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Applied Research and Theory Journal

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Editorial

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Welcome to the inaugural issue of the Dublin Business School Applied Research and Theory Journal, formerly the DBS Business Review. This first volume under the new name is also the first to be edited by me. The DBS Business Review was first issued five years ago, and it is therefore important to reflect on the changes over time and to say goodbye and thank you to Dr Tony Murphy, Editor-in-Chief of the DBS Business Review before his move from DBS to SETU. The rebranding of the journal represented the wider applied research concerns of DBS in general and to demonstrate a sustained commitment to staying responsive to the changing research landscape. The key goal of the journal is to facilitate high quality applied research, especially research with a practical application or implication that is reinforced through a double-blind peer review process, and support for copyediting and formatting. It is intended that by welcoming submissions from across a range of disciplines, the journal will bridge the gap between theory and practice. DBS Applied Research and Theory Journal is a diamond open access journal. The theme of 'Embracing Change' in this issue has been introduced to create unity and coherence among submissions.

The new editorial board and editorial team have brought renewed vigour for research output to the college. The journal is now in the very capable hands of a strong editorial team who are the driving force and ensure quality research. The team consists of Trevor Haugh, Head of Library and Academic Hub and Joint Managing Editor, Louise Cooke-Escapil, Research Librarian and Senior Editor, Amy Fitzpatrick, Digital Literacy Librarian and Senior Editor, and David Rinehart, Information Skills and Research Manager and Joint Managing Editor.

The new journal has a broad remit and fosters collaboration, innovation, and intellectual exchange, but focuses on the multidisciplinary scope of research with non-cognate backgrounds. The scope of the new journal sees contributions from students, faculty, practitioners, and industry experts both national and international with wide-ranging insights.

The three primary research articles in this issue discuss different disciplines but all have a theme of continuous improvement. Bhuvan Israni provides an exploratory study and thematic analysis of the support to healthcare workers during the pandemic and this contribution offers insights into the evidence-based strategies to address pandemics. Mohd Rozie Mohd Damit offers a new perspective on analysing the supply constriction of gross domestic products in Malaysia and the macroeconomic forces that have shaped the sector between 2015 – 2023 for more informed decision-making within the construction sector. Similarly, a contribution from Tryson Yangailo explores the relationship between strategic planning and productivity in Zambia and examines some contingency variables to help improve the process. All three contributions are unified in their aim to improve and enhance processes.

Education is at the heart of the journal which is evidenced throughout this issue and particularly with the following two unique pieces. The first piece offers advice for researchers in the shape of an exclusive interview with the author Robert L. Harris and his literary journey exploring the intersection of history, conservation, and personal reflection on Skellig Michael in his unique, poetic and storytelling writing style. The final section offers pragmatic advice to readers concerning researching and writing a book. The other unique piece on education comes from Alana Loison's educational submission and is a systematic review on high functioning autistic employees. Alana explores the difficult lexicon of autism and gives the reader an insight into the workplace challenges, but also opportunities for simple interventions.

The inclusion of a book review in this issue gave me the pleasure of reviewing 'Teaching Well: Unveiling the Art of Learning-Centred Classrooms' from Professor Stephen D. Brookfield, Dr. Jurgen Rudolph, and Shannon Tan. It takes readers on an illuminating journey through the heart of effective teaching. This book lights the path for those new to teaching or wishing to improve research practice.

The continuing rise in open-access is reflected in the following two contributions. Amy Hayes' article on The Perceptions of Open Educational Resources by Teaching Staff in Higher Education in Ireland evaluates the impact of Emergency Remote Learning on the perceptions of Open Educational Resources. Niamh Dowdall is the recipient of the 2023 Postgraduate Student award and Niamh offers a divergent approach to exploring the transition and transformation of the arts and humanities in an open-access future. This submission defines the need to embrace new methods of research dissemination and existential criticism of communicating value. The journal is a diamond open-access journal and thus provides a sustainable business model. Open-access publishing is embedded in the ethos of DBS library. DBS Applied Research and Theory Journal is an open access, peer-reviewed, academic journal published by the DBS Library Press. DBS Applied Research and Theory

Journal is indexed with the DOAJ, EBSCO and Proquest. This is important to make the journal accessible to all.

DBS stages an annual Practical and Applied Research Conference (PARC) every May and offers the opportunity for submissions from different disciplines to be published in the journal. In November 2023 DBS hosted the HECA Research Conference and this has helped expand the DBS research network and collaborators. This issue includes contributions from the HECA Research Conference 2023: Sharing an Open Research Landscape and outlines the flow of the day from an academic integrity community of practice workshops through the parallel breakout room sessions to the presentation of the HECA student research awards. The Academic and Research Integrity Conference, Ireland (ARICI, 2023) saw several members of DBS staff and faculty attend workshops and was largely based on academia and generative AI. This issue includes a report from the conference attendees about the challenges facing academia from the world of generative AI.

In recognition of outstanding contributions, we have introduced a postgraduate student award. This is to encourage the next generation of emerging scholars to contribute to the journal. Looking ahead, we will be measuring the journal impact through data analytics, we will be cultivating partnerships nationally and internationally, and we ask you to join us in this transformative journey. The future of the journal has ambitions to move towards a bi-annual publication, with a blend of contributors and institutions to transcend boundaries and disciplines. The editorial team are expanding on the types of submissions to excite curiosity from book reviews to interviews with authors to offer a value proposition beyond the research paradigm into the exciting realm of research practice. We aim to build a journal that will reflect all the vibrancy and diversity of applied research and theory. The theme of 'Embracing Change' identifies the unique composition of the journal and shapes academic discourse into the future.

DBS Applied Research and Theory Journal

March 2024

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An Exploratory Study and Thematic Analysis of Responses to Understand the Perspectives and the Level of Support Offered to Healthcare Workers During the Pandemic in Ireland

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Abstract

The COVID-19 pandemic has placed exceptional demands on the healthcare workforce around the world (Vindrola-Padros et al., 2020). The aim of this study was to undertake an exploration of the experiences of healthcare workers (HCWs) who worked during the pandemic and their views about the support they were offered during the pandemic in Dublin, Ireland. Understanding the experiences of HCWs can help identify gaps in healthcare systems and inform efforts to strengthen them.

This primary qualitative study was conducted using semi-structured interviews with six healthcare professionals. Participants were recruited via snowballing sampling technique and included nurses and healthcare assistants. The interview discussion guide consisted of questions on COVID-19-related challenges such as the demands at the workplace, the level of stress and uncertainty to HCWs, availability and quality of personal protective equipment (PPE) and the support as well as coping strategies they received, from the management to handle the pandemic.

Braun and Clarke's (2021) reflexive thematic analysis generated two themes with eight sub-themes. The two major themes were emotional exhaustion and inconsistent guidelines. The findings from the study indicated that healthcare workers were practising and carrying out duties outside their usual roles and reported very high levels of stress and anxiety. The second theme discusses the lack of consistency, which leads to a number of challenges for HCWs while implementing standardised practices. Understanding the perspectives of healthcare workers would facilitate the hospital administrations as well as managements in Ireland to proactively support healthcare providers during future pandemics by ensuring access to mental health programs, standardising communication and developing plans that

will address equipment and supply availability. In addition to this, HCWs are key stakeholders in public health responses to pandemics, and their experiences can inform policies and guidelines related to infection prevention and control, vaccination and other public health interventions, as well as contribute to the development of evidence-based strategies to address pandemics.

Keywords: COVID-19, healthcare workers, reflexive thematic analysis and snowball sampling

Introduction

COVID-19, an infectious disease caused by a rapidly spreading coronavirus, surfaced as a global public health emergency in the early months (January to March) of 2020. The COVID-19 pandemic has put health systems worldwide under pressure and tested their resilience (Agrawal et al., 2022). The World Health Organization (WHO) acknowledges the health workforce as one of the six building blocks of health systems (World Health Organization, 2007). Healthcare workers (HCWs) play a crucial role in a health system's capacity to address external shocks such as outbreaks, and these frontline responders are frequently the most profoundly affected by such shocks (Hanefeld et al., 2018). A thorough comprehension of the impact of the pandemic on healthcare workers (HCWs) is essential for crafting effective interventions to provide support to this group.

The initial case of SARS-CoV-2 in the Republic of Ireland (ROI) was recorded on 29 February 2020, and the first confirmed death occurred on 11 March 2020. Between March 27 and May 31, 2020, the Irish population was requested to undergo a lockdown aimed at 'flattening the curve' of COVID-19 infections (O'leary et al., 2021). Understanding the experiences of healthcare workers (HCWs) and their views about support during the COVID-19 pandemic is crucial in improving hospital resources across Ireland. A systematic review of the literature conducted in April 2020 indicated that a significant number of healthcare workers (HCWs) encountered disruptions in mood and sleep patterns during the COVID-19 outbreak (Pappa et al., 2020). This literature review by Pappa et al. (2020) emphasises the importance of developing strategies to alleviate mental health risks and adapting interventions in the context of a pandemic. Subsequently, interventions supporting HCWs would strengthen the health system's resilience and therefore, a detailed understanding of how pandemics affect healthcare workers (HCWs) is needed to develop effective interventions to support this group (Curtin et al.,2022).

Early during the pandemic, in April 2020, several countries reported high percentages of HCWs infected by SARS-CoV-2 (Chirico et al., 2020). There were over 5,000 HCWs in Ireland affected by the pandemic. A rapid review of the initial pandemic response in Ireland revealed that Ireland was in a state of poor preparedness prior to the COVID-19 pandemic (O'leary et al., 2021). Contributing factors were the lack of understanding about virus transmission, coupled with unpreparedness in the healthcare organisation, including insufficient Personal Protective Equipment (PPE) and a shortage of Infection Prevention and Control (IPC) training (Chou et al., 2020; Hoernke et al., 2021).

Extensive coverage has delved into the multifaceted aspects of the crisis, from the impact on economies to the strain on healthcare systems (Catania et al., 2021). However, amid the broader narrative, the experiences of healthcare workers (HCWs) often warrant closer examination, considering their pivotal role in managing the crisis (Duvendack and Sonne, 2021). Reports have concluded that HCWs caring for COVID-19 patients had an increased risk of stress and burnout as well as mental health problems, including depression, anxiety, insomnia (Pappa et al., 2020) and post-traumatic stress disorder (Raudenská et al., 2020; Miguel-Puga et al., 2020). However, there is insufficient knowledge about how HCWs perceived their work situation and their work culture during the pandemic. Studies based on survey data have attributed mental health problems in HCWs dealing with COVID-19 and HCWs had a constant fear of getting infected, fear of being a carrier and spreading the disease to others (El-Hage et al., 2020), stigmatisation (Taylor et al., 2020) and work overload (Tan et al., 2020). In the extant literature base, there are very few interviews and exploratory studies which are undertaken with HCWs to explore their experiences of working during the early phase of the pandemic, thereby shedding light on the challenges they faced while working during the pandemic. There is a scarcity of literature in the area which had focused explicitly on nurses' and healthcare assistants' experiences and the challenges that they faced while working in emergency care in Ireland (Hoernke et al., 2021; Tan et al., 2020; Catania et al., 2020). In addition to this, the study can offer a contextual understanding of the challenges unique to the Irish healthcare system. Subsequently, this qualitative exploratory study draws lessons for the Irish government that could facilitate policy development and implementation, aiding in preparation for future healthcare emergencies.

According to Chemali et al. (2022), several quantitative studies have been conducted with HCWs. Most of these reviews used psychological scale measures to provide a quantifiable assessment of the well-being of HCWs (De Brier et al., 2020). There is a plethora of qualitative studies, but there is a dearth of qualitative studies in this field, specifically in Ireland. Therefore, this study will add value by examining the complex experiences of HCWs, specifically nurses and healthcare assistants during COVID-19 working within an Irish context. The novelty of the study is that understanding HCWs' experiences via semi-structured interviews can reveal nuanced aspects of their professional lives, shedding light on issues that may not be apparent through quantitative numeric data alone.

This qualitative study aims to address the gap by analysing HCWs' experiences and perceptions of general practice and changes made to it during the COVID-19 pandemic. It explores their views about support in terms of education and training. The research also aims to reveal gaps or shortcomings in the support that was offered to healthcare workers. This may involve recognising challenges such as inadequate resources, insufficient mental health support, communication breakdowns, or gaps in training and preparation for crises. Addressing these gaps can help healthcare institutions and policymakers improve their response strategies for future crises. For example, increasing resource allocation, enhancing mental health services, strengthening support systems, improving communication channels and providing additional training programs can be part of the efforts to address identified weaknesses. The process involves a continuous cycle of assessment, intervention and improvement. By taking these steps, healthcare institutions and

policymakers work towards creating an environment where healthcare workers are better equipped, both practically and emotionally, to handle the challenges of future crises, ultimately leading to a more resilient and well-supported healthcare workforce. A conceptual model has been created (Figure 1), which discusses the primary constructs of the study and explains the importance of carrying out the primary qualitative research study.

A number of questions regarding the health system's preparedness in Ireland remain to be addressed. For example, a recent study by McNicholas et al. (2020) stated that the perceived lack of government support and the public's unrealistic expectations contributed to the issues faced by HCWs in Ireland. These include the increasing number of medical errors and patient safety incidents, the lack of staff retention and the psychological issues that resulted from these. Ali et al. (2020) claimed that policies that involved the redeployment and restructuring of staff were prioritised during the first wave of COVID-19 and although national guidance was given for the staff members to work in different settings, the information was limited. Studies have shown that a poor willingness to report for work during a pandemic is caused by various factors, such as the lack of training and knowledge, preparation, provisions for personal protective equipment (PPE), vaccines, crisis counselling and family preparedness with social support (Almaghrabi et al., 2020; Houghton et al., 2020). These are some reasons why HCWs were unwilling to come to work, which include but are not limited to insufficient training and lack of preparation, which might contribute to fear and uncertainty among healthcare workers, affecting their willingness to actively participate in pandemic response efforts.

The rationale of conducting the study is that it responds to a void in the literature, reporting an interview-based qualitative study that seeks to characterise the challenges faced by those working in mental health settings during the first wave of the COVID-19 pandemic in 2020. Exploring the level of support offered during the pandemic is essential for identifying gaps and areas of improvement. By hearing directly from healthcare workers, the study aims to pinpoint specific challenges they face and assess the effectiveness of support mechanisms in place. The findings from this study can contribute valuable insights to inform policies and practices related to healthcare worker support during pandemics (Baldwin and George, 2021). Understanding perspectives and needs can aid in the development of targeted interventions and strategies to enhance the well-being of healthcare professionals (Vindrola-Padros et al., 2020). In this context, the main aim of this research study was first to identify the factors and the key challenges which were affecting HCWs' psychological well-being during the COVID-19 pandemic. This was followed by analysing the various forms of support that HCWs received or lacked during the pandemic, such as a lack of adequate training and support from the leaders. This study analyses the challenges with respect to emotional support, access to mental health resources, availability of personal protective equipment (PPE), government assistance and the efficiency of care delivery. The goal was to comprehensively understand the extent to which HCWs were supported in various aspects and identify any gaps or deficiencies in the support systems they encountered during the challenging circumstances of the pandemic. Finally, the study explored the organisational policies and practices and how the policies influenced the support available to healthcare workers in Ireland. In addition to this, the study aims to contribute to the extant literature on healthcare workers' well-being and support

during crises, with a focus on the Irish context, thus providing a basis for future research and evidence-based interventions such as providing training on stress management, resilience and coping strategies to equip healthcare professionals with the tools to navigate challenging situations and promoting a supportive work culture which values the mental and emotional well-being of the healthcare workers.

The framework depicted in Figure 1 serves as a conceptual model, offering a foundation for the study. The central focus of this conceptual model revolves around comprehending the diverse impact of the COVID-19 pandemic on the well-being and functioning of healthcare workers (HCWs) in Ireland. Initially, it elucidates the primary challenges encountered by HCWs during the pandemic, followed by an exploration of the needs and support required by HCWs in such critical times. Subsequently, it delves into the psychological stressors experienced by healthcare workers while also examining the deficiencies in support, including insufficient government response, a lack of personal protective equipment (PPE) and delays in the delivery of care. The third aspect considers the pandemic's effects on education and training levels, encompassing issues such as inadequate training and communication. To address and gain insights into these challenges, a primary qualitative study was conducted with HCWs in Ireland, utilizing a methodology that involved one-to-one semi-structured interviews.

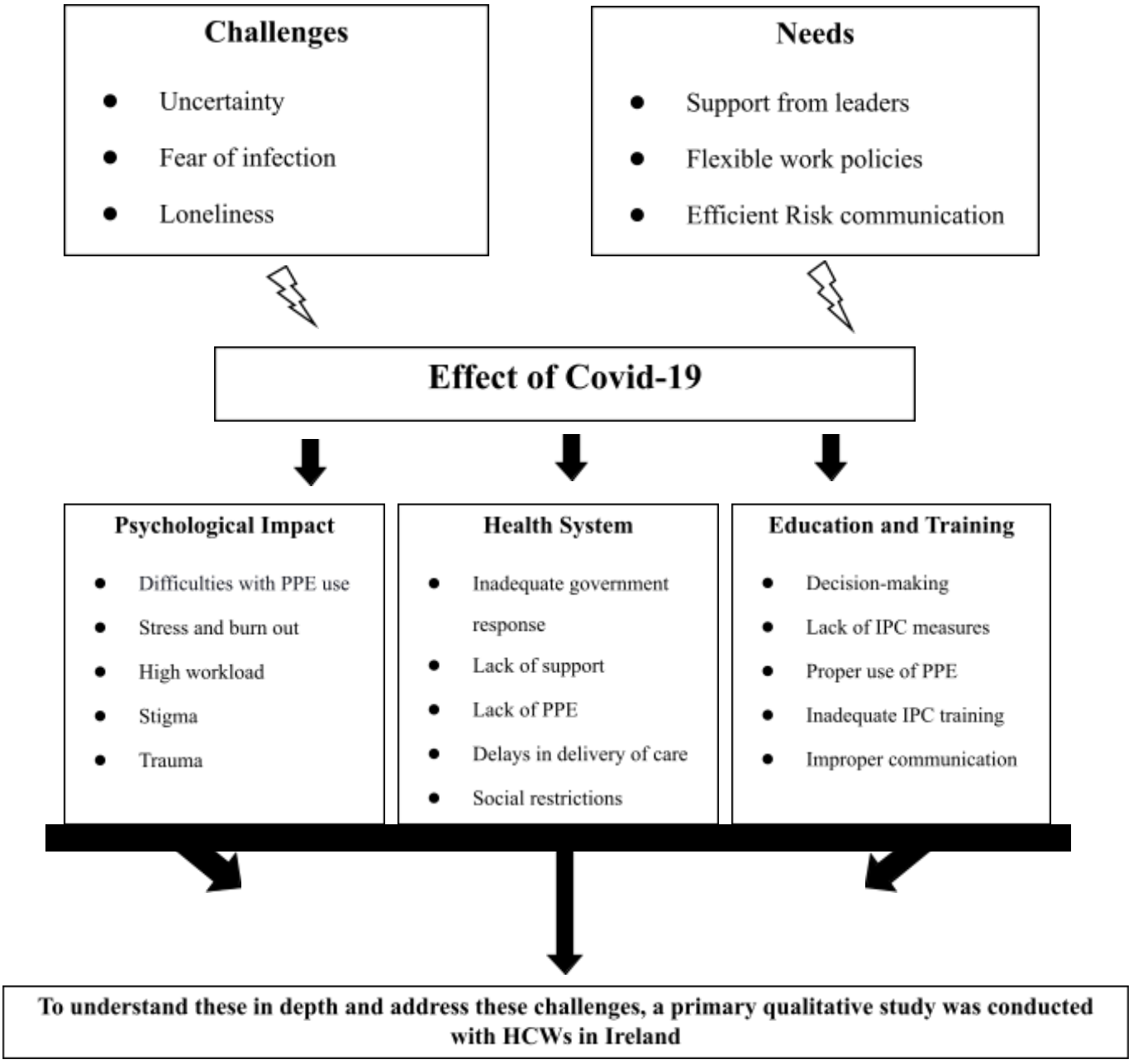

Figure 1: Conceptual Model

Drawing from this, the following are the research questions of the study:

1. What were the key challenges and the factors situated within the work culture which affected the HCW's psychological well-being during the pandemic in Ireland?
2. How do healthcare workers in Ireland perceive the effectiveness of the support systems in place during the pandemic, and what factors influence their perspectives on the adequacy of support?
3. To what extent do organisational policies and practices play a role in shaping the support available to healthcare workers in Ireland during the pandemic, and how do these factors impact the overall well-being of the healthcare workforce?

Method

Qualitative study allows for a detailed description of HCWs' experiences in their own words (Kim et al., 2017; Sandelowski, 2000). Nurses and healthcare assistants who provided care in Dublin's different healthcare settings during the COVID-19 pandemic participated in this study. This primary study focused on assessing the experiences of HCWs and their views about the support offered to them during COVID-19. Given the complex and multifaceted nature of the impact of the pandemic on healthcare workers, the qualitative exploratory study design with semi-structured interviews provided a rich source of information, allowing participants to express their experiences, feelings and opinions in their own words. Semi-structured interviews offer a balance between structure and flexibility. The use of Braun and Clarke's (2021) reflexive thematic analysis necessitates a certain level of structure to ensure that key themes are explored, but the semi-structured format allowed for flexibility in questioning. The exploratory nature of the study, along with this method, allowed for a deeper exploration of the topic, setting the stage for more targeted and informed research in the future (Swaraj, 2019).

Sample

Six participants were selected from 2 hospitals for the semi-structured interviews through the snowball sampling technique. Table 1 displays the demographic profile of the participants, outlining their age, department, job title and tenure within the organisation.

Table 1: **Demographic Profile**

	Age	**Department**	**Job Title**	**Service Years**
Participant 1	46	Elderly Care	Senior Nurse	23
Participant 2	42	Elderly Care	Healthcare Assistant	15
Participant 3	38	ICU	Staff Nurse	8
Participant 4	35	Palliative	Staff Nurse	8
Participant 5	32	Acute Medical Assessment Unit	Healthcare Assistant	6

Participant 6	28	Acute Medical Assessment Unit	Staff Nurse	5

Data Collection

Qualitative interviewing is a practice that has the potential to probe deeply into the private lives of the respondents with the intention of placing their accounts in the public arena. The one-to-one semi-structured interviews were conducted in person from January 2023 to March 2023, and these were scheduled at the convenience of the participants. An exploratory semi-structured interview guide was developed and had probing questions to extract rich information during the interviews. The inclusion criteria for participant selection were based on the requirement that individuals must be full-time healthcare workers (HCWs) in a hospital and must have actively served during the outbreak of the pandemic. Prior to the interviews, a Participant Information Sheet (PIS) was given to all 6 participants. A comprehensive email with attached consent forms and PIS were sent, an informed consent form was signed by all the participants and all the participants were told the purpose of the study. Within the consent form, participants were requested to grant permission for the recording of the interview by using a digital voice recorder and the subsequent use of the collected data for publication. Participants were assured that their responses were confidential. Participants were informed about their right to withdraw their participation at any stage of the interview, and seven days after, all the participants were mailed a copy of their interview transcript. Participants were informed that if they did not communicate their decision to withdraw within seven days, the researcher would assume that participants would remain part of this study and all the responses would be stored. To minimize the likelihood of identifying any participant during the research, each participant underwent anonymisation before the interview. A distinct identifier was assigned to each individual prior to the interview, and only this identifier was utilized in subsequent data processing and analysis. All transcripts and contact details of the participants were encrypted and stored on a password-protected system in accordance with the data protection policy (DBS, 2023). Information collected on audio recorders was safely stored on a password-protected cloud system. Storing such information was done for no longer than five years following the completion of the research study.

Confidentiality, informed consent, briefing, debriefing of all the participants and a consideration of the consequences of participating in the study were taken as ethical rules of thumb (Given, 2012). Throughout the course of this research study, utmost care and attention were dedicated to upholding the rigorous ethical standards.

Each interview lasted for 30 to 40 minutes and the interviews were recorded by using a digital voice recorder. Initially, rapport-building questions were asked of all the participants, and this was followed by the main questions from the semi-structured interview guide. All the interviews were transcribed by using NVivo software for data analysis. The researcher made detailed field notes on participants' behaviours, facial expressions, tones and other factors. After each interview, the researcher wrote memos about anything she considered notable and their feelings during the

interview; these notes were used as supplementary data during the analysis. All interviews were audio-recorded with the participant's consent. The researcher confirmed the accuracy of the transcribed data by comparing each transcription with the associated audio recording in its entirety. Data collection was terminated when it was determined that theoretical saturation had occurred or information power had been achieved (Braun and Clarke, 2021).

Research Paradigm

American philosopher Thomas Kuhn (1997) first used the word paradigm in the field of research to mean a philosophical way of thinking. The word has its aetiology in Greek, where it means pattern (Kuhn, 1997, p.10). According to Mackenzie (2017) in research, the term paradigm is used to describe a researcher's 'worldview'. This worldview is the perspective, or school of thought, or thinking, or set of shared beliefs, that informs the meaning or interpretation of research data (Denzin and Lincoln, 2011; Lewis et al., 2015).

Epistemology refers to assumptions about knowledge, what constitutes acceptable, valid and legitimate knowledge, and how researchers communicate knowledge to others (Burrell and Morgan, 2017). In this study, the researcher adopted a constructivist epistemological position, recognizing that knowledge about healthcare workers' perspectives and the level of support during the pandemic is subjective and socially constructed. It is acknowledged that the diverse and multiple realities that exist among healthcare professionals and the research design and analysis methods reflect a commitment to capturing the nuanced nature of their experiences. Through qualitative methods and thematic analysis, the researcher aimed to uncover and interpret the meaning embedded in the rich narratives provided by healthcare workers, understanding that their perspectives contribute to the construction of knowledge in this specific context.

Data Analysis and Findings

The researcher, after careful consideration, opted for thematic analysis and then further refined this choice by opting for reflexive thematic analysis (RTA) given by Braun and Clarke (2021). The choice of RTA for thematic analysis was deliberate, considering various approaches such as coding reliability and codebook thematic analysis (Braun and Clarke, 2021). RTA was selected for its capacity to incorporate reflexivity and creativity during the analysis of transcripts, as well as in the formation of themes and sub-themes.

RTA was the choice of the researcher because, unlike Boyatzis (1998), who viewed reflexivity, subjectivity and creativity as threats to knowledge production. Braun and Clarke (2021) viewed reflexivity, subjectivity and creativity as assets to knowledge production. The researcher has acknowledged her reflexivity in the next section.

Researcher's Positionality

I was born in a Hindu family in New Delhi, India. I grew up in a family where compassion and service were core values, and my parents ingrained in me the significance of contributing positively to the world. From a young age, I exhibited an

innate curiosity and a desire to understand the world around me. My passion for helping others led me to pursue a career in special needs teaching. Embarking on this venture, I relocated from India to Ireland and commenced teaching special needs children in Ireland. While teaching, I got familiar with the healthcare system in Ireland. As a full-time PhD student, I am always interested in exploring new things and experiences, which led me to this study. I hold profound admiration for healthcare workers who tirelessly devoted themselves, disregarding their own well-being, to save others during the pandemic. I was intrigued by the stories of nurses and support staff who dedicated their lives to caring for others, so I decided to delve deeper into this aspect of the healthcare sector. This study allowed me to explore and document the diverse and often challenging experiences of healthcare professionals. I spoke with healthcare workers and compassionate nurses who formed deep connections with patients and their families, offering solace during their most vulnerable moments. By this study, I would like to highlight the struggles and triumphs of those who dedicated their lives to healing others. Through this research and by shedding light on the difficulties healthcare workers encountered during the pandemic, my aim is to contribute to the formulation of policies and guidelines with respect to public health interventions. This research study focuses on addressing key questions related to the psychological well-being of healthcare workers (HCWs) in Ireland during the pandemic. I aim to explore the challenges within the work culture affecting HCWs, assess the effectiveness of support systems and analyze how organizational policies impact the overall well-being of the healthcare workforce, contributing valuable insights for informed policymaking.

I, as a researcher, acknowledge the inherent influence of my background and beliefs on this research project. To mitigate potential bias, I diligently maintained a reflective journal throughout the study, documenting my journey using a combination of theory, empirical insights and personal reflection. While presenting the findings of this study, I have earnestly endeavoured to provide a comprehensive and unbiased account of HCW's key challenges and experiences during the pandemic. Remaining neutral and objective, I have portrayed their responses faithfully in my analysis and report writing by fully acknowledging the support they received during the pandemic. While recognising the importance of reflexivity in research, I want to assure my readers that I have made a genuine effort to uphold the trustworthiness, transparency and credibility of my research.

Coding and Analytical Themes

Each transcript was critically analysed after the interviews using Braun and Clarke's (2021) reflexive thematic analysis. The researcher followed the six phases of reflexive thematic analysis, as mentioned by Braun and Clarke (2021), starting from phase 1, which was familiarisation with the transcripts and making notes up to phase 6, which was writing up the report. NVivo software was used to generate nodes, memos and annotations. Several rounds of inductive coding were completed. Firstly, semantic codes were obtained, which were then followed by deriving the latent codes from the transcripts. These codes were then summarised and arranged in order to generate analytical themes and sub-themes, which were then reviewed and linked to the research's aims and research questions. The analytical themes and sub-themes that were discovered in the data are presented below as a thematic map (Figure 2). This thematic map was developed by using the NVivo software.

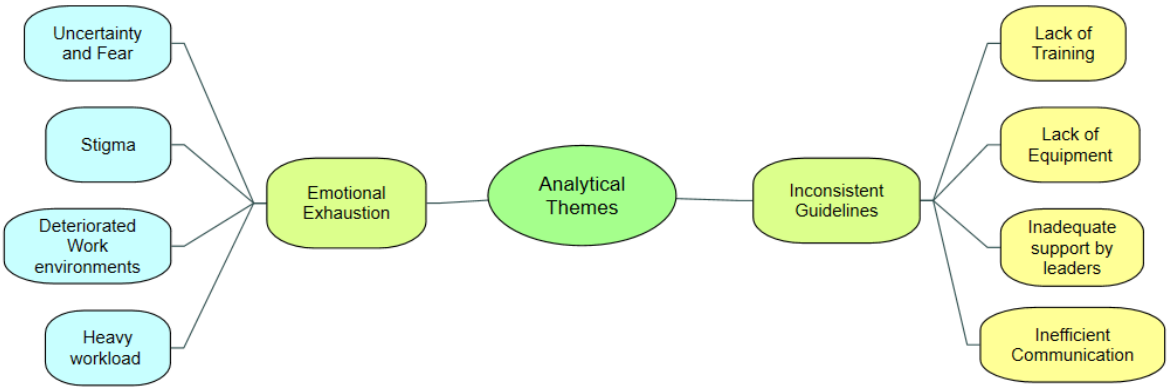

Figure 2: Thematic Map

The following section discusses each of the analytical themes along with the sub-themes. In addition to this, the section also explains how each theme answered the study's aims and research questions.

Theme 1: Emotional Exhaustion

The first research question was to identify the various factors and challenges affecting healthcare workers' psychological well-being during the COVID-19 pandemic. People working in the healthcare sector are trained to think and act steadily in any medical emergency (Chong et al., 2004). Regardless of that training, participants mentioned that they had to cope with different psychological challenges, including but not limited to high levels of stress, fear of passing the virus to their loved ones, anxiety, a feeling of uncertainty and insomnia. Analytical theme one, which is emotional exhaustion, discusses this and answers the first and the second research questions which are about the key challenges affecting HCW's psychological well-being and the HCWs assessment of how effective the existing support systems were during the pandemic. This theme entails four sub-themes, namely: uncertainty and fear; stigma, deteriorated work environment and heavy workloads.

Sub-theme 1.1: Uncertainty and Fear

According to Cullen et al. (2020), particularly those working in public health, primary care, emergency service and intensive care are at risk of developing psychological symptoms. Participants explained that they experienced a range of challenging emotions and psychological difficulties which impacted their mental health in various ways. In particular, nurses highlighted that they experienced a range of negative emotions, including anxiety, fear, shock and stress, when they learned that they would be working in the COVID ward;

> *"When the management said that our ward will be a COVID ward, I felt fear, anxiety, panic and uncertainty."* (Participant 2)

Yet another participant said that they had experienced very high levels of stress;

> *"Stress was an understatement of how we felt during the pandemic."* (Participant 3)

HCWs had great fear that they might pass on the virus to their family members and their children. This was expressed by all the participants and is discussed in the following two quotations:

> *"For many, this fear stemmed not from contracting COVID-19 but from concern for passing it on to their loved ones."* (Participant 2)

> *"I couldn't explain how I felt that time. It was really depressing. I have small kids, and I was so afraid that they would get the virus."* (Participant 5)

It's not uncommon for family members to worry about the safety and well-being of their loved ones working in high-risk environments (WHO, 2020). Healthcare workers were frequently confronted with the need to establish effective communication with their families in order to handle these worries and provide them with reassurance. This is discussed in the following quote:

> *"You will also be demoralised by the view of society and even my loved ones. During the initial stage of COVID-19, some of my friends and family members called and texted me. Some wished me well and sent me good luck, but a few discouraged me, you know… saying that the virus was killing everybody. They were asking, 'do you want to kill yourself?' It took me a great task to convince them that I was not going there to kill myself but to save lives, and someone has to do the job."* (Participant 6)

The experiences shared by nurses, particularly the expressions of fear, anxiety, panic and uncertainty upon learning about their assignment to the COVID ward, provide valuable insights into the key challenges and factors embedded within the work culture that significantly impacted healthcare workers' psychological well-being during the pandemic in Ireland.

