

Independent programme evaluation of the State's investment in The Irish Longitudinal Study on Ageing (TILDA)



Supplement to Main Report

July 2023

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Section 1 Literature review of TILDA's academic outputs

1 Introduction

In order to evaluate The Irish Longitudinal Study on Ageing (TILDA) project comprehensively and systematically, and to support the quality and impact of the insights gained into emerging patterns and predictive trajectories of the wider determinants of ageing on health, a literature review of TILDA's academic outputs was undertaken. This literature review reports on the findings of the academic outputs associated with the core published papers available on the TILDA project's website and illustrates the value of the TILDA project literature's research activities through its quality and impact measurement.

To achieve this, a brief outline of the research value measurement and the SciVal/Scopus interface will be provided. Additionally, the materials and methods will be discussed, and the aim and scope of the review clarified. In order to meet the review aim, a four-step logical framework for conducting a bibliometrics performance analysis will be applied and the process for data generation to perform the bibliometrics analysis will be explained. A data extraction table with selected criteria drawn from the overall evaluation strategy frameworks will be outlined to guide the systematic extraction of additional general quality and impact metrics information from the retrieved TILDA publications. The quantitative analysis of the performance data will allow insights into the quality and impact of TILDA's academic output.

2 Research value measurement

Research publication quality and impact can be measured through a variety of means. Ensuring the trustworthiness and credibility of conducted research were always regarded as the two most important criteria for organisations and research projects to secure legitimacy and resources for the continuation of research activities (Polit and Beck, 2006; Polit and Beck, 2014). Additionally, other factors for assessing the quality of published research include the peer review process and some quantitative metrics, such as journal impact factors (Wilsdon *et al.*, 2015; Ravenscroft *et al.*, 2017). However, the need for increased transparency and evaluation of higher educational institutions' research activity, coupled with publicly funded spending, expanded these criteria to the emergence of bibliometrics research. Bibliometrics research provides innovative techniques with which to measure the quality and impact of research in a more comprehensive way (The Royal Society, 2012; Wilsdon *et al.*, 2015). Bibliometric measurement methods usually include a wide spread of bibliographic material and have been widely applied to the review of different scientific fields and topics (Blanco Mesa *et al.* 2017), scholarly journals (Martinez-Lopez *et al.*, 2018), and countries (Mas-Tur *et al.*, 2018), to mention but a few. Bibliometric research serves as a mechanism with which to evaluate and quantify the correlation between the research publication input and the quality and impact of the research publication output (Ebadi and Schiffauerova, 2016). Bibliometric research encompasses bibliometrics, and, more recently, alternative metrics or altmetrics.

2.1 Bibliometrics analysis

Bibliometrics allow for additional quantitative measurement and focus on the quantitative analysis of publications, both scientific and scholarly, in order to provide information on research outputs (Holbrook,

Mitcham and Andersen, 2014), and traditionally measured academic impact through the number of citations and journal impact factors (Mori and Nakayama, 2013; Williams, 2017). Bibliometrics analyses are uniquely positioned to examine the evolution of a subject (Pinto *et al.*, 2019), and offer an opportunity to consider the study field's dynamics from a broader perspective (Zupic and Čater, 2015). Furthermore, bibliometrics (such as publication counts, citation counts, citation analysis, journal impact factor, and h-index (Hirsch index)) became readily accessible through the Web of Science (2001), Scopus (2003), and Google Scholar (2004), and resulted in the impact measurement of publication-related scholarship by author, journal, or article and evolved into individual-level metrics (Wilsdon *et al.*, 2015; Knowlton *et al.*, 2019). Journal-level metrics provide varied insights into journal impact and article-level metrics, which illuminate people's interactions with individual research publications' outputs. Concurrently, author- and institutional-level metrics drive the assessment of an author or institutional organisation's research output and scholarly impact (Elsevier Research Intelligence, 2019). However, as bibliometrics focused specifically on a publication's academic impact, the need to assess the influence of publications beyond the academic research community gave way to the development of alternative metrics (Ellegaard and Wallin, 2015; De Filippo and Sanz-Casado, 2018).

2.2 Altmetrics

Alternative metrics (or 'altmetrics') survey a much larger field and focus on metrics beyond academia – such as downloads or shares on social media and other forms of web metrics – through indicators that measure features of and relationships between online data which are automatically generated by computer programmes. These alternative measures are uniquely positioned to provide the immediate societal impact of scholarly publications (Retrouvey *et al.*, 2020). Altmetrics track mentions, likes, and shares on various platforms through the usage of a Digital Object identifier (DOI) or links (URLs) attached to online papers and provide real-time research activity information (Wilsdon *et al.*, 2015; Ravenscroft *et al.*, 2017). Consequently, altmetrics include views from wider and more diverse representative groups, such as policy-makers, educators, clinical practitioners, and the general population, to broaden the scope of an impact evaluation beyond academic researchers (Melero, 2015; Patthi *et al.*, 2017; Huang *et al.* 2018).

2.3 SciVal and Scopus interface

The application of bibliometrics and bibliometric analysis is used to understand and interpret research outputs such as the academic publications of the TILDA project. SciVal is a research analytical tool that utilises data generated through the citation-tracking database Scopus to enhance the native interface of the citation-tracking content and allow analysis of research output and comparative benchmarking (University of Waterloo Working Group on Bibliometrics *et al.*, Winter 2016). Although SciVal is limited to the Scopus database content and indexes in excess of 70 million publications which are updated daily (Elsevier Research Intelligence, 2019), no single database exists for all scholarly publications providing full coverage from which to conduct a comprehensive bibliometric analysis (Sivertsen, 2016; AlRyalat *et al.* 2019). According to Sivertsen (2014), the rationale for deficiencies in coverage in relation to the social sciences and humanities is due to “incomplete coverage of the international journals, limited or no coverage of national scholarly journals and very limited coverage of peer-reviewed scholarly books” (Sivertsen, 2014, p. 81). Moreover, a recent study found that when comparing bibliometric analysis using Scopus, Web of Science, and PubMed, a Scopus search resulted in the highest number of publications, followed by searches completed in Web of Science, with the lowest number of publications found during a search of PubMed due to PubMed's narrower scope and coverage (AlRyalat *et al.*, 2019).

However, specific built-in features in SciVal, such as author profiles (which are automatically created), groups of researchers, and publication sets or group of publication sets (Elsevier Research Intelligence, 2019), will form the ideal technological and analytical support solution for the bibliometric analysis of this review. Concurrently, Scopus features an automatic grouping function of publications indexed as having been published by a single

affiliate, such as the TILDA project (Elsevier Research Intelligence, 2019). The SciVal database also hosts a set of three independent module units, like 'overview' (which includes a synopsis of research performance such as outcomes, collaboration, and impact), 'benchmarking' (which provide comparisons between organisations based on achievement metrics articulating strengths and weaknesses), and 'collaboration analysis' (which recognises and scrutinises suitable collaboration opportunities) (Cucari *et al.*, 2022). The SciVal/Scopus interface will allow the evaluation of the various aspects of TILDA's academic outputs in order to measure quality and impact based on reliable evidence. This interface will also complement a cross-national comparison with other longitudinal studies on ageing of a similar scope, such as the English Longitudinal Study of Ageing (ELSA), the Northern Ireland Cohort for the Longitudinal Study of Ageing (NICOLA), and Healthy AGEing In Scotland (HAGIS).

According to The Economic and Social Research Council (2022, p. 1), research impact can be described as "the demonstrable contribution that excellent research makes to society and the economy". Impact thus influences all aspects of how research-generated knowledge benefits society as a whole. While the measurement of research quality and impact was becoming more popular to enhance a more comprehensive understanding of the diverse benefits which scientific outputs can contribute towards the economy, health, policy and legislation, the environment (Ravenscroft *et al.*, 2017), and, increasingly, the impact on society (Williams, 2022), the need to measure quality and impact metrics accurately, wisely, and responsibly became imperative (Wilsdon *et al.*, 2015; European Commission, 2017). As the quality of research impact measurement increased within the academic community, so too did the demand for increased intelligence on impact from stakeholders beyond academia, such as policy-makers and funding organisations (Cook and Meer, 2021; Williams, 2022). Following this, University College Dublin (UCD) published a responsible use of research metrics statement, stating that:

We are committed to ensuring that our research assessment procedures in UCD are fair, transparent and robust. To this end, assessment of research in UCD will include qualitative evaluation involving peer review as well as research metrics. Both elements will be used to inform our academic recruitment, tenure and promotions processes, in development conversations, in internal competitive funding decisions and in quality reviews of our academic units. (University College Dublin, 2022)

In order to ensure a responsible research evaluation and an accurate account of the quality and impact of the retrieved TILDA publications, and to meet the expectations of the funding organisation to produce expert research intelligence, a combination of bibliometrics and altmetrics will be deployed for this evaluation, in addition to the implementation of an extraction table designed to capture additional quality and impact information.

3 Research question

The research question for this review was: What are the quality and impact measures associated with the academic output of the retrieved TILDA project publications?

4 Materials and methods

A bibliometric analysis depends on quantitative techniques and provides a rigorous method to unpack studies' quality elements (Donthu *et al.*, 2021). In order to conduct a bibliometric analysis for the robust assessment of the quality and impact of the retrieved TILDA academic publications, a logical framework, proposed by Donthu *et al.* (2021), was applied. The performance analysis aspect of the bibliometric analysis technique was selected, as performance analysis examines the contributions of research components to a specific field (Ramos-Rodríguez and Ruíz-Navarro, 2004; Cobo *et al.*, 2011), such as healthy ageing. Donthu *et al.* (2021) outline the steps required for a bibliometric analysis, coupled with general guidelines to structure each step. A full outline of the steps and guidelines is provided in Table 1.

For a comprehensive review of the retrieved TILDA publications, a performance analysis approach was proposed through the creation of a SciVal/Scopus summary report, in addition to the creation of a data extraction table in

order to address and summarise more general quality and impact metrics information to complement the bibliometric analysis and improve triangulation of the review findings.

Table 1 Steps and guidelines of framework

Steps	Guidelines
Step 1: Define the aim and scope of the review	Definitions are broad enough to warrant the use of bibliometric analysis.
Step 2: Select the bibliometric analysis technique	Select the appropriate techniques according to the aim of the study.
Step 3: Data collection	Clean the data before proceeding. Remove duplicates.
Step 4: Complete the analysis and report the findings	Summarise the performance of prolific research components. Summarise bibliometric and intellectual structure using science mapping.

Source: Adapted from Donthu *et al.* (2021)

4.1 Define review aim and scope

The overall aim of this study is to offer an independent programme evaluation of TILDA through the application of the Context, Input, Process, Product (CIPP) evaluation model and the Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) framework. The scope of this review includes a bibliometric performance analysis and an analysis of more general quality and impact metrics information on the retrieved academic outputs of the TILDA project. The identification of the quality and impact of the TILDA academic output was based on the most used performance parameters (Craig *et al.* 2021) (listed in Table 4), following discussions with a UCD Liaison Librarian and Scholarly Communications Librarian in UCD Research Services.

The focus of this literature review is to evaluate the quality and impact of the academic output generated by the TILDA project by examining the retrieved TILDA academic publications from the TILDA website. This was achieved through the following steps:

1. Production of a bibliometric summary analysis of the retrieved TILDA publications' citation quality and impact through the SciVal/Scopus interface.
2. Design and creation of a data extraction table to capture additional information from each individual publication included within the SciVal/Scopus interface summary.
3. Extraction and summarisation of the TILDA publication data included in the SciVal/Scopus interface using an Excel spreadsheet.
4. Quantitative descriptive content analysis of the TILDA academic output data to provide a logical, tabular, and descriptive summarised account of TILDA's academic outputs based on the SciVal/Scopus analysis and more general quality and impact metrics information.

4.2 Selecting the bibliometric analysis technique

Bibliometric analysis was conducted through a performance analysis, which allowed for a comprehensive evaluation of the quality and impact of the retrieved TILDA publications, as it refers to publication-related metrics, citation-related metrics, citation- and publication-related metrics, and citation analysis, coupled with an analysis based on the more generalised quality and impact metrics information of the included TILDA publications.

4.3 Data collection

The data collection phase focused on the retrieval of the 464 academic publications available on the TILDA project website. All publications were exported to Microsoft Excel in spreadsheet format. As part of data cleaning, 10 duplicate publications were removed, mostly due to differences between the date of publication creation and the actual publication date by the respective journals.

Consequently, the publication year of some publications was also altered if the publication year on the TILDA website differed from the publication year in the PubMed database. Table 2 outlines the removed duplicate publications.

Table 2 Duplicate publications removed

Duplicate publications on the TILDA website (by year)	Publication citation
2022 and 2020	Burns, A., Leavey, G., Ward, M. and O'Sullivan, R. (2022) 'The impact of loneliness on healthcare use in older people: evidence from a nationally representative cohort', <i>Journal of Public Health</i> , 1–10.
2022 and 2021	Joshanloo, M. (2021) 'Positive and Negative Aging Perceptions as Predictors of the Longitudinal Trajectory of Perceived Stress', <i>Journal of Applied Gerontology</i> , 41(3):831–835, doi: 10.1177/07334648211031047
2021 and 2020	Donoghue, O.A., Leahy, S. and Kenny, R.A. (2021) 'Longitudinal Associations Between Gait, Falls, and Disability in Community-Dwelling Older Adults With Type II Diabetes Mellitus: Findings From The Irish Longitudinal Study on Ageing (TILDA)', <i>The Journals of Gerontology: Series A</i> , 76(5):906–913.
2021 and 2020	Scarlett, S., Kenny, R.A., O'Connell, M.D., Nolan, H. and De Looze, C. (2021) 'Associations between cognitive function, actigraphy-based and self-reported sleep in older community-dwelling adults: Findings from the Irish Longitudinal Study on Ageing', <i>International Journal of Geriatric Psychiatry</i> , 36(5):731–742.
2019 and 2018	McDowell, C.P., Gordon, B.R. and Herring, M.P. (2018) 'Sex-related differences in the association between grip strength and depression: Results from the Irish Longitudinal Study on Ageing', <i>Experimental Gerontology</i> , 104:147–152.
2017 and 2017	McCarron, M., Cleary, E. and McCallion, P. (2017) 'Health and Health-Care Utilization of the Older Population of Ireland: Comparing the Intellectual Disability Population and the General Population', <i>Research on Aging</i> , 39(6):693–718, doi: 10.1002/hec.3429
2017 and 2016	Schinkel-Ivy, A., Mosca, I. and Mansfield, A. (2017) 'Factors Contributing to Unexpected Retirement and Unemployment in Adults Over 50 Years Old in Ireland', <i>Gerontology and Geriatric Medicine</i> , 3: 2333721417722709.
2015 and 2014	Murphy, C., Whelan, B. and Normand, C. (2015) 'Formal home-care utilisation by older adults in Ireland: evidence from the Irish Longitudinal Study on Ageing', <i>Health and Social Care in the Community</i> , 23(4):408–418.
2015 and 2015	O'Regan, C., Kenny, R.A., Cronin, H., Finucane, C. and Kearney, P.M. (2015) 'Antidepressants strongly influence the relationship between depression and heart rate variability: findings from The Irish Longitudinal Study on Ageing (TILDA)', <i>Psychological Medicine</i> , 45(3):623–636.
2013 and 2013	Peklar, J., Henman, M.C., Richardson, K., Kos, M. and Kenny, R.A. (2013) 'Food supplement use in the community dwelling population aged 50 and over in the Republic of Ireland', <i>Complementary Therapies in Medicine</i> , 21(4):333–341.

The remaining 454 studies were imported to an EndNote 20 library using the PubMed database, which captured almost one-half of the publications, complemented by the manual insertion of the remaining publications. All imported publications were examined to confirm a DOI for each publication in order to allow for the creation of a SciVal/Scopus interface report. For data accuracy, 14 publications without a DOI were removed, as outlined in Table 3.

Table 3 Publications without a DOI

Year of publication on the TILDA website	Publication citation
2021	Mohan, G. and Nolan, A. (2021) Impacts of co-payments for prescribed medicines on publicly-insured children and older people in Ireland, Economic and Social Research Institute, Dublin.
2021	Mohan, G., Nolan, A. and Moriarty, F. (2021) 'The Introduction of Cost Sharing for Prescription Drugs: Evidence from The Irish Longitudinal Study of Ageing (TILDA)', <i>Economic and Social Review</i> , 52(1):1–40.
2020	Laird, E., Rhodes, J. and Kenny, R.A. (2020) 'Vitamin D and Inflammation: Potential Implications for Severity of Covid-19', <i>Irish Medical Journal</i> , 113(5):81.
2020	Mosca, I. and Wright, R.E. (2020) 'The Long-term Consequences of the Irish Marriage Bar', <i>Economic and Social Review</i> , 51(1).
2019	Nivakoski, S. and Barrett, A. (2019) 'Estimating, and Interpreting, Retirement Income Replacement Rates', <i>Economic and Social Review</i> , 50(3):507–609.
2017	Ma, Y. (2017) 'Civic Returns to Education: Voter Turnout in Ireland', <i>Economic and Social Review</i> , 48(2):145–169.
2017	O'Driscoll, N., Kennedy, N., Amjum, S., Fraser, A. and Hannigan, A. (2017) 'Comparing cardiovascular risk factors, disease, and treatment in participants with rheumatoid arthritis and without arthritis in a population based study', <i>Irish Medical Journal</i> , 110(5):562.
2016	Coughlan, D., Doherty, E., Frick, K., Ward, P. and O'Neill, C. (2016) 'Healthcare utilisation among cancer survivors over 50 years of age', <i>Irish Medical Journal</i> , 109(2):359.
2016	Mosca, I. and Barrett, A. (2016) 'The Impact of Voluntary and Involuntary Retirement on Mental Health: Evidence from Older Irish Adults', <i>The Journal of Mental Health Policy and Economics</i> , 19(1):33–44.
2016	O'Callaghan, S. and Kenny, R.A. (2016) 'Neurocardiovascular Instability and Cognition', <i>Yale Journal of Biology and Medicine</i> , 89(1):59–71.
2015	Hudson, E., Madden, D. and Mosca, I. (2015) 'A formal investigation of inequalities in health behaviors after age 50 on the Island of Ireland', <i>Economic and Social Review</i> , 46(2).
2014	Nivakoski, S. (2014) 'Determinants of Pension Coverage and Retirement Income Replacement Rates – Evidence from TILDA', <i>Economic and Social Review</i> , 45(3):299–328.
2014	O'Sullivan, V., Nolan, B., Barrett, A. and Dooley, C. (2014) 'Income and Wealth in the Irish Longitudinal Study on Ageing', <i>Economic and Social Review</i> , 45(3):329–348.
2013	Barrett, A. and Mosca, I. (2013) 'Increasing the State Pension Age, the Recession and Expected Retirement Ages', <i>Economic and Social Review</i> , 44(4):447–472.

This finally constituted a potential 440 retrieved publications from the TILDA website for inclusion in the bibliometric analysis. From the 440 potential publications, the SciVal/Scopus interface provided a summarised bibliometric analysis of 360 TILDA academic papers as per the performance parameters outlined in Table 4.

Evidently, bibliometrics for 2022 were unavailable, as the year was still in progress at the time of the evaluation, and bibliometrics before 2012 were unretrievable from the SciVal/Scopus interface. In addition, the SciVal/Scopus interface reduced the amount of retrieved eligible TILDA studies for the review from 440 to 360, which provided 89.7% coverage within the SciVal/Scopus interface.

