenges that necessitate innovative strategies and advancements that enhance the likelihood of addressing these challenges (Kumar and Gupta 2013, Nicholls 2006).

Literature Review

Social Entrepreneurship (SE) Defined

Social entrepreneurship has been the subject of increasing research interest and is gaining popularity, yet the field is considered to be nascent and growing (Dionisio 2019). In view of these developments, Ferreira et al. (2017) argued that despite the increased interest in social entrepreneurship, there is no consensus about its definition. In relation to that assertion, Conway and Kalakay (2016) also averred that there is no consensus on the exact definition of social entrepreneurship. This is a clear indication that there is still disagreement as to precisely what constitutes social entrepreneurship.

The existing body of literature presents several distinct definitions of social entrepreneurship, which may be categorised along two continua. The first continuum pertains to the social aspect of the notion, while the second continuum focuses on the entrepreneurial component (Paredo et al. 2006). Several researchers that discuss the notion of social entrepreneurship in relation to its social aspect often link it solely with not-for-profit organizations that initiate for-profit or earned-income projects, conversely, there are those who employ this term to encompass individuals who establish not-for-profit organizations (Dees, 1998). In relation to the notion of applying SE to not-for-profit organisations, Reis and Clohesy (1999) defined SE as the implementation of effective commercial strategies within the context of non-profit organisations. Kerlin (2012) also reinterated that social entrepreneurship (SE) can be described as the utilization of non-governmental and market-oriented strategies to tackle social problems. Dees (1998) asserts that social entrepreneurship (SE) encompasses the fervor of a social mission, while also embodying the characteristics of business-like discipline, ingenuity, and determination typically attributed to prominent figures in the high-tech industry.

The other part of the continuum suggest that SE have an entrepreneurial component and does not apply solely to the establishment and management of non-profit organisations (Paredo et al. 2006). In line with this school of thought, Austin et al. (2006) defined social entrepreneurship as entrepreneurial activity with an embedded social purpose. Singh (2016) defined social entrepreneurship as a systematic approach to recognizing and capitalizing on opportunities within social issues. This approach involves mobilizing resources and implementing innovative strategies to address these issues, with the ultimate goal of generating social value and fostering positive societal outcomes (Singh 2016). The primary purpose of these resource combinations is to investigate and capitalize on chances for generating social value through the facilitation of social change or the fulfillment of social needs (Natsvlishvili 2018).

Robinson reconciled the definitions categorised along the two continua of SE when he defined SE as establishing a profit-driven organization with a social mission or a non-profit entity with a business-oriented focus, aiming to achieve both financial and social objectives (Robinson 2006).

Understanding Social Enterprises (SEs)

The term social enterprise is attributed with varying definitions and conceptions across different countries and regions (Kerlin 2012). In view of this development Borza et al. (2009) cautioned that not all organisations that uphold a social mission can be classified within the realm of social entrepreneurship. It is only those organisations that truly fulfil the criteria of social entrepreneurship who may be considered as such.

Social enterprises are recognised as organisations that possess hybrid characteristics who integrate social objectives with market-oriented strategies in order to tackle worldwide social problems (Battilana and Dorado 2010, Dacin et al. 2011). Social enterprises are classified as private, autonomous, and innovative entities that employ commercial strategies to effectively address social and environmental challenges (Natsvlishvili 2018).

According to Natsvlishvili (2018), social enterprise can be described as an organisational entity that effectively utilises novel innovations, alternative methodologies, established technologies and tactics, or innovative amalgamations to accomplish substantial, systemic, and enduring social transformations. According to Doherty et al. (2014), social enterprises can be described as hybrid organisations that possess a dual mandate of pursuing social objectives while simultaneously maintaining financial viability. This indicates that social enterprises are focused on adopting commercial strategies to find solutions to social problems.

Explaining Social Impact

The concept of social impact holds significant importance within the realm of social entrepreneurship (Dacin et al. 2010, Lumpkin et al. 2013). The scholarly literature has employed various terms to conceptualise social impact, including social value (Moss et al. 2011, Santos 2012), social performance (Husted and Salazar 2006, Mair and Marti 2006, Nicholls 2008), social returns (Emerson 2003), social return on investment (SROI) (Hall et al. 2015), and social accounting (Nicholls 2009). In recent times, there has been an increasing association between impact and outcomes that specifically address the fundamental underlying factors of a social issue (Ebrahim and Rangan 2014).

Stephan et al. (2016, p. 3) defined social impact as “the beneficial outcomes resulting from the process of transforming patterns of thought, behaviour, social relationships, institutions, and social structure to generate beneficial outcomes for individuals, communities, organizations, society, and/or the environment beyond the benefits for the instigators of such transformations”. Based on the definition offered by Stephan et al. (2016), Rawhouser et al. (2019), p.83 defined social impact as “beneficial outcomes resulting from prosocial behaviour that are enjoyed by the intended targets of that behaviour and/or by the broader community of individuals, organizations, and/or environments”. Social impact is also employed by other scholars to denote noteworthy or enduring transformations in individuals' lives that arise from a specific action or sequence of actions (Ebrahim and Rangan 2014). The term impact is often used in a more limited sense by some individuals, specifically to describe an organization's distinct and quantifiable contribution to influencing a societal outcome. This understanding of impact necessitates the consideration of a counterfactual scenario in order to measure the organization's effectiveness (Ebrahim and Rangan 2014).

Methodology

The Scopus database was used to collect the essential statistical data for this bibliometric analysis. This is due to the perspective held by some bibliometricians who consider Scopus to possess a larger scope compared to the SSCI (WOS) database (SciTech Strategies 2012). The present study has a time frame of twenty years, during which data for the investigation was collected by conducting a comprehensive search of the Scopus database spanning from 2001 to 2020. The Scopus database search engine yielded a total of 1106 papers published in 296 sources between the years 2001 and 2020. Table 1 provides a breakdown of these findings, which include a cumulative count of 57,448 references and 2,259 writers.

In order to measure the productivity and influence of journals in the field of SE, a variety of bibliometric indicators were examined. These indicators included the total number of publications, citations, h-index, and g-index, which together offered a complete depiction of the bibliographic data (Alonso et al. 2009). The measure of a journal’s productivity is determined by the total number of papers (TP), while the relevance and quality of its publications can be assessed by the total number of citations and the number of citations per article (Modak et al. 2019). The h-index is a statistic that is widely recognized and used in the evaluation of a journal's level of achievement (Merigó and Yang 2017). The measurement of efficacy include both production and citations simultaneously. According to Modak et al. (2019), an h-index of n signifies that a journal has published a maximum of n articles, with each publication receiving at least n citations from other papers published in the same journal.

The VOS viewer programme was used to generate network visualisations of bibliographic coupling, co-authorship, co-citation, and co-occurrence of keywords by establishing connections between relevant elements under investigation. The concept of bibliographic coupling pertains to the occurrence when two publications have one or more citations in common (Kessler 1963). According to Zupic and Cater (2015), the strength of the association between two articles is directly proportional to the amount of overlap seen in their bibliographies. When two papers are both referenced by a third document, they are considered for inclusion in a co-citation index (Small 1973). The co-authorship indicator evaluates the degree of interconnectedness among co-authors originating from various sources. Graphical network visualisations are generated by considering the quantity of linkages and their collective strength. The number of circles around network connections in graphical depictions signifies the significance of an entity.

Bibliometric studies have been employed in various disciplines, such as marketing (Donthu et al. 2020a, Donthu et al. 2020b, Donthu et al. 2020c, Kumar et al. 2020), management (Ellegaard and Wallin 2015, Podsakoff et al. 2008, Zupic and Cater 2015), entrepreneurship (Dionisio 2019, Gonçalves et al. 2016, Hota et al. 2020, Kraus 2013, Landström et al. 2012, Sassmannshausen 2013), operations management (Chang and Hsieh 2008, Liao et al. 2018, Merigó and Yang 2017), finance (Alexander and Mabry 1994), and are a frequently used form of review among marketing researchers (Donthu et al. 2020, Hoffman and Holbrook 1993, Kumar et al. 2019, Martinez-Lopez et al. 2018, Okumus et al. 2018, Valenzuela et al. 2017). Bibliometrics is a very effective technique for the management of extensive bibliographic data, and its quantitative nature serves to mitigate the influence of author biases (Donthu et al. 2020).

Results

Table 1. *Main Information*

Description	**Results**
Timespan	2001:2020
Sources (Journals, Books, etc)	292
Documents	1106
Average years from publication	4.46
Average citations per documents	17.47
Average citations per year per doc	2.517
References	57448
DOCUMENT TYPES	
Article	1106
DOCUMENT CONTENTS	
Keywords Plus (ID)	690

Author's Keywords (DE)	2534
AUTHORS	
Authors	2259
Author Appearances	2765
Authors of single-authored documents	207
Authors of multi-authored documents	2052
AUTHORS COLLABORATION	
Single-authored documents	228
Documents per Author	0.49
Authors per Document	2.04
Co-Authors per Documents	2.5
Collaboration Index	2.34

Source: Research Data 2023.

Contributing Authors, Institutions, Countries and Sources

Table 2 summarises the most prolific authors in the field of SE. For the period under review, authors such as Tracey P, Gedajlovic E, Neubaum DO, Shulman JM and Zahra SA are the most prolific contributors in the field of SE. With 1182 citations, Tracey P is the most referenced author. Tracey P is followed by Gedajlovic E, Neubaum DO, Shulman JM and Zahra SA, all with 962 citations. Other prolific contributors include Nyssens M with 530 citations, Defourny J with 529 citations, Dacin MT with 518 citations, Dacin PA also with 518 citations and Mair J with 508 citations.

Table 2. *Most Prolific Authors*

No.	Author	h_index	g_index	m_index	TC	NP	PY_start
1	Tracey P	6	6	0.462	1182	6	2009
2	Gedajlovic E	1	1	0.077	962	1	2009
3	Neubaum DO	1	1	0.077	962	1	2009
4	Shulman JM	1	1	0.077	962	1	2009
5	Zahra SA	1	1	0.077	962	1	2009
6	Nyssens M	3	4	0.25	530	4	2010
7	Defourny J	3	3	0.25	529	3	2010
8	Dacin MT	1	1	0.091	518	1	2011
9	Dacin PA	1	1	0.091	518	1	2011
10	Mair J	4	5	0.4	508	5	2012
11	Kerlin JA	2	2	0.125	482	2	2006
12	Santos FM	1	1	0.1	472	1	2012
13	Bacq S	6	7	0.545	470	7	2011
14	Jarvis O	1	1	0.091	419	1	2011
15	Phillips N	1	1	0.091	419	1	2011
16	Stephan U	3	4	0.429	408	4	2015
17	Janssen F	3	3	0.273	312	3	2011
18	Besharov ML	2	3	0.222	297	3	2013
19	Gonin M	2	2	0.222	292	2	2013
20	Smith BR	5	6	0.417	287	6	2010

Source: Research Data 2023.

Table 3 summarises the most prolific institutions in the field of SE in terms of publications. Institutions such as Swinburne University of Technology, Glasgow Caledonian University, Queensland University of Technology, University of Birmingham, and University of Sheffield have contributed the most articles in the field of SE. Swinburne University of Technology contributes the most papers with 26, followed by Glasgow Caledonian University with 21, Queensland University of Technology with 18, the University of Birmingham with 16, and the University of Sheffield with 18. This table clearly indicates that institutions in emerging economies are underrepresented in terms of research in the field of SE.

Table 3. *Most Prolific Institutions*

No.	Affiliations	Articles
1	Swinburne University of Technology	26
2	Glasgow Caledonian University	21
3	Queensland University of Technology	18
4	University of Birmingham	16
5	University of Sheffield	16
6	Lappeenranta University of Technology	15
7	University Of Cambridge	15
8	University of Pretoria	15
9	University of Cape Town	14
10	Indiana University	13
11	University of Essex	12
12	Auckland University of Technology	11
13	University of Ottawa	11
14	University of St. Gallen	11
15	University of the Witwatersrand	11
16	University of Trento	11
17	University of Valencia	11
18	Miami University	10
19	Universitã© Catholique De Louvain	10
20	University of Economics	10

Source: Research Data 2023.

Table 4 summarises the most productive countries that have made significant contributions to the area of SE over the last two decades in terms of total citations. The United States, the United Kingdom, Belgium, Canada, and Australia are all significant contributors. With 4631 citations, articles by authors based in the United States attracted the most attention, followed by authors from United Kingdom with 3762 citations, Belgium with 1225 citations, Canada with 1129 citations and Australia with 833 citations. The table clearly indicates that Asia is well represented in the top twenty (20) most prolific countries in the world with representations from India, Malaysia, Iran and China. Africa, however does not have any representation in the top twenty (20) most prolific countries in SE research. This clearly indicates that institutions and universities in Africa have not invested much in SE research. This observation is surprising, given the persistent challenges and deficiencies in the area, which underscore the need for more investigation into the field of social entrepreneurship in order to address the enduring societal challenges faced by Africa (Diochon and Gore 2016, Claeyé 2017).

Table 4. *Most Prolific Countries*

No.	Country	Total Citations	Average Article Citations
1	USA	4631	30.07
2	United Kingdom	3762	27.06
3	Belgium	1225	49.00
4	Canada	1129	32.26
5	Australia	833	14.61
6	France	729	33.14
7	Germany	648	24.00
8	Italy	546	18.83
9	Spain	380	12.67
10	Netherlands	356	15.48
11	India	328	9.11
12	Malaysia	315	17.50
13	Switzerland	299	27.18
14	New Zealand	286	15.89
15	Sweden	205	12.81
16	Portugal	160	11.43
17	Iran	139	34.75
18	Austria	134	26.80
19	Finland	121	8.07
20	China	105	4.57

Source: Research Data 2023.

Mapping of Journals with VOS Viewer Software

The VOS viewer software was used in this section to provide a visual representation of the data, facilitating a more in-depth exploration of the bibliographic information (Van Eck and Waltman 2010). This research employs a network framework to depict bibliographic coupling (Kessler 1963), co-citation (Small 1973), co-authorship, and keyword co-occurrence.

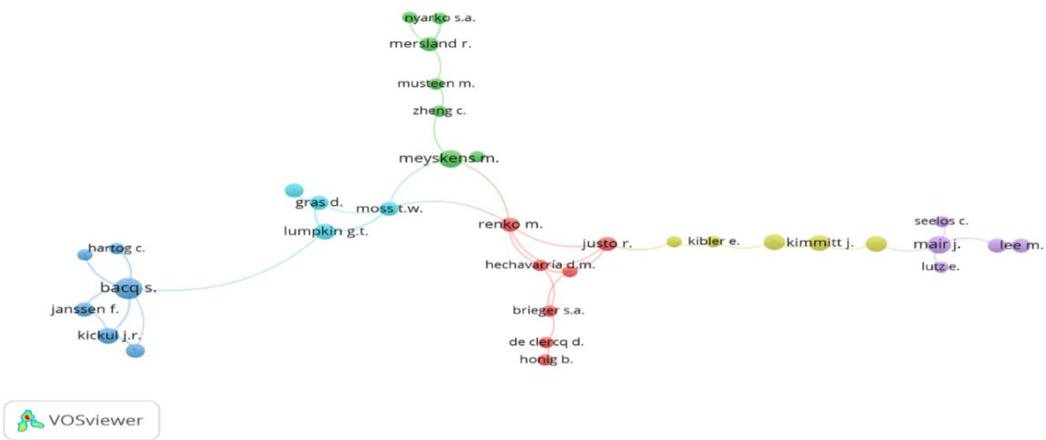
Graphical network representations were created using the number of linkages and their total strength (Modak et al. 2019). In graphical representations, network connections show the strength of relationships between things, and the size of circles represents the value of an item. The number of inner and outer connections joining and leaving a network node is indicated by the node's size in the network. The thickness of interconnections between any two nodes in a network represents the strength of the connections (Bastian et al. 2009).

Co-authorship Analysis of Authors, Institutions and Countries

The co-authorship network of authors working in the field of SE is depicted in Figure 1. Co-authorship network examines the social networks created by authors, institutions and countries who collaborate on scientific articles (Acedo et al. 2006).

For example, Bacqs, Mair, Meyskens, and Lumpkin are the prominent collaborators in the field of SE.

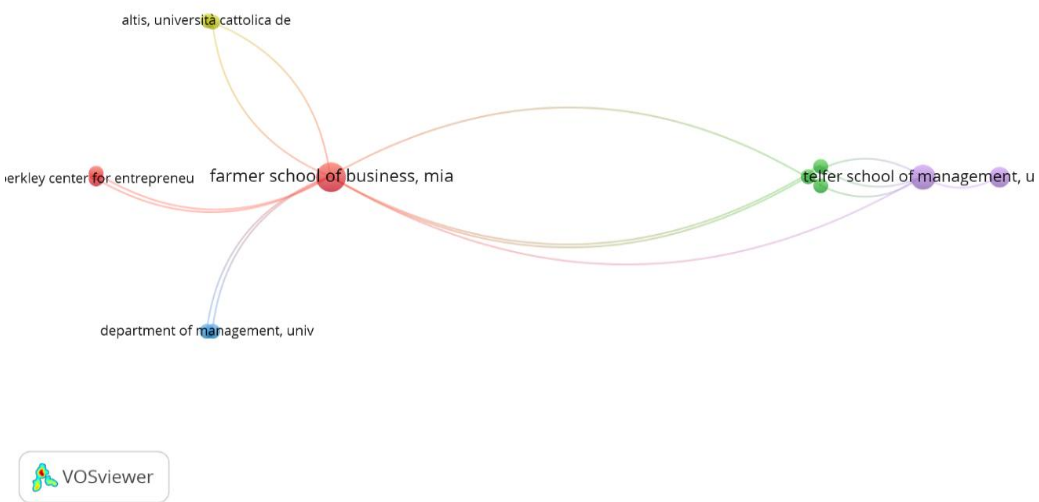
Figure 1. *Co-authorship ANalysis (Authors)*



Source: Research Data 2023.