Sub-theme 1.2: Stigma

During the COVID-19 outbreak, being a healthcare worker meant being a carrier of the virus, leading to unusual behaviour towards nurses and healthcare assistants. The social stigma was a major challenge. Several participants expressed that they experienced stigma, which they felt originated not just from the general population but also from their co-workers. This is explained in the following quotations:

> *"Well, it was very uncomfortable when people knew that I am a healthcare worker and they look at me like I was infected... treated me as if I am the virus."* (Participant 4)

Yet another participant said that co-workers felt sacred and preferred to stay away from them.

> *"I remember I was having my lunch break in the staff lounge, and one of my colleagues said, "Don't come near her… she works in the COVID ward. Yeah that was awkward and frustrating."* (Participant 2)

Some participants expressed that this stigma led to emotional distress and increased their need to gain support. This is illustrated in the following quote:

> *“We must educate people to understand that we are human beings and need their support. And if everybody runs away from us, it will traumatise us. We are doing something honourable, and we expect people to appreciate what we are doing and not stigmatise us.”* (Participant 5)

These emotional responses and distress underscore the profound psychological effects of workplace environment on healthcare professionals, contributing to a deeper understanding of the complex interplay between work culture and psychological well-being.

Sub-theme 1.3: Deteriorated Work Environments

Some participants expressed that the PPE and other IPC made the working environment worse and was an obstacle during patient care;

> *"It's challenging working with face shields and sometimes respirators… I can't see well, and it gets foggy… and you know, I have been stressed in a different way than I usually do… It was giving me a headache and dizziness… I can't insert an intravenous cannula because I can't see anything, and the face shield is in the way."* (Participant 3)

Another participant reported that it was very exhausting to handle patients who wouldn't listen and cooperate with them;

> *"Another source of pressure for us nurses was dealing with patients unwilling to cooperate. It's physically, mentally and emotionally draining when you are doing your best not to get the virus and not to pass the virus to other people, but there are also people not willing to follow the safety instructions."* (Participant 4)

Fear that the Infection Prevention and Control (IPC) measures were inadequate to protect from infection was a concern for most participants. The participants described that at the beginning of the pandemic, everyone, including experts, was uncertain about what was adequate IPC and PPE. This uncertainty was described as very frustrating. Several of the participants expressed fear that the low quality PPEs would not be sufficient to protect them from infection;

> *"When we ran out of FFP3 masks, we received products of minor quality. It felt very uncertain if those PPE or masks were enough to protect us from the virus."* (Participant 1)

The deteriorating work environment, characterized by increased stressors and challenging conditions, directly contributes to understanding the complex interplay between work culture and the psychological well-being of healthcare workers thereby linking this overarching theme and sub-theme to research questions one and two.

Sub-theme 1.4: Heavy workload

Due to the pandemic, health workers faced heavy workload pressure, besides the increased total health expenditures (Shoja et al., 2020). The most immediate consequence of the pandemic described by participants was the increased workload

which impacted their psychosocial well-being. They cited increased hours and weekend shifts, additional time taken to manage PPE, increased paperwork as frequent sources of stress;

> *"The night shift starts at 8:00 pm. I got a phone call from the night nurse manager around 7:30 pm to come in and work since the healthcare assistant that was supposed to work that night received a message that she tested positive. That was supposed to be my day off, so I was getting ready to go to bed. But as soon as I got the phone call, I got ready and went to work. This has happened often."* (Participant 2)

Yet another participant said that:

> *"The amount of work which we were expected to do was so much and it was so mentally as well as emotionally exhausting."* (Participant 4)

The identified theme of a heavy workload provides valuable insights into the role of organisational policies and practices in shaping the support available to healthcare workers in Ireland during the pandemic. This sub-theme is linked to research question 3 and illustrates that the impact of workload on healthcare professionals is a critical factor in understanding the effectiveness and adequacy of organisational support. The demands placed on healthcare workers directly relate to the policies and practices implemented by organisations. Therefore, the extent to which organisational strategies address or exacerbate the challenges posed by a heavy workload significantly influences the overall well-being of the healthcare workforce.

Theme 2: Inconsistent Guidelines

Participants expressed frustration about the government's handling and changing advice throughout the pandemic. In particular, participants talked about confusing guidance from management and the government regarding PPE or distancing procedures at work and the speed at which the guidelines changed.

> *"There was so much contradicting information for a while. We had new infection control routines every other hour, and different managers would tell us different guidelines. Like moving residents to different rooms… it's also physically and mentally draining. Of course, that caused irritation."* (Participant 3)

HCWs consistently reported changes in how they practice during the COVID-19 pandemic. These changes, sometimes made very quickly by hospital administration, were generally viewed as a response to the contagious nature of COVID-19 and ranged from being transferred to a different unit in the hospital, adjusting delivery of care and dealing with increased emotional demands. Analytical theme two, which is inconsistent guidelines, discusses this and entails four sub-themes, namely: lack of training, lack of equipment, inadequate support by leaders and lack of adequate communication. This theme is directly linked and answers the third RQ which is the extent to which organisational policies and practices contribute to shaping the available support for healthcare workers in Ireland during the pandemic, and the perceived impact of these factors on the overall well-being of the HCWs.

Sub-theme 2.1: Lack of Training

Nurses, healthcare assistants and other healthcare providers reported receiving little to no training about caring for patients diagnosed with COVID-19, and most of the participants stated that it was a "learn-as-you-go experience." In response to increased numbers of patients with COVID-19, many hospitals abruptly established dedicated COVID-19 units to reduce risk. While many nurses anticipated that their unit would be converted to a "COVID unit", they typically did not receive any training specific to the provision of care for patients diagnosed with COVID-19. This is illustrated in the following quote:

> *"Well, I think we all got some ICU training as a nurse. Whether you were an ICU nurse or not, you would learn how to be one… and then we started creating ICUs out of nothing, it was we're pulling nurses from the floors and saying, 'hey, you're going to be an ICU nurse today."* (Participant 6)

While redeployment of HCWs from other specialities to intensive care can be used to achieve the sustainable delivery of patient care, redeployed healthcare workers experienced anxiety and stress, particularly when lacking adequate support or PPE, during night shifts when fewer HCWs were available and due to last minute rota changes. Almost all participants experienced redeployment and were relieved of their regular duties to support a surge in admissions and increase capacity in the intensive care unit (ICU). The limited training aroused a lot of discontent and discomfort among HCWs which is stated below by one of the participants:

> *"It was really stressful for me when they pulled me out from the ward to work in the ICU. I'm not familiar with their settings, and I don't know the staff."* (Participant 5)

HCWs felt very scared of getting the virus and had limited understanding related to the use of PPE (Maraqa et al., 2021), again highlighting the need for adequate training. This was expressed by the participants:

> *“It felt very uncertain in the beginning, no one really knew how to use those PPE. In other units they used other sets of PPE. I was very uncertain if they knew what was needed to protect us. Aerosols, for example… a lot was unknown. We didn’t know what we were getting ourselves into. It felt very unsafe, the uncertainty that no one really knew, the physicians didn’t know, we didn’t know, not even the management at the top of the organisation knew.”* (Participant 4)

Some of the participants acknowledged that, aside from their initial professional education, they had no training in relation to IPC; others highlighted little or limited training;

> *"For me, it's very important that there would be more education about the virus, and you know… creating awareness among the people and amongst ourselves. We were given really short training lasting for a day. Our requirements were much more."* (Participant 6)

These quotes demonstrate the necessity for healthcare workers to receive additional support, underscoring the importance of implementing a robust system with well-defined organisational policies.

Sub-theme 2.2– Lack of Equipment

Lack of PPE was a significant problem at the beginning of the outbreak, especially for participants working in nursing homes. There was a constant lack of supply reported by the participants to the extent that HCWs had to bring in their own PPE;

> *"I'm on night shift most of the time, and I had to bring my own PPE because every time I start my shift at night, there were only very few PPE left… we also need to change PPE every time we go inside every patient's room."* (Participant 2)

In addition to this, there was a lack of ICU beds.

> *"We were having unnecessary loss of lives because of lack of ICU beds". (Participant 4)*

This emphasized the critical need for more intensive care units and necessary equipment.

Sub-theme 2.3: Inadequate support by leaders

Healthcare workers valued support from their organisations but gave many examples of not feeling adequately supported. Some workers reported feeling coerced into working with infected patients or in inappropriate conditions (Bensimon et al., 2007). The participants highlighted the importance of supportive leadership in a crisis. They expressed that they were not supported by the top management. Those HCWs felt that they had to deal with the demanding work situation all by themselves, while the management escaped the risk of infection by staying in secure offices;

> *"The big bosses were sitting in protected places, in offices. To protect themselves. Yeah, they should protect themselves but we shouldn't! We were supposed to go out there and work." (Participant 2)*

Yet another participant said that they don't feel cared for;

> *"We are working in a caring profession, but we don't feel we are being cared for" (Participant 5)*

One of the recommendations was to recruit more people in the sector;

> *"A larger workforce is needed. One's energy is limited, but each patient must be attended." (Participant 6)*

This sub-theme explained the importance of having a good organisational culture with transformational and supportive leaders and the pivotal role which organisational policies and practices play for shaping the support available to HCWs.

Sub-theme 2.4: Lack of Adequate Communication

Participants described conflicts between staff, as some HCW started using more PPE than was recommended while others followed the official recommendations. This was due to inefficient communication and is described below by the participant;

> *"At our ward, there was no consensus; there were many strong opposing opinions. Some said that it should be long sleeves and some wanted all the equipment although we were not supposed to use that according to the official directives. We didn't know what was right or wrong as it wasn't communicated properly" (Participant 2)*

Many reported inconsistent and ineffective messaging and a lack of consensus between sources of information (Billings et al., 2020). This is illustrated in the following quotation:

> *"Better communication may go a long way. I blame the department of health for not properly educating the public with how vaccines work."* (Participant 4)

Participants felt they should be consulted and involved in decision-making and that their learning from doing this work on the frontline was vital for responding to current and future pandemics. This explains the HCWs perception regarding the effectiveness of the support systems in place and is linked to the second research question.

Discussion

This study explored the factors and experiences of healthcare workers (HCWs) who worked during the pandemic and their views about the support which were offered to them in terms of training, supply of equipment such as PPE and support from management. As established in the extant literature base, this area warrants exploration to understand workers' perspectives better and to ensure that they can engage with appropriate mental health support when needed (Billings et al., 2020). The semi-structured interviews enabled the researcher to summarise the experience of HCWs into two major themes, namely emotional exhaustion and inconsistent guidelines. These findings and experiences of HCWs were consistent with a number of reviews which have shown that HCWs were affected during the pandemic at individual, interpersonal, institutional, community and policy levels (Baldwin and George, 2021; Chemali et al., 2022; Sun et al., 2020). In addition to this, this study also highlights that certain experiences can have disruptive effects on HCWs' personal and professional lives and thus identifies problems which need to be addressed and areas that could be strengthened to support HCWs during pandemics.

The COVID-19 pandemic and its impact in Ireland shed light on existing deficiencies in the healthcare system. This research study identified comparable concerns among frontline personnel regarding care delivery during the COVID-19 pandemic, echoing similar issues reported in other countries such as Spain, UK and Zimbabwe (Legido-Quigley et al., 2020; Mackworth-Young et al., 2021).

By approaching the topic from an exploratory perspective and delving into the intricate and profound experiences of healthcare workers (HCWs), this empirical research not only offers a comprehensive portrayal of the HCWs' situation but also highlights potential areas for governmental support. This is linked to the third RQ, which aims to explore the organisational policies and to what level the organisational practices play a role in shaping the support available to healthcare workers in

Ireland. Findings from the study clearly showed that HCWs lacked support in a number of areas, such as training, and lack of equipment and found themselves in uncertain working environments with heavy workloads. These findings clearly indicate that governmental support is needed and might include facilitating access to mental health initiatives, establishing consistent communication protocols and devising strategies to tackle issues related to the availability of essential equipment and supplies (Ali et al., 2020; Sun et al., 2020). The findings from this research study extend the previous studies. For instance, a study conducted by Mehendi and Hossain (2022) in Bangladesh emphasised the necessity for collaborative efforts between the government and non-governmental organisations in formulating effective policies to alleviate the impact of COVID-19 on frontline health professionals. Additionally, earlier studies have underscored the significance of implementing programs focused on support, care and stress management by organisations and policymakers (Zhang, 2021).

The outcomes of this research revealed a variety of elements that influenced the psychological welfare of healthcare workers (HCWs) amid the COVID-19 pandemic. Consequently, it pinpoints issues requiring attention and areas with potential for enhancement in order to provide comprehensive support to HCWs during pandemics.

Participants in the study expressed that there was a lack of adequate communication and a lot of ambiguities during the period, especially from the top management side and the government. This is consistent with previous research findings in which HCWs identified inconsistent governmental crisis communication (Feeley et al., 2021).

With increased demands on an already taut healthcare sector, HCWs faced an increased workload with the ever-present risk of infection and the fear of transmission to their loved ones (Ali et al., 2020). All participants in this study conveyed this sentiment, describing a worsened and stigmatised work environment. To strengthen HCWs and empower them to deal with pandemics, the appropriate contextual factors which impacted their situation during pandemics need to be acknowledged and interventions need to follow a multi-component approach, taking the multitude of aspects and settings into account which impacted on HCWs' experiences. This is highlighted in other studies as well in which it is stated that incorporating mental health assistance within a secure and effective work setting that fosters supportive relationships among colleagues and a feeling of personal agency might be instrumental in enhancing the resilience of healthcare professionals (De Brier et al., 2020).

Though this research study provides valuable insights into the experiences and perspectives of healthcare workers during the pandemic, it is not without its limitations. One primary constraint lies in the subjective nature of qualitative research, as individual responses can be influenced by personal biases or unique circumstances. Additionally, the study's reliance on interviews may introduce a potential for response bias, where participants may provide socially desirable answers or withhold certain information. The generalizability of findings may be limited due to the study's specific focus on the Irish context and because of a limited sample size of six participants. The healthcare professionals participating in this

study were derived from only two hospitals. Thematic analysis, while insightful, may not capture the full complexity of healthcare workers' experiences. In addition to this, this research study has primarily concentrated on nurses and healthcare assistants, with limited or no interviews with other crucial frontline healthcare groups such as doctors, physiotherapists, pharmacists, receptionists, porters, or cleaners. Despite these limitations, the study offers a nuanced exploration of the challenges faced by healthcare workers, contributing to a deeper understanding of the support needed in such critical times and has a number of practical implications.

This research study has uncovered several implications for practice, including the critical importance of ensuring the availability of sufficient safety equipment. This is essential not only for promoting safe and effective work but also for mitigating potential adverse mental health outcomes. Workloads should be manageable, with mandated periods of rest to prevent fatigue and burnout. Training should be practical, timely and inclusive of both on-the-job learning and formal education. Clear and consistent communication, shared decision-making and accessible leadership are essential. Establishing mechanisms for staff peer support, including dedicated time and mental health awareness training, is important. Mental health follow-up and ongoing peer support are imperative for early detection and treatment of emerging mental health issues, ensuring staff feel supported by their organisations.

Conclusion and Recommendations

This study has shed light on the multifaceted experiences of healthcare workers during the challenging times of the pandemic. Through a thematic analysis of qualitative data, two major themes emerged which provided valuable insights into the perspectives of healthcare workers and the support they received. The support received by HCWs was inadequate and they lacked adequate training. HCWs had high levels of stress and anxiety, resulting in their emotional exhaustion. Based on the findings of the study, several recommendations can be made to improve the well-being and support of healthcare workers during pandemics. It underscores the paramount importance of proper resource allocation, emphasising the continuous and sufficient supply of essential resources, including personal protective equipment (PPE), to ensure the holistic well-being of healthcare workers—both physically and mentally. This resonates with the insights gleaned from a comprehensive study by Curtin et al. (2022), which not only highlighted the significance of robust peer networks but also shed light on their pivotal role in enhancing the psychological well-being of healthcare professionals. Acknowledging and supporting staff in balancing work and family demands, providing opportunities for time off and addressing anxiety, guilt and moral injury through measures such as reducing lone working and fostering ethical forums are highly recommended by this study. In conclusion, this research has significantly advanced the understanding of crucial aspects within the realm of business knowledge, particularly in the context of healthcare.

The study's findings regarding the viewpoints and support provided to healthcare workers amid the pandemic in Ireland have established a basis for improving their mental and emotional well-being, as well as their ability to adapt to similar future situations. This nuanced understanding of the challenges faced by healthcare workers, particularly in psychologically demanding environments, prompts a call for systematic improvements in the support infrastructure provided to them. By addressing the identified challenges and implementing the recommended strategies, healthcare systems can better support their frontline workers and ensure the provision of high-quality care even in the face of unprecedented challenges.

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Analysing the Dynamics of Supply Construction Gross Domestic Products in Malaysia: A Comprehensive Study (2015-2023)

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Abstract

This research study, set within the context of Malaysia's supply construction sector, serves a dual purpose. Firstly, it provides an in-depth examination of the sector's Gross Domestic Product (GDP) from 2015 to 2023. Secondly, it identifies and analyses the key macroeconomic forces that have shaped this sector over the specified timeframe. The study employs a comprehensive research approach, utilising correlation and regression analysis to scrutinise primary macroeconomic indicators such as exchange rates, base lending rates, and inflation. The data underpinning this research was meticulously gathered from the Department of Statistics Malaysia and Bank Negara Malaysia, both of which provided comprehensive datasets in .csv and Excel formats. Findings reveal that the Base Lending Rate (BLR) significantly impacts Malaysia's supply construction GDP, while exchange rates and inflation rates exert modest or statistically negligible effects. The regression model developed in the study highlights the dominant influence of BLR, positioning it as the most potent predictor among the investigated macroeconomic factors. This research elucidates the complex interplay between macroeconomic data and Malaysia's supply construction sector, emphasising the pivotal role of BLR in shaping the sector's performance and its subsequent impact on the broader economy. Furthermore, the study offers valuable insights for policymakers, industry stakeholders, and future research endeavours, thereby facilitating informed economic decision-making and strategic planning within the construction sector.

Keywords: Supply Construction GDP, Malaysia, Macroeconomic Factors, Base Lending Rate, Economic Development, Construction Sector.

Introduction

The construction sector is a crucial pillar underpinning the economic fabric of any nation (Alaloul, Musarat, Rabbani, *et al.*, 2021; Asila Jalil, 2022). It is often viewed as a reliable measurement reflecting the state of infrastructure development and overall economic progress (Sukriti, 2020). Within the context of Malaysia, the construction industry has undergone significant growth and transformation in recent years (Kazemi *et al.*, 2023). This research endeavours to deepen our comprehension of the sector, with a particular focus on the supply construction subdomain. To achieve this, the study conducts a comprehensive analysis of the Gross Domestic Product (GDP) of the supply construction sector, scrutinising data from 2015 to 2023.

Despite the wealth of existing literature on various facets of the Malaysian construction industry, several research gaps continue to persist (Chang and Kumar, 2021; Gara *et al.*, 2022). These gaps underscore the significance of undertaking this study:

First, Limited Examination of Supply Construction GDP. One conspicuous gap is the dearth of comprehensive studies addressing the dynamics of supply construction GDP in Malaysia. While the existing body of research delves into the industry's challenges (Dehdasht *et al.*, 2022; Farouk *et al.*, 2023; Waqar *et al.*, 2023), its contributions to the national economy, and the impact of industrialised building systems (IBS) (Mohamad Kamar, Alshawi and Abd Hamid, 2009; Ali *et al.*, 2018; Al-Aidrous *et al.*, 2021; Ismail, 2021; Gunasagaran *et al.*, 2022; Thomas Tarang *et al.*, 2022), it often skirts the issue of the supply construction sector's GDP. This absence of holistic analysis, particularly concerning the sector's relationship with macroeconomic factors, presents a gap that this study aims to address.

Second, Incomplete Macroeconomic Consideration. Previous research endeavours have typically examined the construction sector in isolation or within the confines of a restricted set of macroeconomic factors. This study strives to bridge this gap by adopting a more comprehensive approach. It incorporates a broader array of crucial macroeconomic indicators, which include exchange rates, base lending rates, and Inflation (Farhah Natasha Binti Hashim, 2017; Musarat, Alaloul and Liew, 2021; Correia and Ribeiro, 2022; Outram, 2022; Puci, Demi and Kadiu, 2023). By taking this inclusive stance, the study endeavours to provide a more holistic perspective on the performance of the supply construction sector.

Research questions and research objectives

These identified research gaps have propelled the formulation of two central research questions (1) What are the key factors influencing the dynamics of the supply construction GDP in Malaysia from 2015 to 2023 and how do these factors interact during this period? And (2) To what extent does the Base Lending Rate (BLR) affect the supply construction GDP in Malaysia and how does its impact compare to the combined influence of the other considered macroeconomic indicators?

To address these research questions and contribute to a more thorough understanding of the supply construction sector in Malaysia, this study endeavours to attain the following objectives (1) To analyse and elucidate the trends, fluctuations, and significant events that have played a role in shaping the supply construction

GDP in Malaysia from 2015 to 2023; (2) To assess the relative influence of the Base Lending Rate (BLR) when juxtaposed with other macroeconomic factors concerning its impact on the supply construction GDP. Furthermore, this study aims to provide valuable insights into the interactions and implications of these factors.

In short, the research discussed here is motivated by the identification of these research gaps, research questions, and research objectives. It strives to contribute to a more profound comprehension of the dynamics of supply construction GDP in Malaysia, a topic that plays a pivotal role in the Malaysian economy. Moreover, the study aspires to provide insights into the intricate relationships between the construction sector and the broader macroeconomic environment, thereby facilitating informed economic decision-making and strategic planning within the construction industry.

Literature review

In the pursuit of understanding the dynamics of the supply construction GDP in Malaysia from 2015 to 2023 and evaluating the extent to which the Base Lending Rate (BLR) affects it in comparison to other macroeconomic indicators, it is vital to delve into the existing body of literature that sheds light on these research questions and objectives.

The Malaysian construction industry has been a subject of extensive research, offering multifaceted insights into the factors influencing its dynamics, particularly in the context of supply construction GDP. Several prominent factors have been recurrent themes in the literature, serving as a foundation for understanding how they interplay within the specified time frame.

First and foremost, the economic climate in Malaysia, coupled with government policies and public investment, has been a significant driver of construction GDP. As acknowledged by Dehdasht et al. (2022), the construction industry's growth is intrinsically linked to the government's infrastructure projects and investments. This factor interacts with the supply construction GDP by shaping the demand for construction services and materials.

Another crucial factor influencing supply construction GDP is the state of the real estate market. 'Construction and Economic Development: The Case of Malaysia' by Chia (2012) highlights those economic conditions, including the real estate market, have a substantial influence on construction activity, and therefore, on GDP. As supply construction is intimately linked with real estate development, fluctuations in this market significantly impact the sector.

Additionally, 'Construction Supply Chain Management Practices in Malaysia' by Zulhumadi et al. (2013) provides insights into the supply chain dynamics within the construction sector, although it does not directly explore the supply construction GDP. Supply chain management is integral to the construction industry, and its effectiveness influences the overall productivity of the sector. Hence, any disruptions or inefficiencies in the construction supply chain can reverberate and impact the GDP dynamics over the study period.

The role of the Base Lending Rate (BLR) in the context of construction GDP has garnered notable attention in existing literature. The research by Chia (2012) and

Dehdasht et al. (2022) alludes to the importance of monetary policy and base lending rates, indirectly emphasising the role of BLR in influencing the construction sector. This notion can be linked to RQ2, as it forms the basis for understanding the extent of BLR's impact on supply construction GDP.

While these studies offer insights into the BLR, additional exploration of the relationships between BLR and other macroeconomic indicators is vital. For instance, exchange rates and inflation rates have been shown to influence the construction sector's performance, as evidenced by the research by Nawi, Lee and Omar (2014). This adds another layer to RQ2, where assessing the relative influence of BLR concerning these indicators will provide a comprehensive view of the macroeconomic landscape.

A Review of Supply Chain Management Issues in Malaysian Industrialised Building System (IBS) Construction Industry and Construction and Economic Development in Malaysia offer novel insights into the broader impact of monetary and macroeconomic factors in the context of RQ2 (Kan, 2017; Abdullah, 2022). Nevertheless, these studies do not explicitly address the extent to which BLR compares to other indicators in influencing supply construction GDP. This research gap underlines the need to comprehensively investigate the combined impact of BLR, exchange rates and inflation rates.

As this study delves into the specific period of 2015 to 2023, these factors, including government policies, real estate dynamics, and the role of BLR, are expected to interact in intricate ways. The literature reviewed provides a foundational understanding but underscores the necessity of a more comprehensive analysis to address the research questions and objectives effectively.

Research Method

To achieve the research objectives and address the research questions effectively, a rigorous research methodology is paramount. This section outlines the methodology adopted for the study, providing insights into data collection, variables, statistical analyses and the rationale for the chosen approach.

The data for this study was accessed, identified, and prepared through a meticulous process. The primary data source was the Department of Statistics Malaysia (DOSM) and Bank Negara Malaysia, both of which are reputable government agencies known for their comprehensive and reliable datasets (Ubaldi, 2013; Attard *et al.*, 2015; Máchová and Lněnička, 2017).

The identification of the data was based on previous literature (Tan, 2010; Maizura and Rashid, 2017; Musarat, Alaloul and Liew, 2021; Outram, 2022; Çitçi and Kaya, 2023), ensuring that the data selected was relevant and significant to the study. The data was prepared and made available by the Department of Statistics Malaysia and Bank Negara Malaysia in .csv and Excel formats, which are widely used and easily accessible formats for data analysis (BNM, 2023; DOSM, 2023).

The methodological fit for this study is grounded in its comprehensive approach. By incorporating a broad array of macroeconomic indicators, the study provides a holistic perspective on the performance of the supply construction sector (Farhah Natasha Binti Hashim, 2017; Kan, 2017; Abdullah, 2022; Correia and Ribeiro, 2022;

Puci, Demi and Kadiu, 2023). This approach aligns with the study's objective to understand the intricate dynamics and influence of these economic factors on the sector.

The use of robust and pertinent data, along with the integration of crucial macroeconomic indicators, ensures the reliability and validity of the study's findings (Bihani and Patil, 2014; Samuels, 2015; Denis, 2019; Mishra *et al.*, 2019; Frässle and Stephan, 2022; Cole, 2023). This comprehensive approach not only enables a deeper understanding of the sector but also contributes to informed economic decision-making. The study, therefore, serves as a valuable resource for policymakers, researchers, and stakeholders in the construction sector.

Data Collection

At the core of this study lies the wealth of robust and pertinent data that underpins its investigations. The central focus of this research is the comprehensive examination of the supply construction GDP in Malaysia (measured in Malaysian Ringgit (RM) million), encompassing the period from 2015 to 2023. Key to this endeavour is the utilisation of a rich dataset, primarily sourced from the Department of Statistics Malaysia.

This dataset, curated by the Department of Statistics Malaysia, comprises quarterly figures for supply construction GDP with a reference base year of 2015. This extensive dataset serves as the fundamental bedrock upon which the study is built (Grandhe, Damarla and Mohammad, 2019). It empowers the research to meticulously trace and analyse the trends, fluctuations and notable events that have left their mark on the supply construction GDP throughout the specified time frame.

Furthermore, this study endeavours to enrich its dataset by incorporating crucial macroeconomic indicators. These indicators have been meticulously collected and hold significance in the context of Malaysia's supply construction sector. Three key macroeconomic indicators are under scrutiny.

First, on the Exchange Rate. This metric encapsulates the exchange rate between the Malaysian Ringgit (MYR) and the United States Dollar (USD). This exchange rate is instrumental, serving as a proxy for currency valuation and a reflection of global economic dynamics (Maizura and Rashid, 2017; Çitçi and Kaya, 2023; Goldberg and Krogstrup, 2023). The comparative strength or weakness of the MYR against the USD holds pivotal importance within the broader economic landscape.

Second, the Base Lending Rate. The Base Lending Rate (BLR) is a lynchpin macroeconomic indicator subject to the influence of Malaysia's central bank's monetary policies. It plays a pivotal role in shaping the lending rates within the financial sector. In doing so, the BLR significantly influences economic activities, including borrowing and investment decisions (Tan, 2010).

Third, Inflation factor. Inflation, a specialised inflation measure, filters out the impact of volatile elements such as food and energy prices. This process results in a more stable metric for evaluating general price levels within the economy. The Inflation rate serves as an essential gauge of price stability, which is of paramount importance for economic planning and policy formulation (Maizura and Rashid, 2017; Alaloul, Musarat, Liew, *et al.*, 2021; Çitçi and Kaya, 2023).

In conclusion, the amalgamation of this extensive supply construction GDP dataset and the integration of vital macroeconomic indicators sets the stage for a comprehensive exploration of Malaysia's supply construction sector from 2015 to 2023. This comprehensive approach will enable a deeper understanding of the intricate dynamics and the influence of these economic factors on the sector, yielding valuable insights and contributing to informed economic decision-making.

Statistical Analyses

At the heart of the analytical approach are two fundamental statistical methods: correlation analysis and regression analysis. These robust techniques constitute the backbone of the study, enabling this to delve deep into the relationships and significance of the chosen macroeconomic indicators concerning the supply construction GDP in Malaysia.

Correlation analysis serves as the first line of investigation. It is designed to meticulously examine the relationships between supply construction GDP and the selected macroeconomic indicators (Senthilnathan, 2019). Specifically, this study will employ the Pearson correlation coefficient, a well-established statistical tool. This coefficient will quantitatively measure the degree and direction of association between supply construction GDP and the macroeconomic indicators under scrutiny. The objective here is to unveil the nature of these relationships and discern whether and how the macroeconomic factors are correlated with the supply construction GDP. These findings will serve as a foundational understanding of the interplay between the construction sector and the broader economic environment.

In parallel with correlation analysis, this study will also incorporate a robust regression model. The model's form will be as follows:

$$\text{Supply Construction GDP} = \beta_0 + \beta_1 X_{\text{Exchange Rate}} + \beta_2 X_{\text{Base Lending Rate}} + \beta_3 X_{\text{Inflation}}$$

Through this regression model, this study endeavour to gain a more comprehensive understanding of the influence of each macroeconomic indicator while controlling for the presence and potential impact of others (Pierce, 2003). This analytical approach allows this study to identify the key driving factors that significantly affect the supply construction GDP. By quantifying the coefficients ($\beta 1, \beta 2, \beta 3$) associated with each macroeconomic factor, this study can gauge their individual contributions to the fluctuations in the supply construction GDP. Additionally, the adjusted R-square, another vital statistical metric, will be employed to evaluate the goodness-of-fit of the model. This metric provides insights into how effectively the chosen macroeconomic indicators collectively explain the variations observed in the supply construction GDP.

The amalgamation of correlation and regression analyses empowers the study to uncover the nuanced relationships between the construction sector, as epitomized by the supply construction GDP, and a spectrum of macroeconomic indicators. These analytical tools will serve as the compass guiding this study through the intricate landscape of economic dynamics, ultimately providing valuable insights into the industry's performance and the driving forces that underpin it.

Rationale

The selection of quarterly data allows this study to capture short-term fluctuations and trends, which can be especially significant in the construction industry. As this study focuses on a specific period, a time-series analysis is apt for comprehending how factors interact and influence supply construction GDP over time (Alqahtani *et al.*, 2021; Lim and Zohren, 2021; Jastrzebska, 2022; Chiarot and Silvestri, 2023; Olson and Araz, 2023).

The choice of correlation and regression analyses is driven by their ability to unveil relationships and significance levels. Correlation analysis is fundamental for understanding initial associations, while regression analysis offers a more nuanced view of how multiple factors interact and contribute to supply construction GDP (Pierce, 2003; Senthilnathan, 2019). It also allows this study to assess the relative influence of macroeconomic indicators, specifically, the extent to which BLR impacts the sector compared to other factors.

In summary, the research methodology is meticulously designed to explore the research questions and objectives. It leverages a comprehensive dataset and robust statistical analyses to delve into the dynamics of supply construction GDP in Malaysia, providing valuable insights into the influence of key macroeconomic indicators over the study period.

Results and findings

This section presents the findings of our analysis, followed by a detailed discussion of their implications and significance within the context of our research questions and objectives. The results offer insights into the dynamics of supply construction GDP in Malaysia from 2015 to 2023 and the role of macroeconomic factors.

Table 1 Result of Correlation

	supply construction	Exchange Rate	Base Lending Rate	Consumer Price Index
supply construction	1			
Exchange Rate	0.0863	1		
Base Lending Rate	0.6303	0.2342	1	
Consumer Price Index	-0.2448	-0.6629	-0.5242	1

The correlation analysis (Table 1) assesses the degree of association between variables, providing initial insights into their relationships. In this context, the following correlations were observed. First, Supply Construction GDP and Exchange Rate. The correlation coefficient of 0.0863 indicates a weak positive relationship between supply construction GDP and the exchange rate. While the correlation is positive, it is limited in strength, suggesting that changes in the exchange rate have a relatively minor positive impact on supply construction GDP. Second, Supply

Construction GDP and Base Lending Rate (BLR) found robust positive correlation of 0.6303 was found between supply construction GDP and BLR. This indicates a significant positive association between BLR and supply construction GDP, implying that changes in BLR strongly impact the supply construction sector's GDP. Third, Supply Construction GDP and Consumer Price Index (CPI). The correlation between supply construction GDP and CPI is moderately negative, with a coefficient of -0.2448. This suggests a weak negative relationship between supply construction GDP and Inflation. While the relationship is negative, it is not strong, signifying that fluctuations in Inflation have a limited negative effect on supply construction GDP.