Table 4 Performance parameters for SciVal/Scopus bibliometric analysis

Indicator	Characteristic of measured entity	Definition
Scholarly output	Productivity	Number of TILDA publications indexed in Scopus
Field-Weighted Citation Impact (FWCI)	Scientific impact	Number of citations received by TILDA's publications compared with the average number of citations received by similar publications worldwide
Citation count	Scientific impact	Number of citations received by TILDA's publications
Citations per publication	Scientific impact	Average citation impact of TILDA publications as the average number of citations received
Publications in top journal percentiles (top 10% by CiteScore Percentile)	Scientific impact	Number of publications indexed by Scopus in the top 1%, 10%, or 25% of the most cited journals
Field-weighted publications in top 10% most cited worldwide	Scientific impact	Number of TILDA publications indexed by Scopus compared with the average number of publications in the top 1%, 10%, or 25% of the most cited publications worldwide
Publication share by subject area	Scientific impact	Number of publications identified per TILDA subject area
International collaboration percentage	Degree of collaboration between international co-authors	Proportion of international co-authored TILDA publications
Academic–corporate collaboration percentage	Degree of collaboration between academic and corporate affiliations	Proportion of co-authored TILDA publications between academic and corporate sectors
Field-Weighted View Impact	Total usage impact	Number of views received by TILDA's publications compared with the average number of views received by similar publications worldwide
View count	Total usage impact	Number of views received by TILDA's publications
Views per publication	Average usage impact	Average view impact of TILDA publications as the average number of views received
Publications in top journal percentiles viewed	Total usage impact	Number of publications indexed by Scopus in the top 1%, 10%, or 25% of the most viewed journals

Figure 1 illustrates the publication selection process through the application of a modified Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) flow diagram (PRISMA, 2021).

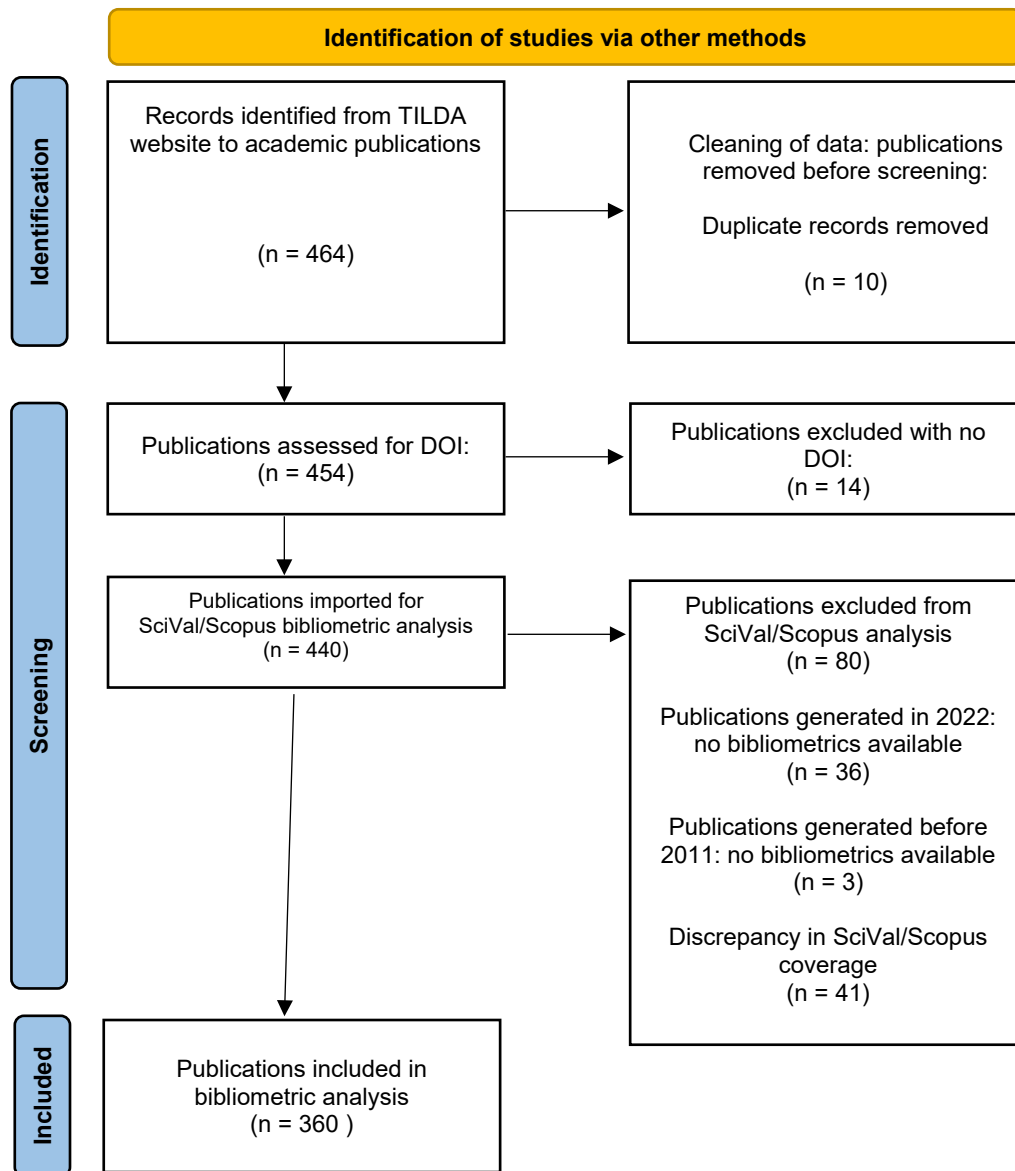


Figure 1 Modified PRISMA flow diagram of included publications

Furthermore, 74 additional TILDA publications indicating reference to the TILDA project were present in PubMed but were excluded from the TILDA website academic publications. These publications were examined and the rationale for exclusion from the TILDA website categorised. Rationale categories included studies which formed part of the Intellectual Disability Supplement to the Irish Longitudinal Study on Ageing, study corrigendum, studies which used secondary TILDA data or formed part of an evidence synthesis, papers which were discussion pieces or expert-based recommendations, and studies which had no reference to TILDA or TILDA data but had authors who had previously engaged with the TILDA project.

Based on the CIPP evaluation model and RE-AIM framework, an extraction table was designed to extract more general and relevant quality and impact metrics indicator information from the retrieved TILDA publications in

order to provide a logical and descriptive summary. The CIPP evaluation model considers the interrelationships of project context (C), inputs (I), processes (P), and product (P) (Stufflebeam, 2015), and the RE-AIM framework is employed to evaluate public health interventions and behaviour change research at individual and population levels (Glasgow *et al.*, 2019). The RE-AIM framework (Appendix 3) evaluates the project’s reach (R), effectiveness (E), adoption (A), implementation (I), and maintenance (M). Table 5 outlines the extraction criteria.

Table 5 Data extraction table for general quality and impact publication information

Indicator	Description
Aim	
Setting	Subject area and subcategory
Methods	What methods were used
Countries of relevance	Reach achieved
Design	Editorial, commentary, recommendations, empirical: evaluative, descriptive, prospective, observational, etc.
Population	Population targeted
Intervention/instruments/exposure	What kind of intervention/instrument was developed? OR What exposure factors were measured/evaluated?
Intervention effectiveness	What intervention outcomes were measured? What association factors were measured/evaluated?
Implementation	Was an intervention or service improvement initiative implemented?
Sustainability	An indication that intervention or service improvement was sustained with the targeted population
Peer reviewed status	In order to triangulate findings with bibliometric analysis
Findings	Summary of the study findings
National and international policy relevance	Is the publication influencing policy or service improvement? In which country?
Any other relevant information	Any other information of value

4.4 Analysis and discussion of findings

Bibliometric analysis can be deployed in any study aimed to quantify the process of written communication (Gokhale *et al.*, 2020). To triangulate the evidence generated through the SciVal/Scopus interface, all six groups of research metrics available in SciVal were included in the review, as including bibliometric intelligence gained from multiple metrics increases the degree of confidence and validity of the findings (Elsevier Research Intelligence, 2019).

The groups of metrics included in the SciVal/Scopus performance interface are outlined in Table 6. Additionally, as SciVal also classifies metrics based on what insights they provide, these functions were also incorporated.

Table 6 SciVal/Scopus metric groups

SciVal/Scopus research metric groups	Metric description
Productivity metrics	Depicts the volume of TILDA academic output
Citation impact	Indicates the influence of the TILDA publication's output through a variety of citation counts
Collaboration metrics	Provides research partnership intelligence
Disciplinary metrics	Describes the spread of topics within the TILDA publications
Snowball metrics	Provides insight into the TILDA project's publication strategies
Power metrics	Indicates the output increase of metrics as the number of TILDA publications increases

5 Performance analysis results – SciVal/Scopus interface

The TILDA project produced 454 academic research publications between 2011 and 2022 year to date (YTD), as outlined in Table 7. Additionally, 67.2% of the included retrieved TILDA publications were identified as open access and are available to readers at no additional cost.

Table 7 Number of TILDA publications, by year

Year of publication	Number of TILDA publications
2022	34 (YTD)
2021	54
2020	78
2019	57
2018	50
2017	44
2016	32
2015	40
2014	31
2013	27
2012	4
2011	3
Total	454

From these 454 publications, 360 were indexed in Scopus and were included in the bibliometric analysis through the SciVal/Scopus interface, which provided 79.2% coverage of the retrieved TILDA academic publications. This is illustrated in Figure 2.

This metric benchmarks against studies that are similar in size and which fall within similar research fields. The graph in Figure 2 indicates publication activity, with the highest scholarly output occurring during 2021, at the height of the COVID-19 pandemic. The lowest academic output occurred during 2011 and 2012, which were in the early stages of the TILDA project. As TILDA’s level of academic output increased, the set of power metrics (such as citation counts or view counts) increased as well, as these tend to increase once the quantity of academic output grows in size (Elsevier Research Intelligence, 2019).

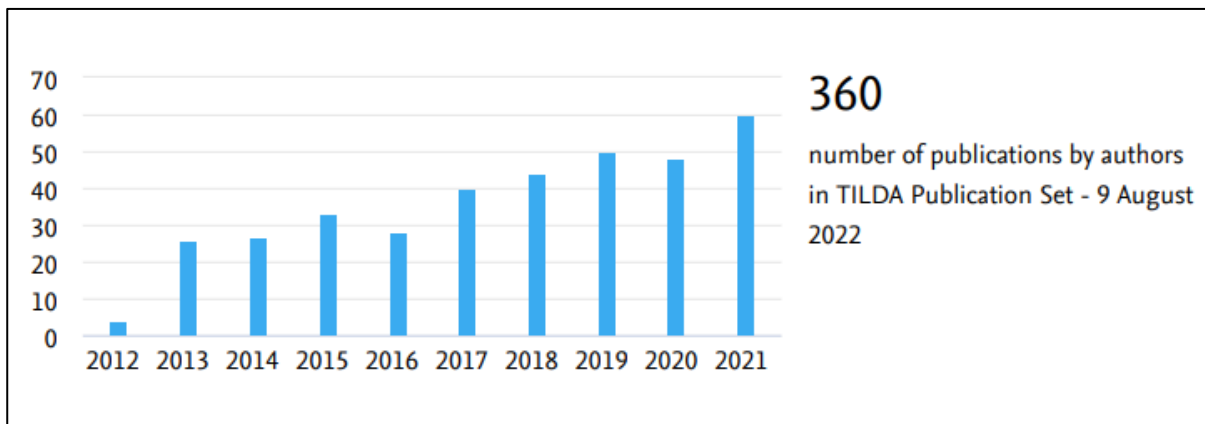


Figure 2 TILDA scholarly output indexed in Scopus, 2012–2021

The TILDA publication FWCI of 1.53 is broken down in Figure 3, indicating the ratio of citations received by TILDA publications relative to the expected world average for a particular subject field, the publication type, and the publication year. As the world average is 1, the TILDA academic output is performing above average (Elsevier Research Intelligence, 2019).

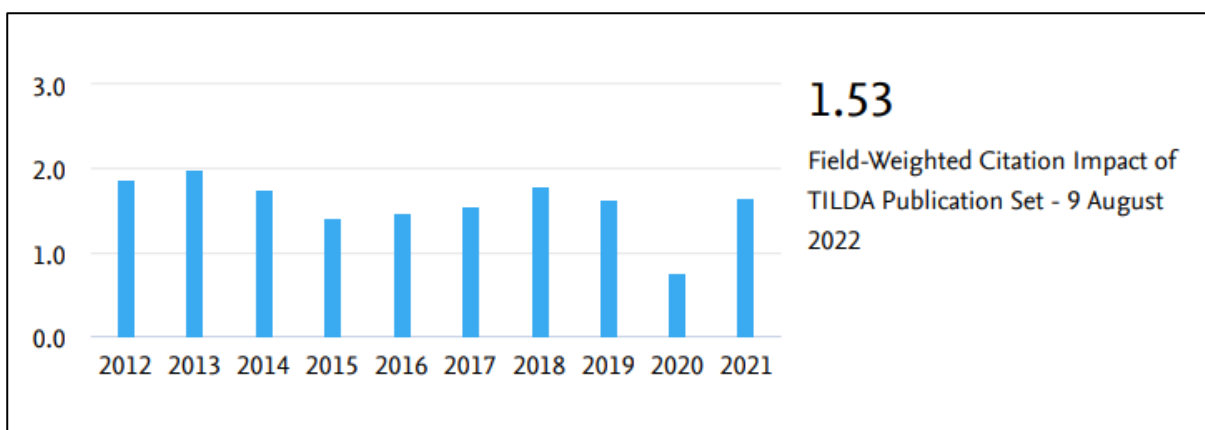


Figure 3 TILDA publications’ FWCI, 2012–2021

The number of citations generated by TILDA publications within the time frame indexed in Scopus is 7,631 and represents the total citation impact of TILDA’s academic publication output. Article-level metrics (such as citation counts) indicate the usefulness of the publication and indicate that the research work was used and published.

Figure 4 illustrates TILDA’s publication citation count, with the years representing the year in which the publications cited were published. Although the citation count decreased in 2020 and 2021 during the worldwide COVID-19 pandemic, the high number of overall citations was influenced by some noticeably highly

cited publications (Elsevier Research Intelligence, 2019), indicating that TILDA’s overall academic output performance remains high.

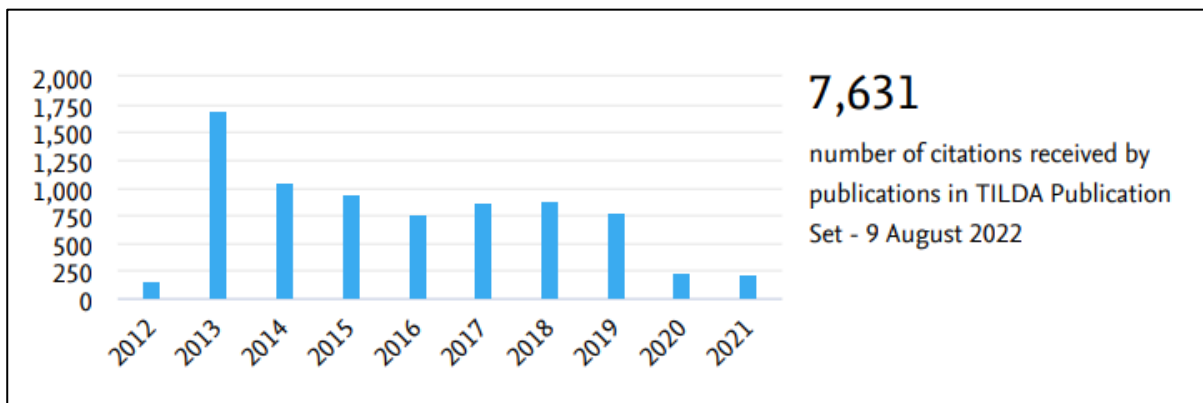


Figure 4 TILDA publications’ citation count, 2012–2021

Likewise, the average number of citations per TILDA publication was 21.2 between 2012 and 2021, ranking the TILDA academic publication average citation number as part of the top 25% of the most cited academic outputs worldwide. The average number of citations per TILDA academic publication is explained in Figure 5.

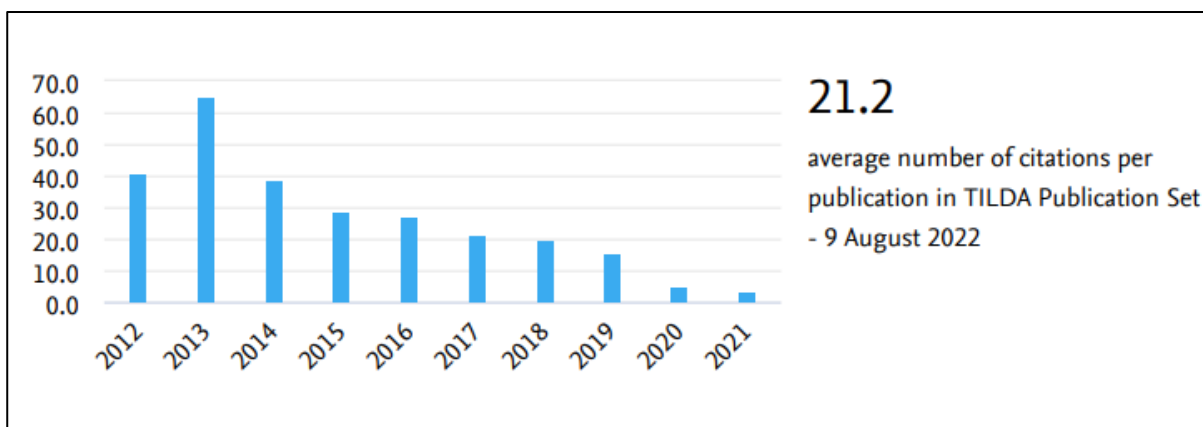


Figure 5 Average number of citations per TILDA publication, 2012–2021

The number of TILDA publications indexed by Scopus that are published in the top 1% and top 10% of journals by CiteScore Percentile is illustrated in Figure 6. CiteScore is a Scopus metric which captures the number of citations received by a journal within a single year for documents which were published in the previous 3 years, divided by the number of documents indexed in Scopus published within these same 3 years. Thus, CiteScore measures the average number of citations received per peer-reviewed document published by the TILDA project. The CiteScore Percentile indicates the relative standing of a serial title in its subject field (such as TILDA with regard to healthy ageing), and was calculated at 49.2%. This indicates that TILDA’s academic publications are ranked higher than 49.2% of titles in the category of healthy ageing.

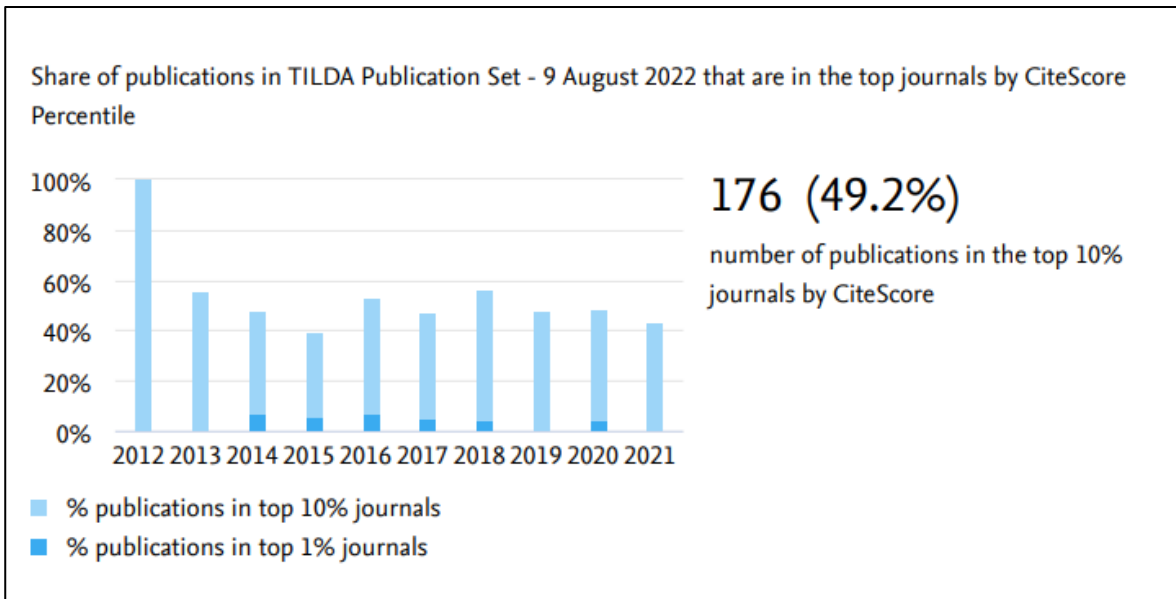


Figure 6 TILDA publications in the top 1% and 10% of journals, 2012–2021

Two publications on frailty and cognitive impairment and the implementation of the Timed Up and Go Test as a frailty identification measure, were among the five most cited TILDA publications from 2012 to 2021. Additionally, papers on the design and methodological considerations of the TILDA project, the normative changes in phasic orthostatic blood pressure, and the protection of physical activity from incident anxiety were also highly cited. The five most cited TILDA publications are listed in Figure 7.