The network of institutions that collaborated on research publications is depicted in Figure 2. The Farmer School of Business at Miami University, the Telfer School of Management at the University of Ottawa, and the Smith School of Business at Queen's University in Canada are among the notable universities that have collaborated on research in the area of SE

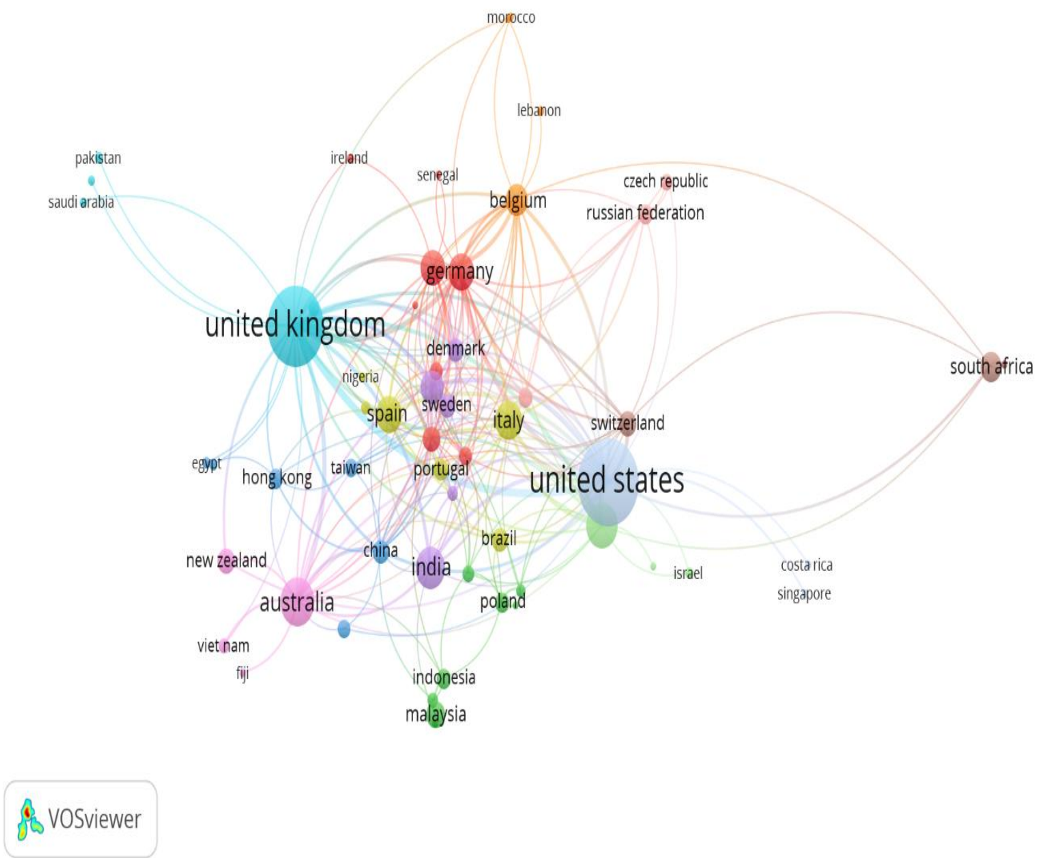
Figure 2. *Co-authorship Analysis (Organisations)*



Source: Research Data 2023.

In terms of country collaborations, Figure 3 shows that the United States of America and the United Kingdom together hold the largest number of nodes in the country co-authorship network, indicating that, among the collaborating countries in the field of SE, the United States of America and the United Kingdom have the greatest number of collaborations with others. Australia, India, Germany, Canada, Italy, and Spain are also prominent collaborators in social entrepreneurship research. The figure indicates a few representation of African countries such as Malawi, Egypt, Uganda, Sierra Leone etc. which serves as an indication that African countries are gradually representing in research in the field of SE.

Figure 3. *Co-authorship Analysis (Countries)*



Source: Research Data 2023.

<u>Analysis of Keyword Co-occurrence - All Keywords</u>

According to Strozzi et al. (2017), author keywords serve as indicators of an article's substance or its relevance to its study subject. Ding et al. (2001) claim that the presence of author keywords appearing together suggests a potential thematic similarity between the respective works. The authors conducted an analysis of the keywords used in order to ascertain the prevailing research patterns in the domain of social entrepreneurship across the years. According to the data shown in Figure 4, the terms that have the highest frequency of occurrence are social enterprise, social entrepreneurship, innovation, sustainable development, organizational framework, and non-profit organization.

Figure 4. *Keyword Co-occurrence Analysis (All Keywords)*

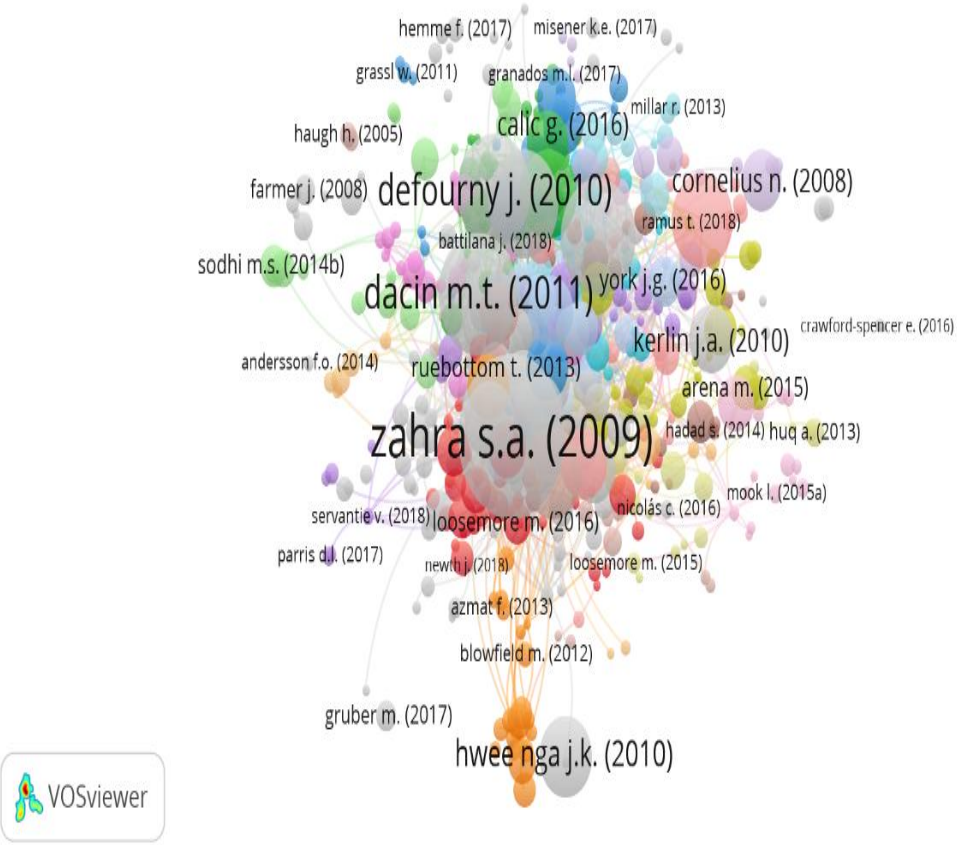
Source: Research Data 2023.

<u>Citation Analysis – Documents, Sources, Authors, Organizations, and Countries</u>

Citation analysis identifies the most frequently referenced publications, sources, authors, organizations, and nations in the subject area under consideration. Citations are used to quantify influence. If an article receives a high number of citations, it is deemed significant (Zupic et al. 2015).

As illustrated in figure 5, the most frequently mentioned documents are Zahra (2009) with 962 citations, followed by Dacin (2011) with 518 citations, Santos (2012) with 472 citations, Defourny (2010) with 453 citations and Tracey (2011) with 419 citations. Other most cited documents include Kerlin (2006) with 318 citations, Bacq (2011) with 292 citations, Smith (2013) with 284 citations, Koe (2010) with 234 citations and Choi (2014) with 218 citations.

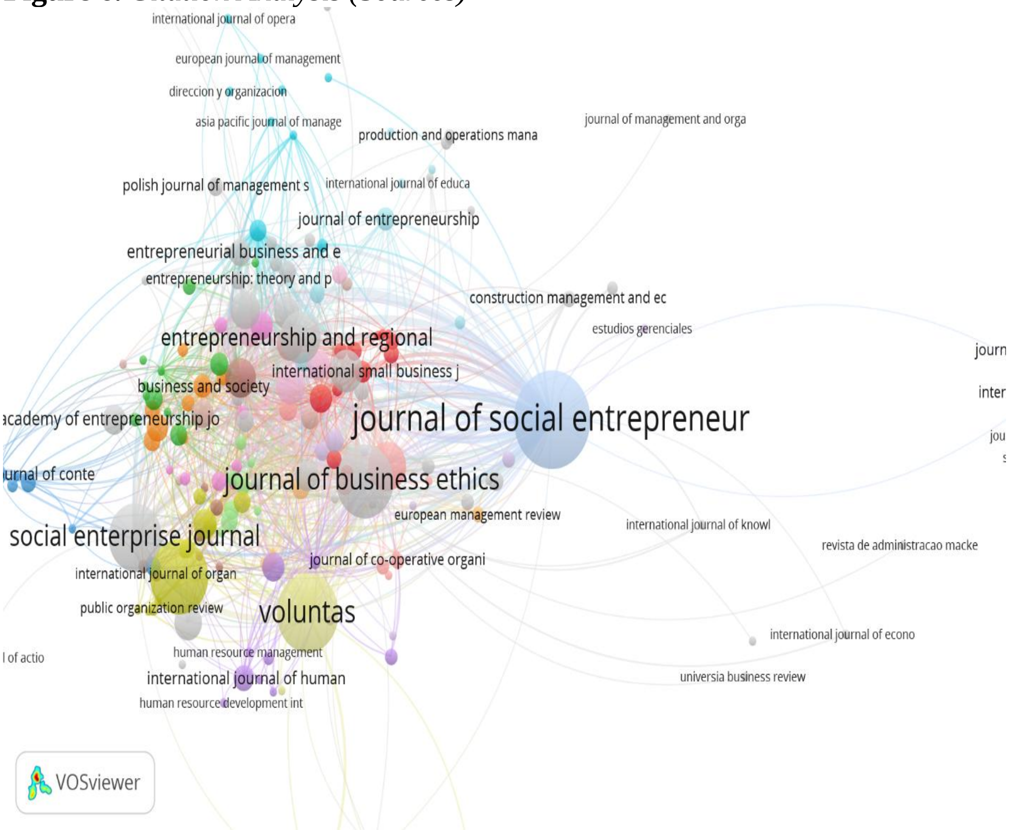
Figure 5. *Citation Analysis (Documents)*



Source: Research Data 2023.

Figure 6 depicts the most cited sources in the field of SE. As indicated in the figure, Journal of Business Ethics is the most often cited source within the period under review with 2363 citations. This is followed by Journal of Business Venturing with 1882 citations, Journal of Social Entrepreneurship with 1726 citations, Voluntas with 1315 citations and Entrepreneurship and Regional Development with 1198 citations. Other journals among the most cited sources include Organization science with 994 citations, Journal of Cleaner Production with 614 citations and Small Business Economics with 569 citations.

Figure 6. *Citation Analysis (Sources)*



Source: Research Data 2023.

Table 5 provides details of the most cited sources in the field of SE.

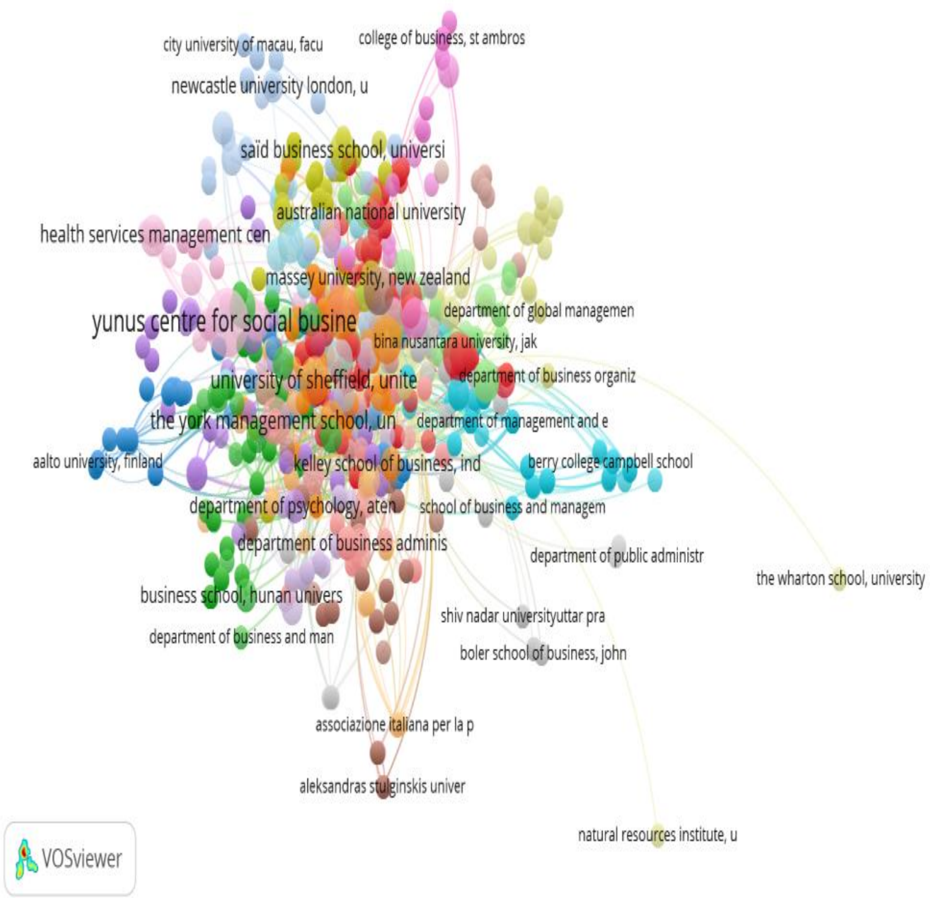
Table 5. *Most Cited Sources*

No.	Source	Documents	Citations
1	Journal of business ethics	58	2363
2	Journal of business venturing	16	1882
3	Journal of social entrepreneurship	101	1726
4	Voluntas	65	1315
5	Entrepreneurship and regional development	28	1198
6	Organization science	4	994
7	Journal of cleaner production	26	614
8	Small business economics	5	569
9	Journal of management studies	5	356
10	Organization studies	6	323
11	Journal of business research	17	314
12	Strategic entrepreneurship journal	6	291
13	Journal of nonprofit and public sector marketing	10	269
14	International journal of entrepreneurial behaviour and research	19	242
15	International small business journal	5	239
16	International journal of entrepreneurship and small business	16	209
17	Technological forecasting and social change	12	185
18	Social enterprise journal	50	167
19	International entrepreneurship and management journal	9	153
20	Business and society	6	143

Source: Research Data 2023.

The list of the most cited organizations is demonstrated in figure 7. Considering the years under review, the prolific institutions in the field of SE include University of Sheffield, Farmer School of Business (Miami University), Yunus Centre for Social Business and Health (Glasgow Caledonian University), University of Toronto, Canada, Gordon Institute of Business (University of Pretoria, South Africa), the York Management School (University of York), Department of Management and International Business (University of Auckland Business School), Health Services Management Centre (University of Birmingham), Swinburne University of Technology, Telfer School of Management (University of Ottawa) etc.

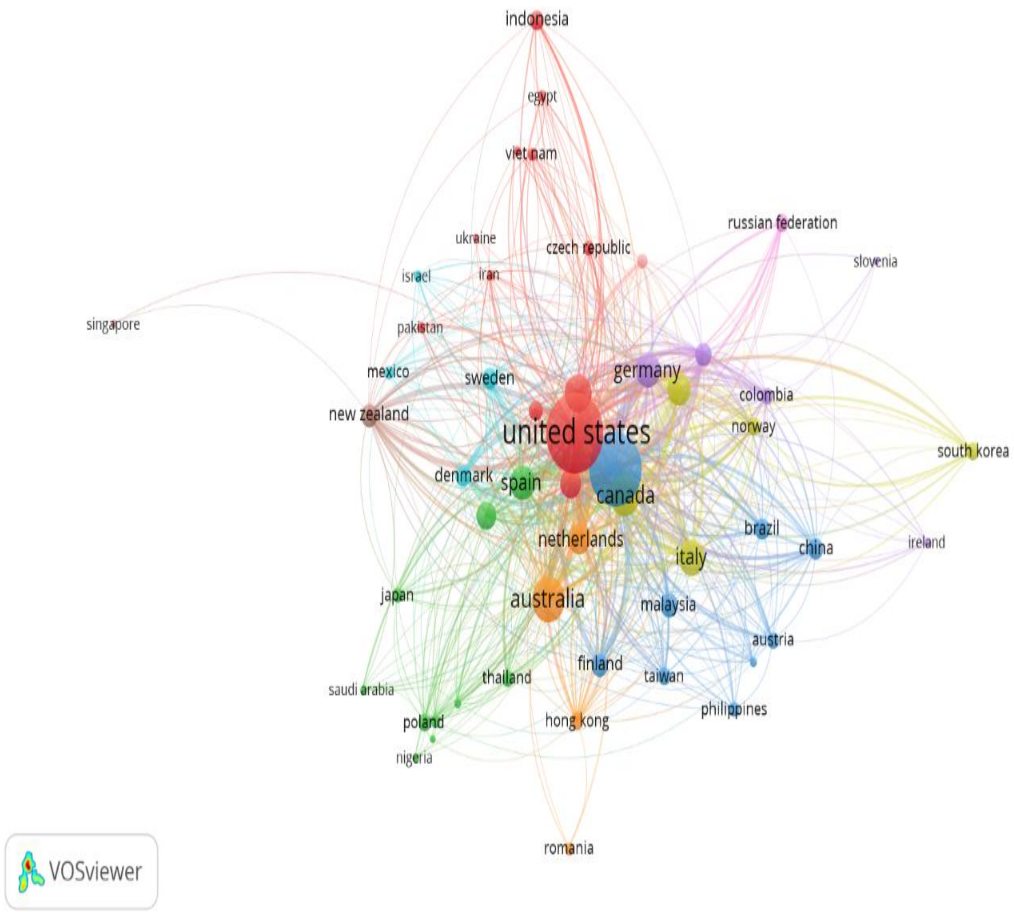
Figure 7. *Citation Analysis (Organisations)*



Source: Research Data 2023.