Table 2 Result of Regression

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.6383
R Square	0.4074
Adjusted R Square	0.3482
Standard Error	1412.1674
Observations	34

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	41134333.24	13711444.41	6.8756	0.0012
Residual	30	59826506.29	1994216.88		
Total	33	100960839.53			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-5356.4210	16600.8091	-0.3227	0.7492	-39259.79	28546.95	-39259.79	28546.95
Exchange Rate	638.3123	27020.5007	0.0236	0.9813	-54544.91	55821.53	-54544.91	55821.53
Base Lending Rate	2247.4045	543.9388	4.1317	0.0003	1136.53	3358.27	1136.53	3358.27
Consumer Price Index	45.8385	82.2651	0.5572	0.5815	-122.1692	213.8462	-122.1692	213.8462

The regression analysis (Table 2) provides a more comprehensive understanding of the relationships between the variables. It identifies the extent to which these variables predict changes in supply construction GDP and helps assess their significance. The regression results indicate the following. [1] Multiple R and

R-Square: The multiple R value of 0.6383 signifies a moderate positive relationship between the independent variables (exchange rate, BLR, and CPI) and the supply construction GDP. The R-square value of 0.4074 indicates that approximately 40.74% of the variance in supply construction GDP can be explained by the independent variables included in the model. This implies that the model accounts for a substantial portion of the variations in supply construction GDP. [2] ANOVA: The analysis of variance (ANOVA) table reveals that the regression model is statistically significant (F = 6.8756, p-value = 0.0012), indicating that at least one of the independent variables significantly predicts changes in supply construction GDP. The F-statistic measures the overall fit of the model, and the small p-value suggests the model's statistical significance. [3] Regression Coefficients: The coefficients of the independent variables provide insights into their impact on supply construction GDP. Notably, the BLR coefficient is 2247.4045, with a low p-value (0.0003), indicating that it is statistically significant. This implies that BLR significantly affects supply construction GDP. In contrast, the coefficients for the exchange rate (638.3123) and CPI (45.8385) are both accompanied by high p-values (0.9813 and 0.5815, respectively), rendering them statistically insignificant in predicting supply construction GDP.

In summary, the results of the correlation and regression analyses underscore the substantial influence of the Base Lending Rate (BLR) on Malaysia's supply construction GDP from 2015 to 2023. While the exchange rate and consumer price index exhibit relationships with supply construction GDP, these relationships are weaker and statistically insignificant. This information is pivotal for economic decision-makers and industry stakeholders, as it highlights the significance of monetary policy, particularly the BLR, in shaping the performance of the supply construction sector in Malaysia.

Discussion

The findings of this study shed light on the intricate relationships between key macroeconomic indicators and the supply construction Gross Domestic Product (GDP) in Malaysia from 2015 to 2023. These results offer critical insights into the dynamics of the construction sector within the Malaysian economic landscape.

One of the most prominent findings of this study is the dominance of the Base Lending Rate (BLR) in influencing supply construction GDP. The robust positive correlation between BLR and supply construction GDP, along with the statistically significant regression coefficient for BLR, underscores the substantial impact of changes in BLR on the performance of the supply construction sector (Hanh *et al.*, 2020; Barbiero, Schepens and Sigaux, 2022; Nguyen *et al.*, 2023). This is a critical revelation, as it highlights the significance of monetary policy, particularly lending rates, in shaping the economic landscape of the construction industry in Malaysia. The BLR serves as a powerful driver, with variations in lending rates significantly impacting the ability and propensity of businesses and individuals to invest in construction projects. Therefore, policymakers and industry stakeholders need to closely monitor and manage BLR fluctuations to maintain a stable and robust construction sector.

In contrast to the significant role of BLR, this study reveals that exchange rates and Inflation exhibit weaker and statistically insignificant relationships with supply

construction GDP. The weak positive correlation between supply construction GDP and exchange rates suggests that while a positive relationship exists, it is relatively minor in strength. In practical terms, changes in exchange rates have only a limited positive impact on supply construction GDP (Maizura and Rashid, 2017; Çitçi and Kaya, 2023). Similarly, the moderately negative correlation between supply construction GDP and Inflation signifies a weak negative relationship, suggesting that fluctuations in Inflation have a limited negative effect on the supply construction sector. Consequently, while these macroeconomic factors are not irrelevant, their influence on the construction industry's GDP appears to be less pronounced.

Understanding the dominant role of BLR in shaping the supply construction sector's performance is crucial for policymakers and economic decision-makers in Malaysia (Tan, 2010; Mohd Shaari *et al.*, 2022). They must recognize that changes in base lending rates can have significant implications for the construction industry (Tan, 2010). Whether it's raising or lowering interest rates, these decisions have direct consequences on the industry's growth, with potential impacts on construction investments, property development, and overall economic stability. Policymakers should consider these findings when formulating and implementing monetary policies to ensure that the construction sector remains a robust contributor to Malaysia's GDP.

It's important to acknowledge the limitations of this study. While the data span from 2015 to 2023, a more extended period might yield further insights into the long-term trends in the supply construction GDP. Additionally, future research could explore other factors, such as government policies and external economic shocks, to provide a more comprehensive understanding of the construction industry's dynamics in Malaysia.

In conclusion, this study illuminates the pivotal role of BLR in influencing the supply construction GDP in Malaysia, emphasising the importance of monetary policy in the construction sector. Recognizing this dynamic relationship is essential for informed decision-making and strategic planning, ultimately contributing to the continued growth and stability of Malaysia's construction industry.

Managerial Implications

The findings of this study hold several crucial implications for industry stakeholders and policymakers. Firstly, the study underscores the need for heightened awareness of monetary policies, particularly the Base Lending Rate (BLR), within the construction sector. This emphasis arises from the study's revelation that changes in the BLR significantly impact supply construction GDP. Therefore, for construction businesses and industry players, staying informed about the BLR and its potential fluctuations is essential for making informed decisions.

Moreover, risk management takes centre stage in light of the study's results. The construction industry's sensitivity to macroeconomic shifts, especially interest rate changes, highlights the importance of adopting risk management strategies. Diversifying investments and developing financial strategies to hedge against unfavourable lending rate fluctuations can enhance the resilience of businesses operating in this sector. The study thus serves as a reminder for construction stakeholders to proactively manage and mitigate risks associated with macroeconomic factors.

Furthermore, the research underscores the value of data-driven decision-making in the construction industry. By regularly monitoring key macroeconomic indicators, particularly the BLR, construction firms can make proactive decisions that align with the economic climate. This data-driven approach can help in strategic planning and guide actions to navigate various economic scenarios effectively.

Significance and Novelty

This study holds significance due to its comprehensive insight into the Malaysian construction industry. While previous research often focuses on specific facets of the construction sector (Chia, 2012; Zulhumadi *et al.*, 2013; Khan, Liew and Ghazali, 2014; Nawi, Lee and Omar, 2014; Jatarona *et al.*, 2016; Mohd Najib *et al.*, 2019; Ne'Matullah, Pek and Roslan, 2021; Asila Jalil, 2022; Dehdasht *et al.*, 2022), this study offers a broader understanding by analysing the supply construction GDP. This comprehensive perspective enables industry stakeholders and policymakers to grasp the industry's dynamics more holistically.

An additional aspect of novelty lies in the extended research period, which spans from 2015 to 2023. This extended time frame allows for a more profound exploration of how the construction sector responds to macroeconomic changes and challenges over an extended duration. It offers a more in-depth understanding of the long-term trends and fluctuations within the industry, providing valuable insights for strategic planning and policy formulation.

The study also stands out for its inclusive macroeconomic analysis. By considering various macroeconomic indicators such as exchange rates (Maizura and Rashid, 2017; Çitçi and Kaya, 2023), lending rates (Tan, 2010; Mohd Shaari *et al.*, 2022), and core inflation (Maizura and Rashid, 2017; Alaloul, Musarat, Liew, *et al.*, 2021; Musarat, Alaloul and Liew, 2021; Outram, 2022; Çitçi and Kaya, 2023), it provides a more holistic economic context for the construction sector. This comprehensive analysis offers a well-rounded view of how the industry interacts with the broader economic environment, thus providing a more accurate basis for decision-making.

Ultimately, the study's policy guidance element is a noteworthy contribution. By highlighting the significance of the BLR in shaping the supply construction GDP, it can guide monetary policy decisions aimed at achieving economic stability and growth. This aspect of the research has the potential to influence policy formulation and implementation, benefiting both the construction sector and the overall Malaysian economy.

Conclusion

In conclusion, this study has shed light on the dynamics of Malaysia's supply construction sector by scrutinising its Gross Domestic Product (GDP) from 2015 to 2023. The research was guided by the objectives of deciphering the key factors influencing the sector's GDP and assessing the prominence of the Base Lending Rate (BLR) in comparison to other macroeconomic indicators. It addressed significant research gaps, primarily the dearth of comprehensive studies concerning supply construction GDP and the limited exploration of a wide array of macroeconomic variables in previous research.

The findings have revealed compelling insights into the supply construction sector's relationship with macroeconomic factors. The analysis established that BLR is a formidable driver of supply construction GDP, exerting a robust and positive influence. In contrast, factors like exchange rates and Inflation exhibited more modest or statistically insignificant effects on the sector.

It is essential to acknowledge the limitations of this study. The analysis was confined to the specific period from 2015 to 2023, potentially limiting the generalisability of the results to other timeframes. Moreover, while multiple macroeconomic indicators were considered, there may be unexplored variables or external factors influencing supply construction GDP.

Looking forward, there are a plethora of opportunities for future research endeavours. Longitudinal studies that encompass broader timeframes could capture evolving trends within the supply construction sector. Additionally, investigating other influential factors, such as governmental policies, international economic conditions, and technological advancements, would provide a more holistic perspective on the sector's performance.

Ultimately, this research underscores the significance of BLR in shaping Malaysia's supply construction GDP, which, in turn, has implications for strategic planning and decision-making within the construction industry. As the construction sector remains a pivotal driver of Malaysia's economic development, it is imperative to continue exploring the intricate interplay between the supply construction sector and the broader macroeconomic environment to inform sound policy decisions and industry strategies.

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Strategic Planning on Productivity through Leadership Commitment and Employee Involvement

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Abstract

Empirical research studies that have examined the relationship between strategic planning and productivity have produced mixed results, with some studies presenting that strategic planning has a significant impact on productivity, while other studies have failed to find the relationship between strategic planning and productivity. This study attempted to clarify and understand the relationship between strategic planning and productivity by including some contingency variables considered relevant in the implementation of strategic planning namely leadership commitment and employee involvement using 156 sample data collected through questionnaires from management employees of Tanzania Zambia Railway Authority. Model fit, validity and reliability were tested using regression analysis, principal component analysis and factor analysis using Jamovi software. The study presents that strategic planning and leadership commitment have a significant impact on productivity and that leadership commitment mediates the association between strategic planning and productivity. This study provides empirical evidence on the nature of the relationship between strategic planning and productivity. This study also gives evidence that leadership commitment is very relevant in the strategic planning process at all stages and that no manager should isolate themselves from the strategic planning process.

Introduction

The dynamics of the 21st century environment are unique and different from those of other centuries, making business competition very tense and fierce. Organisations are striving to have strategies that would help them achieve competitiveness through productivity. This has led to the formulation and implementation of strategic planning in various organisations. The emphasis on the strategic planning process has been emphasised and supported by many researchers, some of which link the direct involvement of the leadership in the

strategic planning process (Kantardjieva, 2015; Line, 1994; Yangailo & Kaunda, 2021), while other studies emphasise the importance of involving employees in the strategic planning process (Ketokivi & Castaner, 2004; Kohtamäki et al., 2012).

Purpose of Study

Even though organisations have been using strategic plans for several decades, not all organisations benefit from them. Bryson and Alston (2011) attributed the failure of organisations to benefit from strategic planning to a half-hearted approach to the practice and a lack of resources. This suggests that the benefits of strategic planning cannot be realised if the process of strategic planning is not well known or understood, and if adequate investment has not been made in the process and implementation of the strategic plan. More research is therefore needed to understand how strategic planning promotes productivity.

Although most empirical studies show a positive significant effect of strategic planning on productivity (George et al., 2019; Yangailo, 2023; Baker, 2003), other studies have failed to find the link between this relationship (Robinson & Pearce, 1983; Miller et al., 2004). The mixed and inconclusive results suggest that there is no established evidence to support the link between strategic planning (SP) and productivity.

This study examined the mediating effect of transformational leadership and employee involvement on the relationship between strategic planning and productivity. The two variables were included because they have been supported by some researchers (see Kantardjieva, 2015; Yangailo & Kaunda, 2021) as the relevant variables that contribute to the successful implementation of the strategic planning process, although none of the studies empirically tested them on this association.

Based on the researcher's knowledge, none of the studies that attempted to examine the effect of strategic planning on productivity included the two variables of leadership commitment and employee involvement as mediators.

Research Objectives

In order to address the gap identified in the literature, this study developed the following objectives:

1. To relate strategic planning with productivity
2. To determine whether leadership commitment mediates the relationship between strategic planning and productivity.
3. To determine whether employee involvement mediates the relationship between strategic planning and productivity.

Literature Review

Strategic Planning

Strategic planning is an approach that helps an organisation to find its future and its destination (Barry, 1997). Strategic planning is the process of authenticating and setting a direction for entrepreneurial activities by assessing both the present and future goals (Henderson & Hines, 2019). Strategic planning helps organisations to know what to do, why to do it and how to do it. Strategic planning influences the selection of goals that determine the company's strategy (Yangailo, 2022a).

Productivity

Productivity is defined as a measure of efficiency in the production of goods and/or services. It can also be expressed as success in terms of effectiveness, efficiency and performance. Productivity is the relationship between the amount of output produced and the amount of input required to produce it (Yangailo, 2022c).

Top Leadership Commitment

Top management leadership is the degree to which top management sets objectives and strategies, provides and allocates the necessary resources, participates in quality improvement efforts, and evaluates the implementation and performance of quality management (Saraph et al, 1989). Top management must provide unity of purpose and direction for the organisation. Their responsibilities include, but are not limited to, encouraging employees to embrace change, to make their own decisions, to communicate a commitment to quality, and to motivate all employees to successfully formulate and implement the strategic planning process.

Employee Involvement

Employee involvement is the direct participation of employees in helping an organisation to fulfil its mission and achieve its goals by using their own expertise, ideas and efforts to solve problems and make decisions. Employee involvement is a process of participation and empowerment of employees to use their contributions to achieve higher individual and organisational performance (Sofijanova & Zabijakin-Chatleska, 2013). This includes employee participation in both decision making and decision making, as well as increased autonomy in work processes. As a result, employees are more committed, motivated and productive because they are more satisfied with their work.

Strategic Planning and Productivity

George et al. (2019) conducted a study to determine whether strategic planning improves performance in an organisation, using a meta-analytic research approach. The result of the study shows that strategic planning has a positive impact on the performance of any organisation.

Baker (2003) conducted a study in the food processing industry to understand the impact of strategic planning on financial performance. The study revealed that strategic planning tools have a positive and significant impact on financial performance.

In the United States, Robinson and Pearce (1983) examined the impact of strategic planning on the financial performance of small organisations. The study found no significant relationship between the strategic planning process and improved performance.

In the United Kingdom, Miller et al (2004) found that careful managerial planning does not guarantee successful outcomes in a firm. This study was conducted on 55 companies.

Based on the studies presented above, it is evident that there are conflicting results regarding the relationship between strategic planning and productivity, indicating the need for further research.

Leadership Involvement and Productivity

High levels of employee engagement will increase commitment and interest in the workplace, resulting in a motivated workforce that will work together to achieve the organisation's goals (Patro, 2013). Employee engagement is a stronger predictor of positive organisational performance (Markos & Sridevi, 2010). In today's dynamic marketplace, it is simply not enough to recruit skilled workers; much more needs to be done to keep them engaged and motivated to support the organisation's goals (Patro, 2013). Engagement is therefore a state in which a person is not only emotionally invested in his or her work, but also intellectually committed to it, going above and beyond the call of duty to advance the interests of the organisation. Work engagement has been shown to mediate the relationship between organisational commitment and rewards and pay, and between performance appraisal and organisational commitment (Aboramadan et al., 2020).

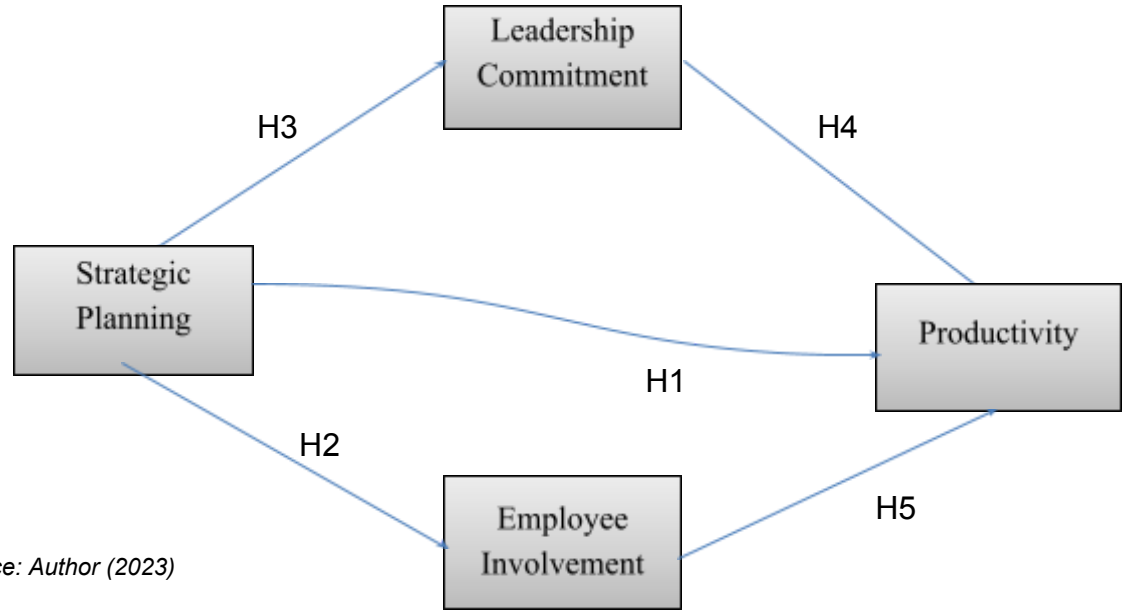
Leadership Commitment and Employee Involvement

The emphasis on the strategic planning process has been highlighted and supported by many researchers, with some linking the direct involvement of leadership in the strategic planning process (Yangailo & Kaunda, 2021; Kantardjieva, 2015), while other studies have highlighted the importance of employee involvement in the strategic planning process (Ketokivi & Castaner, 2004; Kohtamäki et al., 2012) as a key to achieving higher productivity in organisations.

Conceptual Framework

Based on the association between the variables used in this study and the literature review, a hypothesised model was formulated as shown in Figure 1.

Figure 1 Hypothesised Model



Source: Author (2023)

Hypotheses

The following hypotheses are based on the aim of this study, the results of the literature review and the hypothesised model.

1. Hypothesis 1: Strategic Planning has a positive significant effect on productivity.
2. Hypothesis 2: Strategic planning has a positive significant relationship with employee involvement.
3. Hypothesis 3: Strategic planning has a positive significant relationship with leadership commitment.
4. Hypothesis 4: Leadership commitment has a positive significant effect on productivity.
5. Hypothesis 5: Employee involvement has a positive significant effect on productivity.
6. Hypothesis 6: Leadership commitment mediates the relationship between strategic planning and productivity.
7. Hypothesis 7: Employee involvement mediates the relationship between strategic planning and productivity.

Methodology

The railway sector has received little research attention in the focus area (Yangailo & Kaunda, 2021; Yangailo & Mkandawire, 2023; Yangailo et al., 2023), hence the relevance of this study in this sector. The Tanzania Zambia Railway Authority (TAZARA) was selected for this study. TAZARA is owned by two states, Tanzania and Zambia on a 50/50 basis and has been in operation since 1975. The Tanzania-Zambia Railway (TAZARA) offers a number of benefits to both Zambia and Tanzania. TAZARA is vital to the growth and cooperation between Tanzania and Zambia, helping to facilitate trade, stimulate economic growth, improve regional connectivity and promote cultural exchange. A structured questionnaire was

distributed to 198 respondents who were management staff out of a target population of 240. 156 respondents completed and returned the questionnaire. A quantitative research approach was used to analyse the data collected using Jamovi software. With the help of Jamovi software, regression analysis, principal component analysis, and factor analysis were used to verify the model's fit, validity and reliability. This software has been widely used by different researchers in different studies in similar and different settings (see Ahmed & Muhammad, 2021; Abbasnasab Sardareh et al, 2021; Hassen & Ramakrishna, 2020; Şahin & Aybek, 2019; Yangailo, 2022b; Yangailo, 2023; Yangailo & Chambani, 2023; Kaunda & Yangailo, 2023). The sample of 156 against the population target of 240 exceeded the minimum required threshold recommended by Morgan and Krejcie (1970) to conduct scientific research. See Table 1 for further verification of the suggested sample size according to Morgan and Krejcie's (1970) formula:

Table 1 Determine Size of the sample of a given Population

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note: S is sample size, N is size of population
Morgan and Krejcie (1970)

Measures

Five-point Likert scales were adopted and used to assess constructs with strongly agree (5), while strongly disagree (1). Measures for strategic planning, leadership commitment and employee involvement were adopted from quite a number of studies (Coşkun, 2011; Aquilani et al., 2017; Ang et al., 2000; Prajogo & Sohal, 2006; Terziovski, 2006). The measures of productivity were taken from Grayson et al. (2016).

Data Presentation and Analysis

The analysis of the results of this study was based on statistical methods using Jamovi software. The results are presented in the form of descriptive statistics, figures, tables and hypothesis tests.

The Response Rate

Of the 198 questionnaires distributed to the target population of 240, a total of 156 respondents completed and returned the questionnaire, representing 82.5%.

Demographic Characteristics

The demographic profile of the 156 respondents who participated in the study, based on gender and experience, is shown in Table 2.

Table 2 Demographic Profile

Description	Frequency	Percentage
Gender		
Male	130	83.3
Female	26	16.7
Total	**156**	**100**
Years of Experience		
< 10	48	30.8
10-20	58	37.2
> 20	50	32.0
Total	**156**	**100**

Source: Author (2023)

Of the 156 respondents, 26(16.7%) were female and 130(83.3%) were male. Regarding the number of years in the company, of the 156 respondents, 48 (30.8%) had more than 20 years of work experience, 58 (37.2%) had 10 to 20 years of work experience, while 50 (32.0%) had less than 10 years of work experience.

Descriptive Statistics

The mean, skewness, kurtosis and standard deviation of the constructs are shown in Table 3.

Table 3: Mean, Kurtosis & Skewness of Constructs (N = 156)

	P	SP	TLC	ERI
N	156	156	156	156
Mean	2.91	3.23	3.26	3.14
Standard deviation	0.734	0.718	0.767	0.774
Skewness	0.00340	-0.179	-0.225	-0.0817
Std. error skewness	0.194	0.194	0.194	0.194
Kurtosis	0.255	0.396	0.0231	-0.195
Std. error kurtosis	0.386	0.386	0.386	0.386

Source: Author (2023)

The mean values for all four constructs indicate that respondents responded positively. Both Kurtosis and Skewness are within the recommended range of -2 to +2, indicating no serious deviation from normality for the four constructs.

Validity and Reliability

A minimum of 150 cases is usually required to conduct principal component analysis (Fan et al., 2008), therefore our sample size of 156 was sufficient to conduct component analysis. The Cronbach alpha for the four-construct scale was calculated by conducting reliability analysis with the required threshold of (0.7) point seven (Hair et al., 2006) in order to obtain reliable measures to determine good internal fit and consistency of the measures.

The instrument factorability of 30 items was measured and it was found that all items correlated at least 0.3 with another item, indicating good factorability. The measure of sampling adequacy (Kaiser Meyer Olkin) was 0.884 above the value of 0.6, while Bartlett's test of sphericity was significant ($\chi 2$ (435) = 2217, $p < .001$). Principal component analysis of the 30 items was appropriate, as shown in Table 4.

Table 4 Test results of Kaiser-Meyer-Olkin and Barlett's

Kaiser-Meyer-Olkin and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.884
Bartlett's Test of Sphericity	Approx. Chi-Square	2217
	Degrees of freedom	435
	Significance	.000

Source: Author (2023)

The Cronbach's alpha for the instrument was well above the required threshold of 0.7 (Hair et al., 2006). The instrument alpha coefficients ranged from 0.754 to 0.890. The alpha coefficient for the leadership commitment scales was 0.754, the alpha coefficient for the employee involvement scales was 0.761, the

alpha coefficient for the strategic planning scales was 0.890 and the alpha coefficient for the productivity scales was 0.858. All four Cronbach alpha coefficients were within the required acceptable range of above 0.7 as shown in Table 5.

Table 5 Results of Cronbach Alpha

Items	Cronbach's Alpha	Number of Items	Comment
Overall	.933	30	Accepted
Leadership Commitment	.754	5	Accepted
Employee Involvement	.761	5	Accepted
Strategic Planning	.890	11	Accepted
Productivity	.858	9	Accepted

Source: Author (2023)

Linearity

The linearity assumption was verified by calculating Pearson correlation coefficients as shown in Table 6.

Table 6. Correlation Matrix

		P	TLC	ERI	SP
P	Pearson's r	—			
	Spearman's rho	—			
	N	—			
TLC	Pearson's r	0.552***	—		
	Spearman's rho	0.484***	—		
	N	156	—		
ERI	Pearson's r	0.414***	0.593***	—	
	Spearman's rho	0.367***	0.542***	—	
	N	156	156	—	
SP	Pearson's r	0.684***	0.655***	0.533***	—
	Spearman's rho	0.621***	0.558***	0.479***	—
	N	156	156	156	—

Note. * p < .05, ** p < .01, *** p < .001

Source: Author (2023)

The results show significant positive correlations between strategic planning, leadership commitment, employee involvement and productivity. Productivity and leadership commitment have a positive significant Pearson coefficient of 0.552, productivity and employee involvement have a positive significant Pearson coefficient of 0.414, leadership commitment and employee involvement have a positive significant Pearson coefficient of 0.593, leadership commitment and strategic planning have a positive significant Pearson coefficient of 0.655, employee involvement and strategic planning have a positive significant

Pearson coefficient of 0.533. Productivity and strategic planning have a positive and significant Pearson correlation coefficient of 0.684.

The correlations show that there are no multicollinearity problems as the correlations are below the required acceptable cut-off of 0.85 (Hair et al., 2010).

Fitness of the Model

A regression model test was performed before estimating the proposed model of this study.

Overall Regression Model Test

The regression models were tested with the following hypotheses

H0: β1=β2= β3 ..... Bi = 0

Ha: One of the regression coefficients is at least non-zero.

Table 7 Summary of Regression Model Fit Measure

					Overall Model Test	
Model		**R**	**R²**	**Adjusted R²**	**F**	**P**
1	SP predicting P	0.684	0.468	0.465	136	< .001
2	ERI predicting P	0.414	0.171	0.166	31.8	<. .001
3	TLC predicting P	0.552	0.304	0.300	67.3	< .001
4	TLC predicting SP	0.655	0.429	0.425	166	< .001
5	ERI predicting SP	0.533	0.284	0.279	61.1	< .001
SP= Strategic Planning						
p = Productivity						
ERI= Employee Responsibility and Involvement						
TLC= Top Leadership Commitment						

Source: Author (2023)

Table 7 shows that there were strong significant relationships between the constructs based on the regression analyses carried out. The first model, which shows the proposed effect of strategic planning on productivity, has a good fit with significant values of R(0.684), R^2(0.468) and a significant F-value of 136. This indicates that strategic planning explains 47% of the variation in productivity. The second model, which suggests the impact of employee responsibility and involvement on productivity, shows good fit significant values of R(0.414), R^2(0.171) and significant F-value of 31.8. This indicates that employee responsibility and involvement explains 17% of the variation in productivity. The third model that suggests the impact of top leadership commitment on productivity shows good fit significant values of R (0.552), R^2(0.304) and significant F-value of 67.3. This indicates that top leadership commitment explains 30% of the variation in

productivity. The fourth model that suggests the impact of top leadership commitment on strategic planning shows good fit significant values of R (0.655), R^2(0.429) and significant F-value of 166. This indicates that top leadership commitment explains 43% of the variation in strategic planning. The last model that proposed the effect of employee responsibility and involvement on strategic planning shows good fit significant values of R(0.533), R^2(0.284) and significant F-value of 61.1. This indicates that employee empowerment and involvement explains 28% of the variation in strategic planning.

Testing of the Hypotheses

The study tested seven hypotheses with respect to direct and mediation effects. Tables 8 and 9, show results of the hypotheses tested.

Table 8 Indirect and Total Effects

				95% C.I. (a)				
Type	**Effect**	**Estimate**	**SE**	**Lower**	**Upper**	**β**	**z**	**p**
Indirect	SP ⇒ ERI ⇒ P	0.00420	0.0400	-0.07413	0.0825	0.00411	0.105	0.916
	SP ⇒ TLC ⇒ P	0.11899	0.0560	0.00916	0.2288	0.11637	2.123	0.034
Component	SP ⇒ ERI	0.57460	0.0730	0.43145	0.7178	0.53296	7.867	< .001
	ERI ⇒ P	0.00731	0.0695	-0.12900	0.1436	0.00770	0.105	0.916
	SP ⇒ TLC	0.69942	0.0647	0.57270	0.8261	0.65468	10.817	< .001
	TMCL ⇒ P	0.17013	0.0786	0.01616	0.3241	0.17776	2.166	0.030
Direct	SP ⇒ P	0.57663	0.0798	0.42015	0.7331	0.56394	7.223	< .001
Total	SP ⇒ P	0.69982	0.0599	0.58246	0.8172	0.68442	11.687	< .001

Note. Confidence intervals computed with method: Standard (Delta method)

Note. Betas are completely standardised effect sizes

Table 9 Hypotheses

No	Hypothesis	Results
1.	Hypothesis 1: Strategic Planning has a positive significant effect on Productivity	Supported
2.	Hypothesis 2: Strategic planning has a positive significant relationship with employee involvement	Supported
3.	Hypothesis 3: Strategic planning has a positive significant relationship with leadership commitment	Supported
4.	Hypothesis 4: Leadership commitment has a positive significant effect on productivity	Supported
5.	Hypothesis 5: Employee involvement has a positive significant effect on productivity	Not Supported
6.	Hypothesis 6: Leadership commitment mediates the relationship between strategic planning and productivity	Supported
7.	Hypothesis 7: Employee involvement mediates the relationship between strategic planning and productivity	Not Supported

Source: Author(2023)

The significance, insignificance and path coefficients for the model of this study are presented in Table 8.

The first hypothesis 1 on the effect of strategic planning on productivity shows that it is statistically significant (γ = 0.700, p< .001), so hypothesis 1 is supported. After the mediation effect of both employee involvement and leadership commitment, the direct effect is also statistically significant (γ = 0.58, p< .001).

Second, strategic planning has a positive significant relationship with employee involvement (γ =0.575, p<0.001), so hypothesis 2 is supported. Thirdly, strategic planning has a positive significant relationship with leadership commitment (γ =0.700, p<0.001), therefore Hypothesis 3 is supported. Fourth, leadership commitment has a positive significant effect on productivity (γ =0.170, p<0.05), thus supporting Hypothesis 4. Fifth, employee involvement has an insignificant effect on productivity (γ =0.007, p>0.05), therefore Hypothesis 5 is not supported.

The Analysis of Mediating Effects

The indirect effect of strategic planning on productivity through leadership commitment is positive and statistically significant (p <0.05, γ = 0.120; 95% CI: [0.00916, 0.2288]; ratio effect=0.1700). This indicates a partial mediation effect of leadership commitment, thus supporting hypothesis 6.

The indirect effect of strategic planning on productivity through employee involvement is positive and insignificant (p> 0.05, γ = 0.004; 95% CI: [-0.07413, 0.0825]; ratio effect = 0.006). This indicates that there is no mediation effect of employee involvement, so hypothesis 7 is not supported.

Discussion

It is evident that the majority of males occupy more management positions than females in TAZARA, while the majority of employees with 10 to 20 years of work experience are in the majority, followed by those with more than 20 years of work experience, indicating that the company has experienced employees in management.

The results show that among the concepts studied, leadership commitment had the highest implementation in TAZARA, followed by strategic planning, then employee involvement and then productivity.

Regarding the first objective of this study, the study revealed that strategic planning has a positive and significant effect on productivity. The results proved and confirmed that strategic planning has a positive significant effect on productivity. This result was consistent with previous studies that presented that strategic planning has a significant effect on productivity (see Baker, 2003; George et al., 2019; Yangailo, 2023) and also inconsistent with studies that failed to link strategic planning to productivity (see Miller et al., 2004; Robinson & Pearce, 1983).

The study results also show that strategic planning has a positive and significant relationship with employee involvement. This result is consistent with previous studies that have presented the importance of employee involvement in the strategic planning process (see Ketokivi & Castaner, 2004; Kohtamäki et al., 2012).

To determine whether strategic planning has a positive significant relationship with leadership commitment, the study found that strategic planning has a positive significant relationship with leadership. This also supports previous studies that have

highlighted the importance of leadership commitment to the strategic planning process (see Kantardjieva, 2015; Yangailo & Kaunda, 2021).

The study also shows that leadership commitment has a positive significant effect on productivity and that employee involvement does not have a significant effect on productivity. The insignificant result does not negate the importance of employee involvement in promoting higher productivity.