Publication	Citations	Field-Weighted Citation Impact
Frailty and cognitive impairment-A review of the evidence and causal mechanisms. Robertson, D.A., Savva, G.M., Kenny, R.A. (2013) Ageing Research Reviews, 12 (4), pp. 840-851.	398	3.87
Design and methodology of the Irish Longitudinal Study on Ageing. Whelan, B.J., Savva, G.M. (2013) Journal of the American Geriatrics Society, 61 (2), pp. S265-S268.	196	4.25
Using timed up-and-go to identify frail members of the older population. Savva, G.M., Donoghue, O.A., Horgan, F. and 3 more (2013) Journals of Gerontology - Series A Biological Sciences and Medical Sciences, 68 (4), pp. 441-446.	168	3.53
Age-related normative changes in phasic orthostatic blood pressure in a large population study: Findings from the Irish longitudinal study on ageing (TILDA). Finucane, C., O'Connell, M.D.L., Fan, C.W. and 5 more (2014) Circulation, 130 (20), pp. 1780-1789.	138	4.33
Physical activity protects from incident anxiety: A meta-analysis of prospective cohort studies. Schuch, F.B., Stubbs, B., Meyer, J. and 9 more (2019) Depression and Anxiety, 36 (9), pp. 846-858.	126	8.74

Figure 7 Five most cited TILDA publications

Additionally, the number of TILDA publications indexed by Scopus compared with the average number of publications in the top 1% and 10% of the most cited publications worldwide is showcased in Figure 8.

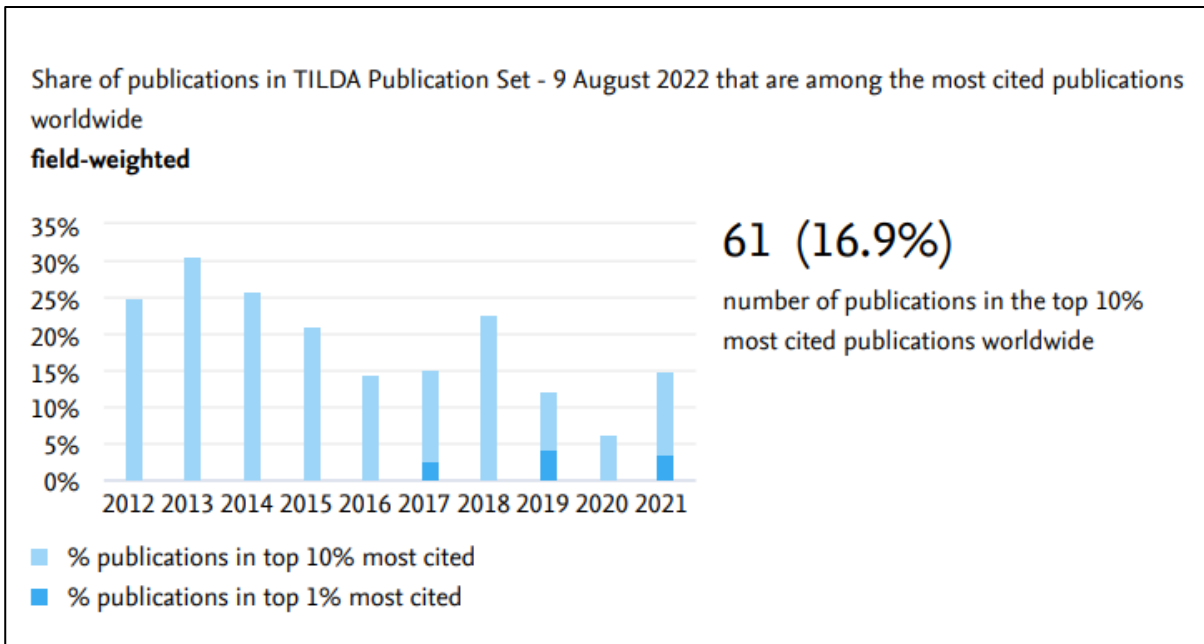


Figure 8 TILDA publications among the most cited worldwide, 2012–2021

The 61 TILDA publications that fall within the top 10% of the most cited publications worldwide between 2012 and 2021 are tabulated in Appendix 1; this highlights the performance of TILDA’s publications which rank among the most cited and highly visible publications worldwide.

An analysis of TILDA publications by subject area illustrates the disciplinary diversity of the project’s publications. The subject area count indicates that most publications are published in the subject area of medicine (77.8%), followed by biochemistry (22.5%); social sciences and psychology (both at 13.3%); nursing (11.9%); and other subject areas, including multidisciplinary (4.4%) and economics and economic change (4.2%); the remainder were unclassified.

More specifically, the top 10 topics addressed by the TILDA publications are illustrated in Figure 9. These are the most prominent TILDA academic research areas and currently have the highest visibility and momentum.

It is imperative to note that prominence differs from importance and that comparisons should only be made between topics within similar scientific fields.

Topic	At this Publication Set			Worldwide	
	Scholarly Output	Publication Share	Field-Weighted Citation Impact	Prominence percentile	
Orthostatic Hypotension; Hypertension; Midodrine T.7995	43	4.28% ▲	1.40	92.331	
Frailty; Frail Elderly; Geriatric Assessment T.2242	22	0.34% ▲	1.48	99.719	
Independent Living; Accidental Falls; Weighing Devices T.259	13	0.31% ▲	1.22	98.785	
Dual Task; Gait; Cognition T.8007	13	0.66% ▲	1.63	96.889	
Loneliness; Social Isolation; COVID-19 T.4510	11	0.34% ▲	2.53	99.777	
Polypharmacy; Deprescriptions; Inappropriate Prescribing T.755	7	0.15% ▲	2.34	98.939	
Multimorbidity; Multiple Chronic Conditions; Chronic Disease T.8117	7	0.22% ▲	0.79	98.927	
Multisensory Integration; Audiovisual Equipment; Cross-Modal T.2937	6	0.36% ▲	1.02	94.379	
Exercise; Cardiorespiratory Fitness; Sedentary Lifestyle T.7849	6	0.30% ▲	1.33	98.445	
Macular Pigment; Lutein; Zeaxanthins T.8191	6	0.60% ▼	1.06	93.126	

Figure 9 TILDA publications' top 10 topics

Collaboration indicates the extent to which TILDA's publications have international, national, or institutional co-authorship or single authorship. Figure 10 showcases the percentage of collaboration per category. The data indicate a mix of international, national, and institutional collaboration. Only 1.9% of all TILDA publications within the SciVal/Scopus interface indicated no collaboration with outside entities.

Additionally, the extensive amount of collaboration which underpins the TILDA academic output, as showcased in Figure 10, contributed to the high citation count for TILDA’s academic publications. The FWCI assigned to international (1.58), national (1.65), and institutional (1.38) collaborations are all above the benchmark of 1.00; this indicates that TILDA’s degree of collaboration is proportionally higher than would be anticipated based on the worldwide average for similar publications (Elsevier Research Intelligence, 2019).

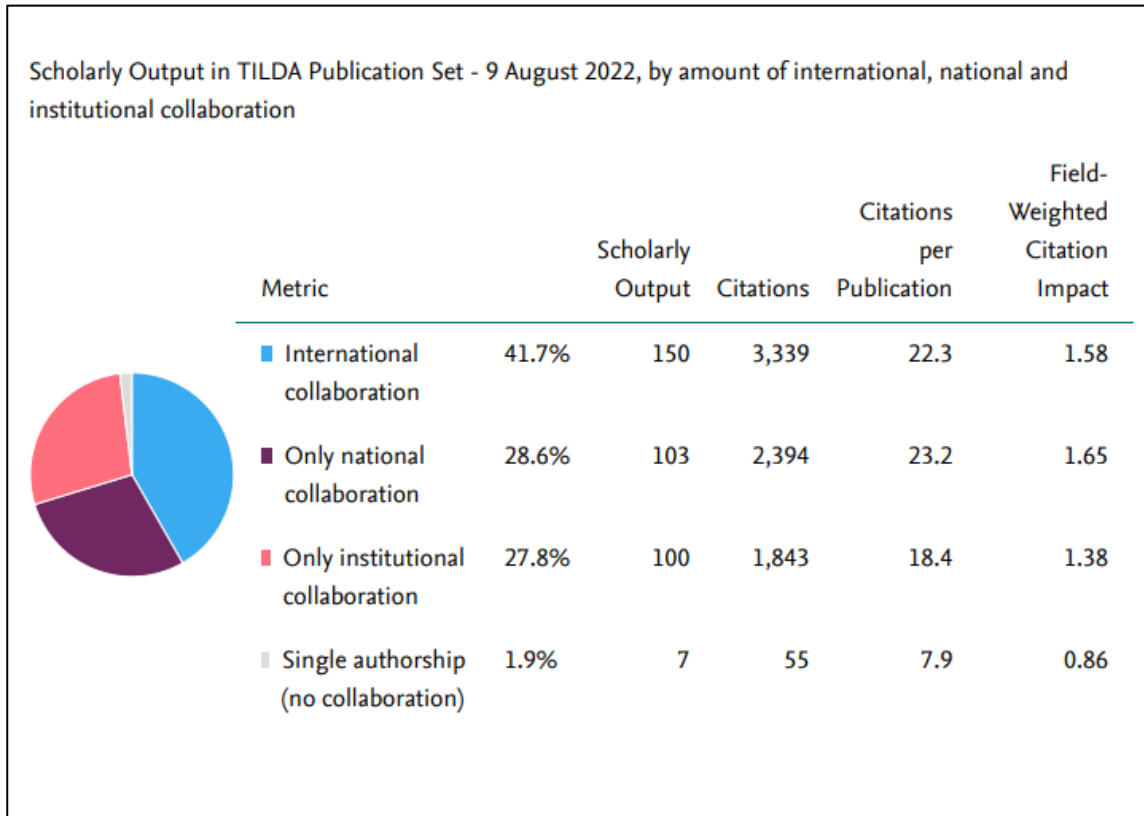


Figure 10 TILDA’s international, national, and institutional publication collaborations

Similarly, the academic–corporate collaboration calculates the citation percentage per publication for collaborative and non-collaborative publications and addresses the proportion of co-authored TILDA publications between the academic and corporate sectors. Figure 11 indicates the scholarly output with both academic and corporate author affiliations. The data indicate a small degree of academic–corporate affiliation, with only three publications included.

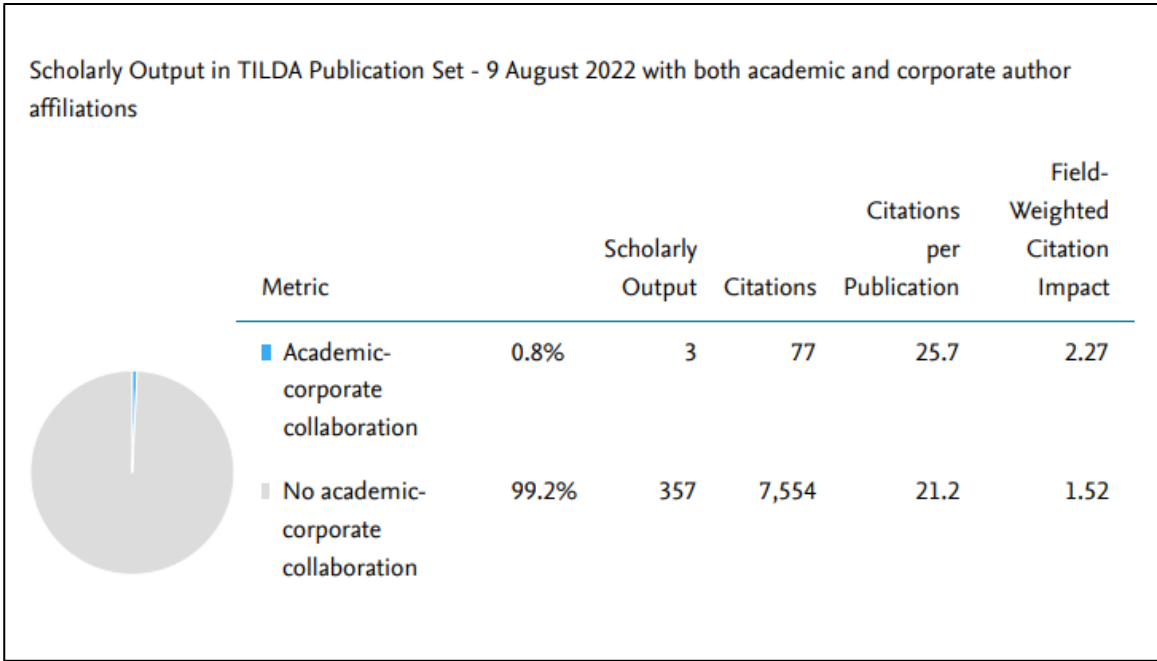


Figure 11 TILDA publications with academic and corporate authors

The Field-Weighted View Impact indicates how the number of views received by an entity’s publications compares with the average number of views received by all other similar publications. As the Field-Weighted View Impact is above 1.00, this indicates that TILDA’s publications were viewed more than anticipated based on the worldwide average for similar publications within the Scopus database (Elsevier Research Intelligence, 2019). The Field-Weighted View Impact is outlined in Figure 12.

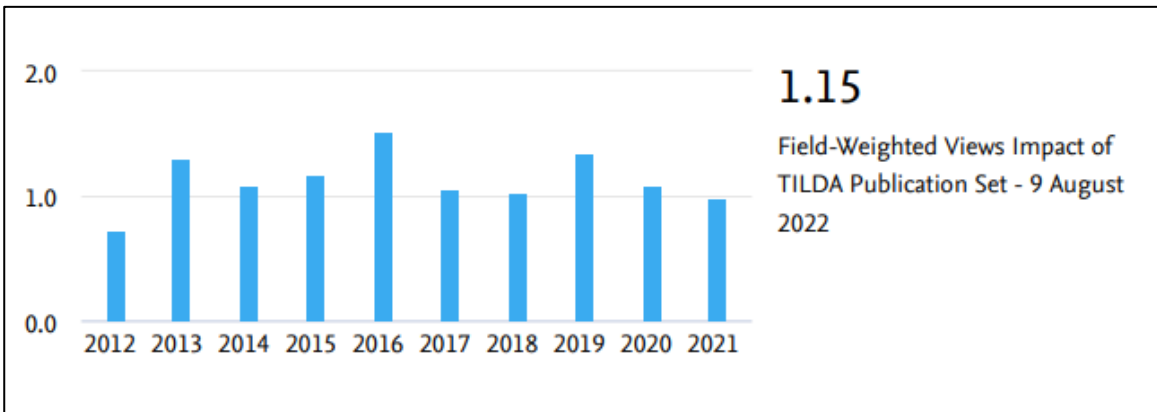


Figure 12 TILDA publications’ Field-Weighted View Impact, 2012–2021

View counts indicate the total usage impact and represent the sum of views and clicks on links to view the full-text version of the publications on the Scopus website. The view count includes views from subscribers and trial consumers. The TILDA publication view count is illustrated in Figure 13, indicating 9,778 views over the 10-year period from 2012 to 2021.

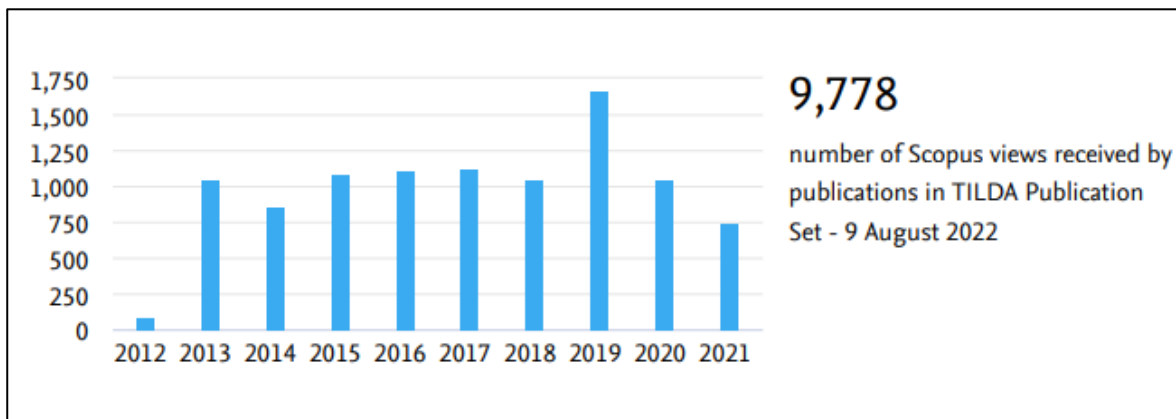


Figure 13 TILDA publication view count, 2012–2021

The average number of views per publication is 27.2 according to Scopus and indicates the average usage impact of the TILDA publications. The views per publication metric is influenced by highly viewed TILDA academic publications and provides an indication of interest in the academic output. The average number of views per TILDA publication per year is outlined in Figure 14.

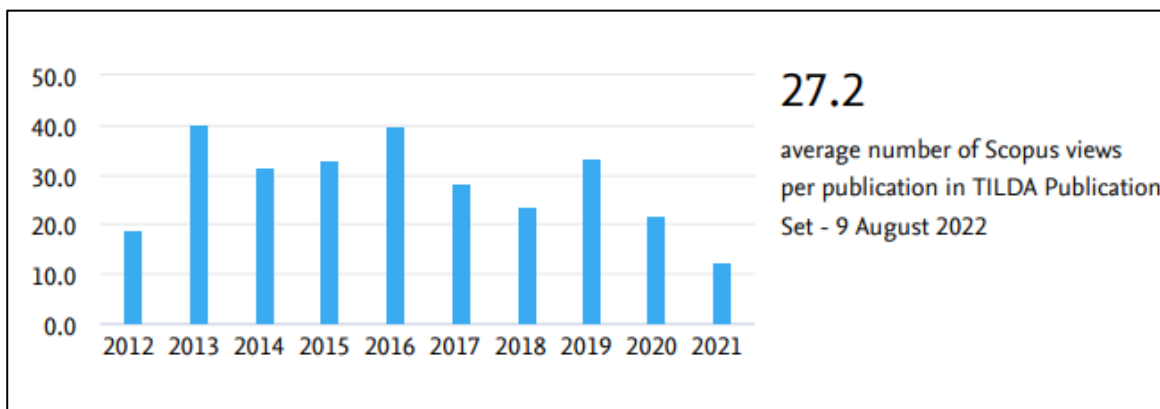


Figure 14 Average number of views per TILDA publication per year, 2012–2021

Overall, 43 academic publication outputs from TILDA ranked within the top 10% of the most viewed publications worldwide. Figure 15 illustrates the percentage of TILDA publications that are in the top 10% most viewed, in addition to the percentage of publications in the top 1% most viewed.