The list of most prolific contributing countries in the field of SE is also analyzed. This is demonstrated in figure 8 which indicates that USA and the United Kingdom are the highest contributing countries during the year under review. Other prolific contributing countries include Canada, Australia, Belgium, Italy, Spain, Australia, France, Germany, Netherlands, Switzerland, India, etc.

Figure 8. *Citation Analysis (Countries)*

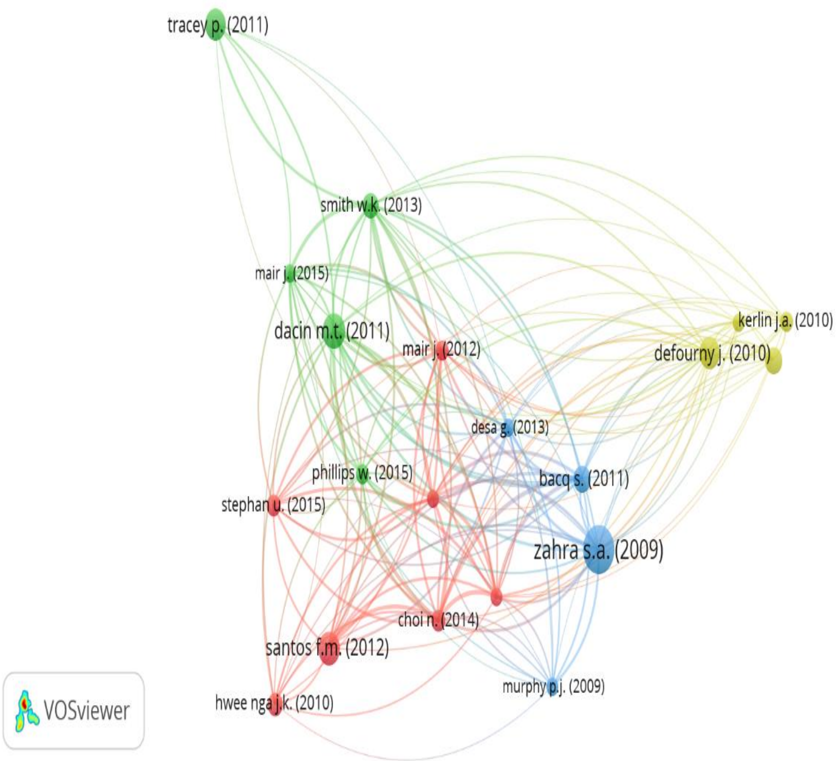


Source: Research Data 2023.

<u>Analysis of Bibliographic Coupling - Documents, Sources, Authors, Organizations, and Countries</u>

Bibliographic coupling, as described by Zupic et al. (2015), refers to the quantification of the shared references between two texts as an indicator of their similarity. The creation of bibliographic coupling occurs when documents reference one or more shared sources and have a coherent intellectual topic (Kessler 1963). This is used to determine how journals in the discipline of SE are organized thematically. The bibliographic coupling of documents in the field of SE is depicted in Figure 9. Choi (2014) and Bacq (2011) exhibit the strongest connection with link strength of 18. This is followed by Choi (2014) and Dancin (2011) with a link strength of 17, Lepoutre (2013) and Bacq (2011) with a link strength of 16, Smith (2013) and Mair (2012) with a link strength of 14, Dacin (2011) and Lepoutre (2013) with a link strength of 14 and Choi (2014) and Santos (2012) as well as Choi (2014) and Dacin (2011) with a link strength of 12. This data suggests more frequent collaborations among authors who publish in the field of SE. It is displayed in Figure 9.

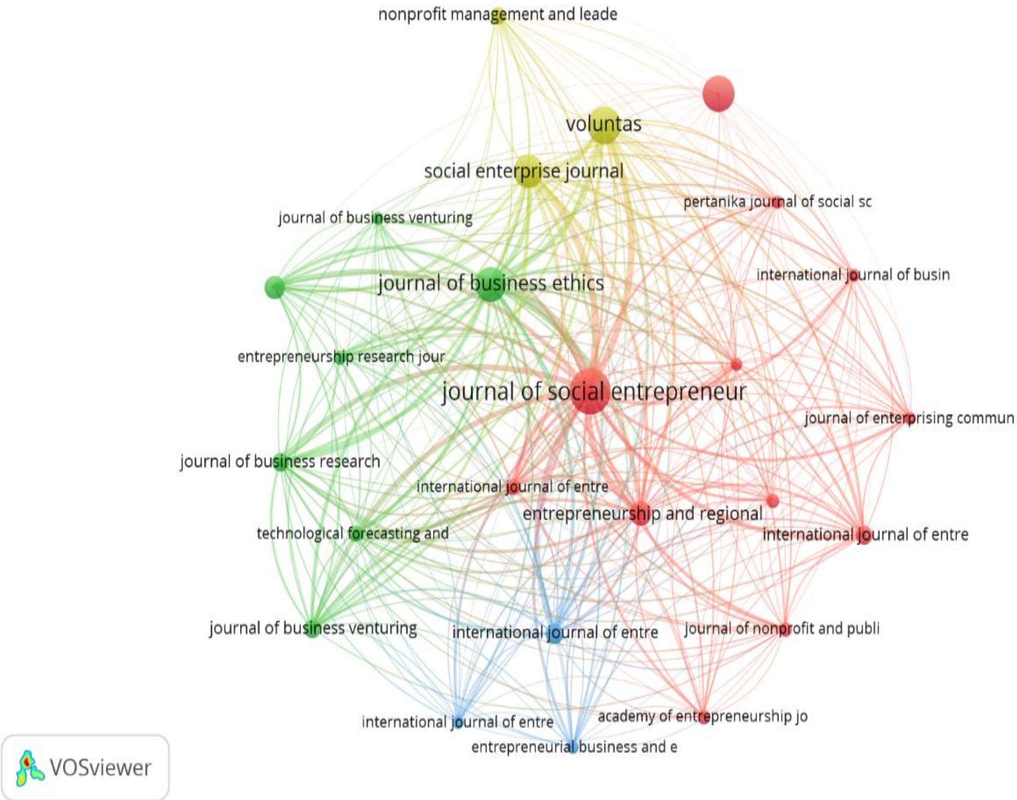
Figure 9. *Bibliographic Coupling (Documents)*



Source: Research Data 2023.

Figure 10 illustrates the bibliographic connection of sources within the domain of SE. The data shown in the figure provides clear evidence of the strong interconnectedness between the Journal of Social Entrepreneurship and many other journals that make significant contributions to the area of social entrepreneurship. This finding suggests that the Journal of Social Entrepreneurship has a substantial overlap in references with the aforementioned periodicals. The Journal of Social Entrepreneurship and the Journal of Business Ethics have the most robust relationship, as shown by a link strength of 10,916. The subsequent associations are observed between the Journal of Social Entrepreneurship and the Social Enterprise Journal, exhibiting a link strength of 7259. Similarly, the Journal of Social Entrepreneurship demonstrates a link strength of 6649 with Voluntas. Additionally, a link strength of 6334 is identified between the Journal of Social Entrepreneurship and both Entrepreneurship and Regional Development. Lastly, the Journal of Social Entrepreneurship is found to have a link strength of 4049 with the Journal of Business Research. There are notable associations between the Journal of Business Ethics and Voluntas, with a link strength of 3837, as well as between the Journal of Social Entrepreneurship and Journal of Business Venturing, with a link strength of 3605.

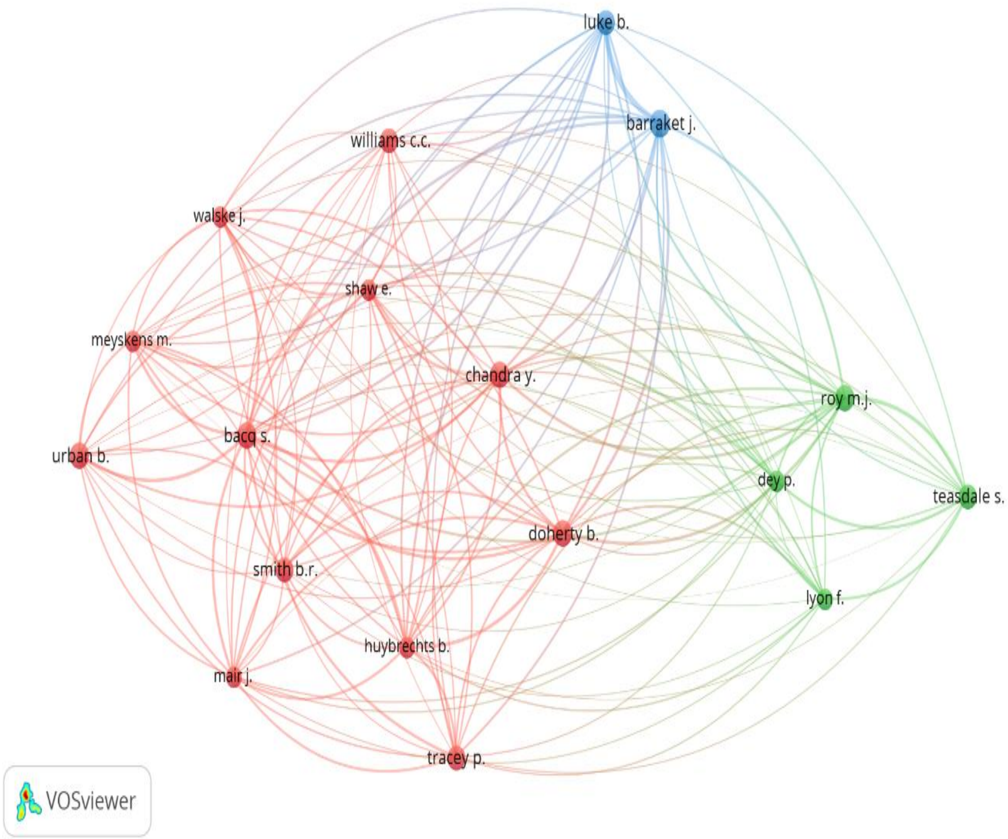
Figure 10. *Bibliographic Coupling (Sources)*



Source: Research Data 2023.

Figure 11 depicts the bibliographic coupling of authors in the field of SE. It indicates that Barraket and Luke exhibit the strongest association with a link strength of 457. This is followed by Roy and Teasdale with a link strength of 186, Bacq and Huybrechts with a link strength of 167, Doherty and Huybrechts with a link strength of 154 and Bacq and Urban together with Bacq and Shaw with a link strength of 145.

Figure 11. *Bibliographic Coupling (Authors)*

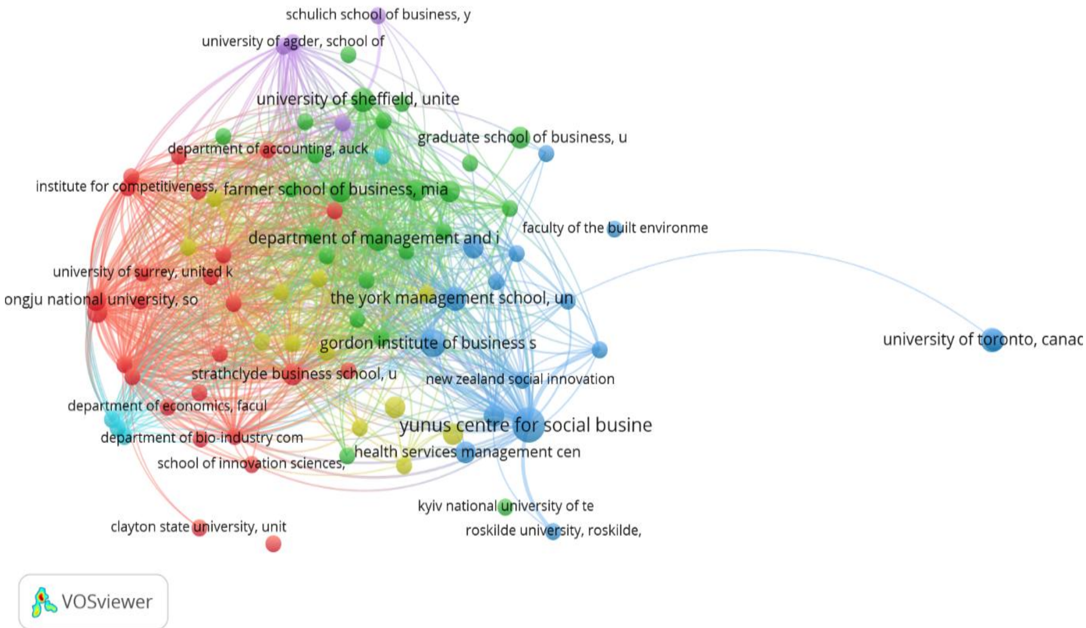


Source: Research Data 2023.

Figure 12 illustrates the bibliographic coupling across institutions of writers who have made contributions to the subject of SE throughout the twenty-year period under examination. The data shown in the figure provides clear evidence of the robust relationships established by authors affiliated with the Yunus Centre for Social Business and Health at Glasgow Caledonian University. These collaborations serve as a testament to the center's significant contribution to the advancement of the area of social entrepreneurship. The Yunus Centre for Social Business and Health at Glasgow Caledonian University and the York Management School at the University of York have the most robust affiliations. The Yunus Centre for Social Business and Health, located at Glasgow Caledonian University, and the Department of Public Policy at City University of Hong Kong are two more universities that maintain significant affiliations with the aforementioned schools. Additional academic institutions that have established robust affiliations include the Yunus Centre for Social Business and Health at Glasgow Caledonian University, the Strathclyde Business School at the University of Strathclyde, the Yunus Centre for Social Business and Health at Glasgow Caledonian University, and the Health Services Management Centre at the University of Birmingham. It is worth noting the significant connection between the

Yunus Centre for Social Business and Health at Glasgow Caledonian University and the University of Sheffield.

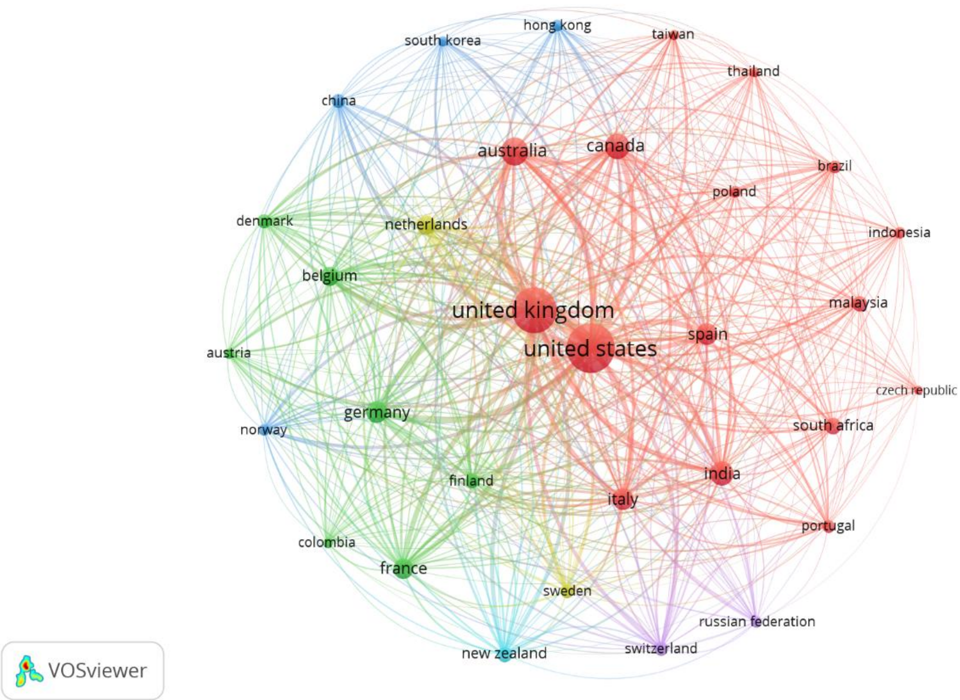
Figure 12. *Bibliographic Coupling (Organization)*



Source: Research Data 2023.

Figure 13 displays the bibliographic coupling of country of origin of authors who contribute to the field of SE. The figure indicates that the USA and United Kingdom is the core of all collaborations as they have strong connections with several other countries and the strongest collaborations all involve the USA and United Kingdom. The strongest collaboration though is between USA and United Kingdom with a link strength of 63,866. This is followed by the collaborations between USA and Australia with a link strength of 23,144, United Kingdom and Australia with link strength of 21,843, USA and Germany with link strength of 19,626, and USA and Canada with link strength of 18,905. Other countries with strong collaborations include USA and India with link strength of 17,104, United Kingdom and Germany with link strength of 16004, as well as the connections between United Kingdom and Canada with link strength of 14833.

Figure 13. *Bibliographic Coupling (Countries)*



Source: Research Data 2023.