Regarding the second objective of this study, the study found that leadership commitment mediates the relationship between strategic planning and productivity. This result shows that leadership commitment partially mediates the relationship between strategic planning and productivity. This finding is a major contribution to the literature as it is the first empirical test of this relationship specifically in the railway sector.

Regarding the third and final objective of this study, the study found that employee involvement does not mediate the relationship between strategic planning and productivity. This finding is a major contribution to the literature and calls for more research to be conducted in other sectors to further verify this result. However, this finding supports other studies that have strictly associated employee involvement with total quality management (TQM), while leadership commitment is associated with both TQM and strategic planning (see Kantardjieva, 2015; Line, 1994; Yangailo & Kaunda, 2021).

Theoretical Managerial Implications

The findings of this study are relevant to management practice. The results show the importance of leadership commitment in the successful implementation of strategic planning processes. Strategic planning should not be left to the planners or the planning manager for implementation, but to the entire management of an organisation.

Conclusion

This research is the first to examine the relationship between strategic planning, leadership commitment, employee involvement and productivity. The study shows that strategic planning and leadership commitment have a significant impact on productivity and that leadership commitment mediates the relationship between strategic planning and productivity.

This study provides empirical evidence on the nature of the relationship between strategic planning and productivity. This study provides evidence that leadership commitment is very relevant in the strategic planning process at all stages and that no manager should isolate himself from the strategic planning process.

The Limitations and Future Research

This was a case study of TAZARA. This limits the generalisability of the findings to other industries. It is strongly recommended that the study be replicated in other railway companies and other industries. Future research studies should also include other contingency variables to gain more insight into the nature of this relationship.

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Appendices

Principal Component Analysis

Component Loadings

	Component				Uniqueness
	1	2	3	4	
SP1		0.612	0.312		0.459
SP2	0.362	0.588			0.435
SP3		0.549	0.319		0.515
SP4	0.368		0.445		0.611
SP5	0.537	0.469			0.407
SP6	0.491	0.514	0.326		0.386
SP7		0.550			0.539
SP8		0.661			0.374
SP9	0.306	0.720			0.362
SP10		0.631		0.366	0.413
SP11	0.345	0.502		0.350	0.474
P1	0.464		0.393		0.577
P2	0.674				0.453
P3	0.673	0.327			0.436
P4	0.599				0.513
P5	0.471		0.380	0.399	0.472
P6	0.567		0.361	0.423	0.369
P7	0.678		0.316		0.430
P8	0.479			0.541	0.462
P9	0.760				0.376
TLC1			0.347	0.473	0.501
TLC2			0.397	0.454	0.543
TLC3				0.708	0.426
TLC4		0.334	0.436	0.447	0.497

Component Loadings

	Component				
	1	2	3	4	Uniqueness
TLC5		0.321	0.470		0.647
ERI1			0.666		0.504
ERI2			0.603		0.607
ERI3			0.594		0.556
ERI4			0.613		0.542
ERI5			0.684		0.485

Note. 'varimax' rotation was used

Assumption Checks

Bartlett's Test of Sphericity

χ^2	df	p
2217	435	< .001

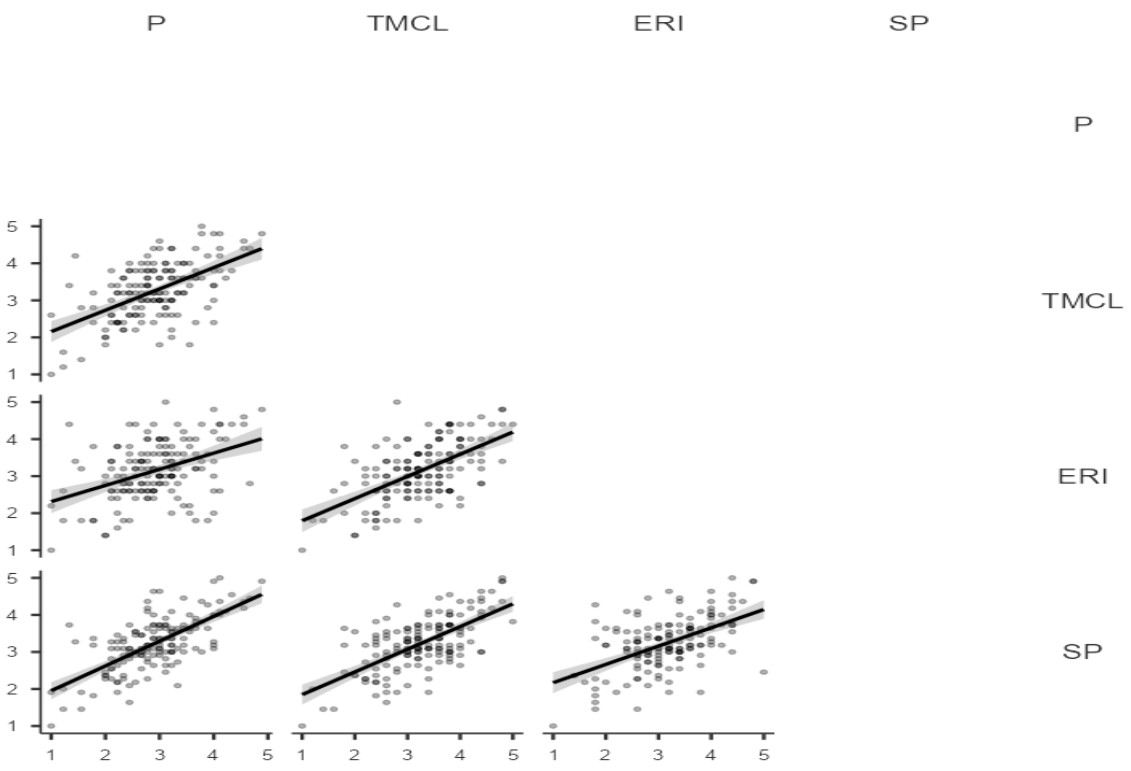
KMO Measure of Sampling Adequacy

	MSA
Overall	0.884
SP1	0.860
SP2	0.947
SP3	0.926
SP4	0.924
SP5	0.905
SP6	0.914
SP7	0.910
SP8	0.932
SP9	0.921
SP10	0.844
SP11	0.934
P1	0.911
P2	0.900
P3	0.880
P4	0.860

Bartlett's Test of Sphericity

	χ^2	df	p
P5			0.823
P6			0.919
P7			0.885
P8			0.882
P9			0.824
TLC1			0.902
TLC2			0.836
TLC3			0.896
TLC4			0.837
TLC5			0.829
ERI1			0.806
ERI2			0.717
ERI3			0.905
ERI4			0.877
ERI5			0.874

Plot

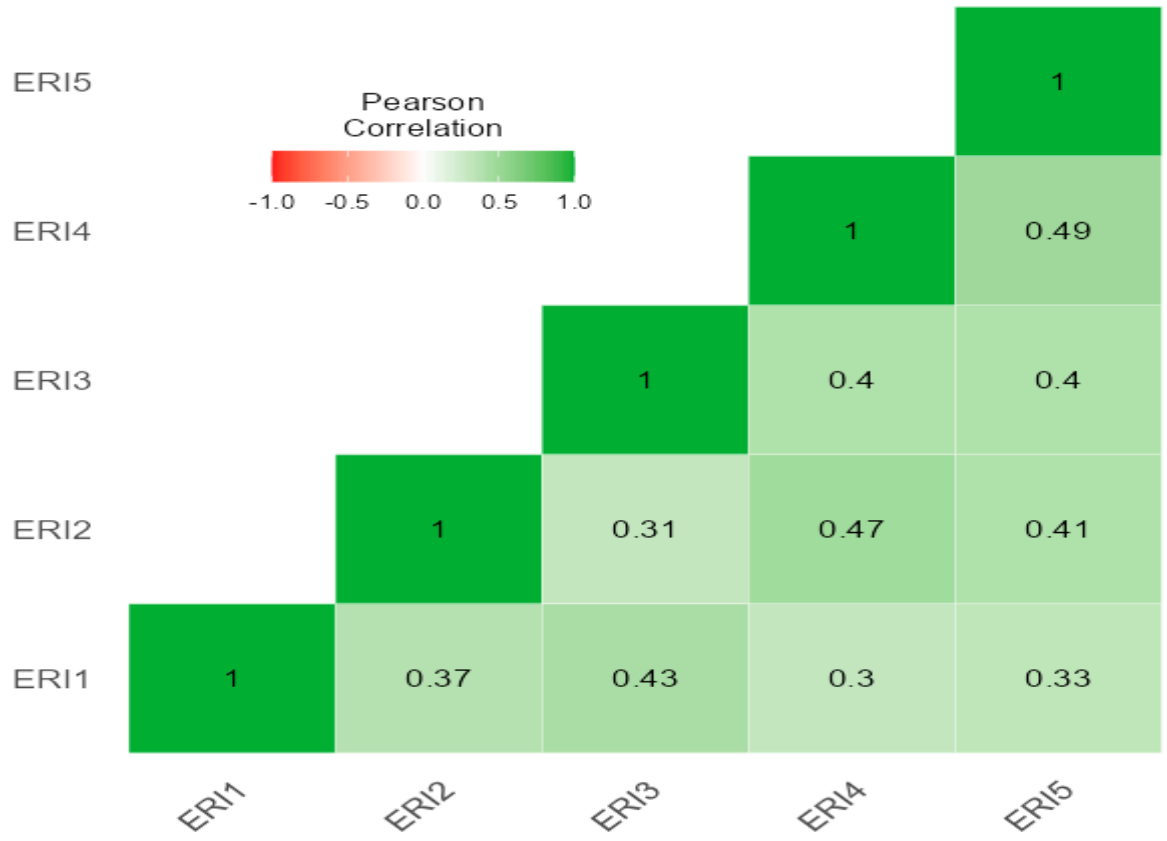


Reliability Analysis

Scale Reliability Statistics

	Mean	SD	Cronbach's α	McDonald's ω
scale	3.14	0.774	0.761	0.763

Correlation Heatmap

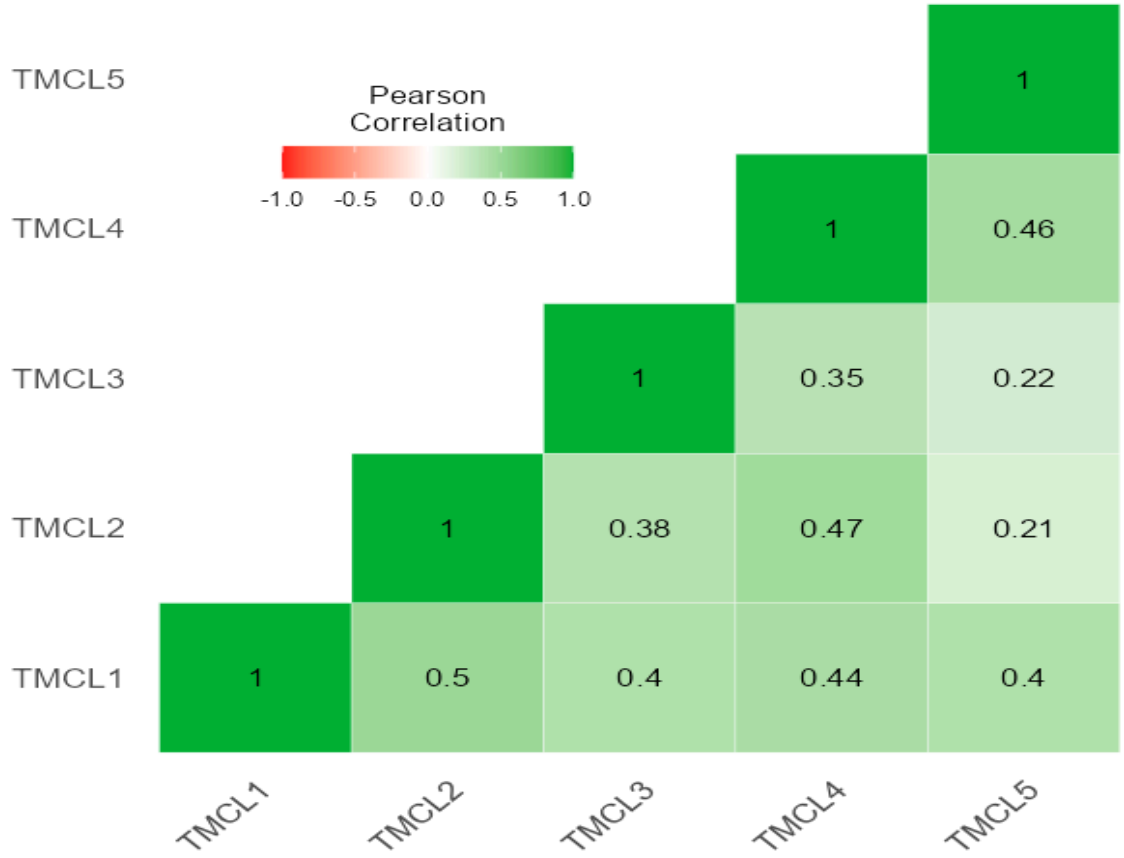


Reliability Analysis

Scale Reliability Statistics

	Mean	SD	Cronbach's α	McDonald's ω
scale	3.26	0.767	0.754	0.761

Correlation Heatmap

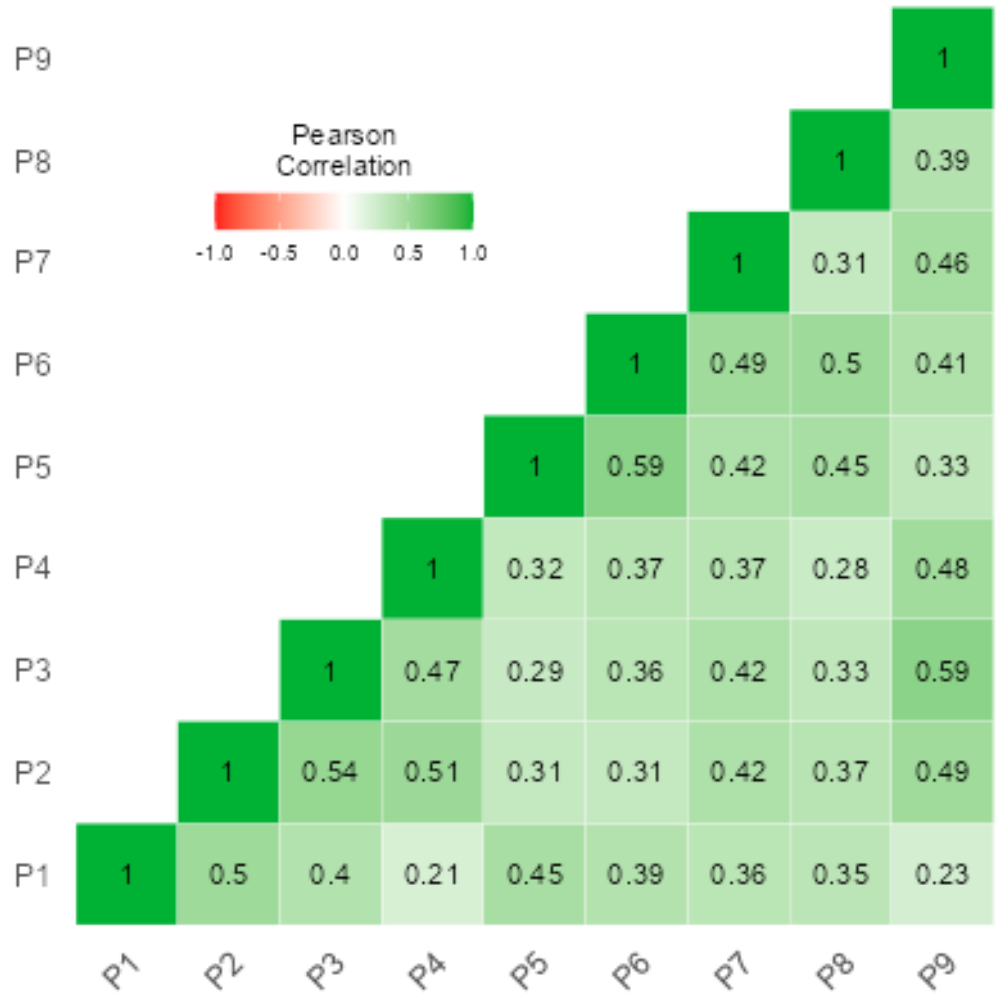


Reliability Analysis

Scale Reliability Statistics

	Mean	SD	Cronbach's α	McDonald's ω
scale	2.91	0.734	0.858	0.859

Correlation Heatmap

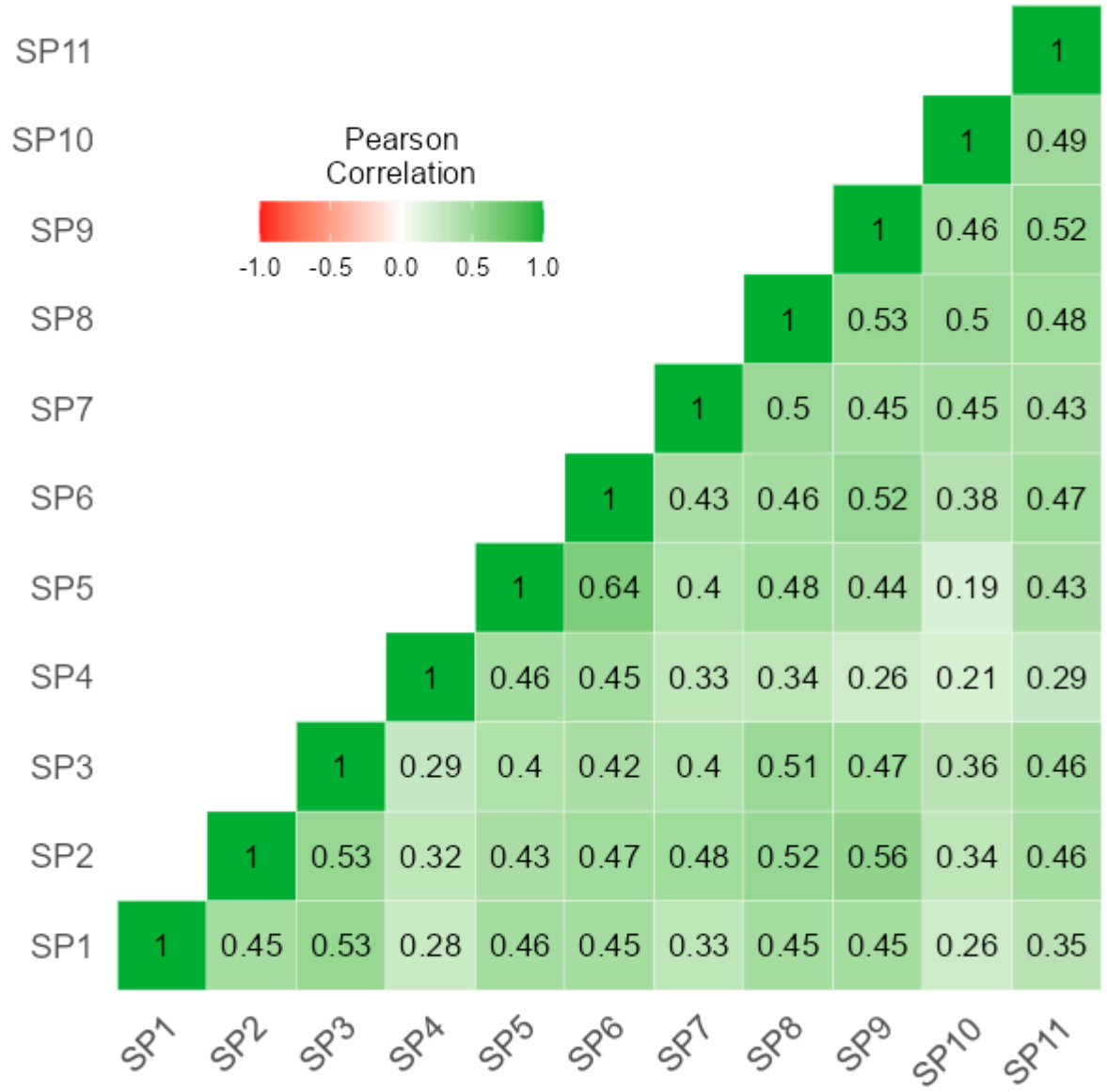


Reliability Analysis

Scale Reliability Statistics

	Mean	SD	Cronbach's α	McDonald's ω
scale	3.23	0.718	0.890	0.892

Correlation Heatmap



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Interview with an Robert Harris

Dr. Rita Day

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Introduction

Nestled off the southwestern coast of Ireland, this UNESCO World Heritage site is renowned for its rugged beauty and historical significance. I had the pleasure of sitting down with an extraordinary individual whose connection to Skellig Michael goes beyond the ordinary. I am delighted to be joined by Robert L. Harris, author of Returning Light and a former warden of this enigmatic island for the last 36 years. The author offers insights into researching and writing a book and gives us, the readers, a beautiful and celestial piece of writing.

Skellig Michael, with its ancient monastic settlement perched on towering cliffs, has long been a subject of fascination for history enthusiasts and adventurers alike. As a warden, Robert L. Harris has not only witnessed the island's awe-inspiring landscapes but has also delved into the daily life and challenges faced by those entrusted with its preservation. In more recent times the monastic settlement has also been the location of Star Wars: The Force Awakens.

In this exclusive interview, we will unravel the layers of experience gaining insights into the unique responsibilities, poignant moments, and the deep connection forged with this remarkable island during his tenure. This is an interview about a literary journey exploring the intersection of history, conservation, and personal reflection. We will hear about windswept cliffs and echoing chambers of Skellig Michael offering a glimpse into a world where the past meets the present in a harmony that only an island of such profound significance can provide.

Interview with Robert L. Harris

The inspiration for "Returning Light" in the context of my time on Skellig Michael

When I first travelled westwards from the Kerry Coast in 1987, I was following a sea route forged by monks over a thousand years earlier. While I did not know this on that first journey, I would be retracing my way out to the island of Skellig Michael for

the next 36 years. The island, over time, became an anchor upon which each year came to revolve for me. I came to live on the island over a period of five months each year and I became acutely aware of seasonal progressions and natural rhythms at this exposed place. The island was often cut off, due to the Atlantic, from the mainland and I knew quickly that my surroundings and observations were little different from those my predecessors a millennium earlier had experienced. And so, I also soon came to know that I had been provided with a unique perspective in the context of our modern world as I bided there in the late 20th century. I felt that it would become necessary to describe these things, in some way, before long.

How the surroundings of Skellig Michael influenced my writing process

The trip out to Skellig Michael by sea poses great challenges to the senses: immediately upon embarkation one leaves what we know as the ordinary world behind. The hour-long trip induces a sea-change in the spirit. The open surroundings of sea and sky are exactly those encountered by the first travellers. Past and present converge into a timeless realm. Then, suddenly, birds are everywhere in the sky overhead; it can almost seem, sometimes, that they are lifting the tiny vessel upon which one travels on toward the island which looms overhead as one nears. There is very little flat space there, and suddenly, one is climbing steep stairs of stone, a chain of ascent which drops away towards the sea on either side, rising to a tiny terrace floating near the summit where the monks made their home. The sense of vertigo can be real, and one's sensory apparatus can be sprung open on a first encounter, and long afterwards. It became necessary to assimilate these things and to communicate the details of my new surroundings as clearly as possible.

The challenges and Obstacles faced in researching the island

First of all, I found my experiences of the island overwhelming. On the other hand, where was I? Stranded on a rock in the Atlantic surrounded only by the sea and sky. In some ways, my life on the island could have been whittled down to a description of my simple movements along these natural divisions and empty horizons. Often, there was very little in the way of human interaction to be had, beyond giving brief histories of the island to visitors who would come for a few hours when the weather was fit. It was difficult to pin down my experiences, based as they were upon subjective and internal experiences, and balanced against the astounding and unusual sensory display which I was experiencing daily. The sea moved before me in a thousand moods and ways; the incredible variety of bird flight was continually unfolding over my head. Yet, life on the island could also be pared down to a few sentences, paragraphs. I began making diary entries which sometimes seemed to say more or less the same things. Slowly, though, the unique vision and perspective possible on the island began to take hold. The sense of connectedness with the entire world beyond became apparent. And I began to see the lookout, the observation post, that Skellig Michael might be, and my sense of place in all things began to evolve and develop in ways undefined upon my first arrival.

The memorable and unexpected experiences that impacted my work

These are innumerable. Two come immediately to mind, from my first days on the island. Skellig Michael has two peaks and a valley between them. The more easterly

is the one upon which the monastery was built facing back towards the mainland. The other is much more precipitous: it snakes upwards in a narrow spiral 715 feet above the sea. There are no stairs leading to the top, only handholds and footholds which are not immediately easy to make out. At one stage, near the summit, it is necessary to climb through a narrow crevasse known as the "Needle's Eye." Emerging from this keyhole, one enters a different world. A small terrace somehow -- inconceivably -- built there 1300 years ago, was a place of solitary prayer. Sometime in my first weeks on the island in 1986 I slowly picked my way up there on a bright afternoon. Nothing lay ahead of me but the open sea, nothing below but empty space. My whole life was suddenly laid open. Often, I have returned in the intervening years, and sometimes I have spent the night upon that peak, but that first climb, and the attraction to the place that I have known ever since, is indelibly printed within my memory.

The heights of the Peak provided an uncanny lookout upon things far away; sea depths, though, pulled my observations and thoughts in other ways altogether. The first year that I spent on the island, I walked many times in the darkness along the lighthouse road to the pier. On bright nights, the little lights from the mainland are clearly visible from St. Finian's Bay, and the dark hills of Iveragh and Beare rise against the night sky. These things are only eight miles away, but the island can be cut off for days, even more, in bad weather, and the mainland seemed often, on those first walks down in the darkness, to be an eternity away. One night, early on, I turned the last corner of the road to see the sea alive with what seemed [to be] endless starlight-- phosphorescent plankton swirling continually just below the surface. I was utterly taken aback, not knowing at all the nature of what I was seeing. Another world, another galaxy had opened before me. And ever since, sometimes waking in the middle of the night and staring out from my bunk upon a high sea, from time to time, I have been revisited by this swirling brilliance of moving and myriad light.

On balancing caretaking responsibilities with the demands of writing a book

My caretaking responsibilities very often provided a sense of rhythm to my time on the island. When I met with visitors, it would be most interesting to see what their initial responses might be on arrival at this strange new place. I soon came to see that their initial experiences, and those gleaned by me after spending extended periods of time on the island, had many features in common. I had been afforded time to investigate these experiences in depth: becoming acquainted with the wildlife on the island, the archaeology, and the progression of the seasons. In many ways, my caretaking responsibilities formed the backbone of these observations, keeping me from making hasty conclusions, allowing the natural rhythms of the island to settle in with me over time. I would come to know, over the following months and years, individual birds that I would meet in my daily rounds, see the effect of sudden storms upon vegetation and bird life, and learn over the course of a season, by casual observations, just when the gannets might veer near the island and when they would disappear.

The unique rituals and practices which helped me connect with the island and its environment while writing

The island is a small compact place. The main routes one traverses there are limited and confined. One is always climbing or descending climbing up from the huts up the chain of steps along the spine of the island to either of the two peaks, or down over the Saddle into the North Cove; or descending along the lighthouse road to the landing, the access point where all arrive at Skellig Michael. Every day I would make journeys along these routes. To some this might have seemed monotonous because of the continual repetition. But after a while, I began to realise that the outlines of the entire island were being internalised within me, and that I was over time drawing an actual map of the place within my consciousness. And these basic routes began to extend in little flourishes: along the ridge behind the monastery, I began to regularly monitor the beautiful fulmars which would hang at arm's length, face high, directly before me as I wandered along the ridge. In the tiny oratory, I would find myself singing vestiges of choral music remembered from decades before in a personal reanimation of that confined charged ancient space.

The impact of the island's biodiversity and ecosystem on my research and how it may have shaped my writing

In the summer months, Skellig Michael teems with life; suddenly, in October, it is scoured clean, the birds are mostly gone and much of the vegetation is pared down to bare rock. This natural progression is marked by very dramatic events: in June, at the height of fledgling season, thousands of puffins fill the air, following continually unfolding trails over empty sky, leaving, for a moment, bright sparks behind them as the sunlight is caught briefly in carmine beaks and feet. Thousands of luminous breasts of a variety of seabirds are aglow along sheer cliff-edges, even in the near dark of late evening. But thousands of birds nest underneath the ground as well, and there is an understanding which comes over everyone who spends any length of time on the Skelligs that the whole island is literally alive. The place is charmed with life, and then, emptied -- but this emptying out of a small rock at sea off the coast of Ireland takes its emissaries -- the puffins, shearwater, razorbills, petrels and all the others-- far off across horizons. Some hover off South American and African coasts, south of the Equator, others travel to the Grand Banks of Newfoundland. Over time, I have come to understand that this tiny island is literally stretched over the entire Atlantic during the winter months and then drawn back tightly onto cliffs and into burrows as the summer approaches.

Moments of personal growth and self-discovery

And these realisations -- of the tiny living representatives from Skellig Michael stretching far and wide upon their journeys and then withdrawing towards the island again-- inevitably impressed upon me a sense of personal interconnectedness with things, people, and events far afield, even though I supposedly stood more or less alone upon an empty island. Deep darkness might sometimes overcome me when alone: failings from the past, both personal and general, and the sadness so prevalent in the human realms just beyond -- on the mainland and along the shores extending far southwards. The mere accumulation of everything going on beyond the horizons ahead would suddenly come to weigh more heavily and seem more dreary than it might if I were caught up within society ashore. The return of the birds each evening, each spring, after every sortie out upon the water in the eternal search for

sustenance -- an awareness of these great rhythms regulating time and life beyond -- came ultimately to sustain me, connecting me almost without my knowing with sequences going back and forward and enriching, immeasurably, the random encounters. I would have with the passing birds, the seals and dolphins rearing from the surface, and - of course - with the random human visitors I would continually encounter, if only very briefly, before they would also depart, embarking for the mainland.

Anecdotes and stories of people and encounters which contributed to the narrative of the book

Some encounters on the island were very brief, but also extremely significant. A sense of common humanity was often not far away when making brief encounters, relatively superficial, with people who would be soon to go, leaving the small core of island inhabitants-- sometimes only two of us -- alone for the night once more. People would occasionally unfold tales of personal tragedy or illness to me in just a few words, over a few minutes, taken as they were out of their normal situation and exposed after a journey over the open sea in a half-decker and following a long climb up a steep stairway. Once a yacht pulled into the little island pier in the late afternoon hoping to make harbour for the evening. It can be very dangerous to do this at the exposed pier on Skellig Michael, as the sea can change very quickly, and there is no real protection from the open ocean to be had there. I wanted these people to head for shelter for the night on the mainland as I had encountered dangers from overnighters before. Eventually, it was agreed that they would eat dinner at the tiny landing, rest for a few hours, and that I would come down after midnight to see them on their way. They were heading for the continent; they would be safe upon the open sea. I lost my irritability when they invited me to sit with them for a while. Briefly, these three travellers and I shared their little cabin, exchanging stories of ourselves in spite of language difficulties. Something clicked. "You should come with us, Bob," they said. While naturally this wasn't possible, the whole brief episode illuminated other strange encounters which often occurred on the island. Hours later, after they had rested, I walked down the half mile to the pier once more. The yacht's running lights were on. We exchanged warm farewells and they departed in the darkness of an ocean that seemed incredibly wide, the three tiny disappearing lights representing my departing brief acquaintances, taking their experience of the island with them. No one else on earth knew anything of this encounter between four random humans, stretching now by bright lights upon the sea and heading into the darkness beyond.

Recommendations

I have lived on islands for long periods of my life, and they are all different, but most have distinct and unique identities. Outsiders soon may learn that it is acceptable to voice criticisms of fellow islanders if you happen to be an islander yourself. If not, beware making any comment. In a way, this is true of any close-knit society, but islanders are different. They are usually very conscious of their differences from mainland society, and this enables them to survive as a distinct unit. I lived a great portion of my youth in Bermuda, an island known as a haven for tourists and honeymooners. But old islanders there are known as "onions," while they can be the most generous of people, they are also known for keeping their opinions to themselves, for having a sharp and inscrutable sense of humour and language and

for not tolerating silly behaviour. To put this in a nutshell, islanders see people come and go, but they remain. So, it came to be for me on the Skelligs: almost unawares, I came to spend years there, and for better or worse, became part of the place during my time.

My advice to people living in similar enclaves of any description might go as follows: there are islands or unique situations even in the densest urban environments. Regardless of whether its boundaries are the sea or the sky or social ones -- if one wants to write about any island, to describe it, to advocate for it or have dialogue with any tight-knit or remote place, to perhaps eventually see it within the context of the wider world - it is essential to move slowly, abandon preconceptions and look to find and describe for one's self a sense of common humanity upon that island, but a common humanity which also exhibits a wide variety of flowers, aromas, sensibilities. The islands I have known - and perhaps I have been lucky in this regard - have ultimately required an abandonment of preconceptions, and an openness to possibilities. That has been a function of their being cut off from the rest of the world. You will not have a choice with regard to circumstance or company you might find on a small island, and so you, and your fellow islanders, will be required to make the very best from the situation where you find yourselves. Paradoxically, while such restrictions can be frustrating, they can also be, unless there is danger involved, very liberating as well.