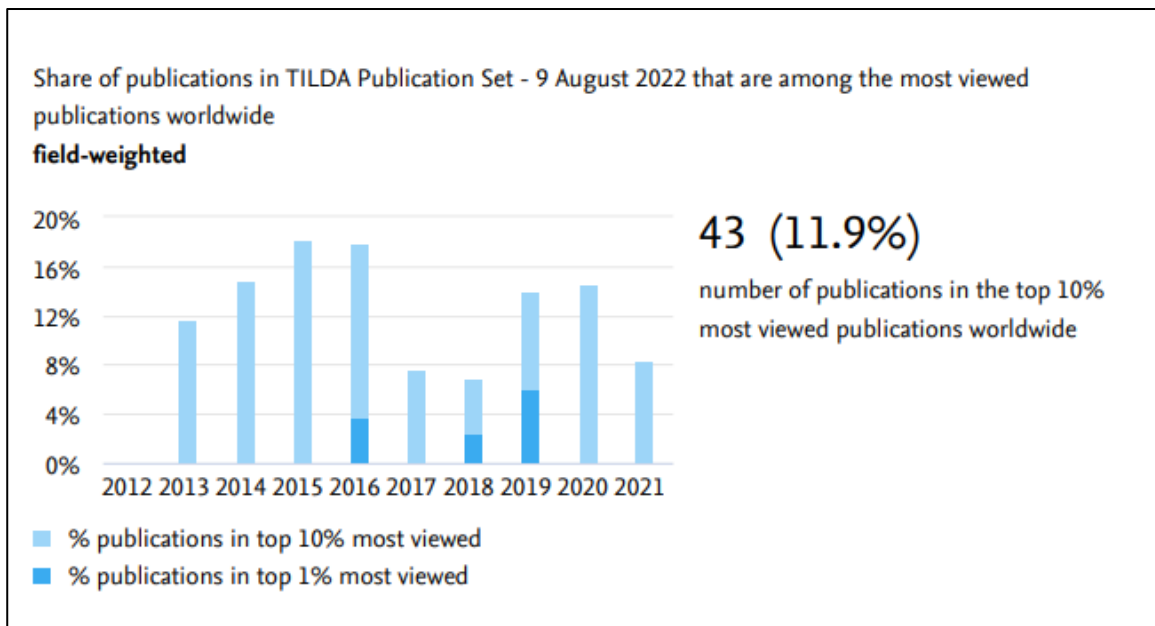


Figure 15 Number of TILDA publications in the top 10% and top 1% most viewed publications worldwide, 2012–2021

6 Descriptive content analysis of TILDA academic output findings

To measure the quality and impact associated with the academic output of the retrieved TILDA publications, data from the 360 studies assessed through the SciVal/Scopus interface were extracted to Excel. Additionally, in order to develop an environment within the Irish context for ‘ageing well’, the TILDA initiative set out to deliver “quality cutting edge research consistent with the emerging national initiative towards a ‘knowledge society’ built on innovations in science and technology” (Trinity College Dublin, 2022, p. 2).

To achieve this, six aims were outlined by the TILDA planners in response to a healthy ageing investigation, which include determining the following of older people: their health status and health needs; their social and economic status and needs; the health, economic, and social needs of their families and carers; the biological and environmental components of ‘successful ageing’; the contributions that older people are making to society and the economy; and how each of these interact to ensure that Ireland meets the needs and choices of its older citizens in a personalised and positive environment with due dignity and respect (Trinity College Dublin, 2022).

The intent of this content analysis is to develop a better understanding in relation to the quality and impact of TILDA’s published academic output, framed within the Context, Input, Process, Product (CIPP) evaluation model and the Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) framework. Content analysis of quantitative data bridges the interpretation of statistical results in a qualitative way for improved understanding of the results (Bauer, 2003; Creswell, 2012). Descriptive content analysis will guide the results of the extracted data in a systematic way that involves thorough examination of the included TILDA publications in order to explore the trends and results in a descriptive fashion (DİNÇER, 2018; Aktoprak and Hursen, 2022). Table 8 indicates how the descriptive content analysis interfaces with the CIPP evaluation model and the RE-AIM framework.

Table 8 Data extraction table headings framed within the CIPP evaluation model and the RE-AIM framework for discussion

Indicator	CIPP evaluation model	RE-AIM framework
Aim	Context	N/A
Setting	Context	N/A
Methods	Process	N/A
Countries of relevance	N/A	Reach
Design	Input	N/A
Population	N/A	Reach
Intervention/instruments/exposure	N/A	Adoption
Intervention effectiveness	N/A	Effectiveness
Implementation	N/A	Implementation
Sustainability	N/A	Maintenance
Peer reviewed status	Context	N/A
Findings	Product	N/A
National and international policy relevance	N/A	Maintenance
Any other relevant information	N/A	Maintenance

6.1 Context

The context evaluation component of the CIPP evaluation model provides an explanatory overview of the TILDA programme and the evaluation process, and can assist programme planners to identify the needs, assets, and resources required in order to ensure that the programme will be beneficial to its strategic intent (*Fitzpatrick et al. 2012*). Longitudinal studies on ageing explore the underlying mechanisms of ageing and provide clear, meticulous, futuristic road maps to direct the planning and preparation for the ageing process at the national level. As such, the official TILDA project website provides updated, detailed information on various aspects of the TILDA project. Specifically, details on the project’s governance (such as the Steering Committee, Oversight Board, and Scientific Advisory Board) are included, which guide and contribute to responsible research, as well as collaborations across multi-professional disciplines associated with ageing since TILDA’s inception (Trinity College Dublin, 2022).

Furthermore, the extracted data generated from the TILDA publications that were indexed in Scopus (n=360) indicate the dynamic co-authorship collaborations between some TILDA research themes – specifically within themes such as biomarkers, frailty and resilience, nutrition, biomedical engineering, neurocardiovascular instability, and neurocognitive issues – and show that the principal investigator co-authored 65 (19%) of the included studies. All of the 360 included studies that were indexed in Scopus were also published in peer-

reviewed journals. All nine TILDA themes¹ were represented within the extracted data and a variety of subcategories were also identified. A diverse research foundation contributes to agility and responsiveness of the research and is viewed as a desirable attribute (Universities UK, 2007).

Two studies did not include any data generated by the TILDA project, although they included researchers affiliated with TILDA. These studies (from O’Gorman *et al.* 2021), which aimed to assess the effect of a 12-week aerobic exercise intervention in individuals with non-cirrhotic chronic hepatitis C, and from King-Kallimanis *et al.* (2014), which aimed to explore the measurement properties of frailty with the goal of optimising frailty assessment according to Fried’s phenotype definition and comparing measurement properties across countries) were thus excluded from further analysis. Another two publications were a commentary on and a response to original studies (McLoughlin *et al.* 2018), and were subsequently excluded, while another commentary publication corrected an author surname (errata), but included the original publication and thus remained (Ward *et al.*, 2021a). The subcategories include psychiatry (n=69); urology (n=40); cardiology (n=38); general geriatrics (n=33); public health (n=28); psychology (n=17); epidemiology (n=17); mental health (n=17); public medicine (n=12); endocrinology (n=9); sociology (n=7); community medicine (n=6); addiction psychiatry, migration, and pharmacology (n=4 in each subcategory); internal medicine, neuroscience, nephrology, physical rehabilitation, social sciences, and vascular diseases (n=3 in each subcategory); circulation, depression, disability, neuropsychology, nutritional sciences, oncology, pain management, COVID-19, and social policy (n=2 in each subcategory); and artificial intelligence, chronic diseases, complementary therapies, demography, dentistry, econometrics and statistics, environmental health, gynaecology, human movement, neurobiology, occupational medicine, ophthalmology, orthopaedics, and psychosomatic research (n=1 in each subcategory).

6.2 Input

The evaluation of the TILDA publications retrieved from Scopus (n=360) demonstrated that they were well-structured with the aims and objectives as well as the purpose and scope relevant to TILDA’s strategy (Mertens and Wilson, 2012).

Study aims introduce the overall purpose of the research to be conducted and clarify the researcher’s intent. Of the 360 publications extracted from Scopus, as explained in the previous section, one publication was excluded (O’Gorman *et al.*, 2021) and another study did not include a study aim, as it was a comment and response to the journal editor regarding an original study which was published (Sexton *et al.*, 2018). The rest of the publications (n=358) all included a well-structured study aim correlating to Bloom’s taxonomy of cognitive skill levels (understanding, applying, analysing, synthesising, and evaluating), which requires study aims to include higher levels of cognitive skills which lead to deeper learning and transfer of knowledge (Bloom, 1956).

All included studies’ aims were examined and found to inform on the TILDA project’s strategic intent, and its responsiveness to clients’ needs was compared with that of similar longitudinal studies internationally. Data were compared and benchmarked against national and international longitudinal studies, population-based studies, and some smaller non-longitudinal studies. Table 9 outlines the comparative benchmarking of TILDA publications.

Concurrently, various study designs were included, including research articles (n=348) and literature reviews (n=9); three studies remained excluded. Most of the publications were empirical studies, except for the literature reviews (n=9) and other reviews (n=3). Additionally, study designs also included descriptive studies (n=3); analytical studies, such as observational studies (including cross-sectional studies (n=142), cohort studies (n=92), and case-control studies (n=10); and experimental/interventional studies (n=83).

¹ TILDA research themes: Biomarkers, Biomedical Engineering, Economics, Frailty and Resilience, Gait and Balance, Neuro-cardiovascular Instability, Neuro Cognitive, Nutrition, Vision.

Table 9 TILDA publications' comparative benchmarking with national and international studies

National and international longitudinal/population-based or non-longitudinal studies	TILDA publication citation
<p>TILDA The Centre for Primary Care Research (CPCR) cohort study in the Leinster region of Ireland</p>	<p>Wallace, E., Moriarty, F., McGarrigle, C., Smith, S.M., Kenny, R.-A. and Fahey, T. (2018) 'Self-report versus electronic medical record recorded healthcare utilisation in older community-dwelling adults: Comparison of two prospective cohort studies', <i>PLoS One</i>, 13(10):e0206201–e0206201.</p>
<p>TILDA The Swedish National study on Aging and Care in Kungsholmen (SNACK-K)</p>	<p>Power, J.E.M., Sjöberg, L., Kee, F., Kenny, R.A. and Lawlor, B. (2019) 'Comparisons of the discrepancy between loneliness and social isolation across Ireland and Sweden: findings from TILDA and SNAC-K', <i>Social Psychiatry and Psychiatric Epidemiology</i>, 54(9):1079–1088.</p>
<p>TILDA United States Health and Retirement Survey (HRS) English Longitudinal Study of Ageing (ELSA) Canadian Longitudinal Study on Aging (CLSA)</p>	<p>Hernández, B., Voll, S., Lewis, N.A., McCrory, C., White, A., Stirland, L., Kenny, R.A., Reilly, R., Hutton, C.P., Griffith, L.E., Kirkland, S.A., Terrera, G.M. and Hofer, S.M. (2021) 'Comparisons of disease cluster patterns, prevalence and health factors in the USA, Canada, England and Ireland', <i>BMC Public Health</i>, 21(1):1674–1674.</p>
<p>TILDA Northern Ireland Cohort for the Longitudinal Study of Ageing (NICOLA)</p>	<p>Pierse, T., Barry, L., Glynn, L., Murphy, A.W., Cruise, S. and O'Neill, C. (2020) 'A comparison, for older people with diabetes, of health and health care utilisation in two different health systems on the island of Ireland', <i>BMC Public Health</i>, 20(1):1446–1446.</p>
<p>TILDA NICOLA</p>	<p>Cruise, S.M., Hughes, J., Bennett, K., Kouvonen, A. and Kee, F. (2019) 'The Impact of Risk Factors for Coronary Heart Disease on Related Disability in Older Irish Adults', <i>Journal of Aging and Health</i>, 31(1):165–184.</p>
<p>TILDA United States RAND Health and Retirement Study (HRS) ELSA</p>	<p>McGrath, N., O'Neill, K., McHugh, S.M., Toomey, E. and Kearney, P.M. (2021) 'Epidemiology of undiagnosed depression in people with diabetes mellitus: a comparative analysis of Ireland, England and the USA', <i>BMJ Open</i>, 11(10):e049155–e049155.</p>

<p>TILDA ELSA</p>	<p>Donati, L., Fongo, D., Cattelani, L. and Chesani, F. (2019) 'Prediction of Decline in Activities of Daily Living Through Deep Artificial Neural Networks and Domain Adaptation', <i>AIIA 2019 – Advances in Artificial Intelligence</i>:376–391.</p>
<p>TILDA The European Prospective Investigation into Cancer and Nutrition (EPIC), Italy The Melbourne Collaborative Cohort Study (MCCS), Australia</p>	<p>Fiorito, G., Polidoro, S., Dugué, P.A., Kivimaki, M., Ponzi, E., Matullo, G., Guarrera, S., Assumma, M.B., Georgiadis, P., Kyrtopoulos, S.A., Krogh, V., Palli, D., Panico, S., Sacerdote, C., Tumino, R., Chadeau-Hyam, M., Stringhini, S., Severi, G., Hodge, A.M., ... Vineis, P. (2017) 'Social adversity and epigenetic aging: A multi-cohort study on socioeconomic differences in peripheral blood DNA methylation', <i>Scientific Reports</i>, 7(1):16266–16312.</p>
<p>TILDA Department of Internal Medicine, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands</p>	<p>van Wijnen, V.K., Finucane, C., Harms, M.P.M., Nolan, H., Freeman, R.L., Westerhof, B.E., Kenny, R.A., ter Maaten, J.C. and Wieling, W. (2017) 'Noninvasive beat-to-beat finger arterial pressure monitoring during orthostasis: a comprehensive review of normal and abnormal responses at different ages', <i>Journal of Internal Medicine</i>, 282(6):468–483.</p>
<p>TILDA Population-Based Cohort Study Lausanne Switzerland (CoLaus) Population-Based General-Purpose Cohort Study in France (CONSTANCES) The French epidemiological study among women from MGEN (the health insurance provider of the national education system) (<i>Etude Epidémiologique auprès de femmes de la MGEN (Mutuelle Générale de l'Education Nationale)</i>); E3N) EPIC, Italy The Portuguese Affordable, Social, and Substandard Housing and Mortality Cohort Study (EPIPorto) The GAZ <i>ELectricité</i> (GAZEL) Cohort Study, France MCCS, Australia The Swiss Kidney Project on Genes in Hypertension (SKIPOGH) The Italian Retired Not-Public Employed Cohort Study and Work Histories Italian Panel (WHIP) The British Whitehall II Study</p>	<p>D'Errico, A., Ricceri, F., Stringhini, S., Carmeli, C., Kivimaki, M., Bartley, M., McCrory, C., Bochud, M., Vollenweider, P., Tumino, R., Goldberg, M., Zins, M., Barros, H., Giles, G., Severi, G., Costa, G., Vineis, P. and the LIFEPAH Consortium (2017) 'Socioeconomic indicators in epidemiologic research: A practical example from the LIFEPAH study', <i>PLoS One</i>, 12(5):e0178071–e0178071.</p>

<p>TILDA Australian Longitudinal Study on Women’s Health (ALSWH) The Netherlands’ Longitudinal Aging Study Amsterdam (LASA) The United Kingdom (UK) Medical Research Council National Survey of Health and Development (NSHD)</p>	<p>Peeters, G., van Schoor, N.M., Cooper, R., Tooth, L. and Kenny, R.A. (2018) ‘Should prevention of falls start earlier? Coordinated analyses of harmonised data on falls in middle-aged adults across four population-based cohort studies’, <i>PLoS One</i>, 13(8).</p>
<p>TILDA The Intellectual Disability Supplement to the Irish Longitudinal Study on Ageing (IDS-TILDA)</p>	<p>Peklar, J., Kos, M., O’Dwyer, M., McCarron, M., McCallion, P., Kenny, R.A. and Henman, M.C. (2017) ‘Medication and supplement use in older people with and without intellectual disability: An observational, cross-sectional study’, <i>PLoS One</i>, 12(9):e0184390–e0184390.</p>
<p>TILDA Dokuz Eylül University (DEU) Cognitive Reserve/Reference Ability Neural Network (CR/RANN) Study</p>	<p>Boyle, R., Jollans, L., Rueda-Delgado, L.M., Rizzo, R., Yener, G.G., McMorrow, J.P., Knight, S.P., Carey, D., Robertson, I.H., Emek-Savaş, D.D., Stern, Y., Kenny, R.A. and Whelan, R. (2021) ‘Brain-predicted age difference score is related to specific cognitive functions: a multi-site replication analysis’, <i>Brain Imaging and Behavior</i>, 15(1):327–345.</p>
<p>TILDA United States Health and Retirement Study (HRS) ELSA</p>	<p>Savva, G.M., Maty, S.C., Setti, A. and Feeney, J. (2013) ‘Cognitive and Physical Health of the Older Populations of England, the United States, and Ireland: International Comparability of The Irish Longitudinal Study on Ageing’, <i>Journal of the American Geriatrics Society (JAGS)</i>, 61(s2):S291–S298.</p>
<p>TILDA The British Whitehall II Study Portuguese Generation 21 (Geração 21) Cohort Study The UK’s Airwave Health Monitoring Study EPIPorto, Portugal SKIPOGH CoLaus Growing Up in Ireland – The National Longitudinal Study of Children</p>	<p>Vineis, P., Avendano-Pabon, M., Barros, H., Chadeau-Hyam, M., Costa, G., Dijmarescu, M., Delpierre, C., D’Errico, A., Fraga, S., Giles, G., Goldberg, M., Zins, M., Kelly-Irving, M., Kivimaki, M., Lang, T., Layte, R., Mackenbach, J., Marmot, M., McCrory, C., ... the LIFEPATH Consortium (2017) ‘The biology of inequalities in health: the LIFEPATH project’, <i>Longitudinal and Life Course Studies</i>, 8(4):417–449.</p>
<p>TILDA IDS-TILDA</p>	<p>McCarron, M., Cleary, E. and McCallion, P. (2017) ‘Health and Health-Care Utilization of the Older Population of Ireland: Comparing the Intellectual Disability</p>

	Population and the General Population’, <i>Research on Aging</i> , 39(6):693–718.
TILDA The German Activity and Function in the Elderly (ActiFE) cohort study ELSA Italian Observational Cohort Study on Older Adults in Chianti (Invecchiare in Chianti (InCHIANTI) Study)	Palumbo, P., Klenk, J., Cattelani, L., Bandinelli, S., Ferrucci, L., Rapp, K., Chiari, L. and Rothenbacher, D. (2016) ‘Predictive Performance of a Fall Risk Assessment Tool for Community-Dwelling Older People (FRAT-up) in 4 European Cohorts’, <i>Journal of the American Medical Directors Association</i> , 17(12):7.
TILDA ELSA The British Whitehall II Study EPIPorto, Portugal SKIPOGH	Layte, R., McCrory, C., Cheallaigh, C.N., Bourke, N., Kivimaki, M., Ribeiro, A.I., Stringhini, S. and Vineis, P. (2019) ‘A Comparative Analysis of the Status Anxiety Hypothesis of Socio-economic Inequalities in Health Based on 18,349 individuals in Four Countries and Five Cohort Studies’, <i>Scientific Reports</i> , 9(1):796–796.
TILDA United States Health and Retirement Survey (HRS)	Mosca, I. and Kenny, R.A. (2014) ‘Exploring differences in prevalence of diagnosed, measured and undiagnosed hypertension: the case of Ireland and the United States of America’, <i>International Journal of Public Health</i> , 59(5):759–767.
TILDA ELSA The Survey of Health, Ageing and Retirement in Europe (SHARE), Continental Europe	Haas, S.A. and Oi, K. (2018) ‘The developmental origins of health and disease in international perspective’, <i>Social Science & Medicine</i> (1982), 213:123–133.
TILDA The Netherlands’ LASA The UK Medical Research Council NSHD ALSWH	Peeters, G., Cooper, R., Tooth, L., van Schoor, N.M. and Kenny, R.A. (2019) ‘A comprehensive assessment of risk factors for falls in middle-aged adults: co-ordinated analyses of cohort studies in four countries’, <i>Osteoporosis International</i> , 30(10):2099–2117.
TILDA ELSA InCHIANTI Study	Cattelani, L., Murri, M.B., Chesani, F., Chiari, L., Bandinelli, S. and Palumbo, P. (2019) ‘Risk Prediction Model for Late Life Depression: Development and Validation on Three Large European Datasets’, <i>IEEE Journal of Biomedical and Health Informatics</i> , 23(5):2196–2204.
TILDA ELSA The British Whitehall II Study EPIPorto, Portugal The GAZEL Cohort Study, France	Stringhini, S., Carmeli, C., Jokela, M., Avendaño, M., McCrory, C., d’Errico, A., Bochud, M., Barros, H., Costa, G., Chadeau-Hyam, M., Delpierre, C., Gandini, M., Fraga, S., Goldberg, M., Giles, G.G., Lassale, C., Kenny, R.A., Kelly-Irving, M., Paccaud, F., ...