Clustering of Articles Based on Bibliographic Coupling

<u>Major Themes in Social Entrepreneurship Research</u>

Kessler (1963) noted that the pattern of referencing used in scientific investigations demonstrates conceptual similarities between the studies. When two articles cite a third article, it indicates that both studies address comparable topics (Donthu et al. 2020a). In line with this assertion, Wallin (2005) opined that when two papers share literature references, bibliographic coupling is predicated on the premise that the two documents also contain the same content. In order to categorize research in the field of SE into broad themes, bibliographic coupling was employed. Bibliographic coupling is the process of grouping publications together based on the references they share, and it helps researchers identify the themes that are being promoted in the field (Donthu et al. 2020b). Following the application of bibliographic coupling, seven (7) significant subject groups emerged. The major focus of each of the theme clusters was then determined. Each cluster is summarised in Table 7.

Cluster 1: Human resource practices of social enterprises, performance measurement of social enterprises and sustainability of social enterprises.

The cluster under consideration has a total of 166 publications, which together accumulate 5803 citations. The aforementioned cluster ranks first in terms of the number of articles it contains, but it ranks third in terms of the number of citations.

The articles within this cluster mostly focus on issues related to human capital and human resource practices within social businesses, the health and well-being of workers in social enterprises, performance assessment and management within social enterprises, and the sustainability of social enterprises.

The authors focus on topics such as performance measurement/management (Arogyaswamy 2017, Arena et al. 2015, Costa and Pesci 2016, Lall 2017, Mamabolo and Myres 2020, Narangajavana et al. 2016), human capital/human resource practices, employee health and well-being (Chan 2016, Gordon et al. 2018, Mirvis and Googins 2018, Popkova and Sergi 2020, Villotti et al. 2014, Zhang et al. 2018), and sustainability of social enterprises (Calic and Mosakowski 2016, Oelze and Habisch 2018, Powell et al. 2019).

The article by Defourny and Nyssens (2010) is the most cited article in this cluster and provides a comprehensive analysis of the historical circumstances in Europe and the United States that have influenced the emergence and development of social enterprise (SE) ideas. The authors examine the evolution of these conceptualizations across time. The second most cited article in this cluster was authored by Ebrahim et al. (2014), and it presents an investigation into the governance challenges encountered by organizations that use market methods to fulfill a social purpose. The study also differentiates between two distinct types of hybrid arrangements that fall under this category. The study by Kerlin (2006) is positioned as the third-ranked study in the cluster. This study presents a comprehensive literature review and contrast social entrepreneurship in the American and European contexts. The author delineates the definitions of social enterprise as employed by scholars and professionals in the United States and Europe. Additionally, the author examines the historical factors that have impacted and molded various understandings of social enterprise. Furthermore, the author underscores the unique institutional and legal contexts within which social enterprises function.

A total of 348 authors contributed content to this cluster, 42 of whom submitted single-authored publications and 306 of whom provided multi-authored articles. 43 (26 percent) of the 166 articles are single-authored, while 123 (74 percent) are multi-authored. The CI (2.49) represents a collective effort.

Cluster 2: Feminism in social enterprises, social enterprises in sports, drivers of social entrepreneurship and theories in social entrepreneurship.

This cluster contains 146 publications and have been referenced 7061 times. This cluster ranks second in terms of the number of articles presented in the cluster and first in terms of the number of citations. The authors focus on topics such as feminism in social enterprises (Alexandre-Leclair 2017, Kimbu and Ngoasong 2016, Muntean and Ozkazanc-Pan 2016), SE in sports (Miragaia et al. 2017, Ratten 2011, Reid 2017, Von Friedrichs and Wahlberg 2016), drivers of SE (Christopoulos and Vogl 2015, Koe et al. 2010, Méndez-Picazo et al. 2015, Mody et al. 2016, Germak and Robinson 2014, Yiu et al. 2014, Zahra et al. 2009), theories/models in SE (Ebrashi 2013, Montesano and Montessori 2016, Murphy and Coombes 2009, Olinsson 2017, Perrini et al. 2010, Santos 2012, Salvado

2011) and issues related to comparing social and commercial entrepreneurship (Bacq et al. 2013, Gras and Mendoza-Abarca 2014, Gimmon and Spiro 2013, Halberstadt and Kraus 2016, Stecker 2014, Trivedi and Stokols 2011, Williams and Nadin 2012).

The paper by Zahra et al. (2009) is widely cited within this cluster and offers a comprehensive account of social entrepreneurship, along with an examination of its impact on the generation of social wealth. Furthermore, the authors provide a comprehensive classification of the search techniques used by entrepreneurs in order to identify potential opportunities for the establishment of social ventures. Additionally, they elucidate the key ethical challenges that social entrepreneurs may encounter. The next referenced paper is that of Dacin et al. (2011), wherein the authors examine social entrepreneurship as a focal point of investigation and provide several suggestions for prospective study topics and inquiries. The article by Santos (2012) is the third most referenced publication within this cluster. It presents a theoretical framework that seeks to enhance academic investigations in the field of social entrepreneurship. The paper examines situations in which externalities are prone to being disregarded, and it further explores the fundamental aim and rationale for the actions of social entrepreneurs, as opposed to their commercial counterparts. The study presents a framework for understanding the growing phenomena of social entrepreneurship (SE) and its importance in the functioning of contemporary society. A total of 327 authors contributed content to this cluster, with 30 individuals submitting single-authored papers and 297 authors submitting multi-authored publications. A total of 146 publications were analyzed, with 31% (21 papers) being single-authored and 79% (115 papers) being multi-authored. The CI (2.58) denotes the collaborative project, which is the fourth of the clusters.

Cluster 3: Scaling strategies of social enterprises and social enterprises as hybrid organisations.

This particular cluster has a total of 89 scholarly publications, which have together garnered a cumulative citation count of 2608. This cluster ranks third in terms of the number of articles represented and fourth in terms of citations. The articles included in this cluster primarily focus on topics related to scaling techniques in social enterprises (Asemota and Chahine 2017, Bauwens et al. 2020, Giudici et al. 2020, Ometto et al. 2019, Zhao and Han 2020) and the examination of social enterprises as hybrid organizations (Battilana 2018, Davies Chambers and 2018, Davies and Doherty 2019, Folmer et al. 2018, Gillett et al. 2019, Mongelli et al. 2017, Moss et al. 2018, Siebold et al. 2019, Vickers et al. 2017, Yin and Chen 2018).

Stephan et al. (2015) conducted a multilevel study involving a sample size of 106,484 individuals. The researchers employed an institutional configuration perspective to examine the factors within national contexts that contribute to the promotion of social entrepreneurship (SE). The study also explored the combined effects of formal regulatory institutions (government activism), informal cognitive institutions (postmaterialist, cultural values), and informal normative institutions (socially supportive cultural norms or weak-tie social capital) on SE. This particular article is frequently cited within the relevant research cluster. The second most cited article in this cluster is by Mair et al. (2015), who investigates the manner in which hybrid organizations build their governance structures and practices. The third most referenced article within this cluster was authored by Parhankangas and Renko (2017) which focused on the language style used in crowdfunding pitches and its impact on the success of fundraising efforts.

A total of 200 authors contributed content to this cluster, consisting of 9 authors who submitted single-authored papers and 191 authors who contributed multi-authored publications. Out of the whole corpus of 89 articles, 11 papers making up 12% of the total, are single-authored. Conversely, the remaining 78 papers, accounting for 88% of the total, are the result of collaborative efforts involving many authors. The CI (2.45) denotes the collaborative undertaking, which is classified as the sixth cluster.

Cluster 4: Crowdfunding in social enterprises, technology in social enterprises and intention formation in social entrepreneurship.

There are 59 papers in this cluster, with 1126 citations. Based on the number of articles that are represented in the cluster, this cluster is ranked fourth; yet, it is ranked fifth in terms of the number of citations. The articles in this cluster appear to be largely focused on topics pertaining to crowdfunding in Southeast Asia (Bento et al. 2019, Bernardino and Santos 2016, Laurell et al. 2019, Meyskens and Bird 2015, Presenza et al. 2019), technology in SE's (García-Morales et al. 2020), and intention formation in SE (Ayob et al. 2013, Barton et al. 2018, Forster and Grichnik 2013, Hockerts 2018, Salhi 2018, Tiwari et al. 2017).

The article by Urban (2015) has received the most citations in this cluster. This study assesses the impact of diverse institutional features on SE intentions. Next to this paper is the study conducted by Meyskens (2015) which evaluated the significance of crowdfunding in social venture funding and offer expertise in the area of crowdfunding components and avenues through which social worth can be created. The paper further provides prepositions to guide the decision-making process for social investors and social ventures regarding types of crowdfunding (reward, donation, equity, or debt) which makes the most sense in light of their social value creation and economic objectives. The next most cited article after Meyskens (2015) is Forster (2013) which utilized the theory of planned behaviour to elucidate the antecedents of SE intention creation.

A total of 145 authors contributed content to this cluster, consisting of 9 authors who contributed via single-authored publications and 136 authors who contributed through multi-authored articles. Out of the whole corpus of 59 articles, 9 articles, representing 15% of the total, were single authored, while the other 50 articles, accounting for 85% of the total, were the result of collaborative efforts involving many authors. The collaborative undertaking, signified by the CI (2.72), is the third among the clusters.

Cluster 5: SE in base of the pyramid markets/SE in emerging markets.

This cluster has 56 articles with a total of 1428 citations. This cluster is ranked fifth in terms of the number of articles and fifth place in terms of number of citations. The articles in this cluster tend to focus mainly on issues related to SE in Base of the Pyramid Markets (Goyal et al. 2017, Goyal et al. 2016, Kistruck et al. 2013, Pervez et al. 2013) and SE in developing markets (Ebrashi and Darrag 2017, Hlady et al. 2017, Rosca et al. 2020). The most cited article in this cluster is the study by Smith and Stevens (2010) who built on a typology of variety in SE to predict the function of space and site in social entrepreneurial processes and further described the variance in the location focus of different kinds of SE impacts on the types of social networks within which SE is embedded. The second most cited article is that of Ruebottom (2013) which studies 10 social enterprises with the aim of converting existing community practices and assessed the challenges in creating legitimacy that is likely threatened, causing compromises to establishing sustainable institutional change. The study by Lettice and Parekh (2010) is the next most referenced to that of Ruebottom (2013). Their study provides explanation to social innovation processes and further analyzed the lessons that is transferred from general business innovation theory and practice.

A total of 136 authors contributed content to this cluster, with 10 contributing single-authored papers and 126 contributing multi-authored articles. Out of the entire 56 publications, 18 percent (equivalent to 10 articles) are authored by a single author, while the remaining 82 percent (equivalent to 46 articles) are co-authored by many authors. The collective effort, as indicated by the CI value of 2.74, is ranked second within the cluster.

Cluster 6: Use of resources in SE/ Use of frameworks in social entrepreneurship.

This cluster is made up of 45 papers referenced 1392 times. This cluster is positioned sixth with regards to number of papers represented in the group and sixth with respect to citations. The papers in the group focuses on issues related to resource utilization in SE (Bacq et al. 2015, Bacq and Eddleston 2018, Brieger and De Clercq 2019, Estrin et al. 2016) and framework to guide SE (Brieger et al. 2019, Hossain et al. 2017, Macke et al. 2018). The paper with the highest number of citations within this cluster was authored by Stephan et al. (2015). In their study, they examined the combined influence of informal normative, informal cognitive, and formal regulatory institutions at many levels. Additionally, they aimed to reconcile contradictory claims from the perspectives of institutional support and institutional emptiness. This article is followed by that of Estrin et al. (2016), which advanced the study of entrepreneurial entrance and human capital by developing a multilevel framework for analyzing the commonalities and distinctions between commercial and social entrepreneurship. The article by Tobias et al. (2013) is the third most often referenced publication within this cluster. The study examines how entrepreneurship may initiate a series of positive outcomes, such as wealth creation and peace, in places characterized by entrenched poverty and war.

A total of 110 authors contributed content to this cluster, with 8 who contributed via single-authored articles and 102 via multi-authored articles. Of the total 45 articles, 8 (18%) are single-authored and 37 (82%) are multi-authored. The collective effort indicated by the CI (2.76) is the first among the cluster.

Cluster 7: Supply chains in SE and scaling social enterprises.

This cluster contains 17 articles, with a total citation of 6189. This cluster is ranked seventh in terms of the number of articles and second in terms of citations. The primary focus of the articles within this collection mostly revolves on the subject of supply chain management in social enterprises (Pullman et al. 2018, Sodhi and Tang 2014a, Sodhi and Tang 2014b, Sodhi and Tang 2012), as well the process of scaling social enterprises (Cannatelli 2017, Desa and Koch 2014). The article with the highest number of citations within this cluster was authored by Mair et al. (2012). The study utilized cluster and content analysis techniques to examine social entrepreneurial organizations and develop a typology of social entrepreneur frameworks. The typology is based on the identification of four types of capital that can be utilized: political capital, economic capital, human capital, and social capital. Next to this paper is the scholarly investigation conducted by Sodhi and Tang (2014), which focuses on the utilization of inadequate supply chains in developing countries and endeavors to determine the potential for further research in the field of operations management. The next most cited article was authored by Desa and Koch (2014) and examines the methodologies used by social enterprises to evaluate their social impact on base-of-the-pyramid markets.
A collective of 36 writers made contributions to this cluster, consisting of 2 authors who contributed via single-authored publications and 34 authors who contributed through multi-authored articles. Of the total 17 articles, 2 (12%) are single-authored and 15(88%) are multi-authored. The collaborative undertaking, signified by the CI (2.27), is the seventh among the clusters. Information on the clusters is presented in Table 6.

Table 6. *Clustering of Articles Based on Bibliographic Coupling*

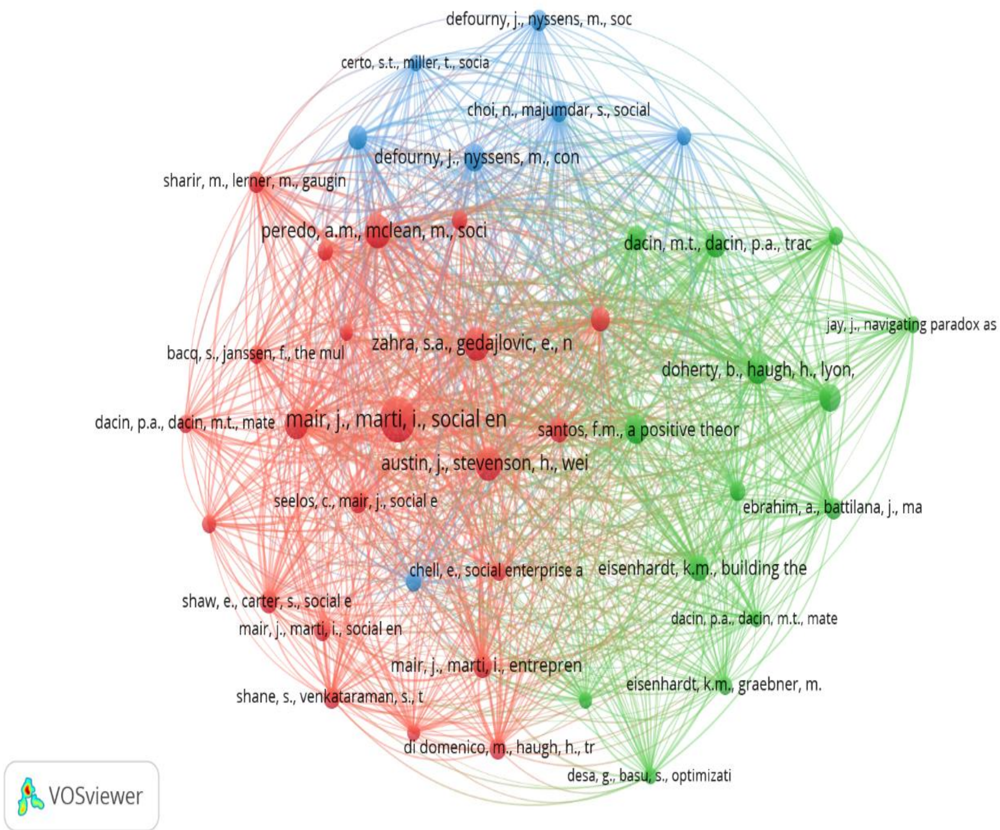
Descriptive Statistics	**Cluster 1**	**Cluster 2**	**Cluster 3**	**Cluster 4**	**Cluster 5**	**Cluster 6**	**Cluster 7**
TP	166	146	89	59	56	45	17
Period	2004:2020	2001:2020	2014:2020	2012:2020	2008:2020	2012:2019	2006:2020
Sources (Journals, Books, etc)	73	63	42	33	40	29	14
TC	5803	7061	2608	1126	1428	1392	6189
TC/TP	34.96	48.36	29.3	19.08	25.5	30.93	36.41
Co-authorship Information							
AUTHORS							
Authors	348	327	200	145	136	110	36
Author Appearances	394	350	231	155	141	125	40
Authors of single-authored documents	42	30	9	9	10	8	2
Authors of multi-authored documents	306	297	191	136	126	102	34
Single-authored documents	43	31	11	9	10	8	2
Documents per Author	0.477	0.446	0.445	0.407	0.412	0.409	0.472
Authors per Document	2.1	2.24	2.25	2.46	2.43	2.44	2.12
Co-Authors per Documents	2.37	2.4	2.6	2.63	2.52	2.78	2.35
CI	2.49	2.58	2.45	2.72	2.74	2.76	2.27

Note(s): This table presents information on the clusters. Here TP=Total Publication, Period=Period during which publication took place, TC=Total Citations, TC/TP=cites per paper, and CI=collaboration index.
Source: Research Data 2023.