Other Irish island life writers who were influential to me

Early Irish writings provided an important context for my writing about the Skellig's. I remember reading the "Voyage of St. Brendan" lying on my bunk in a passing storm my first summer on Skellig Michael. As I read, the plywood walls which were buckling in the howling gales outside were instantly transformed into the caulked hides of Brendan' Currachs, struggling out in the open Atlantic, searching for the "Promised Land of the Saints," beset by storms, monsters, fears of the spirit, for seven long years. For in some early Irish tales, the open sea, in particular the Atlantic, becomes a realm of both spiritual as well as physical commerce. Bede writes of monks setting sail into the "Western Seas," not steering their boats in any direction, trusting that God would find them a desert place beyond the horizons ahead. Abandonment to the sea, to the sweep of natural forces holding sway just beyond the coast, are themes which recur often in such early tales. Brendan and his men abandon themselves completely to the will of God and to the natural forces which provide His instruments, but by doing so they encounter magical wonders; on one island, where they rest, they are greeted by innumerable white birds who intone the Psalms during the monks' vigils. Walking out of my hut in the early morning to bright sunshine, a dazzling blue sea, and the passing of thousands of huge and brilliantly white North Atlantic gannets overhead, it was easy for me to imagine that I had been reading about my new island home.

How the Island environment's connections with the central themes of the book were communicated effectively to the readers

The island is stark, rugged, and self-contained. For much of my time there, and until the last few years only, communication with the outside world was tenuous, achieved only through VHF radio or by the timber boats which took 90 minutes, and sometimes much more, to make the passage to the tiny pier. And yet, at times, while

living there, an uncanny sense of close contact with distant places, people, and events - distant in time or space or both - would come over me. In the isolation, I could sometimes hear voices long forgotten. And this sense of a different kind of access and communication came to be intensified as over the years I became more familiar with the inescapable natural rhythms of the island. Puffins nested directly under my bed, below a thin floor sheeting. Through the summer I was acutely aware of the developing chicks as their voices deepened and became louder. Sometimes they wandered into my hut. Daily they progressed through the skies over the island following a complicated maze of untraceable pathways. And then, in August, suddenly they were gone, the seabirds hovering near other shores, though not touching down upon them, along all the shorelines, beyond the horizon ahead, where the whole gamut of human life and the human condition was being played out. And then, of course, in the spring, they would return, their beaks on fire, breasts aglow, bringing that message of continuity and some very tenuous but real promise of a future with them.

Advice to readers concerning researching and writing a book

There are an endless variety of books, genres, and subjects. Fiction and science would entail, in many ways, completely different writing styles and different systems of research when compared with what was necessary for me. Except, I think I might give the same advice to everyone: expect nothing and abandon preconceptions and be willing to start all over. One never knows where an idea might strike and take root. And writing, and giving an account, is often a mental process just as much as one involving pen on paper. Figure out shorthand ways to remind oneself of what has been playing out in your mind in the midst of all daily hubbub. Ideas are lost in seconds and they might not return. But most of all I would advise to abandon the arrogance of preconceptions (as if that's not recommended in all walks of life). I suppose I believed I had a relatively clear idea of my pursuit - in spite of storms and sea and rain - when I embarked to work on the island of Skellig Michael for the first time in 1987. However, it was not long before all of my sense of understanding - as well as a youthful arrogance, hopefully - became dissolved within the endlessly unfolding natural patterns and the exuberance of the displays of life on the island. Sometime into my second year, there I dawdled for hours aimlessly in the monastery upon a sunny afternoon, and after a while the awareness of identification - with the others who had bided in that lonely place as well over long intervening centuries before me - became very strong. Throughout the afternoon, shafts of light moved regularly, steadily over the platforms, along dark walls within the cells, briefly illuminating nooks and lintels otherwise hidden in the dark. Over time, I began to notice that the light followed the same patterns moving through the monastery and up within the dark walls of the cells day after day, year after year. And I saw the obvious after a while, that this organisation of light was intentional on the part of the builders of these structures so long ago. The place had been built as an engine of moving light, in a way similar to a Gothic cathedral. And consequently, I learned one more obvious thing, that there was so much more here, hidden before me, than a set of ancient lifeless constructs, built and abandoned long ago. Rather, what was there as a field of endeavour and exploration was a place made continually alive with the movements of light and wild birds.

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A Literature Review on High-functioning Autistic Employees

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Abstract

This literature review aims to contribute to the field of autism and employment. It will analyse bibliographic data on peer-reviewed research on the benefits and challenges of a neurodiverse workforce. Similarly, it will examine the experiences of high-functioning autistic people in the workplace. Despite reports in popular media on the benefits of a neurodiverse workplace, including better innovation and company performance – there is very little academic research to support these claims. Of the limited existing literature, there are very few articles in business and management journals. This review gathers empirical evidence to test such claims. The research is based on high-functioning autistic people (verbal, with average or above IQ). Autism will be referred to as Autism Spectrum Disorder (ASD) from here on, which includes Asperger syndrome under the criteria of the DSM-5.

Data from peer-reviewed research articles on high-functioning autism, employment and adults in the Social Sciences Citation Index were analysed to gauge the current trends in publication and citation. This database was chosen to limit the medical literature, which is extensive and an entirely different field. The data indicates that research on the experiences autistic employees, and their employers, up to recent years has been an understudied field. Based on the analysis used for this study, research and interest in this field began to emerge in publications in 2005. This review identified high-functioning autism as an increasingly important factor to consider in designing hiring and recruitment processes. It is also a significant consideration in conflict-resolution, communication and the training and support areas of management. Considering the steep increase in autism diagnoses over the past 30 years, coupled with the supports made available to autistic people up to third-level education; a more neurodivergent, educated talent pool is emerging which will change the way managers approach and manage diversity in the workplace.

Introduction

This review aims to contribute to the body of research on autism and employment by collecting, presenting and analysing bibliometric data on peer-reviewed journal articles in the field, identifying gaps and limitations for further study. Despite the growing media attention on the benefits of hiring autistic employees, there has been little academic research to back up these claims. The Harvard Business Review for example, featured on article on neurodiversity as a competitive advantage claiming that many people with neurological conditions such as autism (ASD), dyslexia and dyspraxia are particularly skilled in pattern recognition, mathematics and memory referring to this group as a reserve of untapped talent (Austin and Pisano, 2017).

Excerpts from blogs and Steve Silberman's book Neurotribes (2015) were referred to throughout the article. So too were steps to create a more neurodiverse workplace as set out by Specialisterne (a not-for-profit foundation that assesses, trains and manages autistic talent in software engineering). Examples of neurodiversity programmes in businesses such as HPE and SAP were also included. Yet no empirical evidence was provided to support the case that neurodiversity benefits employers. The only support leant to the argument was that "preliminary results suggest that the organisation's [HPE] neurodiverse testing teams are 30 per cent more productive than the others" (p. 99). No further data on these results was provided.

Similarly, the BBC business news website Capital, featured an article on why autistic employees are the best workers around (Alsop, 2016). In it, a director of Towers Watson said the company actively recruits autistic people because they are "loyal and diligent and are a lower turnover risk." Other benefits such as "the ability to concentrate on long, repetitive tasks, retention of large amounts of information, a knack for detecting patterns, or strong mathematics and coding skills" were also listed, with SAP's head of diversity Anka Wittenberg quoted as saying, "we find them good for software testing and quality assurance; they can concentrate a long time on a repetitive task and spot mistakes better." Although there are some studies that suggest autistic people are skilled in visual and technical tasks (Baldwin et al., 2014), there is no conclusive evidence to confirm this. Similarly, while some autistic people are described as possessing skills such "honesty, efficiency, precision, consistency, low absenteeism and a disinterest in 'office politics'," (Baldwin et al., 2014, p. 2440, Richards, 2012); this can be true of many people who are not autistic. The evidence in these reports is largely anecdotal.

What is striking about the claims that autistic people possess such talents for employment, is the research that shows they have the lowest employment rates of all disability groups (Roux et al., 2013; Shattuck et al., 2015). These findings show that young autistic adults are the most unemployed group when compared with their peers with learning disability, intellectual disability and speech/language impairment. However, it is important to note that other authors argue that people with sensory disabilities (vision/hearing) have poorer outcomes than those with other disabilities (Bainbridge and Fujimoto, 2018). Even so, if high-functioning autistic employees

have a lot to bring to any business, as suggested in the media, why are they out of work? Similarly, apart from the benefits from a societal perspective and the limited evidence that governments can save in the long-term, by offering supported employment programmes for autistic adults (Hedley et al., 2017) – what do employers gain from neurodiversity? Why bother creating neurodiversity programmes at all?

One of the few studies ever published on employers' perceptions of the costs and benefits of hiring autistic people in open employment by Scott et al. (2017) suggested that employing an autistic adult provided benefits to employers. These included the autistic employees displaying: above-standard workplace performance, increased attention to detail, quality of work and work ethic when compared to their colleagues. The study also found that while hiring an autistic employee may require some modifications in the workplace, supervision and training – there was no significant difference between autistic employees and their colleagues regarding the costs associated with weekly employment, supervision and training. Like this review, this one featured high functioning autistic people, without an intellectual disability, acknowledging that ASD is a spectrum disorder and that the research does not represent all autistic people. While the emphasis of Scott et al.'s (2017) study was on the costs and benefits of hiring an autistic person to the employer, a minority of the researchers were from a business and management discipline; it was largely from an occupational therapy/education perspective. Therefore, a somewhat crude measurement of costs was included, but details on the performance of the autistic employees or broader benefits to the company were excluded.

The aim of this study is to conduct a literature review using academic articles and books from the discipline of business. The review will identify the consequences of hiring autistic people, both positive and negative from the employer's perspective, an autistic person's perspective, via a social science, rather than medical, model. Specifically, this is from a business and management discipline.

Since 2013, Asperger syndrome is no longer a stand-alone diagnosis, but falls under the broader ASD diagnosis. As such, Richards (2012) research population would come under the high-functioning ASD population this review is focused on. However, this population excludes those with high-functioning autism who would not have been diagnosed with Asperger syndrome before 2013; both groups are covered in this review. Richards writes, "the topic of Asperger syndrome and employment has yet to permeate the academic literature on human resource management, employment relations and organisation studies" (p. 630). This review aims to add to this literature. As diagnoses of autism have significantly increased over the past 30 years, with more and more autistic people graduating from third-level education thanks to access programmes, there is a need for more research into autism and employment, to change the current trends of up to 80 per cent unemployment (Barnard et al., 2001), by examining in more detail the benefits of hiring autistic people (Hensel, 2017). Similarly, there is a gap in research where the narrative of

autistic people is used to illustrate their personal experience of employment (Morgan et al., 2014; Krieger et al., 2012), the vast majority of research is descriptive.

This review will:

1. Contextualise the review by providing a background on the current state of research in this field.
2. Provide a brief history of ASD and discuss how the understanding of the disorder has changed over the past 60 years.
3. Chronicle the rise of the neurodiversity movement
4. Discuss the current trends in autism and employment research and highlight the need for further study on supports to accommodate the growing number of autistic individuals who, with the right support, are fit for employment.
5. Identify reasonable accommodations and further explore the benefits of neurodiversity programmes to business.

Background

The Diagnostic and Statistical Manual of Mental Disorders (DSM), edited by the American Psychiatric Association, is one of the standard classification guides of mental disorders with associated criteria to facilitate diagnoses, used by mental health professionals worldwide. Other such guides include the International Classification of Diseases (ICD), and the International Classification of Functioning, Disability and Health (ICF). The DSM-5, as its name suggests, is the fifth edition of the manual. This version removed Autistic Disorder, Asperger's Disorder (AS), Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS) and Childhood Disintegration Disorder as stand-alone diagnoses and creating a new catch-all Autism Spectrum Disorder (Lai et al., 2013). The DSM-5 was published in 2013 and though there has been concern about over-diagnosis and the creation of a number of new disorders (Frances, 2010), there is evidence that the new criteria for diagnosing ASD has reduced false positives; albeit with a caution for reducing sensitivity among older children and adolescents, including those that would have been diagnosed with AS or PDD NOS using the DSM-IV (Lai et al., 2013; Maenner et al., 2014). Similarly, despite the removal of AS as an official diagnosis, the term (Asperger's or Asperger syndrome) remains commonly used, along with the terms low and high-functioning autism, to describe those functioning on the lower or higher end of the spectrum. The latter includes those with an average or above average cognitive ability; who are verbal, capable of working and living independently (Hensel, 2017).

What is Autism?

Autism is generally regarded as a neurodevelopmental disorder, the main characteristics of which involve deficits in social interaction and social communication, and repetitive, or restrictive patterns of behaviour and interests (Crespi, 2016). It was first proposed as a spectrum disorder by psychiatrist Lorna Wing some 40 years ago (1975), to illustrate the heterogeneity of the symptoms (as described above) and their effect on the life of the autistic person. No two autistic people present with identical portfolios and from outward appearances it is often impossible to tell that someone has high-functioning autism (Richards, 2012). The DSM-5 incorporates the severity of symptoms in its diagnostic guidelines to outline the necessary supports required as part of the diagnostic process, but not to diagnose someone as a high or low functioning autistic. While these terms are commonly used to describe the severity of symptoms, they are not attached to the diagnosis; ASD as a standalone condition.

ASD affects approximately 1 per cent of the population in Ireland (Boilson et al., 2016). However, this is a marked increase in the prevalence as officially reported in 1984 as 4 in 10,000 (Department of Education and Sciences, 1993). Autism diagnoses have been described as increasing at alarming rates over the past 20 years (Hensel, 2017; Boilson et al., 2016; Chen et al., 2014). Latest figures from the United States Centres for Disease Control indicate that currently one in 68 children has an autism diagnosis, with boys being four-times more likely to be autistic, or at least diagnosed as such (Christensen et al., 2016). There has been no conclusive evidence found, to indicate what has caused this supposed increase. Some argue it is not a true increase, but suggest it is related to greater awareness around the importance of early intervention and therefore, emphasised early diagnosis, using broader diagnostic tools (Johnson, 2016). Others argue that it is a disorder of high intelligence that has increased as we evolve as human beings – our brains tripling in size, creating problems such as the processing of information at too great a speed (Crespi, 2016). This claim marks a significant contrast to the long-standing but inaccurate association of autism with intellectual disability (Hill et al., 2017). Similarly, the unsupported and damaging theory of the ‘refrigerator mother’ causing autism, based on Leo Kanner’s early research has also been debunked (Chown and Hughes, 2016).

Scientific research increasingly points to genetics playing a key role in causing autism (Persico and Napolioni, 2013). Simon Baron-Cohen who is director of autism research at University of Cambridge suggests increased assortative mating (where both parents, or at least the fathers of both parents, are employed in high-systemising occupations – such as engineering) as a possible contributory factor (2006). More recent research on twins and autism, suggests that autism is predominantly caused by genetic factors (Tick et al., 2016).

Whatever the cause, there has been an increase of 78 per cent in autism diagnoses between 2007-2012 in America alone (Blumberg et al., 2007), almost matched by a 79 per cent increase in diagnoses in Australia from 2009-2014 (Australian Bureau of

Statistics). Whether this is due to the availability of more reliable diagnostic tools, remains to be seen. What is certain, is that more (diagnosed) autistic people than ever before are now entering the labour market (Hensel, 2017). This is also due to greater improvements in supports in education settings, which have seen a growing number of autistic people to enter universities, many of these colleges have access programmes (Hensel, 2017; Chen et al., 2014; Roux et al., 2013; Shattuck and Roux, 2015). The next logical step from education is entering the workplace. However, this is where the support is suddenly withdrawn and autistic people find themselves at a cliff-edge in terms of support – educated but unemployable (Hensel, 2017; Chen et al., 2014; Vogeley et al., 2013; Gal et al., 2015; Roy et al., 2015). Without continued support in employment, autistic people can regress when leaving school (Shattuck and Roux, 2015) and their quality of life can decline significantly once supports that were in place are removed (Jennes-Coussens et al., 2006). The measures taken to ensure autistic children achieve similar educational outcomes to their typically developing peers are not succeeded by an equally effective employment-related resource once they leave full-time education (Richards, 2012). Further research in this area is urgently required to help meet the needs of this growing population (Anderson et al., 2017) as employers can no longer afford to ignore it (Johnson and Joshi, 2016). The difficulties experienced by autistic employees and their employers will be discussed in more detail in the disclosure, support and difficulties section below.

Autism and Neurodiversity

Autism been studied for almost 80 years using the medical model, approached as a pathology. Due to the lack of biological markers, this model identifies disorders and deficits based on behavioural deviations from what is considered typical or average; which is problematic in that no distinction is made between conditions resulting from poor person-environment fit, and deteriorating diseases that could be fatal (Baker, 2011). During the period from the mid-1990s onwards, while more and more children were being diagnosed as autistic, a type of social/political movement was quietly gaining momentum internationally; known as the neurodiversity movement (Singer, 2016; Silberman, 2015). The message of the movement was that neurologically different people should not be seen as disabled, but rather as having a different natural variation. This movement was largely facilitated by advances in information technology, which allowed a once isolated group of people gather together and support one another, without the complications of face to face interaction or sensory challenges of physically meeting up. The term ‘neurodiversity’ was first coined by sociologist Judy Singer (1999), who published an article from her Master’s thesis that chronicled the difficulties her mother, who Singer now recognises as an undiagnosed autistic, experienced throughout her adult life. Many autistic people have discovered the neurodiversity movement online (Kapp et al., 2013). Blume, who is co-credited with coining the term in a 1998 Atlantic article (which was published before Singer’s thesis) remarks, “the impact of the internet on autistics may one day be compared in magnitude to the spread of sign language among the deaf” (cited in Silberman 2015, p. 453). Singer, who drew from the work on disability activism of Lennard J. Davis (1995), called for autism, neurodiversity and indeed all disabilities to be studied,

discussed and researched from a social model. She argued that the entire concept of disability is after all a social construct, created by a predominantly able-bodied society (Davis, 1995; Davis, 2015; Singer, 2016). As Davis writes, “the disability isn’t ‘in’ the person, so much as it is ‘in’ society” (2015, p. 229). Viewing disability from a social model, he argues, removes the drive for a cure and replaces it with accommodations and removal of barriers. Singer claimed she “wanted to do for neurologically different people what feminism and gay rights had done for their constituents” (cited in Silberman, 2015, p. 453). Thanks to the growth of the social model of disability, it is becoming increasingly clear that so many of the challenges that once defined neurodivergent people, are simply the result of coping in societies and workplaces designed exclusively for neurotypical people (CIPD, 2018). To further understand the premise of the neurodiversity movement, see a list of definitions from the past 20 years below.

Figure 1: Definitions of neurodiversity

Blume (1998)	"Neurodiversity may be every bit as crucial for the human race as biodiversity is for life in general. Who can say what form of wiring will prove best at any given moment? Cybernetics and computer culture, for example, may favour a somewhat autistic cast of mind."
Singer (1999, p. 64)	“[Neurodiversity is where:] the ‘neurologically different’ represent a new addition to the familiar political categories of class/gender/race and will augment the insights of the social model of disability”
Baker (2006, p. 15)	“Neurodiversity describes features of neurological difference associated with individual or community identity that is a more or less elective choice of those experiencing neurological difference”
Fenton and Krahn (2007, p. 1)	“The neurodiverse (…), seek (…) better social support mechanisms, greater understanding from those around them or those who treat them, and a recognition that, though they are neurologically, cognitively and behaviourally different, they do not necessarily suffer from being neurodiverse nor do they need to be cured”
Glannon (2007, p. 1916)	“neurodiversity” (…) celebrates differences in the unique cognitive and affective capacities of people who fall along different stages of the neuropsychiatric spectrum. (…) [It] forces us to ask what counts as a mental

	disorder, and whether certain mental traits that deviate from those of the general population should be characterized as differences rather than disabilities."
Robertson (2010)	"the neurodiversity perspective describes the neurology and personhood of autistic people through the lens of human diversity. This understanding of neurological-developmental disability has been influenced by societal diversity in ethnicity, religion, gender, nationality, handedness and sexual orientation."
Armstrong (2010, p. 4)	"[the definition] includes an exploration of what have thus far been considered mental disorders of neurological origin but that may instead represent alternative forms of natural human difference."
Jaarsma and Welin (2012, p. 21)	"One aspect of the neurodiversity claim is that autism (or some other neurological condition) is a natural variation among humans. Being neurodiverse or neurotypical ("normal") are just different ways of existing as humans. The second aspect of the neurodiversity claim is related to rights, non-discrimination and other more political issues."
Kapp et al. (2013, p. 59)	"The neurodiversity movement challenges the medical model's interest in causation and cure, celebrating autism as an inseparable aspect of identity"
Walker (2014)	Neurodiversity (…) [is not] a 'perspective' or 'viewpoint,' but a biological characteristic of the human species, of which autism is just one manifestation (…), the neurodiversity paradigm [is] a perspective, and the neurodiversity movement [is] a social movement that promotes the neurodiversity paradigm."
Sumner and Brown (2015, p. 77-78)	"Neurodiversity suggests that each (…) [neurologically based disability] is a natural variation in brain differences and, as such, it should not be medicalised, nor should attempts to change individuals with these variations be made. Instead, the neurodiversity movement argues that institutions within our society (e.g., schools, workplaces) should find ways to accommodate such variations."

Silberman (2015, p. 16)	"Neurodiversity [is] the notion that conditions like autism, dyslexia and attention-deficit/hyperactivity disorder (ADHD) should be regarded as naturally occurring cognitive variations with distinctive strengths that have contributed to the evolution of technology and culture rather than mere checklists for deficits and dysfunctions."
Baron-Cohen (2017, p. 746)	"The notion of neurodiversity is highly compatible with the civil rights plea for minorities to be accepted with respect and dignity, and not be pathologised."

Meanwhile as internet access became more widely available and became the communicative medium of choice for many autistic people (Benford and Standen, 2009), the first Americans with Disabilities Act (ADA) 1990 came into force. This was a somewhat flawed piece of legislation as it required individuals to prove that they had a disability that substantially limited life activity, while simultaneously proving they were functional in the workplace. Essentially this meant if you were not disabled to the extent that you could not perform activities, than you were not protected by the ADA legislation (Davis, 2015). This anomaly led to 93 per cent of all ADA plaintiffs losing their case at the summary stage (Hensel, 2017). Following the first draft of this legislation the employment rate for disabled people in the USA actually dropped (Acemoglu and Angrist, 2001). The 2008 amendment of the Act proved a far more successful piece of legislation in protecting disabled workers.

Proponents of neurodiversity campaign for support systems (for example, inclusion focused services around employment and independent living) which permit people who do not identify as neuro-typical to live the way they want to instead of being forced to conform to societal norms (Singer, 2016). The notion of norms and their enforcement on the disabled community is explored by Davis (1995), who states that as the word 'normal' only entered the English dictionary in the mid-19th Century, the closest allusion to its meaning before then was 'the ideal,' which Davis (1995) argues continues to shape what society at large, currently considers as the norm.

Singer's (2016) version of neurodiversity refers almost exclusively to high-functioning autistic people and the autism rights movement, from where the concept of neurodiversity originally grew (mostly online). More recent interpretations of neurodiversity consider it inclusive of people with other types of neurological differences such as attention deficit hyperactivity disorder, dyslexia, dyspraxia, Tourette's syndrome, developmental speech disorders, epilepsy and bipolarity (National Symposium on Neurodiversity at Syracuse University, 2011; Jaarsma et al., 2012). Essentially neurodiversity is a social and political movement that calls for the respect and recognition of neurological differences as any other kinds of human

variations (race, sexuality, gender, religion). Much of the existing research into neurodiversity places it in binary opposition to the medical model, which seeks to prevent and cure autism (Baker, 2011). Baron-Cohen (2017) writes that there is no singular way for a brain to be normal; he believes that neurodiversity as a concept is helpful in creating a more ethical approach to neurological difference, which promotes the use of non-stigmatising language about those who may or may not have disabilities

He adds that it marks a departure from a pathological framework, with disproportionate emphasis on the challenges a person has, instead of equal consideration being placed on what they can do. He concludes that recognising the importance of difference (genetic or biological) in a person's sense of identity, should be respected the same way other types of diversity are.

Criticisms of the Neurodiversity Movement

A significant part of Singer's work is the introduction of the term, but she also cautions of the tendency towards social-constructionist fundamentalism within the disability movement in general, from which lessons can be learned for the neurodiversity movement. She argues while it is reasonable to challenge the reinforcement of stereotypes in using language like a person 'suffering' from a particular disability, it is unrealistic to remove the existence of suffering altogether, a notion she felt the wider disability movement seemed to support. She contends that this restrains the paradigm from gaining momentum. Autism is diagnosed on the basis of deficits and difficulties in social skills and communication (American Psychiatric Association, 2013). High-functioning autistic people apparently recognise and acknowledge these deficits (Kapp et al., 2013) and some accept interventions and strategies to improve them. This desire to ameliorate their symptoms, challenges the social model of disability which suggests that oppression alone causes the disability (Beauchamp-Pryor, 2011). Singer is supported by Ne'eman (2010) and other neurodiversity advocates, who recognise the interrelationship between internal challenges as well as social ones (Baker, 2011; Kapp et al., 2012).

The movement is not without its critics. As mentioned, neurodiversity is often criticised for including only high-functioning autistic people, ignoring those who are on the lower-functioning end of the spectrum. Ortega (2009) cautions on the potential for identity politics to obliterate difference entirely, disqualifying the experiences of the neurotypical; he claims that while it is understandable that some groups in the neurodiversity movement are offended by the pro-cure stance of the medical and professional communities, the neurodiversity movement does not represent every autistic person – it constitutes a minority within the total spectrum. He contends that the major challenge for the movement is reconciling the desire for a new, non-pathologised type of identity and community, without the "reductionist identity politics" (2009, p. 427).

Similarly, while the movement rejects the use of the words disorder and dysfunction, there is some confusion around comorbidities, such as language disorders or epilepsy. Baron-Cohen (2017) argues that epilepsy, while commonly occurring with autism, is not autism itself, but a sign of a brain dysfunction that requires medical treatment, and therefore should be considered a disorder. He argues that the concepts of disability and neurodiversity are compatible; but disorder and neurodiversity are not. The term disorder, he writes, can be used where the person cannot function, despite different environmental conditions. Autistic people can function as well as, if not better than typically developing individuals, when in an autism friendly environment (Baron-Cohen, 2017).

This research uses Singer's interpretation of neurodiversity (2016), which is also supported by Jaarsma et al. (2012) and Hensel (2017). That is to be neurodivergent is to be autistic and "sufficiently high-functioning to be capable of holding mainstream, independent employment" (Hensel, 2017, p. 73).

Autism and Employment

Education and employment are human rights. The right to reasonable accommodation according to the Irish Human Rights Commission means; "an employer cannot decide that a person with a disability is incapable of doing a particular job without considering whether there are appropriate measures which they could take to support the person to carry out the required duties" (2018). The high rates of unemployment and underemployment of autistic people are cause for concern, particularly as more and more autistic people enter the workforce (Hensel, 2017; Roux et al., 2015; Anderson et al., 2017; Chen et al., 2014). It is estimated more than 10 per cent of the population is neurodivergent (CIPD, 2018). Current levels of employment for autistic people range between 20 and 30 per cent in the US (Wilczynski et al., 2013), with only 15 per cent employed in full-time work in the UK (Mavranezouli et al., 2014). Similarly, the majority of employment positions held by autistic people are unskilled and poorly paid (Howlin et al., 2005). These figures paint a bleak picture and challenge the claims that autistic people can excel in employment, given the correct organisational support (Howlin et al., 2005). While the long term costs are greater where an autistic person is excluded from the workplace a recent study by Mavranezouli et al. (2014) found it was more cost-effective to support employment for autistic adults when compared with standard care services (day services) for adults in the UK, and had significant positive implications on the subject's self-esteem and independent living skills. These findings are supported by Wilczynski et al. (2013), who argue that while the cost of supporting these adults is greater than supporting those with almost every other disability, the greater long-term cost is to ignore the critical employment supports that will help the growing neurodivergent population integrate into employment. Again, this is from a social responsibility perspective.

As Wehman et al.'s (2016) study included subjects across the spectrum, high level supports were required at the outset. However, others on the autism spectrum may not require such supports. There can be more discreet levels of support from the employer to the autistic employee around areas such as leadership style (Parr et al., 2013). Supported employment services can help people with developmental disabilities find employment, but the level of support can differ considerably. While supported employment services often cater for a broad range of disabilities, including support for those with intellectual disability; autistic employees could benefit more from these schemes when starting their career (Beal and Crockett, 2010). Later on in their career, autistic people could benefit from on-site support in dealing with organisational, sensory or social deficits (Rashid et al., 2017), with one study showing 66 per cent of mid-career autistic people would welcome more support for their ASD, in the workplace (Baldwin et al., 2014). Another study suggests autistic people who aware of their social difficulties may refuse a promotion that requires greater social interactions or organisational skills, such as management (Rashid et al., 2017; Westbrook et al., 2015). Howlin et al. (2005) state that there is a growing understanding of the ability of neurodivergent people to excel in the workplace, but only with the appropriate organisational support. For example, Parr et al. (2013) found that individualised consideration was beneficial for autistic employees, while idealised influence presented a challenge and increased levels of anxiety due to social communication difficulties and shared understandings or theory of mind. This demonstrates that some minor changes in communication could yield positive results for the employer and the employee. Some companies, such as Weir Minerals, Salesforce, Bankwest, Hewlett Packard, Paypal and Microsoft have committed to finding employees on the autism spectrum to increase innovation by diversity of perspectives in the creative process, yet there is little research to support these claims. One large corporation, SAP, has even committed to ensuring that people with ASD will account for 1 per cent of its global workforce by 2020 (Jones, 2016). While these measures garner media attention, the evidence upon which these claims of increased innovation are based, is not available from any literature found in this review.

Despite the underrepresentation of autistic people in the workplace there is a real desire among many autistic people to work (Baldwin, 2014). There are added benefits for the autistic person, such as improved health and the reduction of maladaptive behaviours and autism-related symptoms (Taylor et al., 2014); and also higher levels of self-esteem (Johnson and Joshi, 2016) and improved social wellbeing (Roux et al., 2013).

The current state of research and academic evidence of employment supports for autistic people, particularly around the experience of employers and autistic people, is very weak (Shattuck and Roux, 2015; Wilczynski et al., 2013; Wehman et al., 2016; Chen et al., 2014; Hensel, 2017). Hendricks (2010) refers to the dearth of research on vocational supports for autistic people. Research into attitudes and

behaviour in the employment of disabled people has been targeted mostly at advocate groups and service providers, very little at employers (Karpur et al., 2014). In their review of the OECD and US literature on disability and employment, Waterhouse et al. (2010) noted that the focus on barriers, challenges and constraints from the disabled person's perspective dominated most of the research. Santuzzi et al. (2014) note that research on disability issues in the workplace has been more prevalent in disciplines such as rehabilitation psychology. Similar to the suggestions of Colella and Bruyére (2011) and Ruggs et al. (2013), they call for organisational psychologists to work with practitioners, legal experts, disability scholars and HR professionals to collaborate on for better policy development. It is recognised in the ICF (diagnostic manual) that contextual and environmental factors have a role in the disability experience, yet there is very little research to draw from regarding employer-related factors that affect the labour market engagement of people with disabilities (Karpur et al., 2014). As per the old medical model, a lot of research exists on treatment and potential causes, but as the method section below will show, searches in social science databases focusing on autistic people in employment, do not yield many results.

Disclosure and Supports

Disclosure

There is a body of research on disclosing an autism diagnosis to an employer and the stigma that can be attached to such disclosures (Santuzzi et al., 2014; Prince, 2017; Rashid et al., 2017). In their analysis of invisible disabilities, Santuzzi et al (2014) identify two difficulties associated with disclosure. Firstly, the very nature of hidden disabilities makes them hard to identify and diagnose. Such difficulties extend to the autistic individual personally and make their own detection and acceptance of the disability an essential part of the process. Once the autistic employee is aware of their disability there is opportunity for concealment, which can have very negative effects on job performance, mental health and interaction with colleagues (Beatty and Kirby 2006). Erving Goffman (1963) defined stigma as a source of shame imposed on individuals by society, where those individuals have characteristics that are discredited. Consequently, he says, "because of the great rewards in being considered normal, almost all persons who are in a position to pass [as normal] will do so on some occasion by intent" (1963, p. 74). However, disclosure is vital for reasonable accommodations to be made, so this is an important first step in the process.

The second part of the disclosure process as proposed by Santuzzi et al. (2014) is the decision to disclose to an employer, which can present a number of challenges around stigma and acceptance. As an invisible disability, employers and colleagues might not understand a diagnosis and may judge or discriminate based on their

assumptions (Santuzzi et al., 2014; Prince, 2017). Although ASD is not officially regarded as a mental illness, there are many co-morbidities such as depression, anxiety and obsessive compulsive behaviour that are associated with it. Mental illness is regarded as one of the most highly stigmatising conditions (Dalgin and Bellini, 2008), which is a major factor in concealment. People with known disabilities may be viewed as needy, left in low-level positions or overlooked for team projects (Prince, 2017). In their qualitative analysis of 14 successfully employed autistic individuals, Hagner and Cooney (2005) do not specify if the sample is of employees with HFASD or not. Similarly, all employees are in community employment with very junior positions such as a dishwasher, cleaner, cashier and deli assistant.

Autistic employees' performance and ability to cope in the workplace can be affected by difficulties with executive function, memory and attention (Baker-Ericzén et al., 2018). These difficulties could manifest in areas like teamwork, making small-talk with colleagues and adapting to change (Richards, 2012). Other causes which interfere with performance include changes in routine, unexpected down time or unusually loud environments (Hagner and Cooney, 2005). Autistic employees are particularly vulnerable to incidents of workplace bullying and victimisation, due to difficulties reading non-verbal cues and social skills (Attwood, 2006; Higgins et al., 2008). While autistic female employees are at a far greater risk of burnout than any other employees (Baldwin and Costley, 2016). Once the employee discloses their disability, they are legally protected and reasonable accommodations must be provided. However, due to the stigma attached to disability, Prince (2017) urges caution in choosing to disclose. This approach is supported by Whetzel (2014) who advises against disclosing before the autistic employee accepts the job, which she says, shows the employee was qualified and requires evidence of why the job offer was revoked, if that were the case.