<p>The Population-Based General-Purpose Cohort Study in France (CONSTANCES)</p> <p>The World Health Organization (WHO) Study on global AGEing and adult health (SAGE)</p> <p>SHARE, Continental Europe</p> <p>InterUniversity Consortium for Political and Social Research (Midlife in the United States (MIDUS), Hispanic Established Study for the Epidemiological Study of the Elderly (HEPESE), Social Environment and Biomarkers of Aging Study (SEBAS), and National Social Life and Aging Project (NSHAP)).</p> <p>United States Health and Retirement Survey (HRS)</p> <p>Wisconsin Longitudinal Study Graduate Sample (WLSG) and Wisconsin Longitudinal Study Sibling Sample (WLSS)</p> <p>National Health and Nutrition Examination Survey (NHANES) III, NHANES 1999, and NHANES 2001</p> <p>Costa Rican Longevity and Healthy Aging Study (CRELES) Pre-1945 and CRELES Retirement Cohort (CRELES-RC)</p> <p>Health and Aging in Africa: A Longitudinal Study of an INDEPTH Community in South Africa (HAALSI)</p>	<p>the LIFEPAATH Consortium (2018) ‘Socioeconomic status, non-communicable disease risk factors, and walking speed in older adults: multi-cohort population based study’, <i>BMJ</i>, 360:k1046–k1046.</p>
<p>TILDA</p> <p>The UK’s Airwave Health Monitoring Study</p> <p>European Prospective Investigation into Cancer and Nutrition EPIC</p> <p>EPIC, Italy</p> <p>The epidemiological investigations of the chances of preventing, recognising early and optimally treating chronic diseases in an elderly population (ESTHER) study 1, Germany</p> <p>The epidemiological investigations of the chances of preventing, recognising early and optimally treating chronic diseases in an elderly population (ESTHER) study 2, Germany</p> <p>Cooperative Health Research in the Region of Augsburg (KORA) cohort, Germany</p> <p>MCCS, Australia</p> <p>The Normative Aging Study (NAS), United States</p> <p>The Norwegian Women and Cancer Study (NOWAC)</p> <p>NICOLA</p> <p>The Rotterdam Studies 1 and 2</p> <p>The Rotterdam Study 3</p> <p>Swiss Study on Air Pollution and Lung Diseases in Adults (SAPALDIA)</p> <p>SKIPOGH a</p> <p>SKIPOGH b</p> <p>Case-Control study of Parkinson’s disease in French farmers (TERRE)</p>	<p>Fiorito, G., McCrory, C., Robinson, O., Carmeli, C., Rosales, C.O., Zhang, Y., Colicino, E., Dugué, P.A., Artaud, F., McKay, G.J. and Jeong, A., 2019. Socioeconomic position, lifestyle habits and biomarkers of epigenetic aging: a multi-cohort analysis. <i>Aging (Albany NY)</i>, 11(7), p.2045.</p>

6.3 Process

Process evaluation concerns the TILDA programme's implementation quality through assessment of the methods used and the interventions implemented (Fitzpatrick *et al.*, 2011; Mertens and Wilson, 2012). According to the extracted data results, some publications stipulated the TILDA data collection wave from which the data were utilised under the methods section as follows: first wave (n=14), second wave (n=5), third wave (n=4). Research methods also predominantly included statistical analysis (n=143), confirming quantitative methods as the preferred option for organisational research such as the TILDA project. Two additional publications were excluded, as no methods were indicated. Reasons for exclusion included the provision of comprehensive data on older people in Ireland with new insights into causal processes underlying ageing transformation (Whelan and Savva, 2013), and a descriptive publication on data collected during the second and fourth waves of TILDA data collection with a description of the refined research focus (Donoghue *et al.*, 2018b). Additionally, other analysis types included literature reviews (n=11), mixed-effect modelling (n=12), cross-sectional analysis (n=45), longitudinal analysis (n=28), regression analysis (n=81), meta-analysis (n=9), and secondary TILDA data analysis (n=26). Qualitative or mixed methods publications did not form part of the TILDA publications extracted.

6.4 Product

Product evaluation assesses the positive and negative effects of the TILDA programme on its audience (Mertens and Wilson, 2012), and the intended and unintended outcomes (Stufflebeam and Zhang, 2017). To demonstrate the effects and outcomes of the extracted TILDA publications on the programme audience, a multidimensional model of healthy ageing (Rivadeneira *et al.*, 2021), based on the WHO's concept of healthy ageing, was applied to a sample of themes that emerged from the extracted data findings. The multidimensional model of healthy ageing is illustrated in Figure 15.

Multidimensional model of healthy ageing

According to the WHO, healthy ageing can be defined as “the process of promoting and maintaining functional ability that enables well-being in old age” (World Health Organization, 2015, p. 28). Drawing on that WHO report, a multidimensional model of healthy ageing was designed that included all the intrinsic mental and physical capacities of healthy ageing, such as mobility, cognition, vision, hearing, and memory (World Health Organization, 2015; Rivadeneira *et al.*, 2021). Based on the model's three components – intrinsic capacity, social and political environment, and the interaction of the older adult with the environment – a sample of the extracted TILDA publication findings was evaluated for positive and negative effects and intended or unintended outcomes. The themes that emerged (n=122) were categorised under the three stated headings as follows:

1. Intrinsic capacity: mobility; falls; fear of falling and falling; cognition; memory; sleep; nutrition; frailty; hypotension/hypertension; and syncope
2. Interaction of the older adult with the environment: ageing perceptions and lifestyle, and
3. Social and political environment: COVID-19 impact, social isolation, and end of life.

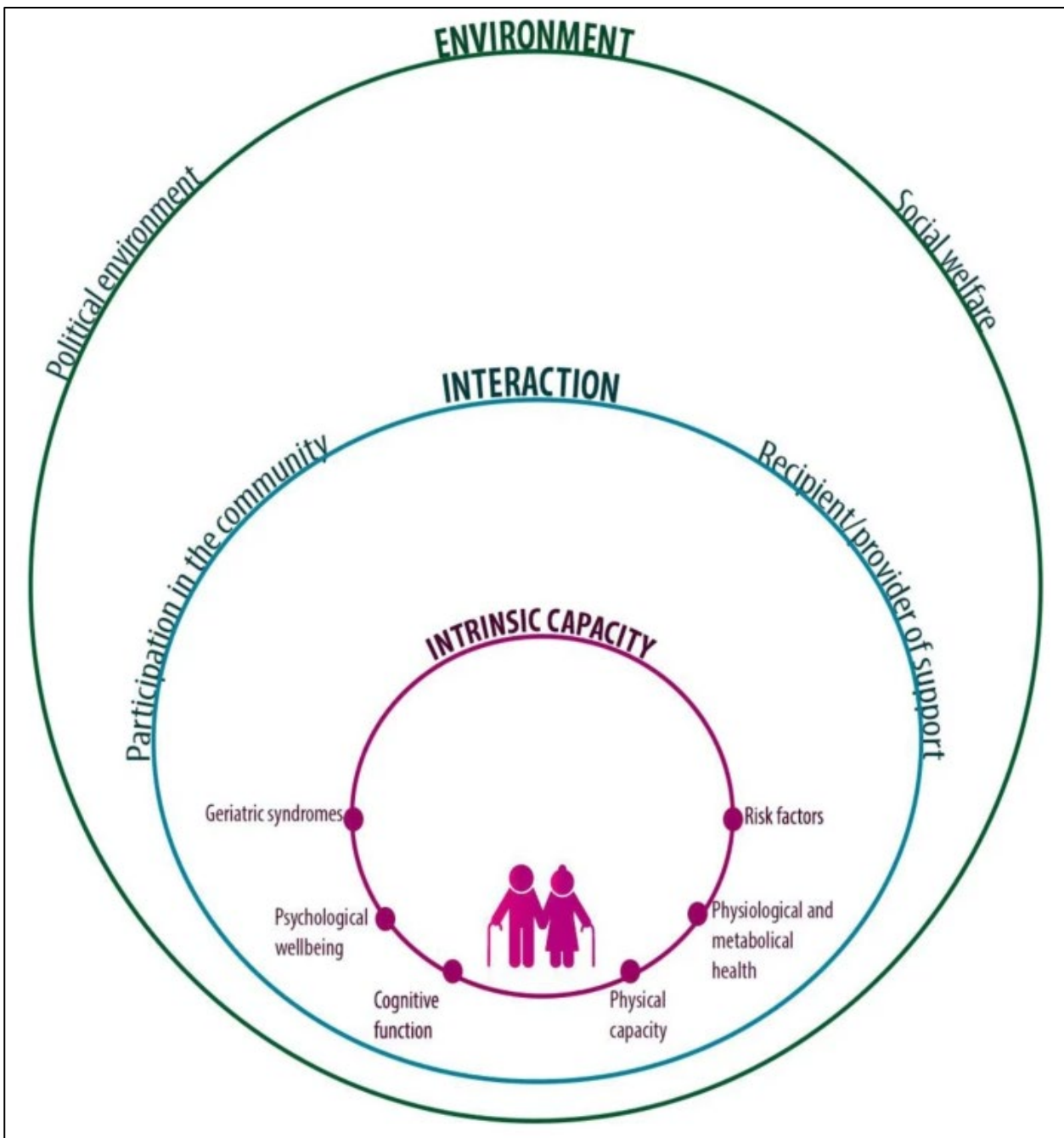


Figure 15 Multidimensional model of healthy ageing (Source Rivadeneira et al. 2021).

In terms of intrinsic capacity's impact associated with ageing adults, analysis of the effects of repeat assessments, rater, and time of day on mobility measures showed that average performance did not vary between baseline and repeat assessments in any test, except on the Rapid Cognitive Screening Test (RCS). Findings indicated no evidence for lower reliability of gait parameters with increasing time between assessments (Donoghue *et al.*, 2019). Analyses of factors associated with mobility performance in older age showed that non-obesity, a higher level of physical activity, vision, and grip strength at baseline were associated with better mobility performance among middle-aged and older Irish adults, and that these associations were modified by age (Huang *et al.*, 2019).

Moreover, while TILDA participants in the slower motor response time (MRT) group seemed to have faster mobility decline, this effect was statistically and clinically small (Chintapalli and Romero-Ortuno, 2021). Mobility was included as a factor in the prevalence of other intrinsic capacity indicators, such as nutrition and cognitive

function. Bardon *et al.* (2020) suggest that in addition to marital status and recent hospitalisation, mobility difficulties are predictors of 2-year incidence of malnutrition.

Findings also indicated that these predictors can be easily assessed through simple questions asked opportunistically by allied health professionals within health and social care settings used by older adults. Donoghue *et al.* (2018a) showed that mobility tasks such as the Timed Up and Go Test, the usual gait speed test, or the dual-task gait speed test are not sensitive predictors of cognitive decline in a high-functioning, community-dwelling sample of older adults. Instead, the Timed Up and Go Test can be used as a sensitive and specific proxy for frailty and a specific proxy for prefrailty that can be applied where the application of Fried's frailty phenotype criteria is not practicable (Savva *et al.*, 2013). Killane *et al.* (2013) showed that there is a link between the neural processes involved in movement and cognition, and that this association differs depending on the gait task being performed. While lower cognition was associated with autonomic dysfunction (Frewen *et al.*, 2015), O'Gorman *et al.* (2021) showed that cognitive impairment improved following a 12-week aerobic exercise intervention on individuals with hepatitis C virus.

In addition, poor sleep emerged as a risk factor for cognitive impairment (Scarlett *et al.*, 2021), while Hooyman *et al.* (2021) showed that grip strength should be cautiously interpreted as being associated with cognition. Studies show that frailty is a central indicator of the impact of intrinsic capacity in older adults. Except for sex differences, characteristics of frailty are similar regardless of whether self-reported or test-based measures are used exclusively to construct a frailty index (Theou *et al.*, 2015). Sustained attention performance and variability are associated with prefrailty and frailty in the older adult population and may represent a novel, objective, and modifiable cognitive marker of frailty progression (O'Halloran *et al.*, 2014).

The relationship between cognitive impairment and frailty has been demonstrated both cross-sectionally and longitudinally by a number of epidemiological and clinical studies. Frailty and cognition interact within a cycle of age-associated decline, with executive function as the cognitive domain most strongly associated with frailty. A better understanding of the direction of the relationship between frailty and cognition and the specific aspects involved will help to validate such causative hypotheses and suggest what interventions may be able to break the frailty cycle (Robertson *et al.*, 2013).

Frailty also emerged as a significant predictor of the utilisation of most social care and medical care services after controlling for the main correlates of frailty and observed individual effects. Frailty predicts utilisation of many different types of healthcare services, rendering it a useful risk stratification tool for targeting strategies of integrated care (Roe *et al.*, 2017). Additionally, some findings suggested that careful consideration must be given when prescribing sedatives to frail older adults, who are most vulnerable to adverse drug reactions and adverse health outcomes (sedative load) (Peklar *et al.*, 2015).

Furthermore, cohort studies across 12 European countries showed that a frailty phenotype (as measured by appetite loss, exhaustion, weakness, slowness, and reduced physical activity) is a valid construct with a qualitatively similar factor structure (King-Kallimanis *et al.*, 2014). Among the intrinsic capacity indicators, hypertension and high cholesterol were the most prevalent self-reported morbidities in two age cohorts of older adults (Mannion *et al.*, 2020). Studies have shown that while hypertension and the use of antihypertensive medications is not associated with decline in global cognitive and executive functions, changes in cognition can largely be explained by age and education (Leong *et al.*, 2020).

Additionally, abnormal blood pressure variability, readily identifiable by conducting an active stand test in a clinical setting, has an independent association with reduced visual contrast sensitivity scores (Ní Bhuachalla *et al.*, 2019). In a comprehensive assessment of risk factors for falls in middle-aged adults based on cohort studies in four different countries, Peeters *et al.* (2019) show that many of the demographic, health, and lifestyle risk factors known to be associated with falls in older adults were also associated with falls in middle-aged adults. However, differences in the strength of the associations between middle-aged and older adults emerged, with some factors, such as musculoskeletal conditions, being potentially more important at younger ages. Country

differences in risk factor profiles may reflect differences in the prevalence of both the risk factors and falls, and/or may be driven by differences in study design.

Statistically significant interactions with sex were found, suggesting that there are some differences in risk profiles for men and women. Orthostatic hypotension, particularly when coexisting with hypertension, was independently associated with an increased risk of future falls, but not of syncope, in community-dwelling adults aged 65 years and older (Donoghue *et al.*, 2021a). Poor mobility and urinary incontinence were the only risk factors that were consistently associated with a higher falls risk.

As part of the impact of ageing adults' interactions with the environment, the reduction of the 32-item Ageing Perceptions Questionnaire, designed as a self-regulation model by Sexton *et al.* (2014), addressed the self-perceptions of older people which are intrinsically linked with positive ageing perceptions, overall health, quality of life, and, ultimately, mortality. However, ageing perceptions are influenced by broader societal attitudes to ageing and manifest as positive perceptions of ageing through personal development, or as negative perceptions associated with physical decline leading to negatively affected outcomes (Sexton *et al.*, 2014). Additionally, ageing self-perceptions can act as motivational factors to explain why ageing adults engage in harmful behaviours such as smoking and drinking, although positive self-perceptions may reduce potentially harmful behaviours (Villiers-Tuthill *et al.*, 2016). These findings indicate that ageing adults' self-perceptions (whether positive or negative), coupled with the control over these perceptions, influence health behavioural choices (Villiers-Tuthill *et al.*, 2016). In addition, when the correlations between negative self-perceptions of ageing were assessed, new onset of depression and anxiety were found during follow-up in ageing adults who had initially presented with negative self-perceptions (Freeman *et al.*, 2016). The concise version of the 32-item Ageing Perceptions Questionnaire, introduced by Sexton *et al.* (2014), was found to not be particularly suitable for implementation in larger population-based surveys, but was found to be beneficial in order to better understand the impact of harmful behaviours in ageing adults and how to prevent these behaviours through positive ageing self-perceptions, and thus to increase healthy ageing.

An inactive lifestyle is also associated with particular risks – and not just physiological, but also psychological risks (Murtagh *et al.*, 2015). Findings furthermore indicated that ageing women are twice as likely as men to be inactive due to lifestyle choices. Interestingly enough, ageing participants who displayed negative self-perceptions of ageing were more likely to be inactive than those with a more positive self-perception of ageing (Murtagh *et al.*, 2015). In addition, Murtagh *et al.*, (2015) reported that 85% of participants had not attended post-secondary education, but ageing adults who had completed any level of post-secondary education were less likely to be inactive, which corresponds with previous findings (Vagetti *et al.*, 2012; Murtagh *et al.*, 2015). Likewise, the findings of a study that investigated ageing adults' socioeconomic position, lifestyle habits, and biomarkers of epigenetic ageing (Fiorito *et al.*, 2019) found that the four biomarkers of ageing used were significantly associated with the participants' educational level, with adults who had a lower educational level expressing a higher number of stochastic epigenetic mutations. The study concluded that ageing adults with lower levels of educational attainment were comparable with ageing adults who engaged in various other lifestyle risk factors, such as obesity and alcohol intake (but not smoking, which indicated a significantly greater negative effect) (Fiorito *et al.*, 2019). Moreover, Layte *et al.* (2019) extrapolated a hypothesis that systematic inflammation due to chronic psychosocial stress links the socioeconomic position of ageing adults with premature ageing. In accordance with this hypothesis, countries with wider social status differences or that emphasise social status more will display higher levels of psychosocial stress, with the damaging biological results of premature ageing and chronic inflammation responses. The study's findings supported its hypothesis, and differences between socioeconomic position are associated with societal income inequality (Layte *et al.*, 2019). Chronic psychosocial stress can promote negative health behaviours such as alcohol intake, inactivity, obesity, and smoking, with stress acting as mediator between socioeconomic position and inflammation (Layte *et al.*, 2019).

With regard to the social and political environment of ageing adults, the impact of the COVID-19 pandemic had detrimental effects on ageing older adults, as they were more likely to be infected, to be hospitalised, or to die (Briggs *et al.*, 2021a). Even when isolation recommendations were less strictly enforced for the general public in the summer of 2021, older people were still disproportionately affected, as they in particular were advised to remain isolated from social contact (Briggs *et al.*, 2021a). The fear of contracting COVID-19, the prevalence of depressive symptoms associated with social isolation, and the higher risk of death contributed to the role of risk factors associated with COVID-19 restrictions such as age, living alone or with others, and adjustments to important covariates of the virus (Briggs *et al.*, 2021a). In a recent study, Briggs *et al.* (2021a) examined trends of depressive symptoms prior to and during the COVID-19 pandemic with more than 3,000 older adults, and found significant increases in the prevalence of depressive symptoms among older adults, specifically in those aged over 70 years and/or who were living alone. A similar study, which investigated older adults' prevalence, predictors, and longitudinal course of a 'wish to die', found that in 72% of cases, older adults no longer reported a wish to die when depressive symptoms were treated and their loneliness was resolved (Briggs *et al.* 2021b). The findings of these studies thus indicated that an enhanced focus by the government on improving access to mental health care, coupled with addressing social isolation among older adults, should be a political and public health priority (Briggs *et al.*, 2021a; Briggs *et al.*, 2021b). However, social isolation was previously examined by Barrett and Mosca (2013), who found that social isolation is a significant feature in the lives of return migrants, and is specifically more strongly felt by migrants who spent more time away from home or those who have returned home more recently. In a comparative study with data from TILDA and ELSA, McHugh *et al.* (2017) found that the difference between social isolation and loneliness is meaningful, as these concepts are related within a broader context. The authors concluded that within the health risk restrictions of an inactive lifestyle, ageing adults are more prone to depressive symptoms, in addition to other factors closely associated with depressive symptoms and an inactive lifestyle, such as social isolation, loneliness, a sedentary mindset, and chronic diseases or physical illnesses (McHugh *et al.*, 2017). Additionally, previously suggested findings which framed loneliness within a cultural context and meaning were supported by Power *et al.* (2019), who investigated the discrepancy between loneliness and social isolation within Irish and Swedish older adults. A link was found between a more robust approach to the impact of social isolation and loneliness and the cognitive functioning of older adults, and the study concluded that cultural influences associated with different interpretations of concepts such as social isolation and loneliness are significant across different countries (Power *et al.*, 2019).