Co-citation Analysis (Cited References, Cited Sources and Cited Authors)

Co-citation counts are used to create metrics of similarity between documents, authors, or journals in co-citation analysis (McCain 1990). The philosophy of co-citation analysis hinges on the reasoning that the more two items are cited together, the more likely it is that their content is related. The co-citation of cited references in the field of SE is depicted in Figure 14. The cited sources with the strongest linkage are Paredo and Mair with a link strength of 65. They are followed by Mair and Zahra with a link strength of 64. Mair and Short with link strengths of 58, Mair and Weerawardena with a link strength of 48 as well as Mair and Austin with a link strength of 44. Others include Paredo and Zahra with a link strength of 42, Mair and Dacin with a link strength of 41 and Mair and Santos with a link strength of 40.

Figure 14. *Co-citation (Cited References)*

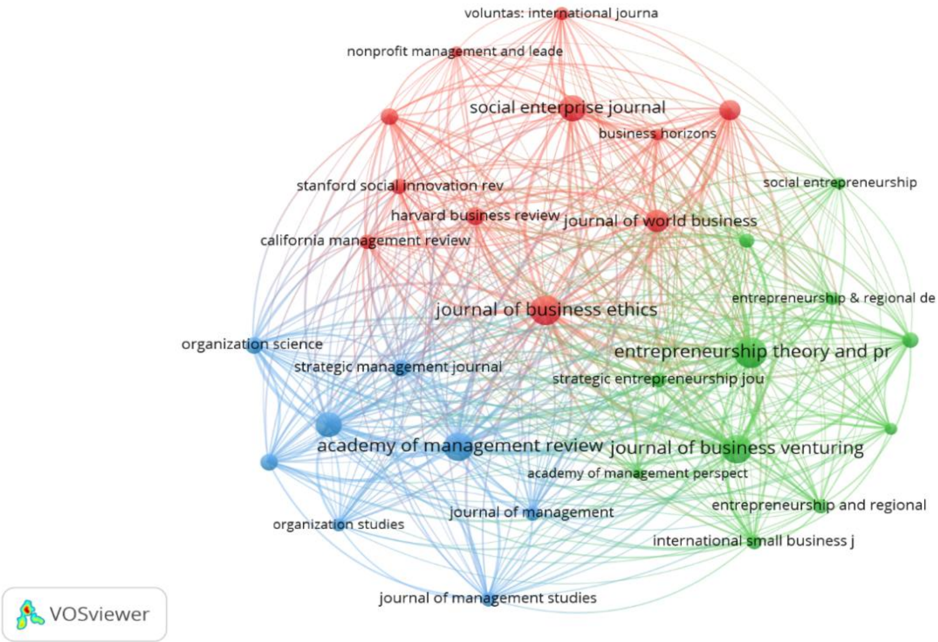


Source: Research Data 2023.

Figure 15 illustrates the co-citation patterns among the referenced sources within the domain of SE. The sources referenced, namely the Journal of Business Venturing and Entrepreneurship Theory and Practice, demonstrate a robust association with a link strength of 6047. The subsequent connections exhibit a link strength of 4389 between the Journal of Business Ethics and Entrepreneurship

Theory and Practice, 4224 between the Academy of Management Review and Entrepreneurship Theory and Practice, 4207 between the Academy of Management Review and Academy of Management Journal, and 3938 between the Academy of Management Review and Journal of Business Venturing. Additional sources that have been mentioned and have high links include the Journal of Business Ethics and the Academy of Management Review, which exhibit a link strength of 3720. Furthermore, the Journal of Business Ethics and the Journal of Business Venturing exhibit a link strength of 3608.

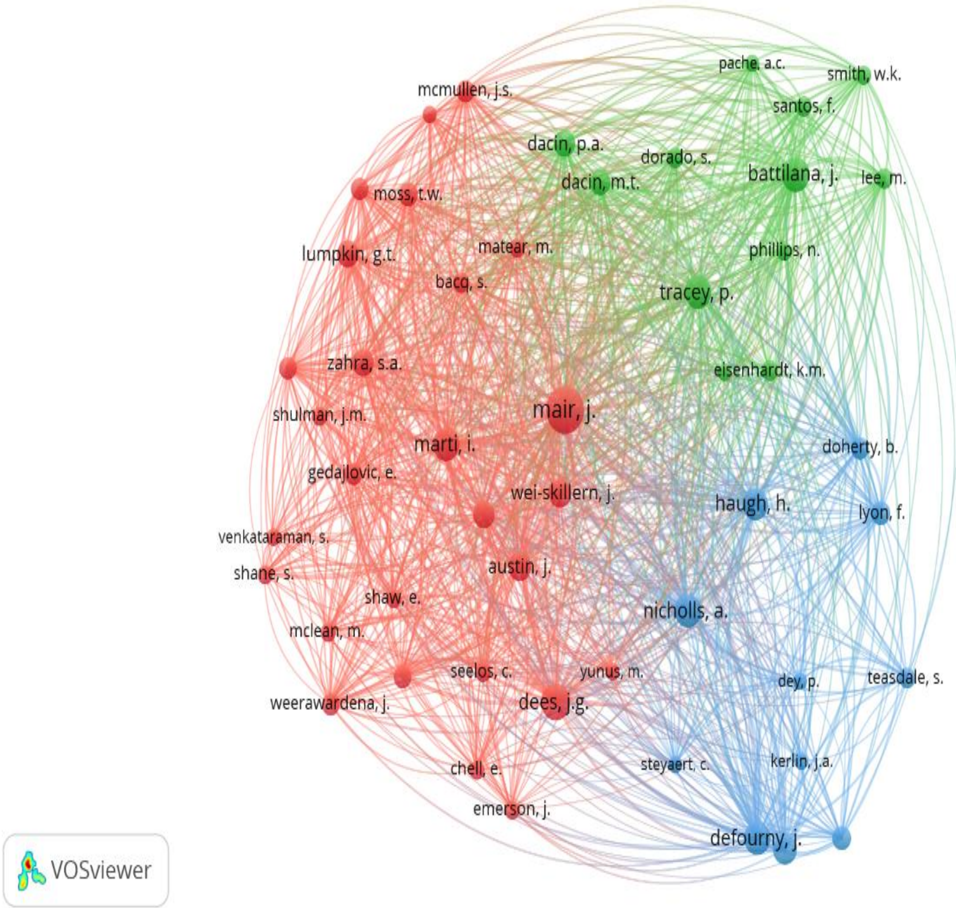
Figure 15. *Co-citation (Cited Sources)*



Source: Research Data 2023.

The co-citation of referenced authors in the field of SE is depicted in Figure 16. The figure indicates clearly that Mair plays a central role as it has been cited together with almost all prolific authors in the field of SE. The cited authors with the strongest connection are Mair and Battilana with a link strength of 1506. This is followed by Mair and Marti with a link strength of 1505, Mair and Tracey with a link strength of 1140, Mair and Dees with link strength of 1097 and Mair and Haugh with link strength of 985. Other cited authors with strong connections include Mair and Nicholls with link strength of 976, Mair and Lumpkin with link strength of 724, as well as Mair and Austin with a link strength of 705.

Figure 16. *Co-citation (Cited Authors)*



Source: Research Data 2023.

Limitations and Recommendation for Practice, Policy and Future Studies

The study is limited to publications in scopus indexed journals only and it covered articles which were published within the period of 2001 to 2020. In view of these limitations, it is recommended that future studies are enhanced by broadening the scope to cover articles in both scopus and non-scopus indexed journals and also the years of publication must go beyond the years covered in this study. It is also recommended that practitioners in the field of social entrepreneurship such as Ashoka, The Scwab Foundation, The Skoll Foundation, The British Council among many others as well all social entrepreneurs must endeavour to identify and collaborate with educational institutions which have deliberately made investments in research focused on the field of social entrepreneurship in order to explore further innovative and inventive strategies of alleviating the many social problems that we continue to grapple with.

The findings of this study indicate a notable disparity in research representation within the subject of social entrepreneurship, particularly with regard to institutions located in developing economies. This observation suggests that there has been little investment by institutions in these countries towards research in the field of social entrepreneurship. This position is also disconcerting since many developing countries are now grappling with a multitude of social problems because the existing obstacles and requirements are far from reaching an optimal state, therefore necessitating more research on the subject of social entrepreneurship (Diochon and Gore 2016, Claeyé 2017). Hence, there is a pressing need for governments in developing economies to increase investments towards research and scholarly investigations focused on social entrepreneurship in order to serve as a viable avenue for identifying innovative and sustainable solutions to the many social challenges encountered in developing countries.

Summary and Conclusion

This study presents a comprehensive review of many indicators, such as the productivity of journals, countries, and institutions, as well as co-authorship patterns, highly cited publications, and prominent research themes. The findings suggest that Tracey P, Gedajlovic E, Neubaum DO, Shulman JM, and Zahra emerged as the most productive contributors/authors in the field of SE between 2001 and 2020. The institutions that have made the most significant contributions to the field of social entrepreneurship are Swinburne University of Technology, Glasgow Caledonian University, Queensland University of Technology, University of Birmingham, and University of Sheffield.

Bacqs, Mair, Meyskens, and Lumpkin are widely recognized as notable collaborators in the area of social entrepreneurship, and their collective co-authorship is considered to be particularly robust. The research findings also demonstrate a robust co-authorship network with the Farmer School of Business at Miami University, the Telfer School of Management at the University of Ottawa, and the Smith School of Business at Queen's University in Canada. The United States of America (USA) has a notable prevalence in engaging in partnerships with several nations. The prevailing subjects of interest included social business, social entrepreneurship, innovation, sustainable development, organizational structure, and non-profit organization. The publications pertaining to the area of SE within the specified time frame were categorized into seven distinct clusters. These clusters provide empirical support for the prevailing trends in the area of social entrepreneurship and acts as a valuable resource for identifying potential avenues for future research.

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The Relationship between Global Crises and Aggression

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Purpose: *Existing literature suggests there is a relationship between aggression and global crises as well as health pandemics. Despite previous research highlighting this relationship, research in the UK that examines this relationship, and particularly between the pandemic containment measures with aggression, has not been thoroughly examined. This pilot study investigates the aggression levels in the UK before and during the implementation measures for containing the latest global health crisis.* ***Design:*** *For the needs of the pilot study, 149 participants (127 female and 21 males) completed an online questionnaire which measures aggression levels before and during lockdown.* ***Findings:*** *The investigation showed that aggression increased during the lockdown periods, with themes of anger and loneliness also being identified through a content analysis. This project is one of the first to examine aggression during lockdown and isolation restrictions. Further implications and limitations are discussed.*

Keywords: *crises, lockdown, pandemic, conformity, violence, aggression*

Introduction

The emergence of the COVID-19 pandemic caused extreme damage to society, with not a single individual being able to avoid its detrimental effects. An extremely important issue emerging involves the increasing problems regarding the growing anxieties caused by the pandemic which are in turn triggering neglection and violent episodes. There is a current gap in the existing literature exploring the effects of the COVID-19 pandemic on aggression levels within the UK, indicating an extreme importance for this research. As this crisis is new phenomenon, it is not yet clear what its relationship with violence is, nor is there knowledge surrounding the effects of the year-long social isolation (Usher et al.,2020). Without this knowledge, it cannot be known what issues are emerging in the privacy of people's homes, potentially suggesting that many individuals who need help are not being acknowledged. Whilst the new global crises with the energy prices has added to the existing difficulties, consequently adding to the research gap.

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Hatred, Violence and Scapegoating

Coverage of historical epidemics and behavioural triggers has uncovered long-held assumptions that epidemics spark animosity among societies, as adopting hatred and advocating blame to others is easily done (Cohn 2020). However, there is evidence of anomalies existing, as the Mexican swine flu was spread due to fear of contagion, although it did not trigger mass hatred or violence, (Cohn 2012). Similarly, yellow fever in America sparked mass compassion and increased volunteering, (Cohn 2020).

Despite the counterargument within the literature, the COVID-19 pandemic has proven to be no exception to the theme of hate and blame as scapegoating has transpired against various groups across the world. Due to the country of the disease's origin, blame has predominantly been directed towards Chinese individuals in the form of serious hate crimes and assaults, (Gee et al. 2020). The initial spread of misinformation resulted in widespread cases of xenophobia as Chinese individuals were connected to the disease, sparking old stereotypes by incorrectly linking race to the pandemic and distorting understanding of the disease, (Gee et al. 2020, Leung 2008). Currently, there are growing reports that mention similar perceptions and behaviour towards Russian citizens, mainly because of the war between Russia and Ukraine, and the impact of that war on the energy prices in the western counties.

Social Harmony, Inclusivity and Solidarity

Despite surplus research suggesting that epidemics divide societies, new evidence implies that common responses include increased solidarity and social cohesion resulting from a shared compassion, (Cohn 2018, Jedwab et al. 2019). Solidarity is often defined as a common interest in survival and safety, promoting social cohesion. During a pandemic a collective effort is made to protect others, particularly those who are vulnerable such as the young and old, (Baylis et al. 2008, Prainsack 2020, Tomasini 2021).

Societies often come together as a response to potential harm to protect their common interests and diminish the threat against them (Dawson & Verweij 2012). The ability to recover from tragedies quickly, by adapting and overcoming vulnerabilities has been documented in the literature, demonstrating the strength and flexibility of the individuals affected (Peters 2020). Historical examples of solidarity include the outbreak of yellow fever and the 1918 Great Influenza which led to increased empathy among the masses and peaceful movements as volunteering and self-sacrifice were encouraged (Cohn 2018).

The most recent pandemic, COVID-19, has overall demonstrated a better response to crises than in the past. The social violence exhibited by the current pandemic is nowhere near as serious as the violence apparent in the riots responding to the outbreak of Cholera and the Black Death (Jedwab et al. 2020). Many areas have seen a decrease in both violent and non-violent crimes, when comparing the same week, a year apart, with South Africa reporting a 71% decline in homicides and 85% decline in rape because of the lockdown (Marupeng 2020).

Increased worldwide unity during this crisis has been proven to likely be a result of the whole world being affected instead of it being restricted to one area. Global solidarity and shared knowledge facilitate the avoidance of psychological conflict. In addition, complete transparency from those in power, regarding the cause of the pandemic, resulted in conspiracy theories being quickly dispelled (Jakovljevic et al. 2020, Jedwab et al. 2020). Further, as authority figures were also affected, anxieties were reduced. Despite most of the world demonstrating a non-violent response to the crisis, there has been evidence of high volumes of blame, conspiracy theories and violent protests against lockdown restrictions worldwide (Jedwab et al. 2020, Loayza 2020).

Crises and Conformity

Research suggests that social disconnection, uncertainty, and social fragmentation are characteristics closely linked to pandemics, which commonly increase conformity and are likely to attract individuals to those with clear or extreme norms (Abrams et al. 2021). Conformity is strongest among individuals belonging to the same unit, as acceptance is essential to fit in and develop social relationships (Cialdini & Goldstein 2004, Packer et al. 2021). Therefore, social influence is heavily relied upon, to spread policies and to ensure each individual audience will comply, for example, the media may promote coercion and identify credible individuals such as religious leaders (Antonakis 2021, Van Bavel et al. 2020).

Two common elements of conformity include normative influences, adapting to maintain social acceptance, and informational influences, adopting similar behaviour to others as this is what is accepted as appropriate, with the latter being more common among pandemics (Cialdini & Goldstein 2004, Deutsch & Gerard 1955). Consumer behaviour is altered radically because of crises, as rumours and false information encourage mass buying of products and labelled 'cures', even if they are not proven to be effective (Song et al. 2020). When an individual's life is threatened, which is the case during a pandemic, their behaviour becomes irrational and is heavily influenced by their peer groups opinions (Murray & Schaller 2012). Existing literature suggests that informational conformity consumer behaviour is extremely harmful during epidemics, as it encourages price changes, impulsive buying and misallocation of resources which are all harmful to the economy and society (Dong & Zhong 2017). Demonstrations of this type of conformity have occurred during the COVID-19 pandemic, such as the demand-driven panic buying across the world which saw individuals purchasing abnormal amounts of goods from local supermarkets (Islam et al. 2021). The reason for the irrational buying was misinformation spread through media outlets and excessive information that accompanied rumours.

Despite this undesirable and unusual display of conformity, there has also been evidence of conformity in a positive way. Most of the world exhibited conformity during COVID-19 in the form of adherence to the lockdown rules (Van Bavel et al. 2020). Unfortunately, many individuals refused to cooperate and rebelled against the rules of social distancing, mask wearing and staying at home. Across the United States protests against quarantine and social distancing measures broke out, fuelled by their president's encouragement (Dyer 2020, Meeker 2020). Motivated by their beliefs of injustice and disagreement with restrictions, some global protests became violent as angry individuals wanted justice as they had become resentful towards the measures in place (Armbruster & Klotzbücher 2020, Briscese et al. 2020). Economic decline and uncertainty lead to demonstrations of frustrations and rebellion against conformity (Justino & Martorano 2019, Li & Coppo 2020, Sedik & Xu 2020). Due to the current understanding of conformity, it is agreed that individuals exhibiting negative behaviour can easily influence others as their reactions are seen as acceptable. This can be particularly dangerous during a crisis when harmful attitudes and beliefs are shared and lead to detrimental consequences, as the threat of contagion encourages unexpected and irrational behaviour (Robson 2020).

Pandemics and Life Satisfaction

A large body of literature has investigated in-depth the detrimental effects of lifestyle changes caused by pandemics. Disasters can cause extreme damage to society and negatively affect a variety of factors. Individuals can be affected emotionally as loved ones may pass away and financially, as they may lose their jobs, with both affecting life satisfaction (Barro & Ursua 2008, Barro et al. 2020). Further, social isolation in the form of lockdowns significantly affects health and psychological welfare, inducing psychological stress and depression, particularly among older adults, (Brooks et al. 2020). Negative mood changes and discontent as a response to crisis are likely to negatively affect life satisfaction. Quarantine measures imposed after an outbreak of SARS in Asia and Canada over a decade ago demonstrated this and had damaging consequences on the mental health of the individuals involved, causing severe distress, and increasing anxieties (Hawryluck et al. 2004, Reynolds et al. 2008). To reduce spreading of diseases, separation is required, meaning the increased stresses and anxieties are an unfortunate accompaniment that cannot easily be avoided.