Supports

Adapting the physical environment, job adjustments and behaviour support have been identified as three main areas that autistic people and their employers require, regarding such accommodations (Scott et al., 2015). Ellestad et al. (2023) idenitfy key aspects of the interview process, for example, that cause heightened yet avoidable stress for high-functioning autistic people. They identify four key themes in the challenges neurodivergent people face regarding interview structure, perceived competency, social camouflaging and forced normality. However, Baker-Ericzén et al. (2018) found that there is a very limited understanding among managers of the types of supports autistic employees require. Such supports extend beyond any kind of checklist for all autistic employees. Hagner and Cooney (2005) advise that supervisors play a key role in the performance of autistic employees, particularly around the supervisor's will and ability to intervene in a supportive way. Some employers create accommodations by using the same resources they apply for all employees, such as company-sponsored initiatives, policy changes or employee

assistance programmes (Unger, 1999). Key supervision strategies as identified by Hagner and Cooney (2005) include:

- *Job modifications*

These include consistent schedules and the outlining of duties, reducing social demands of the job to make it more manageable and predictable. Similarly, providing organisers which help structure and keep track of work. Ensure a back-up plan with some tasks or activities to reduce unstructured time.

- *Supervision*

Give direct and concise instructions. Show the employee what to do when training. Verify that communications have been understood and assist the employee in reading non-verbal cues. Explain and help the employee cope with changes on the job.

- *Co-worker relationships*

Encourage all workers to interact with each other and assign a couple of co-workers to support the autistic employee with job-related suggestions and to look out for the employee, like a buddy-system.

- *Support services*

Reassure staff and the autistic employee and build a sense of familiarity between them, as they get to know each other. As this relationship grows, transfer the support roles to the staff. Check in regularly to avoid conflict and maintain a role to liaise with the autistic employee for non-work related difficulties that may affect the job.

Hagnar and Cooney (2005) report on the excellent performance evaluations these autistic employees received. However, Ren et al. (2008) suggest there can be a paternalistic performance review of employees with disabilities, with more generous reviews of performance. It is worth noting Hagnar and Cooney's (2005) strategies were created for employees in community employment and no information on whether the employees had HFASD or not was sought by the authors. It could be worth modifying the strategies for different types of employment depending on the needs of the autistic individual, pay attention to person-job fit. However, as some autistic people choose not to disclose their diagnosis (Prince, 2017), they can find it difficult to maintain a job as their managers and colleagues can perceive atypical behaviours or communication as deviant or disruptive (Rashid et al., 2017). Without disclosure, even if the employer suspects the employee has a disability, all behaviour must be interpreted without disability as a factor (Santuzzi et al., 2014). Scott et al. (2015) identifies a need for more effective communication between employer and employee to ensure better understandings of accommodations and job expectations to create an effective neurodiverse workforce.

Existing Reviews

During the course of this research I found six systematic reviews on various aspects of employing autistic people, outside of my own database search and analysis for this study. These articles did not meet the criteria for inclusion in the analysis section. Due to the lack of published articles in the field of autism and employment, these were deemed worthy of note to illustrate the state of existing research currently available.

Taylor et al. (2012) conducted a systematic review of vocational interventions for autistic adults, but as they excluded all studies with less than 20 participants, only five studies met their criteria; which they regarded as low-quality. They concluded that there was little evidence available for specific approaches to vocational treatments, despite some successful outcomes from supported employment interventions.

Walsh et al. (2014) reviewed 26 studies, found from the following databases: Academic Search Complete (EBSCO), ERIC, Scopus, PsycInfo and Psychology and Behavioral Science

Collection (EBSCO). They assigned each one into the following categories: predictor, impact of employment and intervention and suggested a combination of personal and external factors served as the predictors of employment in autistic individuals. Of the 26 articles, 17 were included in the intervention category and included: reinforcement-based approaches, video modelling, combined video modelling, cues and visual supports as examples of such interventions. There was no assessment of the quality of the research designs and the effects of the interventions in these studies were not quantified in this review. Anderson et al. (2017) therefore question the strength of an evidence-base for the interventions included in this study.

Jacob et al. (2015) mined eight databases for their systematic review: ProQuest, Ovid Medline, Emerald, Cochrane Library, CINAHL Plus, PsycInfo, Web of Science and Scopus. Following the inclusion criteria, their review examined 11 articles and the authors concluded the scarcity of studies available was a limitation of their analysis. One of the most noteworthy findings of this review was that autistic individuals who can avail of vocational rehabilitation services for adults with ASD, have a strong chance of becoming employed – even if autism is the most expensive disability to provide vocational services for. This cost is offset by the strong potential of autistic people, according to the articles in this review at least, to obtain and maintain employment, given the right supports.

Seaman and Canella Malone's (2016) review was based on intervention studies, including school-based interventions, pre-employment and employment retention skills. They reviewed 20 articles (which included 21 intervention studies), rating the

strength of the evidence as presented, by using visual analysis instead of quantifying the effect size. The study did not conclude that any intervention strategies were evidence-based; and the authors highlighted a number of limitations in their research review. Rigor in some articles was considered one such limitation; the consideration of generalisation and maintenance and social validity (for example, real employment) were others. Despite the lack of an evidence-base in the research, audio and video based interventions were rated highly as intervention tools in most of the studies.

Anderson et al. (2017) featured 18 articles which used a single case research design, found in the EBSCO, ERIC, Scopus, PsycInfo and Ovid Medline databases. The authors quantified intervention strategies such as self-management, behaviour training skills training and video modelling. They categorised each study according to the following: intervention classification, setting, target skill, research design, findings including generalisation and maintenance and What Works Clearinghouse (WWC) standards classifications. They state that the outcome of interventions must be lasting and create generalised change for adaptive and useful behaviours in the workplace; but comment on the underreporting of social validity (only 9 of the studies addressed this), and write where this was included, “the appropriateness of target behaviours and acceptability of the intervention procedures were rarely considered” (p. 35). They concluded that the quality and scope of the research body is clearly limited.

Hedley et al. (2017) conducted a systematic review of employment programmes and interventions targeting adults with ASD. They included 10 review and 50 empirical articles in their review and organised each one according to the following themes: “employment experiences, employment as a primary outcome, development of workplace skills, non-employment-related outcomes, assessment instruments, employer-focused and economic impact” (p. 929). The main findings were that attending employment support programmes leads to better employment outcomes (in both finding a job and receiving more hours and pay); factors such as being older, better educated and the provision of support and absence of any co-morbidities were also found to contribute to better outcomes. These findings are in line with Walsh et al.’s (2014) conclusions that personal factors are as instrumental as other intervention strategies.

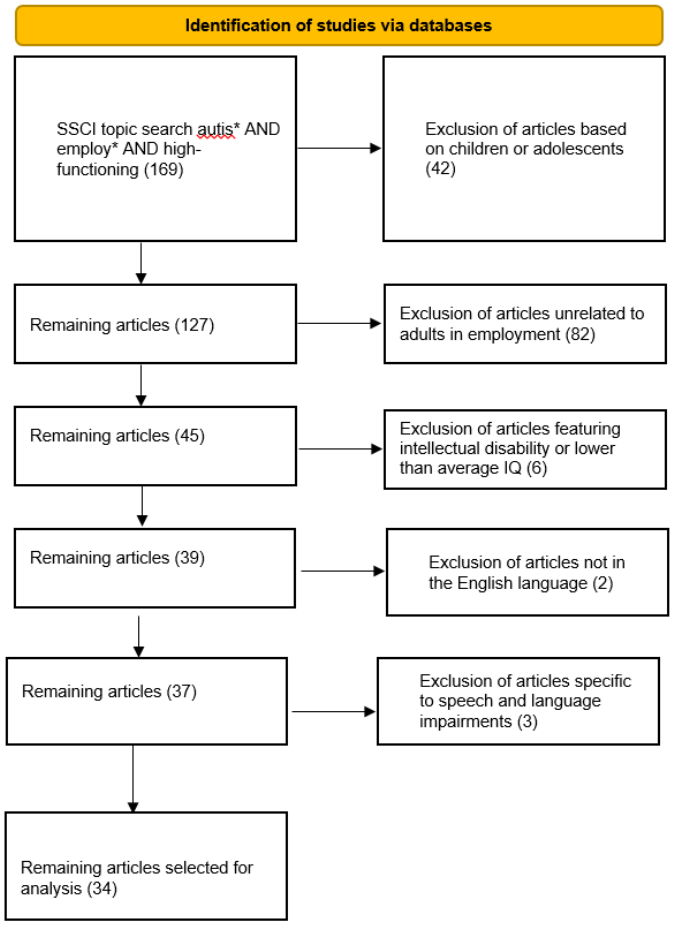
Two of the systematic reviews highlighted a gap in existing literature on neurodiversity and employment. One concluded that there are very few studies on employers and their perspectives regarding the employment of autistic people (Hedley et al., 2017); the other highlighted the need for an examination of the cost and cost-benefit ratio of employing an autistic person, from the employer’s perspective (Jacob et al., 2015). Another systematic review focused solely on the female experience of challenges in the workplace for high-functioning autistic people, but was excluded because it was limited to one group (Hayward et al., 2018).

Figure 2: Journal sources of publications on the topic of high-functioning autism, adults and employment

Journal Title	*Frequency*	*Percent*
Journal of Autism and Development Disorders	10	29.4
Research in Autism Spectrum Disorders	6	17.6
Journal of employment counseling	1	2.9
Autism	2	5.9
Autism Research	3	8.8
Disability and rehabilitation	2	5.9
Work – A Journal of Prevention Assessment and Rehabilitation	2	5.9
Psychology in the Schools	1	2.9
Psychiatria Danubina	1	2.9
BMC Psychiatry	1	2.9
Harvard Civil Rights-Civil Liberties Law Review	1	2.9
Comprehensive Psychiatry	1	2.9
Psychological Reports	1	2.9
European Archives of Psychiatry and Clinical Neuroscience	1	2.9

Research in Developmental Disabilities	1	2.9
Total	34	100.0

Figure 3: Prisma chart of literature selected for this review



Discussion

Although the data suggest that interest in autistic people in employment is growing, very few articles derive from a business management perspective. Despite the growth of the neurodiversity movement and articles in popular media, there remains a lack of research into the employment experience of autistic adults and their managers, peers, specialist or supported employment advisors, human resource managers that offers any guidance or insight into creating a positive outcome. The

medical model approach is still prevalent in much of the research, with therapeutic interventions aimed at reducing autistic symptoms being a primary focus in much of the current research. This approach is in opposition to the neurodiversity movement which embraces neurological difference and promotes acceptance. The movement is based on supporting autistic people and finding accommodations to help in areas like education and employment, instead of funding the search for a cure. A great deal of the focus in existing research is the negative prognosis for autistic adults regarding employment, independent living skills and quality of life. Even so, Dandelion programmes are popping up in many of the larger IT companies without any real evidence to support the advantages of such projects. There is a real need for academic research on best practice around creating neurodiverse hiring programmes, and retention policies, to ensure they support the employee, the manager and all parties involved in the employment experience, which would lend to a more inclusive and diverse workforce. Similarly, more rigorous studies are required to support the claims that neurodiversity programmes contribute to business performance.

Limitations

There are a number of limitations of this review; first and foremost is the exclusion of ‘Asperger’s’ or ‘Asperger syndrome’ in the topic search, which undoubtedly excluded some studies on high-functioning autistic people and employment in the SSCI search. However, this was a conscious decision as Asperger syndrome was a separate diagnosis to autism prior to the publication of the DSM-5 in an effort not to exclude those on the higher-end of the spectrum, who were not diagnosed as having Asperger syndrome. While attempting to review the research of this topic in the social sciences literature, the lack of available studies meant that the sample size for this study was small. As demonstrated in parts of the review where articles outside the search criteria were used, the SSCI does not include all business and management journals. Another limitation was the use of articles published in the English language medium. However, as Europe, the USA, Australia and Japan are featured in the research, this shows the topic is one of global interest. A systematic review including international research on high-functioning autism and employment could offer more insight into the experiences of autistic employees and neurodiversity in management practice.

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Teaching Well: Unveiling the Art of Learning-Centred Classrooms

Professor Stephen D. Brookfield, Dr Jürgen Rudolph, and Shannon Tan

(Routledge, 2023)

Review by Dr Rita Day

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In "Teaching Well: Understanding Key Dynamics of Learning-Centered Classrooms," Stephen D. Brookfield, Jürgen Rudolph, and Shannon Tan take readers on an illuminating journey through the heart of effective teaching. This insightful book, presented through a series of interviews, serves as a beacon for educators seeking to create vibrant, student-focused learning environments. It enables new and current educators to reflect on their practice.

Brookfield, a seasoned scholar, and educator, draws on his wealth of experience to distill the key dynamics that define successful learning-centred classrooms. Through engaging conversations, he shares invaluable insights, combining theory with practical wisdom gained from years in the field. The strength of this book lies not only in Brookfield's expertise but also in the ability of Rudolph and Tan in the writing within the book to convey complex ideas in an accessible and conversational manner.

The structure of the book, organised as a series of interviews and based on thirteen major questions, adds a unique dimension to the exploration of teaching dynamics. It allows readers to witness the author's thoughts unfold organically, creating a sense of dialogue that mirrors the dynamic exchanges. Each interview is a treasure trove of pedagogical wisdom, with Brookfield addressing a spectrum of topics from fostering student engagement to navigating the challenges of diverse classrooms.

One of the book's standout features is its emphasis on reflective teaching practices and how it underscores the importance of educators continuously assessing and refining their methods, creating a symbiotic relationship between teacher and learner. The book provides practical tools and strategies for cultivating a reflective mindset, encouraging educators to adapt and evolve in response to the ever-changing landscape of education. "Teaching Well" is not just a manual for

effective teaching; it's an invitation to a deeper understanding of the teaching-learning dynamic. Readers will find a passion for education permeating every page, inspiring readers to approach their role as educators with renewed enthusiasm and a commitment to student success.

In conclusion, "Teaching Well" is a masterfully crafted guide and the importance of how and well as what we teach. Whether you are embarking on your teaching or lecturing journey or seeking to refine your practice, "Teaching Well" is a beacon that lights the path toward creating transformative, learning-centred classrooms.

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The Perceptions of Open Educational Resources by Teaching Staff in Higher Education in Ireland

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Abstract

The aim of this study was to evaluate the impact of Emergency Remote Learning on the perceptions of Open Educational Resources. This was achieved by comparing the perspectives of academic teaching staff in this research with those documented in pre-COVID-19 studies. A total of 105 participants from 16 institutions in Ireland were surveyed using a combination of quantitative and qualitative questions. The findings indicate that the shift to Emergency Remote Learning has not significantly diminished the perceived barriers to Open Educational Resources. Instead, it has brought forward fresh concerns about the implications of Open Education on conventional teaching methods. Although a national policy would grant individual institutions the autonomy to devise courses in line with their mission and strategy, the outcomes of this study highlight the need for practical assistance, training, and guidance at an institutional level.

Keywords: Open Educational Resources, Open Access, Teaching and Learning, Open Pedagogy.

Introduction

> *"Open Educational Resources (OER) are teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open licence that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions*" (UNESCO, 2019).

This study aimed to evaluate the influence of COVID-19 and the transition to Emergency Remote Learning (ERL) on the perceptions of Open Educational Resources

(OER) among teaching staff across various disciplines and levels in Irish Higher Education Institutions (HEIs). In addition, this research attempted to gauge staff awareness of the copyright status of materials produced by staff, and whether their institutions promote the creation and dissemination of OER through training or policy development. Relatively few studies are emerging on the effects ERL has had on OER-enabled pedagogical approaches – especially in Ireland. The global pandemic provided a unique opportunity for its potential uptake. It is possible that strategies to raise awareness, along with the establishment of OER repositories and databases like OER4COVID, may have struck a chord with educators compelled to adopt novel online teaching practices during the lockdown period. In fact, a lecturer at Manchester University, who both creates and utilises OER, regarded the transition to ERL as an experimental platform for exploring and promoting OER (Rimmer, 2020). The effects of this are yet to be determined, or at least widely published.

While there is an international call for OER policy, as seen in the *Recommendation on OER* set forth at the UNESCO Conference of 2019, Irish HEIs lack a comprehensive national-level OER policy and cohesive strategy. In the absence of explicit directives or guidelines in this area, the inclination to embrace an OER-focused pedagogy is likely to remain an individual choice.

Since the 1960s, open education initiatives have emerged, aiming to emancipate education from various forms of oppression, emphasising universal educational access, and empowering learners (Lane, 2009; Cronin, 2019). The "concept, philosophy, and practice of open education is built on a long history of social, political and education movements seeking to widen access to education and reduce inequality" (Cronin, 2019). Due to its association with social activism, political movements, and the advancement of technologies, the interpretation of open education has evolved over time (Stracke et al., 2019), leading to some ambiguity in defining this movement (Cronin, 2017). In the 20th Century, with the rise of open universities, the movement was associated with open admissions and distance learning (Lane, 2009; Stracke et al., 2019). However, evolving alongside developments in digital, mobile, and social technologies (Cronin, 2019), the movement has become characterised by open content, open educational resources, and MOOCs (Stracke et al., 2019; Wiley and Gurrell, 2009).

Irrespective of the various interpretations of the movement, it remains embedded in the belief that barriers to education should be moveable and learners should be empowered by making available the resources necessary for them to take control of their educational journey. Moves towards this ideal are often met with resistance or suspicion, due to a lack of understanding (Cronin, 2019) or the outdated perception that higher education is reserved for the elite (Biswas-Diener and Jhangiani, 2017).

OER are guided by the idea that high-quality educational materials should be available to everyone. They are openly licensed, the benefit of which allows users – not necessarily the creator – to personalise materials and infuse them with up-to-date content (OER Commons, 2022). The licence provides users with free and perpetual permission to engage in the 5R activities: Retain; Reuse; Revise; Remix: and

Redistribute (Wiley, n.d.). Common examples of OER in higher education include Massive Online Open Courseware (MOOCs), Open Textbooks, streaming videos, Open Access Journals, slideshows, and lecture notes, with the field continuously evolving alongside technological advancements, Open Access policies, and social media platforms. Coyne and Fitzpatrick (2021, p. 4) underline that “OER present a unique opportunity as an emerging and equitable way to transfer knowledge and have yet to be rigidly defined as one thing or another,” highlighting their versatility and adaptability to various academic modules and pedagogies.

The National Digital Learning Resources (NDLR) in Ireland, initiated in 2004 as a pilot project by the Irish Higher Education Authority, facilitated educators in publicly funded higher education institutions to create, share, and distribute digital teaching resources openly (Risquez et al., 2020, p. 101). It also served as a repository platform for storing and retrieving shared resources, alongside a Community Portal fostering communication and collaboration across different subjects and institutions. Although the NDLR aimed to promote and support collaboration, development, and resource sharing among Higher Education sector staff (McAvinia and Maguire, 2011), it was discontinued in 2012 due to financial constraints amid the global economic downturn.

Since then, the National Forum’s eye has seemingly turned to individual institutions’ repositories to support OER sharing and sustainability in Ireland – a devolved method of OER management that has yet to be proven effective. But if the Open Movement grows in tandem with technological advances, and is also somewhat shaped by the society in which it is growing, then the effects of the global pandemic arguably have the power to influence the trajectory of the future of Open Educational Resources.

Literature Review

The three themes that emerged from this review are: Barriers to Implementation; COVID-19 and Emergency Remote Learning; and Policy Development and Implementation Considerations in Ireland.

Barriers to Implementation

Of the studies published that have attempted to gauge staff awareness of OER, it is common to report low levels of cognizance of the term itself (Allen and Seaman, 2014; Appiah et al., 2020; Rolfe, 2012; and Reed, 2012). It is therefore unsurprising that the studies that report low levels of awareness also report low levels of OER-related engagement. Alternatively, some studies emphasise this correlation further by reporting a high level of OER-awareness alongside a high level of OER usage (Nwesri, 2019; Ogunbodede et al., 2021).

Limited research of this kind has been conducted within an Irish context. The 2015 project by the National Forum for the Enhancement of Teaching and Learning highlighted that 47% of the 192 respondents acknowledged their familiarity with OER. However, it was cautioned that this figure "represents less than half of those who, it could be argued, were most interested in OER and/or most motivated to respond, given the self-selected nature of the survey," suggesting that the actual awareness levels

within HEIs may be considerably lower (NFETL, 2015, p. 74). A focus group consisting of OER specialists identified the vagueness surrounding the term OER as a significant hurdle to advocating for and enhancing awareness of OER within institutions (Risquez et al., 2020). Similarly, Cronin's doctoral research in 2018 captured a non-existent awareness level within her sample university. The investigation on openness and praxis revealed that while academic staff used various freely available digital resources in their teaching, there was no recognition of the term OER and no apparent differentiation between 'free' and 'openly licensed' resources, prompting the question of whether the deficiency in awareness pertains more to the terminology of OER rather than the practice itself. It is plausible that some members of the academic community integrate OER into their modules without encountering the term specifically.

Additionally, there exists a misconception regarding the advantages and opportunities of OER. A common scepticism cited is resources available for free must inherently lack quality (Wals, 2015). Risquez and McAvina found in their Irish study of VLE versus OER that “staff interpreted sharing in a narrow sense, and one not consistent with the open education movement” (2018, p. 92). Misconceptions of quality, coupled with a lack of understanding of collaborative opportunities, represent mindsets that demand additional time, comprehensive training, and a deeper understanding to be overcome. Theoretically, awareness is a relatively simple barrier to eradicate. Indeed, the literature suggests that it is not a critical barrier at all, but moving beyond the basic understanding of the term to the advanced stages of implementation serves as a greater obstacle.

In their global systematic literature review of OER, Luo et al. (2020) highlighted discoverability as the primary obstacle, as faculty members expressed frustration over the considerable time required to locate suitable and high-quality materials. Moreover, insufficient or incompatible metadata standards and practices resulted in many OER searches being unproductive (Luo et al., 2020). Similarly, the extensive study conducted by Allen and Seaman in the United States identified discoverability as the chief hurdle to OER adoption, with more than half of the participants (57.5%) identifying the “lack of a comprehensive catalog” as the major challenge. The study also emphasised that “all three of the most mentioned barriers are related to the ease of finding appropriate material” (2014).

The National Forum came across similar perceptions during their national study of OER use and perceptions in Ireland: “Respondents reported that the most important deterrents to the use of OER in their courses were quality (20% of responses), time (17% of responses) and the lack of relevant materials (also 17%)” (NFETL, 2015, p. 75). These issues were previously addressed with the ill-fated NDLR project that was discontinued in 2012. The centralised ecosystem “provided a platform for creating OER… while harvesting and disseminating OER from other national repositories” (Risquez et al., 2020, p. 102). Following the national study in 2015, the National Forum proposed a “system-led action around a devolved approach to OER management that relied on hosting teaching and learning OER in existing research institutional repositories” (Risquez et al., 2020, p. 102). However, in the follow-up analysis, it was revealed that almost 60% of survey respondents did not have/did not know if they had an institutional repository or were unsure of what a repository was. Of those who

declared having an institutional repository, 49% viewed it as inappropriate for sharing OER (Risquez et al., 2020).

What is not explicitly stated but alluded to in a lot of the literature is the workload entailed in maintaining an OER-enabled pedagogy. In the absence of support from higher authorities, this workload is likely to be disregarded in favour of other required and incentivised duties. To see a broader uptake of OER, it must be given the same level of importance at an institutional level as commercial tasks. The sustainability of an OER-enabled pedagogy needs a suitable and reliable platform for sharing and sustaining OER as well as recognition and reward equal to the time invested in OER creation and adaptation.

The final recurring challenge that emerged from the literature is legal uncertainties (Otto, 2019; Luo et al., 2020; Ramsingh, 2021). Conventional copyright laws, designed to safeguard creators of intellectual content from unauthorised use or unlawful reproduction, also extend to OER. However, the framework of copyright is replaced by Open Licensing, such as Creative Commons, albeit with certain restrictions (Patel, Prakash, and Parekh, 2021). The implementation of a Creative Commons License enables the utilisation of OER materials by others, based on the conditions specified by the creator, thereby eliminating the need to reach out to the creator for explicit permissions or ascertain the copyright status of the work (Seibert, Miles, and Geuther, 2019). This is a complex matter and, without an understanding, has the potential to deter many willing participants from OER adoption and use. It elicits a specific question of how copyright complexities could affect OER use in certain fields, for example, educators in the arts, specifically where copyright laws would hinder the distribution of creative works beyond fair use in the classroom.

Risquez and McAvina conclude their discussion with an unanswered question as to whether copyright confusion causes a lack of engagement with OER use in Ireland (2018). Nevertheless, Cronin's interviews and surveys of Irish academics present a more definitive narrative. Merely 38% of the participants acknowledged an understanding of Creative Commons licensing, while the qualitative analysis unveiled that “the tendency was to rely on the ‘educational use’ or ‘fair dealing’ provisions of Irish copyright law or simply to use materials regardless of copyright status” (2018). Beyond the realm of Creative Commons and OER utilisation, it is imperative for academics to be cognisant of the copyright status of their created materials within their workplace, in order to safeguard their work. Consequently, an understanding of such policies could potentially expand their awareness of alternative licensing and agreements.

COVID-19 and Emergency Remote Learning (ERL)

The disruption COVID-19 caused to academia forced faculty and teaching staff to make major changes to their operations in an extremely restricted timeline, resulting in “overwhelming expectations to transform themselves immediately into digital pedagogues” (Havemann and Roberts, 2021, p. 5). ERL highlighted various fundamental societal and institutional challenges: limited accessibility to devices, connectivity, and electricity; inadequately prepared staff for the transition to ERL; differing degrees of institutional support; and the necessity for adaptability from both students and faculty. (Rimmer, 2020; Kanwar, 2021; and Bacon and Peacock, 2021).

Numerous adjustments essential for facilitating the transition to ERL saw the need for educational institutions to lean on private enterprises for the efficient and seamless operation of fully online education. Notably, certain publishers reacted to the pandemic by relaxing license constraints or temporarily providing access to research collections (Carbery et al., 2020). However, this access began to be withdrawn from academic libraries as early as June 2020.

In their report, Williamson and Hogan address the financial strain of educational and digital resources this intersection of private and public sectors has caused: “It exemplifies how ‘disaster techno-capitalism’ has sought to exploit the pandemic for private sector and commercial advantage” (2021, p. 2). This is evident in the eBook crisis rippling through higher education on a global scale. Current eBook licensing practices and fees are eradicating the central mission of libraries, with negative consequences for equity and access to information for curriculums and research alike: “hundreds of textbook titles listed are as much as 4000% more expensive to purchase than their equivalent in hard copy format, and the complexity of their licensing terms is fiendish” (Anderson and McAuley, 2022, p. 2).

While advances are being made in the open movement, the pandemic has shone a light on the grip private companies and big publishers have on academia. Understandably, a recurring theme in the case studies within the literature reveals that educators who had previously engaged with an OER-enabled teaching approach before the pandemic were more receptive to its advantages compared to those who were unfamiliar and had to start from scratch within a brief and stressful timeframe. The literature is predominantly influenced by those more committed to OER, creating a significant gap regarding the experimentation or integration of OER during Emergency Remote Learning (ERL). It remains unclear whether this gap is due to insufficient research or documented instances, or a general lack of adoption among faculty in higher education. Echoing Rimmer's previous observations about the pandemic as a trial ground for OER experimentation, the UNESCO OER Dynamic Coalition has asserted that the pandemic has “triggered a consensus at governmental and institutional levels on a strong need to develop OER” (2021). This could potentially serve as a catalyst for reshaping policy implementation and design in the future.

Policy Implementation and Consideration in Ireland

The Recommendation on OER promotes and endorses the integration of OER policies into national policy frameworks and strategies, ensuring their alignment with existing open policies (UNESCO, 2019). Although Ireland has established national policies for Open Access and Open Data, there is presently no national policy concerning OER, perhaps contributing to a widespread absence of OER policy within higher education institutions (Coyne and Alfis, 2021). To support Member States implementation of the 2019 Recommendation on OER, UNESCO established the OER Dynamic Coalition, which “aims to support networking and sharing of information to create synergies around the five areas of action of the recommendation”:

- building capacity of stakeholders to create, access, re-use, adapt and redistribute OER;
- developing supportive policy;
- encouraging inclusive and equitable quality OER;

- nurturing the creation of sustainability models for OER;
- facilitating international cooperation (2022).

Given the previously discussed barriers to OER, the establishment of a well-defined and succinct policy concerning OER, whether at the national or institutional level, could effectively alleviate the concerns pertaining to legal uncertainties, institutional support, and sustainability. Consistently, the literature advocates for institutional policies and frameworks to facilitate the adoption, remixing, and sharing of high-quality OER. As Cronin notes, individual teachers and learners adopt OER all the time, but institutions "should create clear open education policies and practices" to allow them to adopt more flexible, strategic, and critical approaches (2019). Like any policy change or implementation, organisational and cultural change is required. When it comes to recommendations, much of the literature proposes incentivising OER within the institution to promote the sharing of individual work among the faculty and the broader community. (Wals, 2015; Risquez et al., 2020; Orzech, 2021; Ramsingh, 2021; and Havemann and Roberts, 2021).

Literature Review Conclusion

There are very few resources on the experiences of teaching staff with OER use during ERL – what is written is commonly from the point of view of librarians, advocates or representatives of teaching and learning forums. While some of the literature alludes to the division of educators who will go forth and embrace teaching methods adopted during ERL in a post-pandemic world and those who will revert to the "old normal", there is not a substantial body of work to draw conclusions on the potential change of perceptions of OER or OER-enabled pedagogy by teaching staff due to the pandemic.

What is evident is the necessity for significant policy and organisational changes in this domain. The initiatives taken in Ireland and globally so far have largely been experimental. Various examples and case studies, primarily from an institutional perspective rather than a national initiative, shed light on the efforts required to establish such an environment. Notably, the Delft University of Technology in the Netherlands, in October 2021, formalised the engagement of all on-campus stakeholders through the signing of the Open Educational Resources Policy (de Jong and Will, 2022). The theory versus reality of OER implementation highlights the hurdles and issues faced by those further along the journey (Cronin, 2019). Pressing concerns such as legal issues, insufficient digital literacy, and copyright challenges persist (UNESCO, 2019). To address these challenges, TU Delft initiated the OE Project, a series of programs aimed at easing faculty into OER practice. This project tackled issues such as the high cost of educational materials, recognition of teachers' efforts, and the encouragement of a more participatory learning approach for students. Consequently, TU Delft has identified several key successes of this policy, including recognising students as partners, supporting open textbook authorship, and positioning the library as a driving force. The recognition of the importance of faculty collaboration and the provision of adequate and continuous funding are explicitly acknowledged as imperative to the project's success (de Jong and Will, 2022).

In the realm of open education policy and mandates, Ireland is still in the experimental phase. The discontinued NDLR project was followed by a seemingly unsuccessful attempt over the last ten years to encourage individual institutions to make

their repositories OER-friendly. Ireland has the advantage of looking outwards at success stories from across the globe. Right now, there appears to be no central roadmap for what to do next, in what order, and with what policy, for HEIs.

Methodology

This research aimed to answer the question: to what extent, if any, has COVID-19 altered the perceptions of Open Educational Resources (OER) by teaching staff in higher education in Ireland?

Data collection took place for this study via a mixed-methods online survey. The survey took approximately 5-8 minutes to complete and consisted of 18 questions focused on determining the study's variables (institution of work, school of discipline and length of time in the role), OER use during COVID-19, perceptions of OER, and, finally, institutional support surrounding open access and OER.

The research aimed to provide an overview of the perceptions of OER by academic staff, regardless of their previous experience with the resources, and review possible reasons a lecturer may choose to adopt or forgo such materials. For this reason, the survey allowed for both positive and negative responses. One of the limitations to this study is the ambiguous nature of OER and a broad lack of awareness or understanding of the term. As such, it was understood early on that the self-selective nature of the survey could result in a low participation rate with most respondents being aware or active users of OER. It was shared on social media platforms, such as Twitter and LinkedIn, as well as distributed by email. In total 1,968 surveys were sent to teaching staff in 17 institutions across the country. Special care was taken to ensure surveys were sent to various disciplines via staff directories. Feedback was received from a vast array of teaching staff from different disciplines and institutions and the data may contribute to the mapping of patterns pertaining to certain subjects, organisations, or regional areas.

Findings

OER Use

105 participants from 16 HEIs across Ireland responded to this study's survey. 64% of those participants claimed to use OER during the pandemic while 29% definitively stated that they did not. A small 7% claimed to be unsure. The breakdown of OER use by institution is as follows:

Table 1: OER Use by HEI

During ERL, did you utilise any OER already in existence in your course?	
Atlantic TU	3
No	1
Yes	2

DBS	7
Unsure	1
Yes	6
Dublin City University	15
No	10
Unsure	1
Yes	4
Dundalk institute of technology	5
Yes	5
Griffith College	3
No	1
Yes	2
IADT	4
No	2
Yes	2
Maynooth University	4
No	1
Yes	3
National College of Ireland	5
No	1
Yes	4
National University of Ireland Galway	1
No	1
SETU	3
No	2
Yes	1
Technological University Dublin	11
No	2
Yes	9
Trinity College Dublin	6
No	1
Unsure	2
Yes	3
TUS	7
No	2

Yes	5
University College Cork	4
No	1
Yes	3
University College Dublin	21
No	4
Unsure	2
Yes	15
University of Limerick	5
No	2
Unsure	1
Yes	2
Unknown	1
Yes	1
Grand Total	**105**

The department or field that the participants belong to is also a considerable variable in OER use. For this analysis, fields which received 3 or more responses were considered.