6.5 Reach

Within the Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) framework, reach indicates the "number, proportion and representativeness of individuals who are willing to participate in a given initiative, intervention or programme, and reasons why and why not" (Holtrop *et al.*, 2021, p. 3). For this review, reach included individual researchers or research teams who used TILDA data for research publications. More specifically, as the comparative benchmarking with national and international longitudinal, population-based studies and some smaller non-longitudinal studies were outlined, internationally authored publications which included TILDA data will be indicated under 'reach', alongside TILDA publications published outside of Ireland. TILDA researchers publish their studies in international journals and also promote their datasets for usage in research studies internationally (Whelan and Savva, 2013; Donoghue *et al.*, 2018b).

From a sample of the data extracted from TILDA publications (n=125), nine countries were identified as countries of publication origin of research studies, such as the United States (n=52) (Donoghue *et al.*, 2012b; Nolan *et al.*, 2012; Cronin *et al.*, 2013; Feeney *et al.*, 2013a; Feeney *et al.*, 2013b; Kenny *et al.*, 2013; Layte *et al.*, 2013; Richardson *et al.*, 2013; Savva *et al.*, 2013; Burholt and Scharf, 2014; Cousins *et al.*, 2014; Donoghue *et al.*, 2014b; Finucane *et al.*, 2014; Frewen *et al.*, 2014a; Frewen *et al.*, 2014b; Kamiya *et al.*, 2014; Killane *et al.*, 2014; O'Halloran *et al.*, 2014; Donoghue *et al.*, 2015; Donoghue *et al.*, 2015b; McCrory *et al.*, 2015; Murtagh *et al.*, 2015; Peklar, O'Halloran and Maidment, 2015; Richardson *et al.*, 2015b; Robertson *et al.*, 2015; Canney *et al.*,

2016; Cassarino *et al.*, 2016; Coen *et al.*, 2016; Donoghue *et al.*, 2016; McCrory *et al.*, 2016; Robertson *et al.*, 2016; Duggan *et al.*, 2017; Feeney *et al.*, 2017; Finucane *et al.*, 2017; Peklar *et al.*, 2017; Sexton *et al.*, 2017; Stokes, 2017; Briggs *et al.*, 2018a; Briggs *et al.* 2018b; Briggs *et al.*, 2018c; Briggs *et al.* 2018d; Donoghue *et al.*, 2018a; Laird *et al.*, 2018a; Maguire *et al.* 2018; O'Connell *et al.*, 2018; Ryan *et al.*, 2018; Vaughan *et al.*, 2018; Briggs *et al.* 2019; Cattelani *et al.*, 2019; Corish and Bardon, 2019; Nolan *et al.*, 2019; McCrory *et al.*, 2021), the UK (n=43) (Donoghue *et al.*, 2012a; Fan *et al.*, 2012; Frewen *et al.*, 2013a; Kamiya *et al.*, 2013; Mosca *et al.*, 2013; Regan *et al.*, 2013; Romero-Ortuno *et al.*, 2013; Bhangu *et al.*, 2014; Setti *et al.*, 2014; Sexton *et al.*, 2014; Akuffo *et al.*, 2015; Jansen *et al.*, 2015; McKee *et al.* 2015; Murphy *et al.*, 2015; O'Regan *et al.*, 2015; Richardson *et al.*, 2015a; Theou *et al.*, 2015; Moriarty *et al.*, 2016; Murphy *et al.*, 2016; Tracey *et al.*, 2016; Tyrovolas *et al.*, 2016; Vaughan *et al.*, 2016; Burns *et al.*, 2017; Canney *et al.*, 2017; Connolly *et al.*, 2017; Ma and Nolan, 2017; McHugh *et al.*, 2017; Moore *et al.*, 2017; Santini *et al.*, 2017; Stickley *et al.* , 2017; Briggs *et al.*, 2018e; Dempsey *et al.*, 2018a; Dempsey *et al.*, 2018b; Donoghue *et al.*, 2018b; Laird *et al.*, 2018b; McDowell *et al.*, 2018; McDowell *et al.*, 2018a; McDowell *et al.*, 2018c; McHugh Power *et al.*, 2018; Wong *et al.*, 2018; Byrne *et al.*, 2019; McCrory *et al.*, 2019; McDowell *et al.*, 2019), the Netherlands (n=15) (Gallagher *et al.*, 2012; Mosca, 2013; Leahy *et al.*, 2015; O'Connell *et al.*, 2015; O'Hare *et al.*, 2015; Santini *et al.*, 2015; Freeman *et al.*, 2016; Santini *et al.*, 2016; Ma *et al.*, 2018; McDowell *et al.*, 2018b; Gordon *et al.*, 2019; Ward, *et al.*, 2019; Curran *et al.*, 2020; Domènech-Abella *et al.*, 2020; Vancampfort *et al.*, 2020), Germany (n=2) (Frewen *et al.*, 2013b; Feeney *et al.*, 2016), Italy (n=1) (D'Errico *et al.*, 2017), Japan (n=1) (Donoghue *et al.*, 2014a), New Zealand (n=1) (Peklar *et al.*, 2014), Scotland (n=1) (Peklar *et al.*, 2013), and Switzerland (n=1) (McGarrigle *et al.*, 2014).

In addition, nine literature reviews were also included, originating from the United States (Kenny, 2013; Barrett, *et al.*, 2015; Briggs *et al.*, 2016; Cochrane and McGilloway, 2017; May *et al.*, 2020; Donoghue *et al.*, 2022) and the UK (Ní Bhuachalla *et al.*, 2015; Mayburd and Baranova, 2019; Olanrewaju *et al.*, 2020).

6.6 Effectiveness

Within the RE-AIM framework, effectiveness directs our attention to the programme outcomes and their impact on targeted groups. For this review, publications were assessed for effectiveness based on the intervention outcomes measured and/or the associated factors evaluated. Among the extracted TILDA publications, no intervention outcomes were measured, while the associated factors evaluated fell under the headings identified for the product evaluation, which included: intrinsic capacity (mobility; falls; fear of falling and falling; cognition; memory; sleep; nutrition; frailty; hypotension/hypertension; and syncope); interaction of the older adult with the environment (ageing perceptions and lifestyle), and social and political environment (COVID-19 impact, social isolation, and end of life).

6.7 Adoption, implementation, and maintenance

For this review, adoption, implementation, and maintenance were integrated within a purposeful sampling of TILDA research reports published between 2016 and 2021² in order to evaluate the public health impact of the TILDA programme and the extent to which outputs from TILDA inform the development of policy documents both nationally and internationally. While not describing actual policies implemented based on TILDA outputs, the reports analysed show the policy relevance of TILDA data and publications by providing a picture of the way they have been operationalised and integrated into policy documents.

Four major policy fields were identified as being informed by TILDA outputs in the period considered. These policy fields are as follows:

² Available at: <https://tilda.tcd.ie/publications/>

1. The impact of COVID-19 on older people and policy concerns (n=12). Reports falling within this policy field addressed issues related to frailty and infection risk; mental health; physical function; quality of life; vaccination; nursing homes; loneliness and social isolation; Internet access and technology; and disability.
2. Health and well-being (n=6). Reports falling within this policy field addressed issues related to disability, physical function, health service use, social participation, quality of life, cancer, depression, and dementia.
3. Healthcare service utilisation (n=8). Reports falling within this policy field addressed issues related to social engagement, economics, caregiving, quality of life, substance use, mortality, dementia, and cancer screening.
4. Social issues (n=3). Reports falling within this policy field addressed issues related to housing; substance and tobacco use; public health access; migration; caregiving; retirement and pensions; disability; and transport.

TILDA outputs contained policy-relevant information on the older population of Ireland at the onset of the COVID-19 pandemic (Kenny *et al.* 2020a), providing a context and information to the Irish population aged 50 years and older for tackling COVID-19 (Kenny *et al.*, 2020b), including the roll-out of COVID-19 vaccinations (De Looze *et al.*, 2021). These data covered issues related to risk factors for COVID-19 infection among the older Irish population, including frailty, multimorbidity, and medication usage; the utilisation of healthcare and home care and the types of health coverage; the contributions of older people to Ireland's society and economy; access to and use of the Internet among the older population; and data on TILDA participants in nursing homes. Findings also provided relevant information in view of the successive COVID-19 vaccination. Additionally, TILDA outputs offered relevant indications on the impact of the COVID-19 pandemic and the pandemic containment measures on the older Irish population (Costello *et al.*, 2021; Monaghan *et al.*, 2021). TILDA was particularly well placed to report on older people's experience of COVID-19, including the challenging aspects of social isolation during the lockdowns and the specific impact these had on the quality of life of older people (Ward *et al.*, 2020; Ward, *et al.*, 2021b). The findings provided indications on access to, and utilisation of, Internet and information technology (IT) devices; the specific needs of older people with disabilities; and the correlations between social distancing, loneliness, and mental health issues. Finally, TILDA outcomes provided information on Irish nursing home data to inform COVID-19 responses targeted at nursing home residents (Romero-Ortuno *et al.*, 2020), and informed studies on data about deaths in nursing homes during the pandemic (Romero-Ortuño and Kennelly, 2020).

TILDA outputs provide an evidence base for addressing current and emerging issues associated with population ageing in Ireland across health, economic, and social systems (Turner *et al.*, 2018). Findings from TILDA highlighted the link between well-being and health (McGarrigle *et al.*, 2017), stressing the benefit of social engagement, living conditions, healthcare coverage, and healthcare utilisation on quality of life and on mental and physical health and well-being. In this respect, TILDA outputs suggest that the transition out of employment not only has effects on health-related behaviours, social interactions, and activities, but also has wider implications for well-being more generally (Ward, 2019). TILDA also provided evidence of associations between healthcare coverage and well-being, highlighting that dental status, for example, was related to both quality of life and mood, with large discrepancies between people living in Dublin and those living in rural areas. These findings pointed to the need for stepping up dental services coverage in rural areas, including informing and assisting older people in how to access State dental care services (Sheehan *et al.*, 2017).

Patterns of healthcare utilisation in general showed how adults aged 70 years and older use hospital, primary, and community care services across Ireland. The data suggested that community care service use in adults aged 50 years and older is low, underscoring the fact that the majority of adults aged 50 years and older are active and make significant contributions to the social and economic fabric of Irish society – for example, by providing essential informal care (Roe *et al.*, 2020). Studies showed that, in case of functional limitations, help received by the older population came from a mixture of family carers and formal care, either State-provided or privately sourced. In light of these considerations, in order to enable family caring to continue, State-provided home

support must be available to facilitate and support carers to retain their work and leisure pursuits in addition to their care responsibilities (McGarrigle and Kenny, 2020). In addition, TILDA outputs showed an increase in general practitioner (GP) utilisation upon receipt of a full Medical Card/GP Visit Card (Nolan *et al.*, 2016). In the context of healthcare services coverage, the findings highlighted a higher uptake of cancer screening services among those with private health insurance, although that insurance does not confer any advantages in accessing these services, suggesting consideration of the integrated nature of healthcare systems when seeking to maximise the uptake of services (such as cancer screening) that potentially involve multiple parts of the healthcare system (Connolly and Whyte, 2019). Furthermore, TILDA outputs were included in recommendations from the Economic and Social Research Institute (ESRI) to help inform policy-makers about the service demand for home support services for the population aged 65 years and older in Ireland under various policy scenarios (Walsh and Lyons, 2021).

In terms of social issues, TILDA outputs suggested that the absence of strong social supports, which takes the form of loneliness and social isolation, negatively affected the well-being of older adults, underscoring the need for enhanced public efforts to alleviate these potentially damaging phenomena (Ward *et al.* 2019b). TILDA datasets also provided information on the determinants, patterns, and impacts of tobacco consumption in the Irish context in view of Ireland's commitment to becoming tobacco free by 2025 (Sheridan *et al.*, 2018). Housing conditions constituted another relevant issue impacting on the health, well-being, and quality of life of older adults in Ireland, providing useful information on how to step up home improvement, energy efficiency, and fuel allowance schemes. Specifically, adults who reported difficulty heating their homes had poorer self-rated health and were more likely to report clinically relevant depressive symptoms and chronic pain irrespective of educational attainment. Adults living alone, renters, those living in older housing, and those without central heating were most at risk of experiencing difficulties heating their homes (Orr *et al.*, 2016). TILDA has also provided a unique opportunity to observe changes in the lives of older adults as they embark on retirement, highlighting how individuals experience this transition according to their preparedness and the context of their retirement. In this respect, TILDA findings suggested that public policy must be mindful of this myriad of issues, particularly considering increasingly forceful calls for working lives to be extended as a response to ageing populations (Ward, 2019). Finally, TILDA outputs demonstrated that older adults aged 70 years and older continue to make valuable contributions to society, with many characterised by active citizenship and participation in the lives of their families and their communities. The vision for positive ageing set out in Ireland's National Positive Ageing Strategy – which includes a broad suite of areas for targeted action, including economic, social, cultural, community, and family life, and solidarity between generations – provides a useful benchmark against which public policies and decisions should be continuously assessed, even in times of public health urgency (McGarrigle *et al.*, 2020).

7 Conclusion

This literature review of TILDA's academic outputs provides an analysis of the core published articles available on the TILDA project website. The current review also includes a final section which analyses some core research reports published between 2016 and 2021 in order to examine the extent to which outputs from TILDA inform the development of policy documents both nationally and internationally.

The various sections of this review aimed to address the following question: What are the quality and impact measures associated with the academic output of the retrieved TILDA project publications? The systematic extraction of the TILDA publications, the general quality and impact metrics information for the retrieved TILDA publications, and the descriptive content analysis articulated following the Context, Input, Process, Product (CIPP) evaluation model and the RE-AIM framework allowed this review to provide relevant insights into the quality and impact of the TILDA project literature.

8 References

- Aktoprak, A. and Hursen, C. (2022) 'A BIBLIOMETRIC AND CONTENT ANALYSIS OF CRITICAL THINKING IN PRIMARY EDUCATION', *Thinking skills and creativity*, 44, pp. 101029.
- Akuffo, K. O., Nolan, J., Stack, J., Moran, R., Feeney, J., Kenny, R. A., Peto, T., Dooley, C., O'Halloran, A. M., Cronin, H. and Beatty, S. (2015) 'Prevalence of age-related macular degeneration in the Republic of Ireland', *British journal of ophthalmology*, 99(8), pp. 1037-1044.
- AlRyalat, S. A. S., Malkawi, L. W. and Momani, S. M. (2019) 'Comparing Bibliometric Analysis Using PubMed, Scopus, and Web of Science Databases', *Journal of Visualized Experiments*, (152).
- Bardon, L. A., Streicher, M., Corish, C. A., Clarke, M., Power, L. C., Kenny, R. A., O'Connor, D. M., Laird, E., O'Connor, E. M., Visser, M., Volkert, D., Gibney, E. R., & MaNuEL Consortium (2020). Predictors of Incident Malnutrition in Older Irish Adults from the Irish Longitudinal Study on Ageing Cohort-A MaNuEL study. *The journals of gerontology. Series A, Biological sciences and medical sciences*, 75(2), 249–256.
- Barrett, A. and Mosca, I. (2013) 'Social Isolation, Loneliness and Return Migration: Evidence from Older Irish Adults', *Journal of ethnic and migration studies*, 39(10), pp. 1659-1677.
- Barrett, A., Mosca, I. and Whelan, B. (2015) 'How Well-Informed Are Pension Scheme Members on Their Future Pension Benefits? Evidence from Ireland', *Journal of aging & social policy*, 27(4), pp. 295-313.
- Bauer, M., W. (2003) 'Classical content analysis: A review', in Bauer, M., W. & Gaskell, G. (eds.) *Qualitative researching with text, image and sound*. London: Sage, pp. 131-151.
- Bhangu, J. S., King-Kallimanis, B., Cunningham, C. and Kenny, R. A. (2014) 'The relationship between syncope, depression and anti-depressant use in older adults', *Age and ageing*, 43(4), pp. 502-509.
- Blanco Mesa, F. R., Gil Lafuente, A. M. and Merigó Lindahl, J. M. (2017) 'Fuzzy decision making: A bibliometric-based review', *Journal of intelligent & fuzzy systems*, 32(3), pp. 2033-2050.
- Bloom, B. S. (1956) *Taxonomy of Educational Objectives: the Classification of Educational Goals*. New York NY: Longmans, Green.
- Boyle, R., Jollans, L., Rueda-Delgado, L.M., Rizzo, R., Yener, G.G., McMorrow, J.P., Knight, S.P., Carey, D., Robertson, I.H., Emek-Savaş, D.D., Stern, Y., Kenny, R.A. and Whelan, R. (2021) 'Brain-predicted age difference score is related to specific cognitive functions: a multi-site replication analysis', *Brain Imaging and Behavior*, 15(1):327–345.
- Briggs, R., Carey, D. and Claffey, P. (2019) 'Time to Refocus Assessment of Vision in Older Adults? Contrast Sensitivity but Not Visual Acuity Is AssocTime to Refocus Assessment of Vision in Older Adults? Contrast Sensitivity but Not Visual Acuity Is Associated with Gait in Older Adults', *Journal of the American Geriatrics Society*, 67(5), pp. 6.
- Briggs, R., Carey, D., Kennelly, S. P. and Kenny, R. A. (2018a) 'Longitudinal Association Between Orthostatic Hypotension at 30 Seconds Post-Standing and Late-Life Depression', *Hypertension (Dallas, Tex. 1979)*, 71(5), pp. 946-954.
- Briggs, R., Carey, D. and Kenny, R., A, 2018b. New Geriatric Psychiatry Findings from Tallaght Hospital Reported [What is the Longitudinal Relationship between Gait Abnormalities and Depression in a Cohort of Community-Dwelling Older People? Data From the Irish Longitudinal Study on Ageing .]. NewsRX LLC.
- Briggs, R., Carey, D. and Kenny, R., A, (2018c) 'Psychiatry - Geriatric Psychiatry; New Geriatric Psychiatry Findings from Tallaght Hospital Reported [What is the Longitudinal Relationship between Gait Abnormalities and