Financial, Social and Mental Effects

Loss of work, income and childcare has led to increasing risks of problems within the home due to developing fears around stability (Prime et al. 2020). Across the world, individuals have struggled immensely to continue supporting their families during these strenuous times, as many individuals have lost their jobs, while the remainder are expected to home school their children and work from home simultaneously as approximately 1.37 billion children have been unable to attend school (Cluver et al. 2020). It is anticipated that many individuals will be unable to acquire and maintain stable work for the foreseeable future, even after the disease has subsided (Crayne 2020). Financial strain is not only detrimental on a personal scale but also globally. Many industries are at significant risk due to uncertainties surrounding the economy and a global recession, (Fernandes 2020), with expectations that it will take many years for some jobs to be available again (Berman 2020).

Without this affordance, an individual's wellbeing is affected negatively as their work community and psychological support (Pratt & Ashforth 2003) is withdrawn. The literature suggests that individuals who have problems securing employment experience extreme psychological suffering, (Dooley et al. 1996, Hamilton et al. 1993).There has been a significant decline in the mental health of individuals across the world, in comparison to before the pandemic, (Czeisler et al. 2020, Ettman et al. 2020, McGinty et al. 2020) global responses to the pandemic include suicidal ideation, depressive symptoms, insomnia, stress and anxiety, (Holmes et al. 2020, Killgore et al. 2020, Torales et al. 2020).

As a result of the new lifestyle changes and developing strain on mental health, there were growing concerns that such circumstances and a lack of access to services providing help would increase the risk of aggression manifesting and having detrimental repercussions (Peterman et al. 2020). These anxieties were all supported by research on previous epidemics and began manifesting on a global scale as the pandemic emerged, (Usher et al. 2020). Studies have found that there was increased intimate partner violence and sexual violence resulting from the outbreak of Ebola in 2018 (UN Women et al. 2014), related to the reduced access to health and protective services (Peterman et al. 2020). Sexual and gender-based violence in Guinea increased by 4.5% from before the outbreak of the virus and areas of Congo affected by Ebola, reported increasing sexual and domestic violence against women and children because of the crisis (Wenham et al. 2020). Despite these reports, alternative evidence found that there was a decrease in violence and exploitation (Bandiera et al. 2019), however, this research was a result of personal perceptions, meaning it is not entirely reliable.

Household Violence

Feelings of depression often bring out negative elements of a relationship, including hostility, blame, withdrawal and feeling unsupported (Rehman et al. 2008) which may quickly spiral into violent and uncontrollable episodes. As close relationships are a main source of comfort and support to an individual's well-being (Pietromonaco & Collins 2017) it is understood how stress and frustrations during a crisis are often taken out on those closest to them.

The COVID-19 pandemic is evidence of this happening as the global crisis has been used by individuals as a way of intimidating and threatening their victims to isolate and further abuse them (National Domestic Violence Hotline 2020) Research has suggested that individuals are using social distancing measures to prevent their partners from accessing resources as their violence increases dramatically (Gupta & Stahl 2020). Increasing displays of coercive control are being demonstrated within already abusive relationships and the threat of contagion is fuelling this danger further (Usher et al. 2020). The literature describes a horrifying surge in intimate partner violence across the world during the recent lockdowns (Roesch et al. 2020), particularly towards women as reports suggest they are affected more negatively than men due to restricted use of health services and increasing gender-based violence

(Wenham et al. 2020). Much of the literature has focused on male perpetrated violence towards women and children, suggesting females are more likely to be victimised (Gulati & Kelly 2020), with discussion forums used in research being 96% female reporting (Lyons & Brewer, 2021). However, the strong emphasis on female victims is likely to be a result of existing stereotypes and underreporting from male victims. In the UK, deaths resulting from domestic abuse more than doubled in a one-month period when compared with the average rate over the previous 10 years (Grierson 2020), and in Argentina, it was reported that every 29 hours a woman was killed by her partner (Wenham et al. 2020). Reports have also surfaced in Australia that there had been a significant increase in individuals needing help and increasing case complexity (Lattouf 2020).

Links within the literature have also been identified between hostile sexist attitudes and increasing violent behaviour towards intimate partners and children after the lockdown period has ended (Overall et al. 2020). Already in Australia there has been an increased demand for services protecting women and children from violence and increasing risks for children not being able to go to school (Duncan 2020). Important lessons can be taken from previous pandemics regarding the ignorance towards gender related effects of a crisis. Some countries made no effort to tackle the issue after the outbreak of Ebola, such as Kazakhstan where domestic violence is not illegal and therefore was not addressed. Similarly, Hungary confirmed that they would not reprimand the Istanbul Convention for their violence towards women and did not attempt to protect them from domestic violence (Klugman 2017, Wenham et al. 2020). Despite this shocking response, it was not the case in all countries as Italy significantly increased their service provision and created more helplines for victims of domestic violence and protocols at pharmacies. Similarly, Kenya encouraged telephone counselling for victims and Australia increased funding for anti-violence organisations and provided more accommodation (Wenham et al. 2020). However, to understand which measures are the most effective in harm prevention, data collection is essential and must be encouraged. Collecting data from during and after an outbreak must be conducted and focus on the causes of violence as this is a very under-reported area.

Current Study

This study focused on investigating the aggression levels during the global crisis in 2019-2020, through an exploration of attitudes towards lockdown rules and a comparative analysis of self-reported aggression, before and during lockdown. Although it has been proven that social harmony is a common response, an abundance of research has investigated a plethora of triggers and negative feelings that frequently arise. Often violence is encouraged by pandemics as individuals search for others to blame, turning them to their victim as an outlet to target their aggression. Research conducted across the world and from other pandemics has concluded that aggression is a common response by many and very commonly appears within households (Peterman et al. 2020, Usher et al. 2020, Van Gelder et al. 2020). Further, the lockdown conditions forcing everyone to stay at home for long periods of time and isolating from loved ones provides opportunities for aggressive altercations to manifest and go unnoticed.

The main aim of this investigation was to achieve an understanding of whether there is a positive correlation between the COVID-19 crises containment measures and aggression. To analyse this relationship, changes in aggression or perceived anger were examined with a comparison before and after the year of the restrictions. Another objective of this study was to examine feelings surrounding triggers of aggression linked to the pandemic to understand the reasons for potential behavioural changes. The final objective was to determine whether increasing aggression due to lockdown is a result of conformity. Understanding a link between conformity and aggression might provide an insight into how violent behaviour can be influenced by others. The hypothesis created for this investigation states that individuals would report higher levels of aggression after the lockdown period. The main justification for this prediction comes directly from suggestions within the research that aggression has increased because of the pandemic, along with strains financially and mentally leading to intense irritation. Further, increasing frustrations stemming from the strict restrictions are likely to lead to heightened tendencies to demonstrate violence.

The motivations for this research are emphasised in the literature, with the absence of a UK-based study in this area is the main driving force for this study, making this unique contribution particularly important. An understanding of the effects of lockdown on aggression will provide an insight into the reality of isolation and enable recommendations to be made for the future. Identifying triggers to violence can help pinpoint areas for improvement and highlight individuals who are likely to assert aggression or those who are potential victims. Being aware of these two groups will enable strategies to be designed to protect both from possible harm and inform future interventions. Further, the findings will contribute to the existing literature on COVID-19 and aggression and enable a global comparison with the research conducted in other countries.

Methodology

Participants

The individuals in the sample were recruited through a questionnaire link disseminated on a variety of platforms. Social media pages, both personal and public, such as Facebook, Reddit, and LinkedIn, along with Sona, Survey Circle and multiple University student sites were used to promote the questionnaire and find a range of different participants to ensure generalisability. The original sample consisted of 149 participants, 21 males, 127 females and one preferred not to say. 50% of the sample were aged 21-25, with 85% reporting their ethnicity as white and 58% students. However, several responses had to be removed as they were unable to complete all required sections. Although some questionnaires were not completed in full, only some of the data was necessary for each analysis and therefore each test conducted had a different number of participants within the sample. In total, there was 104 participants in the before and after lockdown condition, with 116 participants in the conformity variable.

Design

The research adopted a within-subjects design as each of the participants completed all the stages of the questionnaire. This design was chosen as there were not different conditions being tested, nor were there different groups and therefore it was important that the individuals answered each section to investigate the research questions.

Materials

A mixed method was adopted in the form of a questionnaire created using Qualtrics, consisting of four different sections. A demographic section enquired about the participant's background characteristics. The next section asked participants to describe their feelings towards a range of rules adopted during lockdown to assess triggers.

The third section was the Buss and Perry (1992) Aggression Questionnaire, enabling a direct comparison between participant self-reported perceptions of their own aggression before and during the lockdown period. Two 5-point scales, ranging from one (extremely uncharacteristic of me) to five (extremely characteristic of me), were used to indicate how characteristic each of the 29 statements were in describing participants and measured levels before the crisis and since. This method was chosen as it enabled a complete understanding of aggression levels and had been proven to be a valid scale. Cronbach's Alpha argued the scale possessed considerable internal consistency and reliability coefficients indicated adequate stability (Buss & Perry 1992). The scale consisted of four factors: nine items for physical aggression, five items for verbal aggression, seven items for anger and eight for hostility. The individual subscales were calculated for before and during lockdown along with a total for each of the timescales.

The Goldsmith and Clarke Conformity Scale was the final component of the questionnaire, used to understand the participants' likelihood of being influenced by external sources. Seven bipolar adjectives were used to measure the tendency to conform, employing a 7-point semantic differential format, indicating which adjective they most related to (Goldsmith et al. 2005). This scale was employed as it had been tested for validity, with internal consistency indicating acceptable to good reliability. The scoring system was coded 1-7, depending on how close to each adjective on the scale they felt they related to the most. A total column was calculated to include all the items as a higher overall score indicated greater conformity.

Procedure

Individuals participating in the study were required to provide informed consent to ensure their cooperation was voluntary. The sample was then asked to briefly describe how a list of lockdown rules made them feel. The next section was the aggression scale, presenting participants with 29 statements regarding aggression and asking them to rate how characteristic each of the statements were of themselves, before and during the lockdown. The final section provided participants with seven pairs of opposite adjectives and asked for an indication on the scale of which best reflected their own personality. After this a debrief form was issued, ensuring the studies aims and participants rights were reinforced. There were no time constraints on the sections, however, each question forced a response so participants could not progress until they had answered the previous question.

Results

Descriptive Statistics

Descriptive statistics were run on the continuous variables, aggression, and conformity, with the results of these tests are displayed in Table 1. The varying sample sizes are a result of incomplete responses. Table 1 outlines the descriptive statistics for the measures of central tendency and spread of the data for the subscales and totals of conformity and aggression before and during the lockdown. In total, before lockdown the mean aggression score for the 104 participants was 61.97 (SD = 15.38), which increased to (M = 65.53, SD = 16.03) during lockdown. Of the 116 participants in the conformity variable, the mean score was 33.34, (SD = 4.46); this variable had a negative skew.

Table 1. *Descriptive Statistics of Continuous Variables*

		N	Min.	Max.	Mean	Std. Deviation
		Stat.	Stat.	Stat.	Stat.	Stat.
(Before Lockdown)	Physical Aggression	104	9.00	32.00	19.95	4.83
	Verbal Aggression	104	5.00	19.00	10.55	3.52
	Anger	104	7.00	26.00	16.38	4.33
	Hostility	104	8.00	27.00	15.10	5.26
	Total	104	29.00	101.00	61.97	15.38
(During Lockdown)	Physical Aggression	104	9.00	33.00	21.07	5.25
	Verbal Aggression	104	5.00	19.00	11.13	3.56
	Anger	104	7.00	28.00	17.52	4.64
	Hostility	104	8.00	27.00	15.82	5.20
	Total	104	29.00	101.0	65.53	16.03
	Conformity	116	17.00	48.00	33.34	4.46

Inferential Statistics

Prior to the following analyses, the variables were tested for normal distribution and data was examined for compliance with the assumptions. The first set of tests conducted analysed the relationship between aggression and the lockdown period. The hypothesis tested was that individuals would report higher levels of aggression after the lockdown period. The self-reported results of perceived aggression before the lockdown were compared to perceived aggression during the lockdown. Each of the four subscales of aggression was analysed, along with the totals, to understand the differences in aggression. There was a statistically significant increase in verbal aggression before (M = 10.55, SD = 3.52) and during (M = 11.1, SD = 3.56), t= 1010, Z= -4.432, p= 0.00) the lockdown. The median scores for before and during lockdown were 10 and 11, respectively, with 41 participants reporting higher levels of verbal aggression after the lockdown, whereas only seven reported higher aggression before the lockdown. There was also a statistically significant increase in hostility before (M = 15.09, SD = 5.26) to during lockdown (M = 15.82, SD = 5.20), t=1195, Z=-4.315, p=0.00. The median scores for before and during lockdown were 14 and 15, respectively, with 41 participants reporting higher levels of hostility after lockdown but only 12 reported higher levels before.

For the physical and anger subscales, along with the totals, repeated measures t-tests were conducted. There was a significant increase in physical aggression from before lockdown (M = 19.95, SD = 4.83) to during lockdown (M = 21.07, SD = 5.25), with this difference being statistically significant, t(103) = -4.76, 0 < 0.01. The mean increase in physical aggression was 1.12 with a 95% confidence interval ranging from -1.58 to -.65. The eta squared statistic (0.47) indicated a small effect. There was also a significant increase in anger from before the lockdown (M = 16.38, SD = 4.33) to during lockdown (M = 17.52, SD = 4.64), this difference was statistically significant, t(103) = -5.17, 0 < 0.01. The mean increase in anger was 1.14 with a 95% confidence interval ranging from -1.57 to -.70. The eta squared statistic (0.51) indicated a medium effect. A significant increase was identified for the totals from before the lockdown (M = 61.97, SD = 15.38) to during lockdown (M = 65.53, SD = 16.03), this difference was statistically significant, t(103) = -6.07, 0 < 0.01. The mean increase in total aggression was 3.56 with a 95% confidence interval ranging from -4.72 to -2.39. The eta squared statistic (0.594) indicated a medium effect.

The final set of analyses conducted investigated the relationship between aggression and conformity, to see whether the former could predict the latter. A simple correlation was carried out for both aggression timescales to conclude whether the two variables were associated. There was a very weak positive correlation between conformity and aggression before lockdown, meaning the two variables increased together. However, the relationship was not statistically significant, (r = 0.12, p > 0.05).

There was also a very weak positive correlation between conformity and aggression during lockdown, meaning a greater aggression score was associated with a greater conformity score. However, the relationship was not found to be statistically significant, (r = 0.11, p > 0.05). Confirmatory analysis was then conducted on the variables in the form of a simple linear regression to predict conformity based on aggression. The results found that neither aggression pre-lockdown, F(1, 105) = 1.40, p = 0.24, nor aggression during lockdown, F(1, 104) = 1.33, p = 0.23 were significant predictors of conformity. Therefore, the null hypothesis was not rejected.

Content Analysis

The answers provided by participants to the COVID questions were subject to content analysis, to analyse feelings towards specific restrictions in place and the potential triggers of aggression. Participants were asked about different rules relating to restricted activity such as seeing loved ones, attending hospitality venues, travelling, and working from home. A common theme identified throughout was a shared understanding as participants could recognise the importance of the new rules and their benefits, however, could not help but express their concern and unhappiness. A small group of participants were unbothered by the newly implemented restrictions as they were more than happy to stay at home and did not rely on others for life satisfaction. However, from most respondents, the main themes identified were anger, loneliness, powerlessness, social deprivation, and suffocation.

Synonyms of anger were very commonly reported by the sample within this section, such as the repetition of the word’s frustration, hate, annoyed, disappointed, and stressed was constant. There was a strong indication of irritation as participants felt extremely annoyed about the new rules and interruption to their daily routines. The restriction that generated the most anger was not being able to see loved ones and staying at home unless journeys were essential, closely followed by cancellations to leisure activities as this brought up a lot of negative feelings. Another predominant theme was loneliness. Extreme isolation brought about by being made to stay at home for long periods of time, triggered feelings of anxiety and helplessness which were strongly linked to mental health issues. Being unable to see loved ones upset and saddened many as their support and care systems were taken away from them, in a time when joining together and helping each other was essential. Further, for individuals relying on sport and attending work to improve their life satisfaction, being forced to stay at home was detrimental to their personal well-being. Participants commonly reported a loss of enjoyment for life because of the inability to make experiences and have enjoy themselves at leisure and hospitality venues, describing suffering social deprivation. Individuals relying on these settings for employment also felt extreme worry regarding financial loss and uncertainty. Feelings of alienation triggered by these rules was a key trigger to the onset depressive symptoms, especially for individuals living alone.

Like the strong sense of loneliness, another clear emerging theme was an overwhelming feeling of suffocation. Respondents commonly reported feeling trapped and confined in their own homes, almost like they were in prison, being reprimanded for something they were not responsible for. Disconnections from the outside world were common and the forced distance meant major life events were missed and the lack of freedom meant there was nothing to look forward to. A loss of power was also commonly reported as the last theme identified from the content analysis. The inability to control their own lives meant individuals felt weak and helpless as they could not go or do what they wanted, nor could they express themselves through their hobbies the way they usually would.