Table 2: OER Use by Field/Department

During ERL, did you utilise any OER already in existence in your course?	
Arts and Humanities	17
Yes	13
No	3
Unsure	1
Business	36
Yes	17
No	15
Unsure	4
Education	3
Yes	2
No	1
Engineering and Architecture	5
Yes	3
No	2

Health and Agricultural Sciences	4
Yes	3
No	1
Science	12
Yes	7
No	3
Unsure	2
Social Sciences and Law	20
Yes	15
No	5

Of the 67 participants who reported using OER during ERL, 56 (83.6%) claimed to have 'used OER prior to ERL and continued to do so'. This would suggest that 11 of the 105 participants of this survey (10.5%) became first-time users of OER during the pandemic. Of these 11 participants, the following statements were checked:

- 'I used OER as a replacement for certain F2F techniques that could not be done in lockdown, i.e. experiments/field trips' (81.8%);
- 'OER were shared with by colleagues' (27%); and
- 'I will continue to use these OER in a post-pandemic environment' (64%).

Of the 31 participants who answered 'No' to using OER during ERL, 13 (42%) chose the statement 'I was not aware of OER during ERL'. This would suggest that 14% of all 105 respondents to this study's survey had no awareness of OER during the shift to ERL. The 14 remaining participants of this question checked the following statements:

- 'I was aware of OER during ERL, but did not know how to access /find them' (14%);
- 'I was aware of OER during ERL, but did not want to use them' (50%);
- 'I was aware of OER during ERL, but I could not find relevant or high standard OER for my course' (71%); and
- 'I was aware of OER during ERL, but I had difficulty understanding the copyright complexities of open licensing' (21%).

These findings suggest that those new to OER during ERL came to the resource to replace face-to-face techniques that were difficult to replicate or conduct online, while finding relevant OER was possibly the biggest barrier to OER adoption during this time.

Perceptions of OER

Two open-ended questions were asked to ascertain the perceived concerns/barriers of teaching staff adopting OER in higher education in Ireland, as well as the perceived benefits/opportunities. The structure of these questions allowed for multiple answers per response.

Perceived Barriers/Concerns to OER Adoption:

- Change Culture (52 responses)
    - Time-Cost
    - Training
    - Copyright Complexities
    - Disruption to F2F Learning/Student Engagement
    - Negative Connotation
- Discoverability (30 responses)
    - Finding OER
    - Lack of Relevant OER
    - Accessing OER
- Quality (30 responses)
- Awareness (17 responses)

Participants who belong to the Arts and Humanities field, which has the highest rate of OER usage in this study, cited quality and copyright complexities as their top concerns or barriers to OER adoption. Participants who belong to the Business field, which has the lowest rate of OER usage in this study, cited relevance, quality and awareness as their top concerns or barriers to OER adoption.

Perceived Benefits/Opportunities of OER Adoption:

- Enhanced Teaching/Learning Experience (100 responses)
    - Support
    - Engagement
    - Flexibility
    - Diversity of Materials/Ideas
    - Time-Saving
    - Potential for Quality Resources
- Accessibility (42 responses)
    - Ease of Access
    - Cost-Savings
- Sharing/Collaboration Opportunities (16 responses)

Participants who belong to the Arts and Humanities field, which has the highest rate of OER usage in this study, cited timesaving and flexibility as their top benefits or opportunities for OER adoption. Participants who belong to the Business field, which had the lowest rate of OER usage in this study, cited support as additional material and opportunities to widen perspectives as their top benefits of OER adoption.

Awareness of Institutional Policy

It emerged from this study that there is a vast misunderstanding or lack of awareness surrounding institutional support or policy regarding Open Access, copyright, training, and OER.

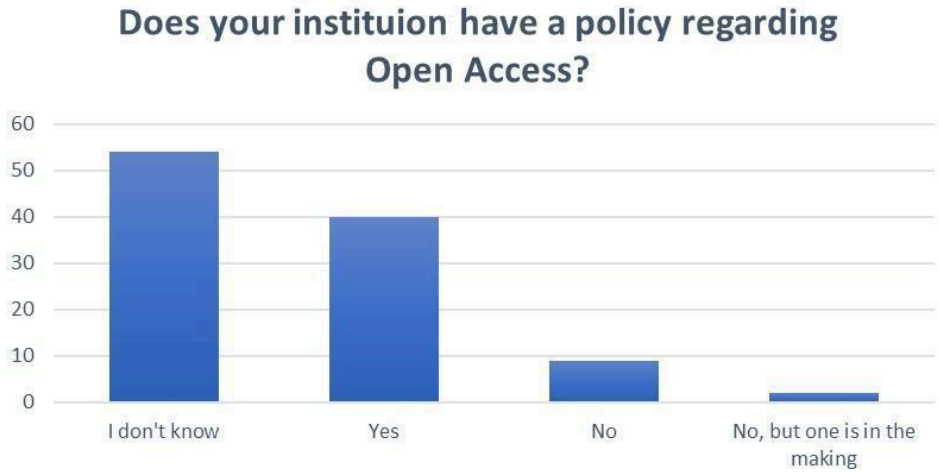

Figure 1: Open Access Policy Awareness

Of the 67 'Yes' responses to using OER during ERL, 31 (46%) are unaware of whether their institution has an Open Access policy. This could be interpreted as almost half of the OER users in this study acting without the influence of an open policy to indulge in open education methods. The data from this question is contradicting, with responses from the same institution showing conflicting information.

When asked if their institution has a policy regarding OER specifically, awareness levels drop further, as shown in the bar chart below.

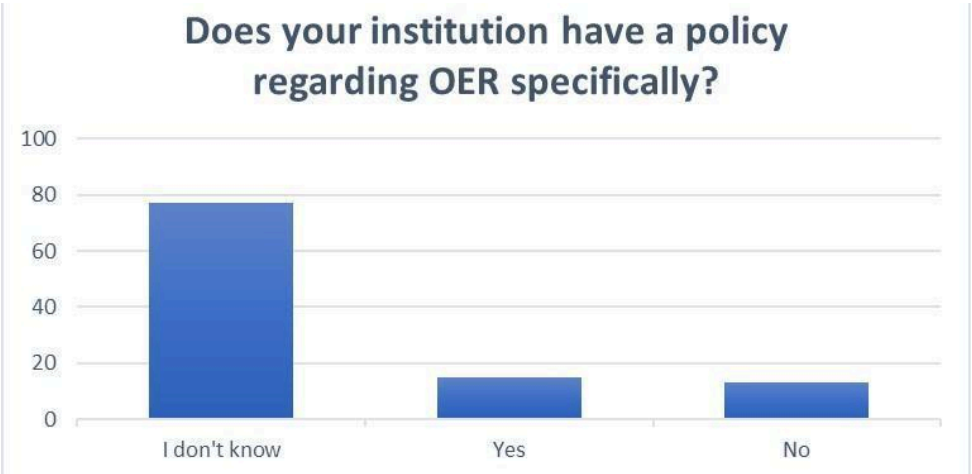

Figure 2: OER Policy Awareness

73% of all survey respondents do not know if their institution references OER specifically in a policy. Of the 67 respondents who reported using OER during ERL, 44 (66%) are unaware if their institution has a specific OER-related policy. This further

suggests that a significant percentage of OER users in this study are uninfluenced by policy in their adoption of OER-use. The contradictions presented in these questions further suggest that awareness levels are lower than those which are captured in the above chart.

Similar patterns are shown when participants were asked about the copyright status of materials produced by staff in their institution. 54% are unclear or unaware of their institution's policy, while the remaining responses contradict others from the same institution. Of the 67 respondents who reported using OER during ERL, 33 (49%) reported that the copyright status of materials produced by staff is unknown or unclear to them.

Awareness of Institutional Support

45% of respondents are unsure of the suitability of their institutional repository for sharing OER, while 35% claim it is suitable. Of the 22 participants who previously selected the statement 'I shared OER with others in my related field', 10 (45%) reported being unsure if their institutional repositories were suitable for sharing OER, while 9 (41%), claimed it is suitable. It was not asked, nor do the statements specify, how the OER was shared and therefore it cannot be assumed that it was or was not via the institution's repository.

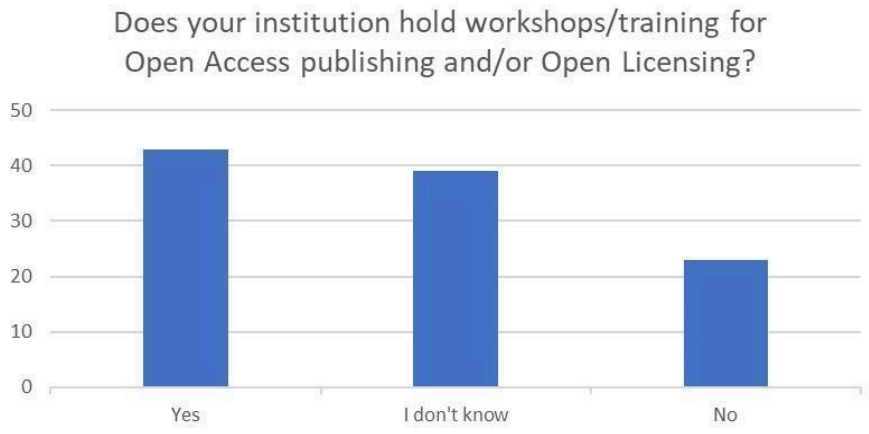

Figure 3: Workshops/Training for OA Publishing and Licensing

43 (41%) stated their institution does hold workshops and/or training in OA publishing and/or licensing. 39 (37%) are unsure, while 23 (22%) stated it does not. However, the contradictions in this question which derive from comparing responses from the same institutions suggest awareness levels are much lower than they appear.

As shown in the figure below, awareness levels drop significantly when asked about OER training specifically. Of the 43 participants who stated their institution provides training in OA publishing and/or licensing, 18 (42%) claim to not know if their institution does the same for OER. 22 (51%) stated their institution does, while 3 (7%) stated it does not.

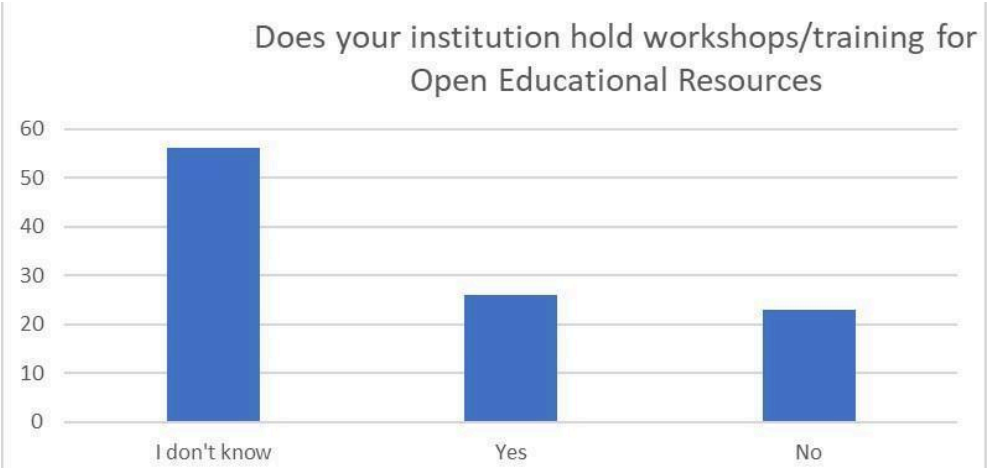

Figure 4: Workshops/Training for OER

Ultimately, awareness levels of institutional policy and support pertaining to the creation and use of OER is very low across the variables. Although 66% claim their institution encourages the consideration of open licensing and releasing work as OER, it is not clear from the answers given in this study how that is. The data strongly suggests that awareness levels of such policy and training are lower than the answers given, as contradictions present themselves in every question from this section.

Discussion

Awareness

The survey's self-selecting nature was expected to attract respondents already acquainted with OER terminology if not actively engaged with the educational resource. This is a probable reason for the relatively low response rate. Therefore, the study did not aim to specifically measure awareness of the term and concept.

However, when the National Forum's findings are broken down, 15% of 192 respondents stated they were not aware of OER, while 38% were aware of the term but either did not know much about the resource or did not know how to utilise it (NFETL, 2015). Similar statistics were found in this study in that 14% of the 105 participants specifically stated that they were not aware of OER during ERL, with awareness, or lack thereof, placing second in the top perceived barriers to OER adoption. Additionally, 1 participant added in the final comments: "Many faculty members (and students) consider all resources available on the internet to be available for use in their classes. e.g. Scribd, Chegg, etc. There is little or no distinction made between OER and these resources". This is a similar finding to Cronin's doctorate, where she noted there was little distinction between 'free' resources and 'openly licensed' resources (2018).

Given the expectation that the majority of respondents would possess at least some familiarity with the term OER, this study aimed to assess the differences in pre- and post-pandemic perceptions of the resource. However, certain comments within the responses have suggested that this survey indirectly raised awareness of OER, open policies, and institutional support: "Thanks for the invitation. This study encourages me

to find out more about my institution's overall approach to Open Access - I am not entirely clear as to its policy"; "Never heard of OER but I should know about it."; "Am new in post and so am unsure as yet"; and "This has opened my eyes as someone who should know more about this, it's clearly an area which requires further consideration in my institution". This positively indicates that ongoing advocacy in this area by individuals in the field can effectively increase awareness of OER.

Perceptions of OER

When asked 'Do you believe there is value to Open Educational Resources for teaching staff in higher education?' in this study, 104 (99%) of participants answered 'Yes'. Indeed, the responses primarily highlighted perceived benefits relating to an enriched teaching and learning experience. Many participants appreciated the support that OER can provide, along with the diverse range of materials, expert opinions, and case studies it offers.

Based on the qualitative feedback in this survey, a number of participants provided passionate opinions about the accessibility of resources in higher education. In relation to Open Access (OA) in particular, several comments implied that prioritising the publication of OA papers (or in OA journals) and eliminating paywalls is currently more crucial than integrating OER into their pedagogy. OER and OA publishing of academic journals and eBooks are intrinsically linked. John McMurry, author of the bestselling 'Organic Chemistry' academic textbook, published the 10th edition of his textbook as an OER textbook with OpenStax (Knox, 2022) which is arguably a huge endorsement of the credibility of OER, as well as highlights potential avenues of solutions for the current eBook crisis in higher education. Indeed, TU Delft has been fostering a culture of open textbook authorship since the launch of their OER project which, deliberately or not, tackles the eBook crisis in their university (de Jong and Will, 2022). The open movement, though vast and ever-growing, does not explicitly foster segregated avenues. Progress in OA publishing can aid in eliminating obstacles to OER development, and conversely, advancements in OER creation have the potential to facilitate the growth of OA publishing.

Alternatively, a wide range of issues were presented in this study regarding barriers and concerns to OER use and adoption. To summarise the findings, the greatest concerns were the perceived lack of quality OER available and the inability to locate or access relevant OER to their modules or courses. This is much the same in the 2015 Irish study: "the most mentioned challenge related to the discoverability problem and the time it takes to find relevant material" (NFETL, 2015, p. 82). Moreover, this observation resonates with the global studies discussed previously in the literature review. Consequently, it appears that despite the introduction of initiatives such as OER4COVID, the pandemic has had minimal to no impact on the discoverability issues perceived by Irish faculty in higher education.

At the core of most cited concerns, the larger issue of change culture became evident. There was a stigma expressed by some responses that using OER can be seen as lax teaching, or that academic staff are quite conservative by nature and would be reluctant to share their work. However, the predominant sentiment was the expressed requirement for more structured support from institutions through training, acknowledgement, and sustainability initiatives. Staff recognise the necessity of

institutional backing and guidance in this realm to effectively integrate OER into their modules in a pedagogically sound manner. There is a call for training in areas such as copyright and open licensing, and most notably, for time.

While most perceived barriers and concerns echo what has been previously discussed in the literature, some comments presented new concerns. Specifically, 6 participants commented that OER could indirectly lead to lower face-to-face student engagement in their modules. This concern is not captured in the 2015 Irish study and, additionally, has not been seen in the literature reviewed for this research that predates the pandemic. A separate study would need to occur to discern to what extent OER contributes to falling in-person attendance rates in higher education. Whether proven or not, this concern is important to address when breaking down barriers to OER implementation.

The pandemic has had little effect on eradicating existing barriers to OER adoption by teaching staff in Ireland, rather it appears to have elicited new concerns steeped in challenges brought on by ERL. The unpredictability surrounding the trajectory of teaching and learning in higher education, driven by the heightened demand from students for greater flexibility and accessibility, has left some faculty members apprehensive about the expectations for their teaching methods in the future. Just as with the recommendations for the current obstacles to OER adoption, guidance in this realm through institutional support and policies is crucial in the context of post-pandemic education. This new perceived concern speaks more to the pedagogical expectation of teaching staff going forward than it does of OER use and is one of the many new challenges brought on by the pandemic that higher education is facing.

Institutional Policy and Support

Both the literature and the findings of this study indicate a notably low level of awareness or comprehension of OA and copyright policies at an institutional level. This issue is not only a concern for the open education movement but also for the safeguarding of the works produced by the participating academics in this survey. The Recommendation of OER by UNESCO was declared in 2019, and Coyne and Alfis published a paper lobbying for OER policy and infrastructure in higher education in Ireland in 2021, so proof of the existence of an OER-specific policy in institutions was not expected to emerge from this study. Nevertheless, the disparity in responses regarding OA and copyright policies, which do exist at national and institutional levels in Ireland, implies the need for greater guidance and support in this domain to ensure clarity among faculty and facilitate their involvement in open education.

In the concluding remarks section, a participant took the opportunity to delve into the intricacies of the copyright status of materials produced by faculty members in their institution: “The copyright situation is rather complex and though dependent on one’s role the norm is materials pertaining to a 'named' programme are the IP of the institution, however, the materials used in teaching may be considered the IP of the individual. Except if those materials are hosted on the VLE, then that is considered an institutional publication and the IP of same! This would obviously influence how individuals may create and share materials...”

Given the general absence of policies specifically addressing OER, it falls to individual academics to interpret the existing Intellectual Property (IP) policies to ensure the appropriate use and/or ownership of resources. Although not explicitly stated in this study, concerns regarding infringement or misunderstanding of complex IP policies have been documented in the 2015 Irish study, as well as in Cronin's doctoral work from 2018. Participants in this study frequently highlighted time constraints as a significant obstacle to integrating OER, including the time required to interpret, comprehend, and adhere to ambiguous or unclear IP policies. Revising such policies to offer clearer guidance on teaching materials would help alleviate the apprehension of infringement or potentially encourage the sharing of such materials. Furthermore, only one participant in this study referenced Creative Commons licensing in the open-ended questions, specifically in the context of identifying areas where institutions need to provide training.

The findings of this study, in alignment with the existing literature, indicate that OER in Ireland are still being explored, adopted, and implemented primarily through a bottom-up approach. Over half of the participants utilised OER in some capacity during the pandemic, yet there remains a notable lack of awareness regarding policies or support for such resources. Policymaking, though imperative, does not equate to automatic change in the open movement. Indeed, policy is not necessary for most academics who undertake an OER-enabled pedagogy. Rather, it is a meaningful acknowledgement by the institution that this area of open is recognised or considered worthy of policy, and as such lays the foundation for proper strategy and change culture to take place.

Many of the concerns articulated by the participants in this study are echoed globally, where institutions have made strides to eliminate such obstacles. These global case studies can serve as a source of inspiration for Irish institutions to investigate the most suitable model or framework that aligns with their mission and values. The National Forum proposes that institutions consider the University of Edinburgh, which has an Open Educational Resources Policy, as a beacon of innovation (2021). Individual academics can only achieve so much independently or in small cohorts to maintain a comprehensive OER-enabled teaching approach if they wish to do so. In an Irish context, it has been noted that “there is a strong rationale for a more in-depth understanding of issues that includes policy makers involved in implementing institutional OER strategy, academics who use OER, academics who have not yet used OER, and students” (Risquez et al, 2020, p. 110).

Mandates that facilitate accredited continuous professional development in copyright and FAIR data management, along with training in Altmetrics and Open Access Monitoring to comprehend the usage, metrics, and data citations associated with OER, are crucial aspects for improvement that could significantly bolster the adoption of OER in higher education. These recommendations are reflected in the National Framework on the Transition to an Open Research Environment document (2019), which has been formulated as the initial stride in establishing a National Action Plan for the shift to an open research environment in Ireland.

Conclusion

Ireland is in a pivotal position coming out of the pandemic, where pedagogical expectations in the post-pandemic teaching world have potentially not been

consolidated or communicated from students and institutions to teaching staff. Perceptions of OER still impede its widespread adoption, with genuine concerns regarding its reliability, relevance, and sustainability. Furthermore, the findings of this study have underscored the need for substantial support from teaching staff in this domain to cultivate or sustain an OER-enabled teaching approach. While a national policy would permit individual institutions the autonomy to devise a curriculum best aligned with their mission and strategy, the outcomes of this study imply a demand for hands-on and practical support, training, and guidance.

Students' perspectives on this matter would add tremendous value to the conversation. One participant stated, "the BEST OERs are the ones you get your students to make!". Indeed, another participant addressed the possibility of using students to create OER in areas where relevant OERs are difficult to find or non-existent. Perhaps this is an area that needs to be developed to foster change culture in open education at the student level. Salt Lake Community College employed student interns as OER advocates with the duty of creating an OER training guide (Scott and Hughes, 2022). Similarly, Connecticut College hired a student assistant to participate in communicating with stakeholders about the benefits of OER to the college community (McCaffrey, 2022). Additionally, the City University of New York created an Open Pedagogy Fellowship for graduate students who were teaching as adjuncts in undergraduate classes and challenged them to implement OER into their field and syllabi (Smith-Cruz and Bakaitis, 2022). Perhaps collaboration between library faculty and students could be the first step in embracing a systemic change for OER culture within an institution. Further research into OER and these particular stakeholders may lead to positive and realistic initiatives to drive from the ground.

This research sought to answer the question: to what extent, if any, has COVID-19 altered the perceptions of Open Educational Resources (OER) by teaching staff in higher education in Ireland? The results of this research have found that the shift to Emergency Remote Learning has done little to eradicate the perceived barriers to OER, rather it has elicited new concerns about the effects of Open Education on traditional teaching methods.

In exploring the barriers and benefits of OER by teaching staff, it was determined that the resource is perceived as a welcome addition of supportive material by academics and that most of the benefits discussed relate to the accessibility and cost-effective avenues to learning materials that they offer students. Most of the concerns pertaining to the barriers of implementation relate to change culture, such as the imbalanced work/reward structure that is currently in place, or the need for academics to embrace participation in communities of practice. Predominantly, there was recognition by participants of this survey that support for OER needed to come from the top to enable an OER culture in their institution.

This research has also confirmed that awareness levels of Open Access policies, OER policies, the copyright status of published work, and the suitability of institutional repositories for sharing OER are generally very low. Additionally, the level of support an individual has in their institution to sustain OER in their pedagogy is perceived to be quite low.

What this research has done is identified the pain points of adopting OER by teaching staff in HEIs, which is ultimately the first step in implementing a strategic plan

to facilitate an OER culture within an institution. Each institution is unique in the challenges it faces and varies with the experiences of teaching staff with OER already. However, common practical problems include overworked teaching staff whose priority is teaching, not creating, and misconceptions of the positive implications of open education. As previously stated, teaching staff are not the only stakeholders or contributors to promoting an OER culture within an institution. As such, collaboration across faculty, with library and student involvement, has the potential to foster an ecosystem for creating and sharing such resources.

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"My Books *are* My Relation to Society": Transition and Transformation for the Arts and Humanities in an Open Access Future

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Abstract

This article contextualises the transition to an open access publishing future and sets it against the background of the current state of decline in arts and humanities research funding in the US and UK. It outlines the problems which have stymied and slowed the move towards open research and it highlights those issues which particularly pertain to the field of arts and humanities. It considers the demands of research assesement and to quantify value and the opportunities that open access publishing might afford to those who research in the arts and humanities.

What are the humanities anyway?

When Catriona Crowe, formerly of the National Archives in Ireland, was asked by the Irish Humanities Alliance to contribute to their regular feature *The Humanities and Me*, she said that the humanities allow us to answer the question: "How do we know what we know?" (Crowe, 2023). A recent article in *Inside Higher Ed* described the humanities as the study of things humans make, "helping us understand who we are, what we do, how we do it, why and with what consequences" (Wilson, 2023).

The definition of what constitutes the humanities and what the study of arts and humanities means for both the individual and society at large has become an increasingly pertinent subject in recent years – in particular, in higher education environments in Anglophone countries. 2023 has seen this conversation move into a more mainstream sphere: an impassioned article in the *Los Angeles Review of Books* in July decried "the real-time dismantling and destruction of the infrastructure that afforded scholars […] a top-notch humanities education and secure

employment," while *The Guardian* newspaper in the UK regularly featured Irish and Irish-based writers such as Kit de Waal and Thomas Morris explaining how the appreciation and popular support for the arts and humanities is still (for the moment) thriving in Ireland, in contrast to the situation in Britain (Sánchez Prado, 2023; Murray, 2023; Cummins, 2023).

An existential crisis: communicating value

Support, in this case, is, in essence, a question of funding. Across the US and the UK we have seen multiple high profile cuts in arts and humanities faculties in 2023. However, it is not merely a crisis of funding, but also one of perception and communication. It is lamentable that a discipline so closely associated with language and the expression of innermost thought should have such a problem articulating its own value and importance. Sánchez Prado implores humanities scholars to "take ownership of the public conversation regarding the humanities." Few who *are* having those conversations, he says, both within and outside educational institutions, "can accurately describe the everyday work of teaching and research that we do. Only we can change this" (Sánchez Prado, 2023). This is, as the president of the MLA has identified, a result of a "nearly nonexistent humanities research infrastructure." The absence of the material conditions in which "to conduct and circulate research results at the scale established by the most prominent academic disciplines, nearly all of them in STEM" allows the humanities to fade into the background, becoming a nice-to-have but not a necessity (Newfield, 2022). In other words, an inability on the part of the arts and humanities in academia to communicate their value to society is a flaw of the research infrastructure that underpins higher level education across the globe.

Scholarly societies and associations have responded to the decline in funding and estimation for the arts and humanities with panicked anxiety. Multiple documents such as statements, public responses, policies, strategies, guidelines and papers have been published in recent years. The Royal Historical Society put out a statement in June 2023 lamenting the "state of unprecedented turbulence and uncertainty" that history departments in UK institutions were experiencing; and the following month, the Arts and Humanities Alliance responded to the UK Government's proposals to clamp down on so-called "low value" degree programmes in English universities, with a statement claiming that such a policy would be socially regressive and would ultimately have an "impoverishing" effect on society (RHS, 2023; AHA, 2023).

Many of the responses attempt to put an economic or career value on the arts and humanities, such as the British Academy's *Qualified for the Future. Quantifying demand for arts, humanities and social science skills* (2020) or Oxford University's *The Value of the Humanities: Understanding the Career Destinations of Oxford Humanities Graduates* (Robson et al., 2023). Other responses, such as the Modern Language Association's *Guidelines for Evaluating Publicly Engaged Humanities Scholarship in Language and Literature Programs*" (2022) attempt to engage with the communication element of the crisis: to paraphrase Catriona Crowe (2023): "how do we know what we know", and how do we convey the importance of knowing it?

In order to communicate the value of research to those who fund it, the research must be assessed and quantified. Wilson (2023) advocates expanding the definition of the humanities to include law, economics and government, as a quick fix to increase the possibilities for funding by including subjects with more easily quantifiable research outputs. In Europe, CHANSE (Collaboration of Humanities and Social Sciences in Europe) and HERA (Humanities in the European Research Area) announced a call for more research into "the perceived crisis in the humanities" with a focus on diversity in research (HERA, n.d.). This echoes the May 2023 response by the Royal Irish Academy to the Irish government's proposed *Research and Innovation Bill*. There had been nervous chatter on social media about the absence of mention of "arts" and "humanities" in the published documents and the RIA document suggested that side-by-side ambitions of "building national research capacity across the arts, humanities, and social sciences (AHSS) and science, technology, engineering and mathematics (STEM) continuum" and "building a diverse and inclusive research system" be considered in the bill (RIA, 2023). Similarly, the Irish Humanities Alliance response paper suggested that explicit agreement "between the government and the academic community that the Bill [...] serve the interests of sciences and humanities, and promote research in all its forms and disciplines, and in every sector of knowledge" be included, as well as the phrase "to promote parity of esteem" (2023).

Commodification and quantification

Achieving parity of esteem for the arts and humanities is a matter of assessment, measurement and communication of research value. In the present situation, this often requires engaging in systems which are opposed to, and which often actively contradict, the nature of research in this area. An article in *Harvard Magazine* (Engell, 2023) condemns the treatment of students in higher education institutions as both consumers and product and the commodification of all education, most especially in the humanities. There are numerous examples in the literature of the growing interest in looking at arts and humanities research "from an evaluation and indicators perspective" (Donovan and Gulbrandsen, 2018, p. 285). In an appraisal of the REF (the Research Excellence Framework: the UK's system for assessing the quality of research in UK higher education institutions), Knöchelmann (2023) writes that "the structural incentive to publish inherent to research assessment in the UK shapes a research culture focused on output and monologue at the expense of an engaged public dialogue." The publish-or-perish model, when applied to arts and humanities research, falls short of accurately assessing their value and even contributes to the suppression of important discourse. At its heart, the REF is dependent on an effective "marketing strategy," as Knöchelmann puts it, on the part of the humanities researcher and that "against their nature, they have to perform for profit." The framing of research in terms of economic profit and of humanities graduates as "national assets" (Bulaitis, 2020, p. 215) has a pressurising effect on researchers and ensures the advancement of privatisation and commodification in higher level education. The consequence of a failure to engage, however, is that universities will continue to undervalue humanities researchers "because of their inability to bring in external funding" (Siddique, 2023).

The Hidden REF's *5% Manifesto* encourages higher education institutions in the UK which are subject to the REF to ensure that at least 5% of their submission is comprised of non-traditional research outputs – in other words, research that consists of outputs other than journal articles, books or book chapters for which an impact factor can be measured. At just 5%, however, this target is unambitiously low. Combine this with recent research which shows that altmetrics (alternative calculations of impact which include social media reception and impact) replicate imbalances in research assessment along gender lines – and the limitations of social media engagement in a post-Musk landscape – and the current model looks set to stay with us for the foreseeable future (Meibauer et al., 2023).

If we accept that this model is unlikely to substantially change in the short term and taking into account all the other benefits that go along with making research openly available to find, access and reuse, then open access research and publishing is crucial to future arts and humanities research funding. Open access publishing can go some way towards aiding visibility and quantification but there are, however, some perceived incompatibilities between the ways in which arts and humanities research is conducted and disseminated, and the principles that open access publishing espouses. Martin Paul Eve observed in back 2014, that the humanities "still trail behind the sciences in open publishing" and this situation persists in 2023.

The transition to open access publishing is now widely accepted as being essential to a research assessment future that is diverse, collaborative and sustainable. However, the transition to open, as mentioned above, has been slower than many would wish, stymied as it is by reliance on traditional publishing models, legacy publishers, and a system which rewards quantity and frequency of publication. Indeed, open access publishing "may be evolving more slowly than crises in academia are emerging" (Mackinlay, 2023). The vision of an open access future for academia as a whole is also vulnerable to lip service by actors with an incentive to preserve the status quo. Most large publishers now offer, and even publicise, open access options to authors but administer hefty APCs (article processing charges) and BPCs (book processing charges) to facilitate this. This is known as the Gold open access model and its persistence allows a facade of open access to smother efforts to move towards Green (self-archiving) or Diamond (no cost to author or reader) models.

Diversity and disadvantage: whose research is published?

In general, the virtues of open access publishing lie in its "democratizing [sic] possibilities" and in its fulfilment of the principle of public service that citizens legitimately believe lies behind research funding (Tenopir et al., 2017, p. 825). However, the promise of diversity and a plurality of voices must be considered against the potentially "homogenizing" effects of open access publishing (Gilby et al, 2022). Despite being open access, a large proportion of journals from the Global South are not indexed on traditional bibliometric databases such as Web of Science and Scopus (Khanna et al, 2022). Similar findings from Ma et al. (2023) showed that the gold open access model disadvantages researchers in lower-income countries, those outside prestigious institutions and others in vulnerable or precarious positions

and that the persistence of high APCs and BPCs "perpetuates the monoculture of knowledge production." High APCs in the transition to open access publishing also "hinder research equity and careers" (Williams et al., 2023). Citations are seen as "currency" in the academic environment, attracting funding and resources to individuals and institutions (Oransky et al., 2023). A model which relies on current bibliometric systems to translate or transform research outputs into palatable and useable numbers is neither sustainable nor equitable; it simply tweaks the system, rather than overhauls it.

The conversation about the death of the humanities intersects with this aspect of an open access publishing future at the point where privilege is considered: those who lament the loudest the demise of humanities research are often, themselves, insulated from faculty cuts and department closures by tenure, race, a prestigious institution, or merely location in the Global North (Herlihy-Mera, 2023). Those who will suffer most from a utilitarian approach to higher education funding are those students and scholars who come from "non-traditional backgrounds" (AHA, 2023). The crises in both research publishing and the humanities boil down to "questions of memory: What do we remember, and what do we forget? Whose stories can endure, and what experiences disappear? Which voices matter?" (Herlihy-Mera, 2023). Voices are important: what is being said is only part of the story; who is speaking and how they are expressing it are equally important elements in a diverse research landscape.