- Depression in a Cohort of Community-Dwelling Older People? Data From the Irish Longitudinal Study on Ageing .]’, *Psychology & psychiatry journal*, p. 100. Available at: <https://go.exlibris.link/nS6Xvym8>.
- Briggs, R., Kennelly, S. P. and Kenny, R. A. (2018d) 'Does baseline depression increase the risk of unexplained and accidental falls in a cohort of community-dwelling older people? Data from The Irish Longitudinal Study on Ageing (TILDA)', *International journal of geriatric psychiatry*, 33(2), pp. e205-e211.
- Briggs, R., Kenny, R., A, and Kennelly, S., P, (2016) 'Systematic Review: The Association between Late Life Depression and Hypotension', *Journal of the American Medical Directors Association*, 17(2), pp. 12.
- Briggs, R., McDowell, C. P., De Looze, C., Kenny, R. A. and Ward, M. (2021a) 'Depressive Symptoms Among Older Adults Pre– and Post–COVID-19 Pandemic', *Journal of the American Medical Directors Association*, 22(11), pp. 2251-2257.
- Briggs, R., Tobin, K., Kenny, R. A. and Kennelly, S. P. (2018e) 'What is the prevalence of untreated depression and death ideation in older people? Data from the Irish Longitudinal Study on Ageing', *International psychogeriatrics*, 30(9), pp. 1393-1401.
- Briggs, R., Ward, M. and Kenny, R. A. (2021b) 'The ‘Wish to Die’ in later life: prevalence, longitudinal course and mortality. Data from TILDA', *Age and ageing*, 50(4), pp. 1321-1328.
- Burholt, V. and Scharf, T. (2014) 'Poor health and loneliness in later life: The role of depressive symptoms, social resources, and rural environments', *The journals of gerontology. Series B, Psychological sciences and social sciences*, 69(2), pp. 311-324.
- Burns, A., Strawbridge, J. D., Clancy, L. and Doyle, F. (2017) 'Exploring smoking, mental health and smoking-related disease in a nationally representative sample of older adults in Ireland – A retrospective secondary analysis', *Journal of psychosomatic research*, 98, pp. 78-86.
- Byrne, C. J., Walsh, C., Cahir, C. and Bennett, K. (2019) 'Impact of drug burden index on adverse health outcomes in Irish community-dwelling older people: A cohort study', *BMC geriatrics*, 19(1), pp. 121-121.
- Canney, M., O'Connell, M. D. L., Murphy, C. M., O'Leary, N., Little, M. A., O'Seaghda, C. M. and Kenny, R. A. (2016) 'Single agent antihypertensive therapy and orthostatic blood pressure behaviour in older adults using beat-To-beat measurements: The Irish longitudinal study on ageing', *PLoS one*, 11(1), pp. e0146156-e0146156.
- Canney, M., O'Connell, M. D. L., Sexton, D. J., O'Leary, N., Kenny, R. A., Little, M. A. and O'Seaghda, C. M. (2017) 'Graded association between kidney function and impaired orthostatic blood pressure stabilization in older adults', *Journal of the American Heart Association*, 6(5).
- Cassarino, M., O'Sullivan, V., Kenny, R. A. and Setti, A. (2016) 'Environment and Cognitive Aging: A Cross-Sectional Study of Place of Residence and Cognitive Performance in the Irish Longitudinal Study on Ageing', *Neuropsychology*, 30(5), pp. 543-557.
- Cattelani, L., Murri, M. B., Chesani, F., Chiari, L., Bandinelli, S. and Palumbo, P. (2019) 'Risk Prediction Model for Late Life Depression: Development and Validation on Three Large European Datasets', *IEEE journal of biomedical and health informatics*, 23(5), pp. 2196-2204.
- Connolly S, Whyte R. (2019) Uptake of cancer screening services among middle and older ages in Ireland: the role of healthcare eligibility. *Public Health*, 173, pp. 42-47.
- Chintapalli, R., Romero-Ortuno, R., (2021) Choice reaction time and subsequent mobility decline: Prospective observational findings from The Irish Longitudinal Study on Ageing (TILDA), *EClinicalMedicine*, 31,

- Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E. and Herrera, F. (2011) 'An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field', *Journal of informetrics*, 5(1), pp. 146-166.
- Cochrane, A. and McGilloway, S. (2017) 'The Role of Philanthropic Funding in Building Research Evidence to Support an Aging Population: A Case Study from Ireland', *Journal of aging & social policy*, 29(3), pp. 262-275.
- Coen, R. F., Robertson, D. A., Kenny, R. A. and King-Kallimanis, B. L. (2016) 'Strengths and Limitations of the MoCA for Assessing Cognitive Functioning: Findings From a Large Representative Sample of Irish Older Adults', *Journal of geriatric psychiatry and neurology*, 29(1), pp. 18-24.
- Connolly, D., Garvey, J. and McKee, G. (2017) 'Factors associated with ADL/IADL disability in community dwelling older adults in the Irish longitudinal study on ageing (TILDA)', *Disability and rehabilitation*, 39(8), pp. 809-816.
- Cook, T. and Meer, N. 2021. *The Impact Agenda: Controversies, Consequences and Challenges*. OXFORD: Oxford Univ Press.
- Corish, C. A. and Bardon, L. A. (2019) 'Malnutrition in older adults: screening and determinants', *Proceedings of the Nutrition Society*, 78(3), pp. 372-379.
- Costello, N., Ward, M., O'Mahoney, P., Kenny, R.A., (2021) In Their Own Words: the Voices of Older Irish People in the COVID-19 Pandemic: The Irish Longitudinal Study on Ageing, <https://www.doi.org/10.38018/TildaRe.2021-04>
- Cousins, G., Galvin, R., Flood, M., Kennedy, M.-C., Motterlini, N., Henman, M. C., Kenny, R.-A. and Fahey, T. (2014) 'Potential for alcohol and drug interactions in older adults: Evidence from the Irish longitudinal study on ageing', *BMC geriatrics*, 14(1), pp. 57-57.
- Craig, B. M., Cosh, S. M. and Luck, C. C. (2021) 'Research productivity, quality, and impact metrics of Australian psychology academics', *Australian journal of psychology*, 73(2), pp. 144-156.
- Creswell, J., W. (2012) *Research design: Qualitative, quantitative and mixed method approaches*. 4th edn. United States: Pearson Education.
- Cronin, H., O'Regan, C., Finucane, C., Kearney, P. and Kenny, R. A. (2013) 'Health and Aging: Development of The Irish Longitudinal Study on Ageing Health Assessment', *Journal of the American Geriatrics Society (JAGS)*, 61(s2), pp. S269-S278.
- Cruise, S.M., Hughes, J., Bennett, K., Kouvonen, A. and Kee, F. (2019) 'The Impact of Risk Factors for Coronary Heart Disease on Related Disability in Older Irish Adults', *Journal of Aging and Health*, 31(1):165–184.
- Cucari, N., Tutore, I., Montera, R. and Profta, S. (2022) 'A bibliometric performance analysis of publication productivity in the corporate social responsibility field: Outcomes of SciVal analytics', *Wiley Corporate Social and Environmental Management*, pp. 15.
- Curran, E., Rosato, M., Ferry, F. and Leavey, G. (2020) 'Prevalence and factors associated with anxiety and depression in older adults: Gender differences in psychosocial indicators', *Journal of affective disorders*, 267, pp. 114-122.
- D'Errico, A., Ricceri, F., Stringhini, S., Carmeli, C., Kivimaki, M., Bartley, M., McCrory, C., Bochud, M., Vollenweider, P., Tumino, R., Goldberg, M., Zins, M., Barros, H., Giles, G., Severi, G., Costa, G., Vineis, P. and Consortium, L. (2017) 'Socioeconomic indicators in epidemiologic research: A practical example from the LIFEPAth study', *PloS one*, 12(5), pp. e0178071-e0178071.
- De Filippo, D. and Sanz-Casado, E. (2018) 'Bibliometric and Altmetric Analysis of Three Social Science Disciplines', *Frontiers in research metrics and analytics*, 3.

- De Looze, C., Ward, M., McDowell, C., Bourke, N., and Kenny, R.A., (2021) Preparing for COVID-19 Vaccination: Important Learnings from the Irish Longitudinal Study on Ageing: The Irish Longitudinal Study on Ageing, <https://www.doi.org/10.38018/TildaRe.2021-00>
- Dempsey, S., Devine, M. T., Gillespie, T., Lyons, S. and Nolan, A. (2018a) 'Coastal blue space and depression in older adults', *Health & place*, 54, pp. 110-117.
- Dempsey, S., Lyons, S. and Nolan, A. (2018b) 'Urban green space and obesity in older adults: Evidence from Ireland', *SSM - population health*, 4, pp. 206-215.
- DİNÇER, S. (2018) 'Content Analysis in Scientific Research: Meta-Analysis, Meta-Synthesis, and Descriptive Content Analysis', *Bartın Üniversitesi Eğitim Fakültesi Dergisi*, pp. 176-190.
- Domènech-Abella, J., Mundó, J., Haro, J. M. and Rubio-Valera, M. (2020) 'Corrigendum to "Anxiety, depression, loneliness and social network in the elderly: Longitudinal associations from The Irish Longitudinal Study on Ageing (TILDA)" [Journal of Affective Disorders 246 (2019) 82–88]', *Journal of affective disorders*, 266, pp. 811-811.
- Donati, L., Fongo, D., Cattelani, L. and Chesani, F. (2019) 'Prediction of Decline in Activities of Daily Living Through Deep Artificial Neural Networks and Domain Adaptation', *AIIA 2019 – Advances in Artificial Intelligence*:376–391.
- Donoghue, O., A., Feeney, J. and O'Leary, N. 2018a. Findings from Trinity College in the Area of Geriatric Psychiatry Described [Baseline Mobility is Not Associated with Decline in Cognitive Function in Healthy Community-Dwelling Older Adults: Findings From The Irish Longitudinal Study on Ageing .]. NewsRX LLC.
- Donoghue, O., A., Jansen, S. and Dooley, C. 2015. Data on Atrial Fibrillation Detailed by Researchers at University of Amsterdam (Atrial Fibrillation Is Associated With Impaired Mobility in Community-Dwelling Older Adults). NewsRX LLC.
- Donoghue, O., A., O'Hare, C. and King-Kallimanis, B. L. 2015. Studies from University of Dublin Trinity College Update Current Data on Depression (Antidepressants are Independently Associated with Gait Deficits in Single and Dual Task Conditions).(Clinical report). NewsRX LLC.
- Donoghue, O., Setti, A., O'Leary, N. and Kenny, R. A. (2016) 223SELF-REPORTED UNSTEADINESS PREDICTS FEAR OF FALLING AND ACTIVITY RESTRICTION AT TWO YEARS FOLLOW-UP', *Age and ageing*, 45(suppl 2), pp. ii1.40-ii12.
- Donoghue, O. A., Cronin, H., Savva, G. M., O'Regan, C. and Kenny, R. A. (2012a) 'Effects of fear of falling and activity restriction on normal and dual task walking in community dwelling older adults', *Gait & posture*, 38(1), pp. 120-124.
- Donoghue, O. A., Horgan, N. F., Savva, G. M., Cronin, H., O'Regan, C. and Kenny, R. A. (2012b) 'Association Between Timed Up-and-Go and Memory, Executive Function, and Processing Speed', *Journal of the American Geriatrics Society (JAGS)*, 60(9), pp. 1681-1686.
- Donoghue, O. A., McGarrigle, C. A., Foley, M., Fagan, A., Meaney, J. and Kenny, R. A. (2018b) 'Cohort profile update: The Irish Longitudinal study on ageing (TILDA)', *International journal of epidemiology*, 47(5), pp. 1398-1398L.
- Donoghue, O. A., O'Shea, M., McGarrigle, C. A., Lang, D., Hoey, C., Whitty, H., O'Shea, D. and Kenny, R. A. (2022) 'Translating Frailty Assessment Methodologies and Research-based Evidence to Clinical Education and Practice', *Journal of aging & social policy*, 34(4), pp. 537-551.

- Donoghue, O. A., Ryan, H., Duggan, E., Finucane, C., Savva, G. M., Cronin, H., Loughman, J. and Kenny, R. A. (2014a) 'Relationship between fear of falling and mobility varies with visual function among older adults', *Geriatrics & gerontology international*, 14(4), pp. 827-836.
- Donoghue, O. A. P., Savva, G. M. P., Cronin, H. M. B. P., Kenny, R. A. M. D. and Horgan, N. F. P. (2014b) 'Using Timed Up and Go and Usual Gait Speed to Predict Incident Disability in Daily Activities Among Community-Dwelling Adults Aged 65 and Older', *Archives of physical medicine and rehabilitation*, 95(10), pp. 1954-1961.
- Donoghue OA, Savva GM, Börsch-Supan A, Kenny RA. (2019) Reliability, measurement error and minimum detectable change in mobility measures: a cohort study of community-dwelling adults aged 50 years and over in Ireland. *BMJ Open*. 11(9)(11):e030475.
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N. and Lim, W., Marc, (2021) 'How to conduct a bibliometric analysis: An overview and guidelines', *Journal of business research*, 133, pp. 285-296.
- Duggan, E., Donoghue, O., Kenny, R. A., Cronin, H., Loughman, J. and Finucane, C. (2017) 'Time to Refocus Assessment of Vision in Older Adults? Contrast Sensitivity but Not Visual Acuity Is Associated with Gait in Older Adults', *The journals of gerontology. Series A, Biological sciences and medical sciences*, 72(12), pp. 1663-1668.
- Ebadi, A. and Schiffauerova, A. (2016) 'How to boost scientific production? A statistical analysis of research funding and other influencing factors', *Scientometrics*, 106(3), pp. 1093-1116.
- Ellegaard, O. and Wallin, J. A. (2015) 'The bibliometric analysis of scholarly production: How great is the impact?', *Scientometrics*, 105(3), pp. 1809-1831.
- Elsevier Research Intelligence (2019) *Research Metrics Guidebook*, The Netherlands. Available at: ELSV-13013-Elsevier-Research-Metrics-Book-r12-WEB_SciVal_Guidebook.pdf.
- European Commission, D.-G. f. R. a. I. (2017) *Evaluation of research careers fully acknowledging Open Science practices*. Available at: <https://op.europa.eu/en/publication-detail/-/publication/47a3a330-c9cb-11e7-8e69-01aa75ed71a1>.
- Fan, C., W., Savva, G., M, and Finucane, C. (2012) 'Factors affecting continuous beat-to-beat orthostatic blood pressure response in community-dwelling older adults', *Blood Pressure Monitoring*, 17(4), pp. 3.
- Feeney, J., Finucane, C., Savva, G. M., Cronin, H., Beatty, S., Nolan, J. M. and Kenny, R. A. (2013a) 'Low macular pigment optical density is associated with lower cognitive performance in a large, population-based sample of older adults', *Neurobiology of aging*, 34(11), pp. 2449-2456.
- Feeney, J., Kamiya, Y., Robertson, I. H. and Kenny, R. A. (2013b) 'Cognitive Function Is Preserved in Older Adults With a Reported History of Childhood Sexual Abuse: Childhood Sexual Abuse and Cognitive Function', *Journal of traumatic stress*, 26(6), pp. 735-743.
- Feeney, J., O'Leary, N., Moran, R., O'Halloran, A. M., Nolan, J. M., Beatty, S., Young, I. S. and Kenny, R. A. (2017) 'Plasma Lutein and Zeaxanthin Are Associated with Better Cognitive Function Across Multiple Domains in a Large Population-Based Sample of Older Adults: Findings from the Irish Longitudinal Study on Aging', *The journals of gerontology. Series A, Biological sciences and medical sciences*, 72(10), pp. 1431-1436.
- Feeney, J., O'Leary, N. and Kenny, R. A. (2016) 'Impaired orthostatic blood pressure recovery and cognitive performance at two-year follow up in older adults: The Irish Longitudinal Study on Ageing', *Clinical autonomic research*, 26(2), pp. 127-133.
- Finucane, C., O'Connell, M. D. L., Donoghue, O., Richardson, K., Savva, G. M. and Kenny, R. A. (2017) 'Impaired Orthostatic Blood Pressure Recovery Is Associated with Unexplained and Injurious Falls', *Journal of the American Geriatrics Society (JAGS)*, 65(3), pp. 474-482.

- Finucane, C., O'Connell, M. D. L., Fan, C. W., Savva, G. M., Soraghan, C. J., Nolan, H., Cronin, H. and Kenny, R. A. (2014) 'Age-Related Normative Changes in Phasic Orthostatic Blood Pressure in a Large Population Study: Findings From The Irish Longitudinal Study on Ageing (TILDA)', *Circulation (New York, N.Y.)*, 130(20), pp. 1780-1789.
- Fiorito, G., McCrory, C., Robinson, O., Carmeli, C., Ochoa Rosales, C., Zhang, Y., Muka, T., Voortman, T., Vineis, P., Polidoro, S., Lifepath, c., Consortium, B., the Lifepath, c. and the, B. C. (2019) 'Socioeconomic position, lifestyle habits and biomarkers of epigenetic aging: a multi-cohort analysis', *Aging (Albany, NY.)*, 11(7), pp. 2045-2070.
- Fiorito, G., Polidoro, S., Dugué, P.A., Kivimaki, M., Ponzi, E., Matullo, G., Guarrera, S., Assumma, M.B., Georgiadis, P., Kyrtopoulos, S.A., Krogh, V., Palli, D., Panico, S., Sacerdote, C., Tumino, R., Chadeau-Hyam, M., Stringhini, S., Severi, G., Hodge, A.M., ... Vineis, P. (2017) 'Social adversity and epigenetic aging: A multi-cohort study on socioeconomic differences in peripheral blood DNA methylation', *Scientific Reports*, 7(1):16266–16312.
- Fitzpatrick, J., Sanders, J. and Worthen, B. 2011. Program evaluation; alternative approaches and practical guidelines, 4th ed. 4th ed. Portland: Ringgold, Inc.
- Freeman, A. T., Santini, Z. I., Tyrovolas, S., Rummel-Kluge, C., Haro, J. M. and Koyanagi, A. (2016) 'Negative perceptions of ageing predict the onset and persistence of depression and anxiety: Findings from a prospective analysis of the Irish Longitudinal Study on Ageing (TILDA)', *Journal of affective disorders*, 199, pp. 132-138.
- Frewen, J., Finucane, C., Cronin, H., Rice, C., Kearney, P. M., Harbison, J. and Kenny, R. A. (2013a) 'Factors that influence awareness and treatment of atrial fibrillation in older adults', *QJM : monthly journal of the Association of Physicians*, 106(5), pp. 415-424.
- Frewen, J., Finucane, C., Savva, G. M., Boyle, G., Coen, R. F. and Kenny, R. A. (2013b) 'Cognitive function is associated with impaired heart rate variability in ageing adults: the Irish longitudinal study on ageing wave one results', *Clinical autonomic research*, 23(6), pp. 313-323.
- Frewen, J., Finucane, C., Savva, G. M., Boyle, G. and Kenny, R. A. (2014a) 'Orthostatic hypotension is associated with lower cognitive performance in adults aged 50 plus with supine hypertension', *The journals of gerontology. Series A, Biological sciences and medical sciences*, 69(7), pp. 878-885.
- Frewen, J., Savva, G. M., Boyle, G., Finucane, C. and Kenny, R. A. (2014b) 'Cognitive Performance in Orthostatic Hypotension: Findings from a Nationally Representative Sample', *Journal of the American Geriatrics Society (JAGS)*, 62(1), pp. 117-122.
- Frewen, J., King-Kallimanis, B., Boyle, G., Kenny, R.A. (2015) Recent syncope and unexplained falls are associated with poor cognitive performance, *Age and Ageing*, 44(2), pp. 282–286.
- Gallagher, D., O'Regan, C., Savva, G. M., Cronin, H., Lawlor, B. A. and Kenny, R. A. (2012) 'Depression, anxiety and cardiovascular disease: Which symptoms are associated with increased risk in community dwelling older adults?', *Journal of affective disorders*, 142(1), pp. 132-138.
- Glasgow, R. E., Harden, S. M., Gaglio, B., Rabin, B., Smith, M. L., Porter, G. C., Ory, M. G. and Estabrooks, P. A. (2019) 'RE-AIM planning and evaluation framework: Adapting to new science and practice with a 20-year review', *Frontiers in public health*, 7, pp. 64-64.
- Gokhale, A., Mulay, P., Pramod, D. and Kulkarni, R. (2020) 'A Bibliometric Analysis of Digital Image Forensics', *Science & technology libraries (New York, N.Y.)*, 39(1), pp. 96-113.
- Gordon, B. R., McDowell, C. P., Lyons, M. and Herring, M. P. (2019) 'Associations between grip strength and generalized anxiety disorder in older adults: Results from the Irish longitudinal study on ageing', *Journal of affective disorders*, 255, pp. 136-141.