Discussion

The main aim of this research was to investigate the relationship between lockdown and aggression. A hypothesis was developed to investigate this relationship, stating that individuals would report higher levels of aggression after the lockdown period, when compared with before. The findings showed that there was an overall significant relationship between the two variables, including each of the variables' subscales. The subscale with the biggest increase in aggression was anger, closely followed by physical aggression. These results confirm the hypothesis, as aggression did increase because of lockdown. This supports existing literature as research argues that pandemics commonly increase violent outbursts such as unprovoked attacks and mass violence (Cohn 2020, Cohn & Kutalek 2016, Esner & Nivette 2020, Rose 2018). Research conducted on COVID-19 in other countries also concluded that aggression has seen a dramatic increase since the introduction of lockdowns, particularly escalating family violence and hostility (Gupta & Stahl 2020). The findings within this investigation contribute to the literature and support previous research that concluded that all types of aggression increase during times of uncertainty.

The second analysis examined whether there was a relationship between gender and conformity. The results found that there was not a statistically significant difference in conformity between males and females. Existing research found evidence that females were more likely to conform and follow COVID-19 rules and restrictions than males, (Haischer et al. 2020). The findings within the current analysis do not support these findings in the literature. This difference may be due to the biased participant characteristics within the current investigation, or perhaps due to the strict view of gender as dichotomous within the literature and ignorance to social and psychological mechanisms as a complicated concept (Brouard et al. 2020).

The final analysis attempted to investigate whether there was a relationship between conformity and aggression as they have both individually been found to increase during the lockdown, in existing literature. There was a very weak positive correlation identified between conformity and aggression before and during lockdown, however, the relationships were not statistically significant. Existing literature concluded that the crisis initiated displays of conformity such as irrational panic buying, (Islam et al. 2021) and increasing obedience to traditional gender roles (Rosenfeld & Tomiyama 2020, 2021). Research on previous pandemics also concludes that crises encourage the bandwagon effect (Wang et al. 2020) and attracts those with extreme views to join (Abrams et al. 2021). The findings within the current investigation do not support these findings as the result was non-significant. This may be due to limitations within the sample, or the method used, as comparing participant responses to adjectives does not reflect actual displays of conformity and individual imitation.

The themes identified within the content analysis were anger, loneliness, powerlessness, social deprivation, and suffocation. This analysis enabled an understanding of feelings towards restrictions introduced by the UK government to reduce spreading of the pandemic. It was very apparent that the overall response was extremely negative, as words and phrases used described feelings of hurt and disappointment. The literature suggests that violence is often caused by distrust and broken relationships between society and authoritative bodies in times of uncertainty, (Cohn & Kutalek 2016), as anger and disappointment triggered by the isolation may lead to such mistrust and impairment of confidence in those in power. This could be an explanation for the growing aggression demonstrated in the dataset. Further explanations for manifesting aggression within the literature includes increasing anxieties due to a loss of control (Yang et al. 2021) and sudden economic changes leading to financial uncertainty (Jedwab 2020). The content analysis supports this research as participants reported increasing feelings of powerlessness due to not being in control of their own lives and fears for their future over economic insecurity. This may be responsible for the increasing aggression.

The literature has also described how an increasing strain on mental health in past pandemics has led to aggressive episodes (Peterman et al. 2020, Usher et al. 2020, Van Gelder et al. 2020). This was a main theme identified in the content analysis, was suffocation and loneliness, which had strong links to mental health issues because of isolation and being confined at home. Such depressive symptoms may be a main cause of the apparent increasing violence, supporting previous research. Similarly, the literature concludes that lifestyle changes such as social isolation impacts psychological welfare by inducing stress and depression (Brooks et al. 2020), which in turn can manifest into aggression. Social deprivation and missed opportunities reported by participants add to the possible growing explanations for the increase in aggression because of lockdown.

Implications

This research area significantly lacks valid research; therefore, this investigation makes a substantial contribution. This is beneficial as it aids a comparison to other research conducted, either supporting or contrasting previous findings, enabling new information to be brought to light. There is also the ability to compare findings from this pandemic to previous outbreaks of disease to understand differences and similarities. This makes a very important contribution to the real world in terms of prevention for the future. This investigation can guide an understanding of a 21st Century pandemic and encourage crisis prevention in regard to aggressive action, so we know how to deal with future outbreaks and ways to improve what has already been done. With the current energy crisis progressing, it is advisable that the authorities should be aware of the effect of crises on aggression and particularly domestic violence. Attempts to apply the findings from this pilot study to new research related to the energy crisis should take place, in order to create preventive models and policies related to crises and potential increased aggression levels due to failing measures.

Governing bodies can use the results to understand the positive and negative effects of the lockdown period and take this information and make new legislation. These authoritative associations can also learn whether the lockdowns were effective and worth the accompanying consequences, such as increased aggression and the onset of mental health issues. Understanding the effect of lockdowns will inspire changes to policy regarding pressure to stay at home, designing safer ways to get people out of the house. Support and health services can also use this knowledge to identify at risk individuals and understand how to redesign and distribute their resources to be most beneficial. Services created to protect children from abuse or neglect and prevent domestic or family violence can be improved to reduce cases of exploitation and maltreatment. Similarly, facilities designed to support those perpetrating the violence due to the pandemic can be developed to find such individuals and help them to channel their anger differently.

Limitations

There were elements of the study restricting success that were evident from the onset. When designing the study, it was accepted that honesty could not be guaranteed as the investigation relied on self-report data and therefore, participants could choose to either conceal information they were embarrassed about or not tell the truth to finish the questionnaire quicker. It was also understood that individuals may not recognise that they had been more aggressive from before the lockdown meaning their answers would also not be completely accurate. Further, when designing the questionnaire, the rules regarding lockdowns kept changing meaning there were multiple lockdowns and therefore participants may have been answering about a previous one. Similarly, as the data collection period was over a couple of months the area an individual lived in may not have been made to isolate in that period; more lenient restrictions at the time may have influenced participants to judge each rule more compassionately.

After the data had been collected, limitations regarding the dataset and sample were also made apparent. The sample size was less than desirable and was further reduced as many responses were incomplete. The length of time available and lengthy questionnaire contributed to this limitation as many participants began the survey but gave up halfway through. Another issue identified was that the sample was not representative of the general population, as the demographics showed that the group was predominantly young, female, university students. Future research could increase the sample size to avoid such issues.

Other limitations that require consideration were that lockdown might not have been the cause of the apparent increase in aggression. A range of unconnected life events could have led to this change, such as personal or health problems. Further, emotional responses to the lockdown restrictions depended heavily on an individual's priorities. For example, participants with children's concerns would be primarily focused on the wellbeing of their family and financial uncertainty, however, younger participants would have predominantly been concerned about not being allowed to attend festivals or go out with friends. Therefore, obtaining a sample that was representative of individuals in each stage of life was essential, so all feelings were considered and analysed.

Future Research

An in depth understanding of the test results and discussion of the limitations enabled suggestions to be made regarding future research and potential recreation of this investigation. To amend the problems with the sample size and demographics, a more thorough recruitment process could be conducted; participants could be enrolled through alternative methods such as through the post or on the telephone which would guarantee a more diverse group and greater participation. A larger sample would afford a more generalisable conclusion and more accuracy. Further, to address concerns over honesty, the Brief Social Desirability Scale could have been included to uncover whether participants were answering to adhere to socially desirable expectations. This would enable an understanding of whether participants were being honest and therefore increase validity of the results.

Conclusion

To conclude, this investigation has yielded valuable insights and has made a significant contribution to the existing body of knowledge on the pandemic and its associated measures. The results of the analysis indicated that there is a positive correlation between aggression and the period of lockdown, potentially highlighting an influential relationship. The analysis also facilitated a thorough understanding of triggers to aggression as feelings of anger and frustration, as these emotions were quoted frequently as a response to newly imposed regulations within the results. Due to the nature of the pandemic's growth being so quick, little is known within this area meaning it was essential to fill the gap in this areas collective knowledge. Although more research is required to understand the depth of these phenomena, the present study provides a vital step forward towards enhancing our understanding of the area. By highlighting the pressing need for changes in the government's response to the pandemic and existing support services for victims of violence, this study underscores the significance of protecting vulnerable individuals and rehabilitating perpetrators in the real world.

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Digital Participation and the Covid-19 Pandemic. Evidence from Italy

*By Gabriele Giacomini**

This study examined the impact of digital technologies on political participation in Italy during the COVID-19 pandemic. A demoscopic survey conducted in October 2020 analysed the digital divide, Internet access as a right, e-voting, and civic and party platforms for political engagement. Four research questions were addressed. The first question asked about the relevance of the right to access for Italians. The second question explored Italians' Internet usage for economic and political purposes, assessing the importance of political activities compared to other online activities. The third question investigated Italians' inclination towards the use of ICT for remote voting at the national and local party levels, examining their preferences for expressing electoral choices through technology. The fourth question focused on civic and party platforms, investigating Italians' interest in using digital tools for participating in local and party-level political activities. The article thus elaborates on the impact of digital technologies on political engagement in Italy amidst the accelerated spread of ICTs due to the COVID-19 pandemic.

Keywords: Digital technologies; Political participation; Italy; COVID-19 pandemic; Internet access; Civic and party platforms

Introduction

The spread of ICTs in recent decades has led to significant social transformations. This article examines the impact of ICTs on political participation in Italy, particularly regarding the consequences of the COVID-19 containment measures on the attitudes of Italian citizens. This research aimed to investigate this issue through a demoscopic survey of a sample of 600 Italians selected by means of proportional design sampling and interviewed using CATI and CAWI methods.

The surveys were conducted in October 2020, during Italy's pandemic shock reaction phase known as the "second lockdown," characterised by limited physical movement and a consequent increase in digital communications for many daily activities (Gabbiadini et al. 2020; DeFilippis et al. 2022; McGloin et al. 2022). The COVID-19 pandemic also caused a rapid reorganisation of public services, requiring them to be provided via the Internet (Gabryelczyk 2020; Agostino et al. 2021; Shen et al. 2023). Since the survey was carried out eight months after the outbreak in Italy (the first cases were identified in February 2020, in Lombardy and Veneto), it is reasonable to assume that the issues addressed in the demoscopic survey were influenced by the spread of the virus and the containment strategies, suggesting an updated picture of citizens' attitudes towards political participation through ICTs.

During a period when many rights of citizenship, information, and participation were rapidly shifting to digital channels due to lockdowns and restricted physical

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movement (Nguyen et al. 2020), the right of access to the Internet and the digital divide emerged as fundamental issues (Esteban-Navarro et al. 2020; Litchfield et al. 2021; Lai & Widmar 2021). Consequently, the survey highlighted the effects of the digital divide and the perception of these issues, especially in segments of the population that are already fragile due to age, income, or other factors. Furthermore, reference was made to critical elements for digital participation, such as the right of citizens to access the Internet and the role of the state in ensuring this right. Finally, with the aim of analysing changes in political participation because of the increasing spread of ICTs accelerated by the pandemic, this article focuses on forms of political participation through digital technologies, such as e-voting procedures and civic and party platforms (digital democracy).

After a brief review of the scientific literature on Internet access and political participation through ICTs in Italy, the research questions on which the questionnaire to survey the sample's opinions was based are presented. Finally, the research methodology is specified and the results are presented, both through descriptive statistics and multivariate analyses. Concluding remarks follow.

Internet Access and Political Participation through ICTs

Access to the Web in Italy

Concerning the right of access to the Internet, in 2014 the "Commissione per i diritti e i doveri relativi ad Internet" chaired by the jurist Stefano Rodotà was established within the Italian Parliament, which drafted the "Dichiarazione dei diritti in Internet" (Masera & Scorza 2016) and identified the right to Internet access as a priority. The right to access is associated with freedom of expression and intellectual liberty, which is why the Italian Commission understood it as a fundamental right.

Nevertheless, there are large differences in individuals' access opportunities (digital divide). The inability to navigate the Internet can stem from two primary factors: lack of means and lack of skills. In the past, it was commonly believed that the market would regulate itself regarding access: the idea was that hardware, networks, computers, and mobile phones would become increasingly widespread, and tariffs would become more inclusive, progressively guaranteeing access for all. Although this trend has occurred, it has been insufficient to ensure egalitarian and universal access (Van Dijk 2020; Lythreatis et al. 2022).

To guarantee this right, various public plans and programmes have been developed by the EU. Among the objectives set out by the European Commission (2015, 2022) in its "Digital Strategy" are universal coverage with a minimum speed of 100 Mbps by 2025 and Gigabit connectivity for all by 2030, outlining a path for the evolution of connectivity and an expansion of access. This plan was implemented by the Italian Government (2015) through the "Strategia Italiana per la Banda Ultralarga," with the Ministry of Economic Development and the in-house company Infratel Italia Spa responsible for its execution. A significant step was the identification of "white areas," i.e., market failure areas throughout the country. In these areas, the Italian Government opted to support a "direct intervention" model through national, EU, and regional funds. Public intervention in these areas was deemed necessary (and authorised by the European Commission under state aid rules) precisely to guarantee the right to Internet access, correcting social and geographic inequalities. Additionally, the “Piazza WiFi Italia” project aimed to allow citizens to connect to a WiFi network free of charge in public places throughout the country (Italian Government 2019).

Models of Political Participation through ICTs

Through ICTs, citizens can engage in public debate, express specific social and political demands, and participate in decision-making processes. Furthermore, groups of people with common interests, behaviours, and values, who share particular demands, can share resources and information using the Internet. They can organise and mobilise themselves to achieve a goal, even independently of political parties (Dahlgren 2009; Castells 2013).

When voting is carried out through ICTs, it is called e-voting (Gibson et al. 2016). At first glance, the advantages seem obvious: speeding up the process, saving public money on the provision of physical premises, and enabling social distancing, which is particularly useful in situations such as the pandemic. However, it is not without disadvantages, particularly related to IT security issues (the risk of fraud or interference by hackers, possibly on behalf of foreign powers) (Lauer 2004). Furthermore, digital inequality is a point of concern; there is a risk of excluding some citizens from exercising their right to vote due to a lack of computer skills.

A second way of using ICTs is through information, participation, and collaboration platforms. According to Reddick (2011), there are three models of political participation that rely on digital media. The first is called the “managerial” model; in this case, the Internet and ICTs are used by institutions to inform citizens and provide access to specific services and functions. The second is the “consultative” model, in which governments and administrations also use communication technologies to gather information on public policies and improve them. The third model is the “participatory” one, which most closely approaches e-democracy. Communication technologies can ensure more widespread and less intermittent interactivity, for example, through platforms for deliberative democracy. The participatory approach aims to form active citizen communities (Blondiaux 2008) and can address both local and global issues (Della Porta & Rucht 2013).

Regarding Italy, De Blasio (2018) identified two macro-types of participatory platforms: those related to the publication of open data aimed at increasing the transparency of public institutions, and those that aim to offer tools for participation and collaboration. According to De Blasio, in Italy, the focus has mainly been on digital public services and transparency measures, enabling citizens to monitor public institutions better. Participation has so far been promoted mainly through consultation practices with closed-ended answers and open comments, both online and offline, sometimes associated with public meetings. The topics have also been concentrated in a few specific areas: education, food, and public administration. These initiatives often refer to the need to promote equality and inclusion of citizens, with a focus on the idea of restoring trust in institutions.

A third way in which digital participation can be realised is through party platforms. Some movements have tried to renew the party form by drawing inspiration from hacker culture, especially in terms of communication and management organisation. Externally, they have utilised the communication potential of social networks such as Facebook and Twitter, or channels on YouTube, to broadcast their proposals and build a supporter base. Internally, they have developed a series of online decision-making platforms to call on members to discuss and vote on policies, internal offices, and candidates (Deseriis 2020). Gerbaudo initially called these new political organisations "platform parties", later referring to them as "digital parties" (2020). Among these formations in Italy, the Movimento 5 Stelle is one of the best-known and most successful examples. In fact, the Internet is a central channel for coordination and organisation, with a precise division of functions between the founder Grillo's blog, the Movement's blog, and the participation platform, formerly called "Rousseau" and now "SkyVote", where it is possible to put forward proposals and select political directions and personnel (Bordignon & Ceccarini 2015, Giacomini 2022).

Research Questions

Some research questions can be formulated and answered through the empirical analysis provided by the survey conducted at the end of 2020, involving a sample representative of the Italian population. The answers to the research questions can provide an overview of Italians' attitudes towards digital participation following the lockdowns caused by the COVID-19 pandemic.

Access to the Internet is necessary for political participation using new technological tools. The first research question focused on the importance attributed by Italians to the right to Internet access.

RQ1) Do Italians consider the right to access the web important?

The second question examined the purposes for which Italians use the Internet in their daily practice, whether for economic or political purposes. In other words, the question tried to find out how important political purposes are compared to other online activities.

RQ2) For what purposes is the Internet used, and what relevance do political purposes have?

The third question focused on the use of ICTs for remote voting at the national, local, and party levels. This question sought to establish whether Italians are inclined to use these technologies to express their electoral preferences and whether they are interested in using platforms to participate in political life.

RQ3) Are Italians inclined to use ICTs for voting and to engaged with participation platforms at the national, local, and party levels?

The fourth question aimed to explore socio-demographic differences in digital participation in Italy.

RQ4) Which groups of Italians are most likely to use the Internet for information and political participation?

Methodology

The demoscopic survey, carried out by the University of Udine and the Ixè Institute of Trieste, involved a sample of 600 respondents, representative of the Italian population aged over 18 (50,243,518 as of 1/1/2019). The sampling followed a proportional design, with a priori definition of sample quotas, aligned with the most recent ISTAT data, with respect to the following parameters: gender, age class, geographical area, and size class of the municipality of residence. Considering the correlation with the phenomena investigated, based on official data, an a posteriori weighting was also carried out to guarantee correct distribution with respect to education level and voting behaviour at the last political elections. The sample size used ensured a fair degree of precision of the estimates, with a maximum margin of error of plus or minus 4.01%.

The interviews were carried out based on a structured questionnaire. Prior to the administration of the interviews to the sample, a pre-test was carried out between 01/10/2020 and 02/10/2020, by means of around 20 pilot interviews, which allowed for the validation of the questionnaire design and the wording of the various questions. Between 6/10/2020 and 10/10/2020, a total of 600 complete interviews were carried out, distributed as follows according to the survey technique: 500 online interviews (CAWI system - Computer Assisted Web Interviewing) and 100 telephone interviews (CATI system - Computer Assisted Telephone Interviewing).