Entrenchment and prestige

There are, also, some problems with open access publishing which are unique to the arts and humanities. First among these is an entrenched adherence to the current scholarly research model for reasons which are ossified into career paths. The attachment to legacy publishers and traditional models of disseminating research is borne of genuine concern, given that it has real effects on tenure and promotion (Scott and Shelley, 2022; Coonin and Younce, 2009). "Ingrained habits and institutional culture" are understood to form the basis of this attachment, with little motivation to change the system (Rodriguez, 2014). While publish-or-perish is the dominant research assessment across all academic disciplines, in the arts and humanities in particular, *where* you publish is as relevant as *what*. This then manifests itself as a reluctance to engage with open access publishing options and in fact, Eve goes further and claims the existence of an "extremely vocal opposition to implementations of open access" in the arts and humanities (2014).

Arts and humanities researchers also have different and often more positive relationships with traditional publishers, many of whom tend to be scholarly societies (Gilby et al., 2022). The reputation of the individuals who make up the editorial board of a particular journal can be more important to the arts and humanities researcher than any other considerations (Rowley et al., 2017). The American Council of Learned Societies published a statement in relation to open access publishing in 2023, acknowledging that a move to an open access future is inevitable but that the transitionary period, "this crucial moment of change", will necessitate disruption in every area, including "perceptions of prestige" (ACLS, 2023). Similarly, the Irish

Humanities Alliance in 2021 confirmed the centrality of scholarly societies and associations "within the humanities research ecosystem" and accepted that the move to open access publishing "may undermine the existence of these associations" (IHA, 2021).

Cultural opposition

Inherent in any resistance or opposition to open access publishing is an acceptance that there is a strict binary in academic research: STEM and not STEM. Many arts and humanities departments have also begun to use the terms Open Research or Open Access in preference to Open Science, indicating that the latter is exclusionary and even, perhaps, confusing. The arts and humanities have, in the past, defined themselves in opposition to STEM and an open access movement that continues to utilise the term Open Science to encompass all there is about facilitating access to knowledge reaffirms that an exclusion exists. An insistence on terminology that alienates and does not encompass diverse research behaviour is likely to lead "to the design of solutions that do not meet the needs of qualitative research" (Tumelty, 2023).

Moves have been made recently to package the arts and humanities in ways that are more palatable, more marketable, and better able to compete for funding. The proliferation of the term SHAPE (Social Sciences, Humanities, and the Arts for People and the Economy) is becoming increasingly common. The British Academy's Connected Knowledge Project states that "STEM and SHAPE are two sides of the same coin" (n.d.) and Oxford University Press groups journals under the category SHAPE (OUP, 2023). Trinity College Dublin has also adopted the term, using it in its SHAPE-ID project which attempts to improve "inter- and transdisciplinary cooperation between the arts and humanities and STEM" (SHAPE-ID, n.d.). Efforts such as these, however, still seek to define the arts and humanities in terms which are better applied to STEM and with value that is quantifiable. As Sánchez Prado (2023) points out: "The humanities do not claim scientific accuracy as a specific outcome, so arguing for a scientific method, as the structuralists of yore sought to do, is folly."

The fixed views that some aspects of open access publishing are designed for the sciences and just do not work for the arts and humanities are explained by Eve (2014) as, "after all, the humanities often operate on an entirely different basis to their scientific counterparts, exemplified in the fact that most work is unfunded and rests upon institutional support." Donovan and Gulbrandsen (2018) put it that the humanities "have run ahead of whatever contemporary approaches to measuring research quality might be and so elude meaningful measurement." This is dangerously close to saying that quantification is a method of research assessment that is not as relevant to the arts and humanities as it is to STEM; such a view fails to acknowledge that funding is dependent on proving the value of the research being funded, as well as basic funding for teaching functions. One cannot exclude the possibility that STEM and the arts and humanities are pitted against one another to distract from the broken third-level funding model in most EU countries. Nonetheless, there are, admittedly, basic differences between how STEM and arts and humanities research is funded. To begin with, much arts and humanities research is simply not

funded or meagrely-funded. It very often is born of the researcher with an idea, rather than a funded project seeking a researcher. An Irish Humanities alliance position paper on open access publishing in the arts and humanities explained that "many researchers in the humanities develop work on an individual basis, rather than working as members of funded research teams" (IHA, 2021). One obvious way in which this might affect the use of open access publishing routes for arts and humanities researchers is in the administration of APCs – article processing charges, or a fee paid, generally by the researcher themselves, in order to facilitate the immediate open access availability of a journal article. As Gross and Ryan (2015) pointed out, there is simply more capacity to pay an APC in STEM than in arts and humanities research.

There is often, too, a concurrent lack of knowledge of what open access publishing is and how it may benefit the arts and humanities scholar. The 2022 report of the University of Cambridge's Working Group on Open Research in the Humanities advised that "in the immediate and short term, [arts and humanities] colleagues require institutional support to understand and get to grips with the current routes to open access within academic publishing" (Gilby et al., 2022). And as Tenopir et al. (2017) point out, even where there is awareness of open access publishing routes, this "does not always equate to understanding or acceptance." This lack of knowledge is slowly but surely being addressed in individual institutions however, and a tacit acknowledgment that researchers in arts and humanities departments will not be able to avoid engaging with open access publishing in the future is not evident in, for example, University College Dublin's webpage specifically tailoring open access information for those researching in this area (UCD Library, 2023). In the UK, new public funding guidelines will require all researchers in receipt of public funds to produce open access publications of their research within twelve months of the end of their project from January 2024, a policy which is explicitly inclusive of monographs, book chapters and edited collections (UKRI, 2023).

Open books and monographs

The form that published research takes in the arts and humanities emphasises longevity over urgency: even critical research takes a long time to produce, and the impact is often longer lasting. What the arts and humanities researcher produces for publication traditionally tends to be longer texts: books (monographs, edited collections) are expected on a regular basis (Dalton et al., 2020). These projects have a longer "shelf life" (Scott and Shelley, 2022, p. 150) compared to the urgency and frequency of journal article publication in the sciences.

Some of the logic of the open access publishing model applies better to articles than to longform texts, and therefore is better suited to meeting the needs of researchers in STEM than in the arts and humanities: "researchers need to know quickly what is happening in their microspecialization, partly to build on it in their own work and partly to avoid being scooped" (Suber, 2017). A 2020 study claimed that less than 25 percent of papers published in the humanities are open access (Olejniczac et al., 2020). The origin of this reticence is, again, an unwillingness or an inability to separate from the traditional publishing model. The 2022 Ithaka S+R report on the profitability of open access monographs identified "pockets of cultural resistance

among humanists" (Brown et al, p. 2) to open access publishing due to worries that not having a print monograph would be viewed unfavourably in the tenure process (Brown et al., 2023). A related worry about the quality of open access books was identified by Brundy et al. (2023). And critically, still, citation-based metrics "do not work as well for books as they do for journal articles" (Snijder, 2023).

The Ithaka S+R report also identifies that "open access book publishing remains on the fringe of most university press book programs [sic]" (Brown et al, p. 2). However, transformation is on the way. As mentioned previously, from 2024, the open access monograph will become one of the conditions for public funding of research projects in the arts and humanities in the UK (UKRI, 2023). And in Europe, the two-year PALOMERA project (n.d.) attempts to ask why so few open access funder policies include books. The position paper on open access publishing by the Irish Humanities Alliance urged funders to recognise that the monograph remains "the main currency for career development within most fields in the humanities" and to also acknowledge that this text form "requires a significant editorial and publishing infrastructure [and] poses unique challenges in relation to open access" (IHA, 2021).

The writing *is* the data

One further factor in this reluctance to either give up the monograph or to move to an open access version of it is that for many in the field of arts and humanities, the writing is not merely *how* data are conveyed to the public: the writing is part of the research process, it *is* the data. In 1949, the Irish novelist, essayist, and academic Elizabeth Bowen attempted to articulate how she connected with the world; how her thoughts and feelings were transmitted through the printed word. She described her books as a "substitute" for "a so-called normal relation to society" (Bowen et al., 1948, p. 23). In expressing the personal, Bowen also captured the universal experience of the literary writer and of the academic. The lines between researcher and writer are often blurred, as they are between what constitutes primary and secondary material in a field where academics and critics themselves become the subject of research.

Many in the arts and humanities may feel as though they are caught in this tension between being a writer and being an academic or a researcher. How data are expressed in words is itself a research output. Add to this the reliance on correct pagination and verbatim quotations that is a feature of writing and research in the arts and humanities, and control of the final version of a paper is imperative. The Cambridge Working Group articulated this as an anxiety about the existence of multiple versions (submitted, accepted, published) of the same piece of research circulating, citing it as a reason for reluctance to use institutional repositories. This multiplicity might affect the integrity of the work, and compromise the process of editing, it is claimed. Differing publisher rules about embargoes, which version of a paper may be circulated open access, and even the perceived necessity to negotiate complicated publisher agreements so as to locate this information, means that the entire process is anxiety-inducing. Many researchers are uncomfortable with the suggested solution of Green open access publishing (self-archiving on personal websites or institutional repositories) due to the possibility of multiple versions of the paper being available. In fact, the figure for humanities papers being made available in this way is less than 10 percent (Olejniczak et al., 2020).

Copyright, too, is seen as a problem for open access publishing in the arts and humanities. The Cambridge Working Group use the acronym CORE to describe the nature of data in this area: Collected, Organised, Recontextualised, Explained. They use this as a replacement for FAIR data principles (Findable, Accessible, Interoperable, Reusable). CORE data is understood as "information used for reference and analysis" (Gilby et al., 2022) and does not usually belong to the researcher, consisting, as it may, of texts, music, images, fabrics, objects, installations, performances, etc. The financial or legal burden involved in gaining copyright and secondary publishing permissions for publishing research data of this type may be prohibitive to the researcher (Cantrell and Swanson, 2020). Suber in 2017 claimed that it is for this reason that art history will continue to lag behind all other subjects in the transition to open access publication, anticipating continuing hefty fees for reproduction rights.

So, where to from here?

There are both positives and negatives on the horizon for the arts and humanities in an open access future. The transition to open access, it is now acknowledged, will require more consideration of individual subject nuances than a blanket approach, that there is "no single solution" to achieving the democratic possibility that open access publishing seems to promise (Schwamm, 2023).

It is also clear that there needs to be a shift in many of what are considered baseline fundamentals of research assessment, as tied to career progression and academic success. This shift is frustratingly slow and the movement progressing an open access future is fragmented: libraries which advocate and advise on open access scholarly publishing are themselves competing for funding within the institution as a whole and may be invested in working within the current bibliometrics landscape; individual researchers may find that they are virtually alone in sticking their heads above the parapet if they work in areas within the arts and humanities; and together – libraries, researchers and institutions – are trapped in a cycle of paying for access to the catalogues of large academic publishing companies, with little left over to fund open access initiatives. Within institutions (libraries in particular), those who seek to progress open access publishing progammes are usually unpaid.

It is also becoming clear that (for better or worse) the relevance of the print monograph is in decline, due to low usage or competing financial pressures on libraries to purchase expensive access to scientific journals (Crossick, 2016). The Ithaka S+R 2021 faculty survey found that even among those in the arts and humanities, an increasing proportion indicated that electronic monographs, as opposed to print copies, were of importance to their teaching and research (Blankstein, 2022). A push to research and support the ecosystem around open access monographs and longform texts is also increasing with groups and resources such as the OAPEN Foundation, Open Book Collective, Open Access Book Network, as well as SPARC Europe's recent commitment to Diamond open access. Similarly, the Ithaka S+R report suggests that open access and print versions of monographs can coexist and have a reciprocal effect on each other's revenue (Brown et al, 2023). Crossick highlights the potential inherent in online open

access publication for monographs to become “a more living intellectual document” that promotes community engagement. UCD Library’s guide to open access in the humanities points out that open access publishing can render discoverable that most invisible of publications, the book chapter, and the new open access fund announced by Edinburgh University Press shows what can be achieved when action is aligned to overall institutional strategy and commitment to open research (Anderson, 2023).

There is disagreement, however, over who needs to compromise most in this transition: researchers, institutions, funders, or publishers. Nick Lindsay, Director of Journals and Open Access at the MIT Press, identifies academics as the crux for change, arguing that funding for publishing follows researchers, rather than the other way around. He suggests that the momentum of “unsustainable level of profit-taking by commercial publishers” may accelerate the move by individuals towards an open access future, where they “[choose] to give their time (as editors, authors, and reviewers) to well-governed non-profit publishing venues” (Mackinlay, 2023). If we accept that the onus is on the author-researcher alone, then the arts and humanities scholar may have to balance short-term career progression against future-proofing and may therefore not be as motivated to agitate for an open access model. We need the cooperation of arts and humanities scholars to choose to pursue publication in fully open access journals, with publishers who do not exact an APC, and to change the structures and systems of career progression which rely on traditional scholarship routes.

There are likely to be increased expectations of transition and momentum as funding bodies create the conditions to make research available on an open access basis. However, assuming that this momentum can be maintained without broad support from all stakeholders is naive and relies on publishers who are currently reaping huge profits (recent research indicates more than $1 billion was paid over four years to the five largest academic publishers for open access alone) to benevolently go against their own interests (Ansede, 2023). Momentum must be seized and harnessed, rather than merely observed. The assumption of a continuing momentum towards an inevitable open access future is paralleled in the thread of exceptionalism running though some of the discourse around the arts and humanities; an assumption that their value to wider society is known and accepted and respected.

Conclusions

Solutions on the detail-level are proposed to almost every obstacle that occurs in relation to open access publishing in the arts and humanities. Libraries and research departments have created guides and toolkits to lead researchers through the murky waters of acronyms and legal responsibilities. Solutions, ideas, and support – as well as bravery – at the institutional and funding level are what will tip the balance towards an open access future (Sanderson, 2023; Tumelty, 2023). In the humanities, transition will require a translation of value and an ability to communicate the data without transmuting the data itself.

In Ireland, there is a growing feeling of awareness of the precarity of arts and humanities funding and of the necessity to embrace new methods of research assessment and dissemination in order to prove value and impact. The Irish

Humanities Alliance strategy document for 2020-2030 explicitly connects open access publishing to educational and societal impact, the UN SDGs (Sustainable Development Goals) and public research funding (IHA, 2019). However, Gibson and Hazelkorn's 2017 study showed that almost all third-level institutions in Ireland "have identified research in the arts and humanities as areas of strategic interest." The transition to open access in the arts and humanities must cease to be a fragmented one and must bring funders, institutions (and, importantly, the institutional library) together with researchers to extend the reach or their work out into society and to convey the value and impact of arts and humanities research in new and exciting ways.

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HECA Research Conference 2023: Sharing an Open Research Landscape

Report by The HECA Research Conference Committee

Dublin Business School (DBS) and the Higher Education Colleges Association (HECA) hosted HECA's second annual research conference, titled "Sharing an Open Research Landscape" and incorporating the HECA Student Research Awards (HSRAs), on the 14th of November 2023. After the welcome and introduction by Andrew Conlan Trent, the President of DBS, the MC for the day, Ruth Ní Bheoláin, mentioned the packed nature of the schedule and introduced us to the timekeeping piggies who would keep the presenters on track for time by honking. True to her word, the authors proceeded directly to this year's conference's strands.

An Academic Integrity Community of Practice Workshop

The first session was an Academic Integrity Community of Practice Workshop led by Elva Casey of Hibernia College, assisted by Irene O'Dowd and Ann Byrne. The session aimed to generate a discussion regarding the practicalities and challenges involved in setting up an academic integrity community of practice (CoP). To provide context for the topic, Elva discussed a case study example of establishing a CoP for academic integrity at Hibernia College. The remainder of the workshop focused on three key questions which were examined in the context of the case study and then opened to the audience for group discussion: what is a community of practice and why have one?; what are the challenges of a community of practice? And finally, what supports success and how do you know success?

Participants were divided into groups and given time to discuss each question. Verbal feedback was given by elected group speakers after each question, and also in written form on giant sticky notes which were gathered onto a feedback wall. The workshop generated lively conversation and discussion on the academic integrity CoP topic, and served as a thought-provoking introduction and segue to the following session on artificial intelligence and academic integrity. It also provided an early opportunity for networking and social interaction, setting a tone of support, collaboration and community that permeated throughout the day.

Workshop lead Elva Casey adds giant sticky notes capturing discussion points to the feedback wall.

The Two AIs: Artificial Intelligence and Academic Integrity

The next session focused on “the two AIs”: Artificial intelligence and Academic Integrity. Dr. Andrew Browne and Kunwar Maden presented an interim report on their project with Dr. David Williams on a root-cause analysis of academic impropriety in academic programmes. Next, David McQuaid of CCT presented his work using version control software and suggesting how it might preserve academic integrity. This is a practical approach, although some lecturers may feel that it requires extra technical learning and support that they might not be comfortable with. Muhammad Iqbal of CCT gave a paper on revised avenues of assessment in the face of generative AI, a theme that recurred throughout the conference. Dr. Barnaby Taylor gave a lively and engaging talk with striking images entitled “GenAI, GenZ and Gen(re): Using Text Prompts to Teach Film History”. The creative use of imagined (re)visions of film, flattening the decades with the intention of engaging contemporary students in silent film and the history of film, is certainly promising.

Behavioural Studies

The final session before lunch, on behavioural studies research, featured presentations by researchers from IICP College. John Lalor used a model of mediation analysis to examine the associations between mindfulness, compassion for others, and

self-compassion in psychotherapists in Ireland. Lalor looked into the constructs of compassion for others and compassion for oneself, comparing theorists and underlying mechanisms that influence the inner-connection to human suffering. The findings of this work suggested that self-compassion was a mediator between developing the skills for a mindfulness practice and the deep empathy that led to compassionate practice. Alan Dignam's research explored Irish LGBT+ clients' experience of psychotherapy, using qualitative methods. This work referenced current challenges that LGBT+ clients face when connecting with a psychotherapist, including navigating assumed gender roles, gaps in knowledge/understanding of terminology, and lack of training for heterosexual therapists on LGBT+ needs. The talk concluded with recommendations to therapists supporting LGBT+ clients by increasing awareness of heteronormative assumptions and inclusion of appropriate self-disclosure if it can help address shame and increase connection in the therapeutic space.

The HECA Student Research Awards

After lunch the HECA Student Research Awards were presented, with the first prize going to Leo Muckley from IICP College for his work on 'Pluralistic Psychotherapist's and Counsellor's Experiences of Working with Actively Suicidal Clients: A Qualitative Interpretative Phenomenological Analysis'. Second and third prize awards were presented to Hilary A Travers from St Nicholas Montessori College Ireland, for 'The role of music in supporting a cross-curricular pedagogy', and Hayley O'Gorman of IICP College for 'Counsellors' Experience of Assessing and Managing Suicidality among Students in Third-Level Institutions'. The winning entries can be viewed, along with entries that received special mentions from the judging panel, on the HECA website: https://heca.ie/winners-of-the-heca-student-research-awards-2023-hrsa/

The conference's afternoon programme began with parallel breakout room sessions on three research themes: mental health, education, and digital hubs and business.

Room 1: Mental Health Research

This breakout featured ten presentations from ICHAS and IICP. Sandra McQuaid, Leo Muckley, and Hayley O'Gorman explored themes related to counselling and suicidal clients. Rebecca Kilroy, Niamh O'Sullivan and Donna McCafferty canvassed the perspectives of therapists on sexually diverse clients, psychedelics, and spirituality in therapeutic practice. Self-care for therapists was another emergent theme with Anita Lynch discussing reclaiming sexual empowerment after childhood abuse and Mary Pierce discussing the psychotherapist's experience of taking care of themselves. Joan Murphy used a qualitative Interpretative Phenomenological Analysis (IPA) approach to explore how individuals describe and make sense of their experience of hope in mental health recovery, and Deborah Mends employed a pre-experimental framework and

quantitative methods to investigate whether cognitive restructuring delivered to trauma therapists under hypnosis would impact indicators for posttraumatic growth (PTG).

The presenters are to be commended for tackling difficult, traumatic, troubling, and important topics. While the timekeeping piggies weren't busy due to the discipline of the presenters, the attendees felt they would have liked more time to hear their research in detail.

Room 2: Education Research

The Education Research breakout session comprised presentations from Marie O' Neill (CCT College), Dr John Mescal, Dr Frank Kehoe, John Lenehan, Dr Annemarie Doran and William Buckley (Hibernia College) and Karolina Maxwell (SNMCI).

UDL, technological responses to pedagogical needs, leadership, well being, and stress were themes that ran through the session. The session opened with 'Embedding Universal Design for Learning in HECA Colleges: An Exploratory Study' followed by presentations on 'The Supervisor Hub:A Model for Supporting Research Supervisors' and 'Understanding adjunct faculty needs in a student-focused VLE - a user-centred design approach'. The theme of leadership threaded through remaining presentations that included: 'The Experience and Effect of External Evaluation on Teachers' Practice'; 'The Impact of Leadership on Teachers' Wellbeing' and 'A Post-Pandemic Study on the Perception of Stress by Special Education Teachers. The session ended with a graduate presentation on 'Student Voice in Bullying Prevention and Intervention: Teachers' Perspectives'.

The final Q&A session shared presenter thoughts on innovative approaches to technological and teaching across all sectors of education to support more leadership and meaningful learning contexts.

Room 3: Digital Hubs and Business Research

The Digital Hubs and Business Research breakout session featured presentations by Amy Fitzpatrick, Louise Cooke Escapil, David Rinehart and Trevor Haugh (DBS), Niamh Dowdall (DBS), Ann Byrne and Irene O'Dowd (Hibernia College), Dr Barnaby Taylor and Conor Murphy (DBS), Jeanette Garcia Kola (Griffith College), Bhuvan Israni (DBS), Alexander Victor (DBS), and Michael-Philippe Bosonnet (Griffith College). The presentations showcased a broad variety of research topics including library support, digital literacy, digital archiving, business innovation, policy research, HR recruitment, and healthcare systems. Notwithstanding the multidisciplinary nature of the research areas covered in the presentations, common themes emerged and generated a fruitful discussion among presenters and attendees.

Among the highlights of the breakout session was the range of methodological approaches, with some researchers engaging with innovative methods such as different types of quantitative and qualitative textual analysis and the use of machine learning. The necessity for research to engage with the exponential pace of technological change

was evident across disciplinary areas, from upskilling students for 21st century employment to the fostering of digital literacy, and from digitally preserving historical artefacts to harnessing the potential of the Internet of Things (IoT). Mentoring also emerged as a key theme in some research projects, from supporting students to publish their research to providing mentorship frameworks to support business innovation.

A Message of Hope

Fittingly, the conference concluded by bringing all attendees together once more for “A Message of HOPE: Generative AI and Authentic Interactive Oral Assessment" by Danielle Logan Fleming of Griffith University, Australia. HECA were very fortunate that Danielle was able to take time out of her whistle stop tour of Ireland at short notice to present on this initiative, which she has been leading for some years and in which she has collaborated on internationally, including with some conference delegates. Danielle’s work on interactive orals as alternatives to written essays and exams is developing into a mature process, with examples of practice from multiple disciplines at multiple levels. Danielle provided the conference with two rich and useful resources to enable post-conference exploration of the themes she discussed:
https://griffithu.padlet.org/daniellelogan1/interactive-oral-assessment-an-alternative-approach-to-oral--varmx3yvd47uxewz
and
https://sway.cloud.microsoft/yQ2s0Bm3ILkWtGll?ref=email&loc=play

Conclusion

The second HECA Research Conference served as a vibrant forum where HECA students and staff exchanged knowledge, forged collaborations and strengthened personal and professional contacts. The diverse programme of presentations resulted in stimulating conversations about how methods and skill sets on display could be applied to different research contexts. There was a high level of enthusiasm for pursuing research collaborations across HECA institutions in the future, with knowledge being shared on topics such as European alternatives to Irish research funding programmes, from which private institutions typically find themselves excluded. Feedback from presenters and attendees alike suggested that more time to delve more fully into the research would have been appreciated, and that the opportunity to exchange knowledge and make connections was seen as very valuable. Even as the conference committee began to wind down and take a well-earned rest after a successful event, thoughts began to percolate in everyone’s inboxes as to how this feedback could be implemented to make next year’s conference an even better experience for all.

The HECA Research Conference committee, MC and timekeepers relax after the conference.

The presentation slides and presenter biographies are available on the HECA website at https://heca.ie/heca-research-conference-2023-presentations/ and https://heca.ie/wp-content/uploads/Bio-and-Photo-13_11_23.pdf

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Conference Report | journal.dbs.ie

National Academic and Research Integrity Conference, Ireland, 2023

Report by Attendees of ARICI, 2023

Several members of Dublin Business School (DBS) staff and faculty attended the Academic and Research Integrity Conference, Ireland, 2023. A large part of the conference centred around the primary concern across the world in academia - generative AI. The panellists, papers, and workshops identified the challenges of genAI, the reality of how it is being used, research being undertaken on genAI, bold new approaches in integrating genAI into the curriculum, and much more. Other important discussions throughout the conference included important topics such as Open Access and predatory publishers. The staff members were from various backgrounds including the Library and Academic Hub, Lecturing staff, Quality Assurance, and the office of the Registrar. The DBS staff attended several workshops, panel discussions, and talks and have written about the highlights from the conference.

Dr. Andrew Browne attended a session that occurred on the second day of the conference which centred around the ideas of Open Science and Open Scholarship. This session, chaired by Aarhus University's Dr Serge Pascal Johannes M Horbach, opened with one of the University of Galway's own neuroscience researchers, Dr Ciara Egan. Dr Egan's discussion, 'Open Scholarship in teaching and research: Opportunities and challenges for a more equitable academia', which focused on the synergies between slow science and team science in an Open Science environment. The discussion allowed for the vibrant possibilities of this approach to become apparent.

In the following discussion during this panel, 'The Principles and Practices of Open Research (PaPOR TRaIL) course: An open educational resource for open research,' Dr Karen Matvienko-Sikar from University College Cork discussed a great Open Research tool, PaPOR TraIL, an online open access course on the principles and practices of open research. This resource presents great potential and opportunities for staff looking to teach Open Research. Dr Matvienko-Sitar and her research team took notice of the importance for students conducting their first research at the 3BA or MA level to learn

best (or worst) practices towards Open Research. The team compared Teaching & Learning approaches to Open Research tools like the Framework for Open and Reproducible Research Training (FOORT) and the Agape Open Science Community (specifically designed for PhD students) and discovered a gap for an evidence-based Open Science course. The result is a splendid open access course which has an open licence for teachers to use as long as they attribute PaPOR TraIL.

The following discussion in the panel titled, 'When heroes fall: How can we prevent bias and dishonesty in research publications?,' shifted to the topic of research misconduct. Dr. Maura Hiney gave a stimulating and, at times, quite emotional discussion of how to prevent misconduct in research. Dr. Hiney highlighted her own disappointment at discovering the misconduct of colleagues in her own field whose research she had once looked up to. She discussed the ways to prevent research misconduct before registration and peer analysis and expressed that this was an important way to prevent misuse of data. Open registries of data make the design much more rigorous. Preprinting of data preceding peer-review on specified servers allows for these open registries of data to exist. Open research allows researchers to technically have two outputs - one for the data and one for the analysis.

The final discussion of the session was delivered by two librarians from the University of Galway's James Hardiman Library. Hardy Schwamm and Aisling Coyne presented 'Predatory Publishing – The dark side of Open Access?' This discussion helped inform the audience about the dangers of predatory publishing while also giving the audience some key points to look out for. Essay mills, citation cartels and other aspects of the field were discussed. One interesting point of note was the statistic that one third of papers from India tend to get captured in these types of journals. It was theorised that this might be due to the fact that Indian scholars must publish in order to finish their PhDs and thus a rush to publish leads to them being preyed upon by predatory journals. It was an interesting insight into this dark part of academia.

These four sessions provided a great overview of some of the highs and lows of Open Access, Open Science and publishing in general. It was a succinct representation of the wider themes of the conference and left the audience with many interesting pathways to follow for further development and insights.

David Rinehart, Librarian, attended a panel discussion with students detailing their experiences as students using genAI, ramifications of using and not using genAI, and what they hope the future of academia will look like in relation to the implementation of genAI. It is also important to note that the conference took place during a time in which graduate students and allies across the country were protesting for better pay. One of the student panellists discussed the difficulties graduate assistants face in having to work below the living wage while studying full time.

The student panel was insightful, providing a student perspective on how genAI has impacted their education. While some students are using genAI as a study aid, others note that they have colleagues in their cohort abusing genAI and, as it is very difficult to

catch genAI being that there is no reliable software to identify the use of the technology, these students are both lowering the validity of the assessments but also have an unfair advantage. These are challenges that students hope academic institutions, organisations like the QQI, and others will tackle quickly as they feel that being a good student and following the rules is becoming disadvantageous. This is not to say they will use genAI in a way that would be deemed academic impropriety, but that they want the validity of their degrees and the effort they put in to be recognised.

As can be expected, students have varying and wholly different relationships with cheating, plagiarism, and Generative AI to each other and to academic staff. One student mentioned how they found Generative AI useful for finding references for assignments, for example. While it was important to hear how a student, and likely many students, are using genAI, it is important to note that using genAI to find references is a practice that is strongly condemned. There are many lecturers that would agree, genAI is an exciting tool, however, when writing assignments, the use of GenAI for finding references or automating part of the process can be a slippery slope for a few reasons. As was just mentioned, not enough is known about how genAI finds sources, there could, and likely are, baked in biases that can skew your secondary research. Second, genAI does, in fact, create false references. It is so important that students engage with all the secondary sources they are citing and meet with their lecturers and librarians to learn more about proper referencing and use of genAI.' Research on inherent biases within genAI are consistently coming out and undergoing and should be frequently reviewed.

Grant Goodwin attended the presentation of a fascinating paper by Dr Miguel Nicolau from UCD on strategies and approaches he has tried employing to mitigate the risk of Generative AI being misused in his assessments. Recognising the value and advantages in computer-based exams, he has not fled the digital sphere, but rather embraced it in creative ways to facilitate and personalise learning and assessment. Drawing heavily on analytics from the institutional VLEs and deploying their tools to reduce the administrative burden and risk of human error in conducting assessments, his research into learner experience tracked the advantages of the online assessments. These advantages tracked include supporting Accessibility and Universal Design to improved question design (where performance at a question bank level could be analysed over multiple cohorts) and even to personalised exam questions with automated grading systems and the possibility of automated feedback mechanisms.

His research readily acknowledged the challenges posed by Generative AI. In particular, strategies to restrict the use of gen AI by students, such as converting questions to images rather than text, or requiring new windows to be opened or files to be downloaded which at best reduces the speed at which GenAI can be used without quite preventing its use, and at worst counters actions taken to support Accessibility.
A fundamental challenge identified was that, almost inherently, any mechanism to support the diversity of the classroom, such as increased Accessibility and utilising Universal Design, could be co-opted by GenAI softwares to produce answers for tests. A fundamental dilemma of principles comes into effect as examiners must determine

which bitter pill to swallow: reduce their teaching and learning Accessibility, and negatively impact learners, or risk the misuse of GenAI in their assessments which inherently lowers the validity of said assessment. This is a challenge facing the sector as a whole as other aspects of academic integrity are threatened. For example, questions of privacy raise serious concerns in terms of proctoring software for online exams. This would be a result of the impact on the individual as institutions try to protect the integrity of their assessment processes. Dr Nicolau, at least, recognised that reducing Accessibility was a bigger threat to his learners, where other strategies could be explored to counter the risks of GenAI.

Sylwia Plucisz, a lecturer at DBS, reports on the second day of the conference where Orna Farrell (DCU), along with Perry Share, Susan McDonnell and Lisa Cronin (ATU) facilitated an inspiring workshop titled 'Authentic Learning through Authentic Assessment: The Challenges of Implementation at Scale.'

In small groups, attendees were tasked with discussing prevalent forms of assessment within their respective fields. The focus of these discussions revolved around determining whether these assessments were susceptible to content generated by artificial intelligence. The emerging consensus indicated that even authentic assessments are not immune to the influence of generative AI, presenting a significant challenge to maintaining academic integrity. In light of this, a thought-provoking suggestion was proposed: allowing students to utilise genAI tools but under clearly communicated boundaries.

This solution, while acknowledging the new, rapidly changing learning environment, emphasises the importance of incorporating critical thinking skills into AI-assisted learning activities and, eventually, assessment. Students are encouraged not only to employ genAI but also to critically evaluate and assess the outcomes, ultimately promoting a deeper understanding of the subject matter. This approach seeks to integrate technology responsibly into education while simultaneously cultivating a sense of criticality among students and maintaining a commitment to academic integrity.

A forward thinking DCU cross-faculty project coordinated by Dr Farrell - Artificial intelligence, Assessment and Academic Integrity - aims to frame the challenges posed by gen AI as an opportunity for innovation for staff in designing and for students in doing assessments within higher education. Our academic community is eagerly anticipating the outcomes of both the staff and students' research strands, as well as the subsequent development of teaching and learning resources informed by these results.

Overall, the conference highlighted the current and upcoming challenges the academic sphere will face going forward regarding developing technologies as they intersect with academic integrity. However, the spirit of collaboration and clarity regarding the next steps to take, whether for staff, students, or other members of the academic community, demonstrate the address them head on and embrace the future of learning.

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