This distribution of interview techniques made it possible to oversample the segment of Internet users during the survey phase, consistent with the topics addressed. On the other hand, it is important to note that online surveys primarily represent the online population, which might be different from the non-online population in Italy. This represents a limitation of this study as it may not fully capture the perspectives of those less engaged with or having limited access to digital technologies. Nonetheless, 100 telephone interviews were also conducted, and the a posteriori weighting procedure in any case ensured sampling representativeness with respect to the overall distribution of the Italian adult population. The inclusion of telephone interviews and the rigorous sampling methodology employed contribute to the robustness of the findings, providing valuable insights into the impact of digital technologies on political participation in Italy during the COVID-19 pandemic.

Results

Considering access to the Internet a fundamental right is a widely shared opinion among most Italians (RQ1). In fact, the percentage of those who totally and largely agreed with the idea that the right to Internet access is necessary was 89.2% (totally agree 56%, largely agree 33.2%). Those who do not agree with the statement that "Internet access should be regarded as a fundamental right of every citizen" make up 6.6% of the population (largely disagree 3.9%, totally disagree 2.7%). Those who are excluded for some reason (for reasons of old age, insufficient skills, or poverty) claim more access as a fundamental right, expressing a clear desire to be included in the digital world. For example, on the right of access, different percentages were observed across age groups, with 35.5% of 25–34-year-olds and 72.3% of those over 65 years of age saying that they "totally agree". Even those who use the Internet less frequently (75%) and those who are politically left-wing-aligned (78%) declared themselves in complete agreement with the idea of considering access to the Internet as a fundamental right.

The sample cited multiple purposes for surfing the Internet (RQ2). The results are (multiple answers possible): sending or receiving emails 83.9%, shopping 78.2%, using social networks 75.3%, using bank services 60.3%, entertainment 60.2%, information on social and political issues 48.4%, planning trips 48.4%, seeking health information 45.4%, using public administration services 41.7%, reading newspapers and magazines 39.7%, job search 28.4%, participation in virtual communities 25%, participation in institutional online platforms 23.9%, expressing opinions on social and political issues 23.8%, subscribing online petitions 18.7%, participation in online party platforms 6.4%.

The most common purposes cited were "sending and receiving emails" (84%, which rose to 90.3% for the 55–64 years age group), "shopping" (80%, which rose to 92.5% for 18–24-year-olds), "using social networks" (75%, which rose to 89% among 18–24-year-olds and the unemployed), "using banking services" (60%), and "entertainment, music and games" (60%). Less than half the times, information on social and political issues was cited as the reason for use (48%, with a minimum of 31% among individuals with low education); in 42% of the cases, the motivation was the use of digital services of the public administration (the share fell below 30% for Forza Italia voters, politically unaffiliated individuals, and non-users of social networks). About 40% of the sample also declared that they use the Internet to download or read newspapers or magazines online; for people with a high level of education, the percentage was 58%, and for those who are centre-left voters, it was 59%. Therefore, the most popular digital activities involve communication (email and social) and the commercial–economic sphere (shopping, using banking services). At the bottom of the ranking were the activities typical of the public sphere and those related to political participation. Only 25% of Italians studied admitted that they participate in institutional platforms and 6.4% in party platforms. The pandemic has necessarily increased Italians' recourse to online services, but it can be deduced that Italians use the Internet mainly for communication and commercial purposes and that political purposes are relatively less relevant.

It is possible to explore the political use of the Internet by considering technologies as tools for preference gathering and participation at the national, local, and party levels (RQ3). First, we considered preference gathering. In theory, using digital technologies, one could elect one's political representatives online (and more conveniently). This method of selection (e-voting) for the formation of parliament, regional councils, etc., may have both advantages and disadvantages. According to 44.7% of the sample, disadvantages prevail for this type of instrument, identified as the possibility of fraud or interception by hackers or foreign political forces. Only 23.3% claimed that the advantages of digital political participation would prevail ("advantages and disadvantages are balanced" 29.2%). It may be deduced that the majority of Italians, despite the travel restriction issues caused by the pandemic, remain cautious about e-voting and prefer to stick to the traditional method (with paper ballots and ballot boxes), mainly due to security issues and fear of external interference.

Secondly, consideration is given to civic platforms for information, participation, and collaboration, through which it is possible to take part in local community decisions. The ways of involvement can be many (open data, online participatory budgets, participatory planning). When asked about participation in territorial policy initiatives through institutional online platforms, 63% of respondents were quite or very much in favour (18.5% very much in favour, 44.5% quite in favour). Among those most in favour were certainly young people between the ages of 18 and 24 (79%), those between the ages of 25 and 34 (78%), the unemployed (77%), M5S voters (84%), and the most frequent users of social networks and the Internet (84%). In municipalities with fewer than 5,000 inhabitants, on the other hand, 24% did not favour this form of participation, perhaps because the community is so small that they do not feel the need for new places of "aggregation," as seen in the case of pensioners and those over 65. Even for non-Internet and non-social users, there were high shares of people who are completely against this idea (about 45% and about 40%, respectively). These categories of citizens probably fear being excluded from the online participatory processes of their community.

Thirdly, we considered participation in their party's political initiatives through online platforms. This third modality found more limited acceptance, that is, 52.9% (18.7% very much in favour, 34.2% quite in favour). Good propensity was more evident among the electorate of the M5S, which already makes extensive use of this form of participation by members of the movement (73%); whereas for Forza Italia and Fratelli d'Italia voters, the consensus did not reach 40%. PD voters showed agreement in 62% of cases, and League voters in 58%. In short, even the group of retired people, homemakers, the over-65s, and those who are not Internet and social users showed a tendency to disagree with this type of ICT use.

For RQ4, a multivariate analysis, including descriptive, inferential, and correlation techniques, was conducted using mainly ordinal variables. These variables were recoded by assigning them numerical scores consistent with the range of variation of each question and then indexed on a uniform scale from 0 to 100. The recoding made it possible to standardise the range of the response scale, assigning the highest score (100) to the response that indicated greater propensity and/or agreement. This methodology made it possible to effectively compare the summary indicators of all items, including those with a dichotomous response. Question 2 on the purpose of Internet use, with 16 possible answers, generated as many dichotomous variables (scored 0 for the absence of the behaviour, 100 for presence). Since some answers could be traced back to the same application sphere, five summary variables were generated from the 16 variables:

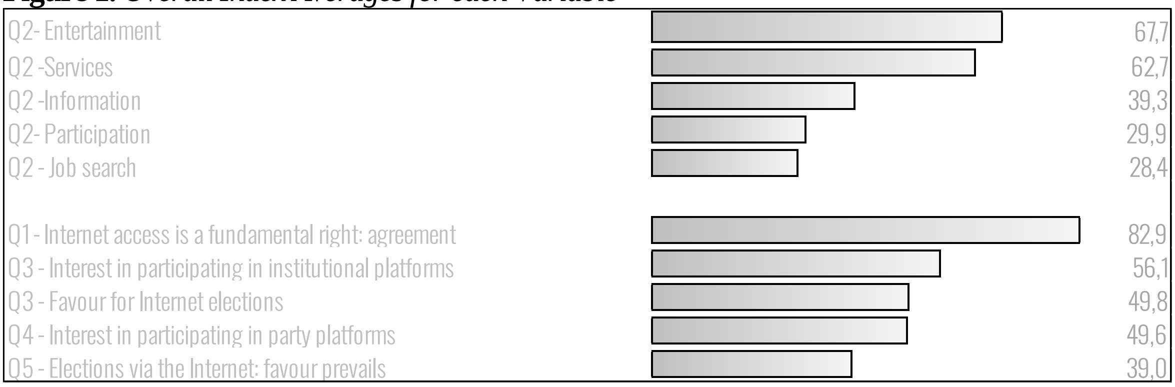
1. Q.2- “Information” (4 var.);
2. Q.2- “Participation” (4 var.);
3. Q.2- “Services” (5 var.);
4. Q.2- “Entertainment” (2 var.);
5. Q.2- “Job search” (1 var.).

For the elaboration of multivariate analyses, in addition to the five summary variables just described, reference was also made to other questions that were considered essential for the analysis:

6. Q.1- measuring responses regarding “Internet access is a fundamental right: agreement”;
7. Q.3- measuring “Interest in participating in institutional platforms”;
8. Q.3- measuring “Favour for Internet elections”;
9. Q.4- measuring “Interest in participating in institutional platforms”;
10. Q.5- measuring “Interest in participating in party platforms”.

The multivariate analysis of the data revealed some significant conclusions. An initial descriptive analysis revealed that the Internet is more widely used in the areas of Entertainment (average I=67.75; SD=37.8) and Services (average I=62.7; SD=31.7), rather than Information (average I=39.33; SD=33.5), Civic and Social Participation, and Job Search; moreover, the average index remained below 30 (figure 1).

Figure 1. *Overall Index Averages for each Variable*



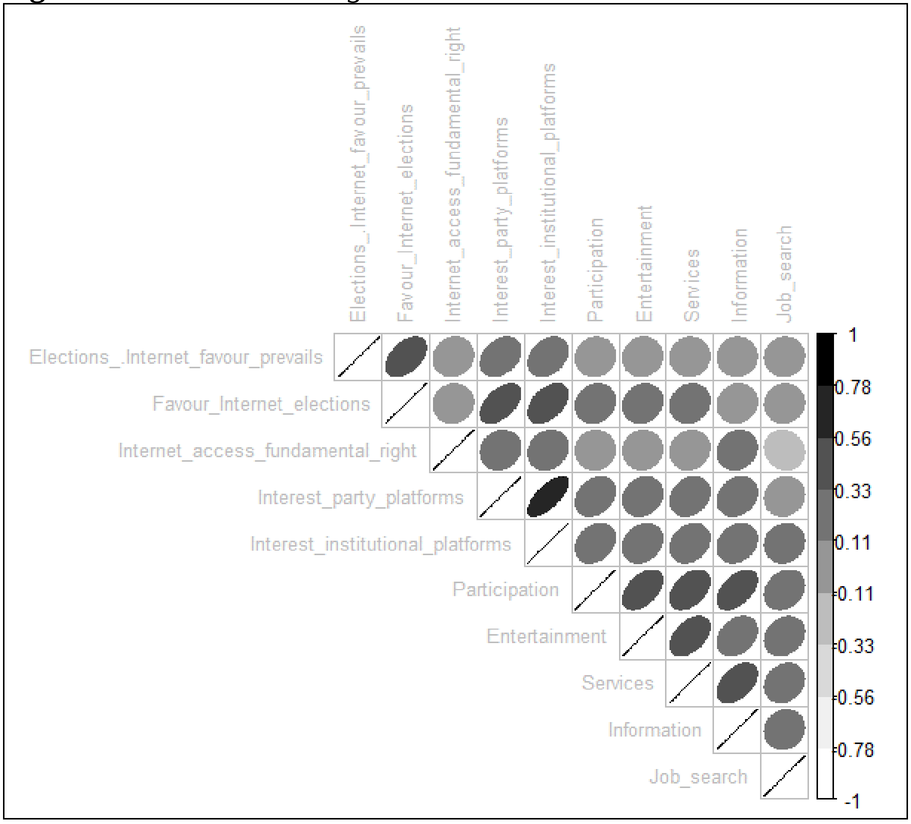
Support for Internet elections received an intermediate score. Some groups, such as the self-employed and voters of the Movimento 5 Stelle, favoured this way of voting more. In contrast, the over-65s and voters of Fratelli d’Italia scored lower. In particular, the sample’s favour towards elections via the Internet showed an average index score of 49.79 (SD=43.32), with a positive deviation of 16–18 points for the self-employed, M5S voters, and those who position themselves politically on the right, and a negative jump of about 20 points for the over-65s and Fratelli d'Italia voters. Again, with regard to Internet elections, the total number of subjects showed an average score that is not very high for the assertion that advantage prevails (average I=38.97; SD=40.37), an average that falls by about 13 points for people aged over 65, and rises by almost the same amount for subjects in the 45-54 age bracket, for the self-employed, and for the M5S and Forza Italia electorate.

Regarding participation in institutional platforms, interest showed an average index score of 56.1 (SD=31.9). However, significant differences were observed according to age, level of education, and political orientation. Young people, those with a higher education, and M5S voters showed a greater interest in these forms of political participation. The average index increased by about 10 points for individuals aged 18–34 and reached over 70 for those with a higher level of education and M5S voters. Interest in participating in party platforms showed a slightly lower average index than in the previous case (average I=49.55; SD=35.14), and the average was higher by more than 10 points for the younger class, those economically better off, the better educated, those on the political right, and M5S voters (the average index was 66.5).

There is strong evidence of differences in the various groups in terms of their schooling, political orientation, and profession. There is weak evidence of differences, on the contrary, in terms of gender, territorial origin, and size of municipality of residence. To express this in inferential terms, however, it was necessary to test the incidence of each socio-demographic factor on each response variable (Kruskal-Wallis test). The result of the inferential comparison analysis shows that significant differences by gender were nevertheless present in correspondence with the use of the Internet for services, agreement on Internet access as a fundamental right, and interest in institutional and party platforms, all points in which there is greater agreement among men. By age group, excluding the over-65 age group, which showed significantly different characteristic values for each of the areas discussed, there were no significant differences for Internet use other than entertainment and job search, and regarding the agreement on Internet access as a fundamental right. Different levels of schooling produced significant equality with respect to the agreement on the Internet as a fundamental right but also on the prevalence of the benefits of digital voting in elections. On the other hand, subjects of different professions showed a different descriptive value structure for all macro-variables at stake, as well as the expression of voting.

The correlations between the summary variables indicate that the series linked to Internet use are all positively and significantly connected with each other, with coefficients close to 0.5, except for use for information and entertainment, which do not appear to have a specific significant linear link (figure 2). Furthermore, these variables show no connections with the other quantities analysed. The two variables related to agreement on online elections and the two variables related to interest in institutional platforms and linked to political parties are also positively correlated. Also significant is the correlation between those interested in institutional and political platforms and those in favour of Internet elections; here too, coefficients exceeding 0.5 are found. On the other hand, the agreement on Internet access as a fundamental right has no significant correlation with the other variables of use and institutional/political interest.

Figure 2. *Correlations among Variables*



Discussion and Concluding Remarks

Based on the results presented, several considerations emerge regarding the political participation of Italians following the COVID-19 pandemic. In general, it can be stated that political participation through ICT is still an evolving phenomenon.

The data highlights the importance of Internet access as a fundamental right for the majority of Italians. However, Internet use is mainly oriented towards communication and commerce, while interest in online political participation is limited. Technological developments and efforts to increase digital inclusion could influence the situation in the long run, but it is also important to consider security concerns and individual preferences regarding the methods of political participation, as a significant part of Italians seem to be attached to traditional methods. Despite technological advancements, the lockdown experience has not led to the advent of widespread online political participation, indicating that traditional habits and concerns about new methods still persist.

The majority of Italians (89%) believe that access to the Internet should be considered a fundamental right. Notably, digital literacy is seen as crucial mainly for the elderly and those who use the Internet less frequently, rather than for citizens of all ages. Those excluded from Internet access due to age, insufficient skills, or poverty are the ones who most yearn for inclusion in the digital world. This is believed to be due to the awareness of the rapid evolution of technologies and the realisation that it is difficult to keep up without having the appropriate foundation. Despite public efforts to bridge the digital divide, it should be considered that, as technologies innovate, so do forms of exclusion. This should be taken into account by those who wish to promote greater political participation through ICTs; the difficulty of guaranteeing the right to access increases the risk of good intentions turning into exclusionary practices. Before encouraging people to participate politically online, one should first consider whether they are truly capable of doing so, without assuming they can easily adapt.

Regarding Internet use, the main purposes include sending and receiving emails, online shopping, using social networks, availing of banking services, and playing music and games. Activities related to communication and the commercial-economic sphere are the most widespread, while those related to the public sphere and political participation are relatively less relevant. Only a limited percentage of Italians use the Internet to inform themselves about social and political issues or to participate in institutional or party platforms. The Internet was intended as a means of information, but it has become primarily a place of entertainment. The Internet offers a wide range of content and activities that can divert attention from important political issues. Engaging politically is a tiring, difficult, and sometimes even frustrating activity, and the fact that it is online does not automatically make it more comfortable. Moreover, mistrust of traditional political institutions may also extend to digital political participation.

This orientation is confirmed regarding e-voting and participation platforms. The majority of respondents are cautious about the use of e-voting and still prefer the traditional method of paper voting due to security issues and fear of external interference. This mistrust might have well-founded reasons, in light of the issues related to IT security and the management of anonymous and uninfluenced voting procedures; to date, multiple pieces of evidence show that it is difficult to guarantee both of these aspects online (Abba at al., 2017). However, there is a large propensity (63%) to participate in local political initiatives through institutional online platforms, especially among young people and those who frequently use the Internet and social networks. Political participation via online platforms regulated by one’s own party receives lower approval (53%) and shows significant differences between supporters of different political parties. Put another way, respondents appeared to be polarised on certain issues related to political participation via digital platforms according to their gender and political affiliation. Based on these considerations, it is possible to state that for most Italians, participation is analogue to the public space of pre-eminence, while only rare exceptions (such as the Movimento 5 Stelle and its supporters) practice online forms of participation.

For future research, we envisage the administration of an online questionnaire similar to the one used in this study, in order to record changes in the population’s opinions on these dynamics. In addition, it is essential to investigate the issues of digital literacy and devise suitable strategies to address the digital divide; indeed, the resilience of democratic systems in the face of the complex challenges posed by constantly evolving ICTs and the associated risks will depend on the effectiveness of such strategies.

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