- Hernández, B., Voll, S., Lewis, N.A., McCrory, C., White, A., Stirland, L., Kenny, R.A., Reilly, R., Hutton, C.P., Griffith, L.E., Kirkland, S.A., Terrera, G.M. and Hofer, S.M. (2021) 'Comparisons of disease cluster patterns, prevalence and health factors in the USA, Canada, England and Ireland', *BMC Public Health*, 21(1):1674–1674.
- Haas, S.A. and Oi, K. (2018) 'The developmental origins of health and disease in international perspective', *Social Science & Medicine* (1982), 213:123–133.
- Holbrook, J., B., Mitcham, C. and Andersen, H. 2014. *Encyclopedia of Science Technology and Ethics*. 2nd ed. London: MacMillan Reference Library.
- Holtrop, J. S., Estabrooks, P. A., Gaglio, B., Harden, S. M., Kessler, R. S., King, D. K., Kwan, B. M., Ory, M. G., Rabin, B. A., Shelton, R. C. and Glasgow, R. E. (2021) 'Understanding and applying the RE-AIM framework: Clarifications and resources', *Journal of clinical and translational science*, 5(1), pp. e126-e126.
- Hooymans, A., Malek-Ahmadi, M., Fauth, E.B., Schaefer, S.Y. (2021). Challenging the relationship of grip strength with cognitive status in older adults. *International Journal of Geriatric Psychiatry*, 36(3) pp. 433-442.
- Huang, W., Wang, P. and Wu, Q. (2018) 'A correlation comparison between Altmetric Attention Scores and citations for six PLOS journals', *PloS one*, 13(4), pp. e0194962-e0194962.
- Huang, C., Sun, S., Tian, X., Wang, T., Wang, T., Duan, H., & Wu, Y. (2019). Age modify the associations of obesity, physical activity, vision and grip strength with functional mobility in Irish aged 50 and older. *Archives of gerontology and geriatrics*, 84,
- Jansen, S., Frewen, J., Finucane, C., de Rooij, S. E., van der Velde, N. and Kenny, R. A. (2015) 'AF is associated with self-reported syncope and falls in a general population cohort', *Age and ageing*, 44(4), pp. 598-603.
- Kamiya, Y., Doyle, M., Henretta, J. C. and Timonen, V. (2013) 'Depressive symptoms among older adults: The impact of early and later life circumstances and marital status', *Aging & mental health*, 17(3), pp. 349-357.
- Kamiya, Y., Doyle, M., Henretta, J. C. and Timonen, V. (2014) 'Early-life circumstances and later-life loneliness in Ireland', *The Gerontologist*, 54(5), pp. 773-783.
- Kenny, R. A. (2013) 'An Introduction to The Irish Longitudinal Study on Ageing', *Journal of the American Geriatrics Society (JAGS)*, 61(s2), pp. S263-S264.
- Kenny, R. A., Coen, R. F., Frewen, J., Donoghue, O. A., Cronin, H. and Savva, G. M. (2013) 'Normative Values of Cognitive and Physical Function in Older Adults: Findings from The Irish Longitudinal Study on Ageing', *Journal of the American Geriatrics Society (JAGS)*, 61(s2), pp. S279-S290.
- Kenny, R.A., Scarlett, S., and O'Mahoney, P. (2020a) The Older Population of Ireland on the Eve of the COVID-19 Pandemic: The Irish Longitudinal Study on Ageing, <https://doi.org/10.38018/TildaRe.2020-10>
- Kenny, R.A., Hernández, B., O'Halloran, A., Moriarty, F., McGarrigle, C., (2020b) TILDA Report to Inform Demographics for over 50s in Ireland for COVID-19 Crisis: The Irish Longitudinal Study on Ageing, https://tilda.tcd.ie/publications/research-briefs/pdf/Report_DemographicsOver50s.pdf
- Killane, I., Donoghue, O. A., Savva, G. M., Cronin, H., Kenny, R. A., & Reilly, R. B. (2013). Variance between walking speed and neuropsychological test scores during three gait tasks across the Irish Longitudinal study on Aging (TiLDA) dataset. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference, 2013*, 6921–6924.
- Killane, I., Donoghue, O. A., Savva, G. M., Cronin, H., Kenny, R. A. and Reilly, R. B. (2014) 'Relative association of processing speed, short-term memory and sustained attention with task on gait speed: A study of community-

dwelling people 50 years and older', *The journals of gerontology. Series A, Biological sciences and medical sciences*, 69(11), pp. 1407-1414.

King-Kallimanis, B.L., Kenny, R.A. and Savva, G.M., 2014. Factor structure for the frailty syndrome was consistent across Europe. *Journal of clinical epidemiology*, 67(9), pp.1008-1015.

Knowlton, S. E., Paganoni, S., Niehaus, W., Verduzco-Gutierrez, M., Sharma, R., Iaccarino, M. A., Hayano, T., Schneider, J. C. and Silver, J. K. (2019) 'Measuring the Impact of Research Using Conventional and Alternative Metrics', *American journal of physical medicine & rehabilitation*, 98(4), pp. 331-338.

Laird, E., O'Halloran, A. M., Carey, D., Healy, M., O'Connor, D., Moore, P., Shannon, T., Molloy, A. M. and Kenny, R. A. (2018a) 'The Prevalence of Vitamin D Deficiency and the Determinants of 25(OH)D Concentration in Older Irish Adults: Data from the Irish Longitudinal Study on Ageing (TILDA)', *The journals of gerontology. Series A, Biological sciences and medical sciences*, 73(4), pp. 519-525.

Laird, E. J., O'Halloran, A. M., Carey, D., O'Connor, D., Kenny, R. A. and Molloy, A. M. (2018b) 'Voluntary fortification is ineffective to maintain the vitamin B12 and folate status of older Irish adults: evidence from the Irish Longitudinal Study on Ageing (TILDA)', *British journal of nutrition*, 120(1), pp. 111-120.

Layte, R., McCrory, C., Cheallaigh, C. N., Bourke, N., Kivimaki, M., Ribeiro, A. I., Stringhini, S. and Vineis, P. (2019) 'A Comparative Analysis of the Status Anxiety Hypothesis of Socio-economic Inequalities in Health Based on 18,349 individuals in Four Countries and Five Cohort Studies', *Scientific reports*, 9(1), pp. 796-796.

Layte, R., Sexton, E. and Savva, G. (2013) 'Quality of Life in Older Age: Evidence from an Irish Cohort Study', *Journal of the American Geriatrics Society (JAGS)*, 61(s2), pp. S299-S305.

Leahy, S., O' Halloran, A. M., O' Leary, N., Healy, M., McCormack, M., Kenny, R. A. and O' Connell, J. (2015) 'Prevalence and correlates of diagnosed and undiagnosed type 2 diabetes mellitus and pre-diabetes in older adults: Findings from the Irish Longitudinal Study on Ageing (TILDA)', *Diabetes research and clinical practice*, 110(3), pp. 241-249.

Leong, S. L., Robertson, I. H., Lawlor, B., & Vanneste, S. (2020). Associations between Hypertension, Treatment, and Cognitive Function in the Irish Longitudinal Study on Ageing. *Journal of clinical medicine*, 9(11), 3735.

Ma, Y. and Nolan, A. (2017) 'Public Healthcare Entitlements and Healthcare Utilisation among the Older Population in Ireland', *Health economics*, 26(11), pp. 1412-1428.

Ma, Y., Nolan, A. and Smith, J. P. (2018) 'The value of education to health: Evidence from Ireland', *Economics and human biology*, 31, pp. 14-25.

Maguire, F., J., Killane, I. and Creagh, A., P, 2018. Researchers from University of Dublin Detail New Studies and Findings in the Area of Healthcare Management (Baseline Association of Motoric Cognitive Risk Syndrome With Sustained Attention, Memory, and Global Cognition). NewsRX LLC.

Mannion, C., Hughes, J., Moriarty, F., Bennett, K., & Cahir, C. (2020). Agreement between self-reported morbidity and pharmacy claims data for prescribed medications in an older community based population. *BMC geriatrics*, 20(1), 283. <https://doi.org/10.1186/s12877-020-01684-8>

Martinez-Lopez, F. J., Merigo, J. M., Valenzuela-Fernandez, L. and Nicolas, C. (2018) 'Fifty years of the European Journal of Marketing: a bibliometric analysis', *European journal of marketing*, 52(1/2), pp. 439-468.

Mas-Tur, A., Modak, N. M., Merigó, J. M., Roig-Tierno, N., Geraci, M. and Capecchi, V. (2018) 'Half a century of Quality & Quantity: a bibliometric review', *Quality & quantity*, 53(2), pp. 981-1020.

May, P., Normand, C. and Morrison, R. S. (2020) 'Economics of palliative care for cancer: Interpreting current evidence, mapping future priorities for research', *Journal of clinical oncology*, 38(9), pp. 980-986.

- Mayburd, A. L. and Baranova, A. (2019) 'Increased lifespan, decreased mortality, and delayed cognitive decline in osteoarthritis', *Scientific reports*, 9(1), pp. 18639-15.
- Mc Dowell, C. P., Carlin, A., Capranica, L., Dillon, C., Harrington, J. M., Lakerveld, J., Loyen, A., Ling, F. C. M., Brug, J., MacDonncha, C. and Herring, M. P. (2018) 'Associations of self-reported physical activity and depression in 10,000 Irish adults across harmonised datasets: a DEDIPAC-study', *BMC public health*, 18(1), pp. 779-779.
- McCarron, M., Cleary, E. and McCallion, P. (2017) 'Health and Health-Care Utilization of the Older Population of Ireland: Comparing the Intellectual Disability Population and the General Population', *Research on Aging*, 39(6):693–718.
- McCorry, C., Berkman, L. F., Nolan, H., O'Leary, N., Foley, M. and Kenny, R. A. (2016) 'Speed of Heart Rate Recovery in Response to Orthostatic Challenge', *Circulation research*, 119(5), pp. 666-675.
- McCorry, C., Dooley, C., Layte, R. and Kenny, R. A. (2015) 'The Lasting Legacy of Childhood Adversity for Disease Risk in Later Life', *Health psychology*, 34(7), pp. 687-696.
- McCorry, C., Fiorito, G., Hernandez, B., Polidoro, S., O'Halloran, A. M., Hever, A., Ni Cheallaigh, C., Lu, A. T., Horvath, S., Vineis, P. and Kenny, R. A. (2021) 'GrimAge Outperforms Other Epigenetic Clocks in the Prediction of Age-Related Clinical Phenotypes and All-Cause Mortality', *The journals of gerontology. Series A, Biological sciences and medical sciences*, 76(5), pp. 741-749.
- McCorry, C., Fiorito, G., Ni Cheallaigh, C., Polidoro, S., Karisola, P., Alenius, H., Layte, R., Seeman, T., Vineis, P. and Kenny, R. A. (2019) 'How does socio-economic position (SEP) get biologically embedded? A comparison of allostatic load and the epigenetic clock(s)', *Psychoneuroendocrinology*, 104, pp. 64-73.
- McDowell, C. P., Dishman, R. K., Hallgren, M., MacDonncha, C. and Herring, M. P. (2018a) 'Associations of physical activity and depression: Results from the Irish Longitudinal Study on Ageing', *Experimental gerontology*, 112, pp. 68-75.
- McDowell, C. P., Dishman, R. K., Vancampfort, D., Hallgren, M., Stubbs, B., MacDonncha, C. and Herring, M. P. (2018b) 'Physical activity and generalized anxiety disorder: Results from The Irish Longitudinal Study on Ageing (TILDA)', *International journal of epidemiology*, 47(5), pp. 1443-1453.
- McDowell, C. P., Gordon, B. R., Andrews, K. L., MacDonncha, C. and Herring, M. P. (2019) 'Associations of physical activity with anxiety symptoms and status: results from The Irish longitudinal study on ageing', *Epidemiology and psychiatric sciences*, 28(4), pp. 436-445.
- McDowell, C. P., Gordon, B. R. and Herring, M. P. (2018c) 'Sex-related differences in the association between grip strength and depression: Results from the Irish Longitudinal Study on Ageing', *Experimental gerontology*, 104, pp. 147-152.
- McGarrigle, C. A., Cronin, H. and Kenny, R. A. (2014) 'The impact of being the intermediate caring generation and intergenerational transfers on self-reported health of women in Ireland', *International Journal of Public Health*, 59(2), pp. 301-308.
- McGarrigle, C., Donoghue, O., Scarlett, S. and Kenny, R. A. (2017) Health and Wellbeing: Active Ageing for Older Adults in Ireland. Evidence from The Irish Longitudinal Study on Ageing: The Irish Longitudinal Study of Ageing, <https://tilda.tcd.ie/publications/reports/pdf/w3-key-findings-report/TILDA%20Wave%203%20Key%20Findings%20report.pdf>
- McGarrigle, C., Kenny, R.A. (2020) Receipt of care and caring in community-dwelling adults aged 50 years and over in Ireland: The Irish Longitudinal Study of Ageing, <https://doi.org/10.38018/TildaRe.2020-09>.

- McGarrigle, C., Ward, M., Scarlett, S., Kenny, R.A. (2020) The Contributions of the Over 70s to Irish Society: Results from Wave 5 of the Irish Longitudinal Study on Ageing: The Irish Longitudinal Study on Ageing, <https://www.doi.org/10.38018/TildaRe.2020-01>.
- McGrath, N., O'Neill, K., McHugh, S.M., Toomey, E. and Kearney, P.M. (2021) 'Epidemiology of undiagnosed depression in people with diabetes mellitus: a comparative analysis of Ireland, England and the USA', *BMJ Open*, 11(10):e049155–e049155.
- McHugh, J. E., Kenny, R. A., Lawlor, B. A., Steptoe, A. and Kee, F. (2017) 'The discrepancy between social isolation and loneliness as a clinically meaningful metric: findings from the Irish and English longitudinal studies of ageing (TILDA and ELSA)', *International journal of geriatric psychiatry*, 32(6), pp. 664-674.
- McHugh Power, J., Tang, J., Lawlor, B., Kenny, R. A. and Kee, F. (2018) 'Mediators of the relationship between social activities and cognitive function among older Irish adults: results from the Irish longitudinal study on ageing', *Ageing & mental health*, 22(1), pp. 129-134.
- McKee, G., Kearney, P. M. and Kenny, R. A. (2015) 'The factors associated with self-reported physical activity in older adults living in the community', *Age and ageing*, 44(4), pp. 586-592.
- McLoughlin, S., Kenny, R. A. and McCrory, C. (2021) 'Critiquing a study or a paradigm?: In response to: The Promise of Allostatic Load Rests Upon Strategic Operationalization, Scoring, and Targeted Interventions', *Psychoneuroendocrinology*, 123, pp. 104881-104881.
- Melero, R. (2015) 'Altmetrics – A complement to conventional metrics', *Biochemia medica*, 25(2), pp. 152-160.
- Mertens, D. and Wilson, A. (2012) *Program evaluation theory and practice: A comprehensive guide*. New York: Guilford Press.
- Monaghan, A., Bourke, N., O'Halloran A., Ward, M., Xue, F., Jennings, G., Kenny, R.A., Romero-Ortuno, R., (2021) New Self-Reported Exaustion During the COVID-19 Pandemic: The Irish Longitudinal Study on Ageing, <https://www.doi.org/10.38018/TildaRe.2021-02>
- Moore, P. V., Bennett, K. and Normand, C. (2017) 'Counting the time lived, the time left or illness? Age, proximity to death, morbidity and prescribing expenditures', *Social science & medicine (1982)*, 184, pp. 1-14.
- Mori, H. and Nakayama, T. (2013) 'Academic Impact of Qualitative Studies in Healthcare: Bibliometric Analysis', *PloS one*, 8(3), pp. e57371-e57371.
- Moriarty, F., Bennett, K., Cahir, C., Kenny, R. A. and Fahey, T. (2016) 'Potentially inappropriate prescribing according to STOPP and START and adverse outcomes in community-dwelling older people: a prospective cohort study', *British journal of clinical pharmacology*, 82(3), pp. 849-857.
- Mosca, I. (2013) 'Body mass index, waist circumference and employment: Evidence from older Irish adults', *Economics and human biology*, 11(4), pp. 522-533.
- Mosca, I., Bhuachalla, B. N. and Kenny, R. A. (2013) 'Explaining significant differences in subjective and objective measures of cardiovascular health: Evidence for the socioeconomic gradient in a population-based study', *BMC cardiovascular disorders*, 13(1), pp. 64-64.
- Mosca, I. and Kenny, R.A. (2014) 'Exploring differences in prevalence of diagnosed, measured and undiagnosed hypertension: the case of Ireland and the United States of America', *International Journal of Public Health*, 59(5):759–767.
- Murphy, C. M., Kearney, P. M., Shelley, E. B., Fahey, T., Dooley, C. and Kenny, R. A. (2016) 'Hypertension prevalence, awareness, treatment and control in the over 50s in Ireland: evidence from The Irish Longitudinal Study on Ageing', *Journal of public health (Oxford, England)*, 38(3), pp. 450-458.

- Murphy, C. M., Whelan, B. J. and Normand, C. (2015) 'Formal home-care utilisation by older adults in Ireland: evidence from the Irish Longitudinal Study on Ageing (TILDA)', *Health & social care in the community*, 23(4), pp. 408-418.
- Murtagh, E. M., Murphy, M. H., Murphy, N. M., Woods, C., Nevill, A. M. and Lane, A. (2015) 'Prevalence and correlates of physical inactivity in community-dwelling older adults in Ireland', *PLoS one*, 10(2), pp. e0118293- e0118293.
- Ní Bhuachalla, B., McGarrigle, C. A. and Kenny, R. A. (2015) 'Neurocardiovascular instability may modulate end-organ damage: A review of this hypothesis investigating the eye and manifestations of NCVI', *Medical hypotheses*, 85(5), pp. 594-602.
- Ní Bhuachalla, B., McGarrigle, C.A., O'Leary, N., Owusu Akuffo, K., Peto, T., Beatty, S., Kenny, R.A. (2019) Orthostatic blood pressure variability is associated with lower visual contrast sensitivity function: Findings from The Irish Longitudinal Study on Aging, *Experimental Gerontology*, 119, pp. 14-24.
- Nolan, A., McCrory, C. and Moore, P. (2019) 'Personality and preventive healthcare utilisation: Evidence from the Irish Longitudinal Study on Ageing', *Preventive medicine*, 120, pp. 107-112.
- Nolan, A., Ma, Y., Moore, P. (2016) Changes in Public Healthcare Entitlement and Healthcare Utilisation among the Older Population in Ireland, The Irish Longitudinal Study on Ageing, <https://www.doi.org/10.38018/TildaRe.2016-03>.
- Nolan, J. M., Feeney, J., Kenny, R. A., Cronin, H., O'Regan, C., Savva, G. M., Loughman, J., Finucane, C., Connolly, E., Meagher, K. and Beatty, S. (2012) 'Education is positively associated with macular pigment: The Irish Longitudinal Study on Ageing (TILDA)', *Investigative ophthalmology & visual science*, 53(12), pp. 7855-7861.
- O'Connell, M. D. L., Savva, G. M., Finucane, C., Romero-Ortuno, R., Fan, C. W. and Kenny, R. A. (2018) 'Impairments in Hemodynamic Responses to Orthostasis Associated with Frailty: Results from The Irish Longitudinal Study on Ageing (TILDA)', *Journal of the American Geriatrics Society (JAGS)*, 66(8), pp. 1475-1483.
- O'Halloran, A. M., Finucane, C., Savva, G. M., Robertson, I. H. and Kenny, R. A. (2014) 'Sustained attention and frailty in the older adult population', *The journals of gerontology. Series B, Psychological sciences and social sciences*, 69(2), pp. 147-156.
- O'Regan, C., Kenny, R. A., Cronin, H., Finucane, C. and Kearney, P. M. (2015) 'Antidepressants strongly influence the relationship between depression and heart rate variability: findings from The Irish Longitudinal Study on Ageing (TILDA)', *Psychological medicine*, 45(3), pp. 623-636.
- O'Connell, M. D. L., Savva, G. M., Fan, C. W. and Kenny, R. A. (2015) 'Orthostatic hypotension, orthostatic intolerance and frailty: The Irish Longitudinal Study on Aging-TILDA', *Archives of gerontology and geriatrics*, 60(3), pp. 507-513.
- O'Gorman, P., Strahan, O., Ferguson, D., Monaghan, A., Kennedy, M., Forde, C., Melo, A. M., Doherty, D. G., O'Brien, K. K., McKiernan, S., Kenny, R. A., Coen, R., Doherty, C., Bergin, C., Gormley, J. and Norris, S. (2021) 'Improvement in cognitive impairment following a 12-week aerobic exercise intervention in individuals with non-cirrhotic chronic hepatitis C', *Journal of viral hepatitis*, 28(4), pp. 637-650.
- O'Hare, C., O'Sullivan, V., Flood, S. and Kenny, R. A. (2015) 'Seasonal and meteorological associations with depressive symptoms in older adults: A geo-epidemiological study', *Journal of affective disorders*, 191, pp. 172-179.
- Olanrewaju, O., Koyanagi, A., Tully, M., Veronese, N. and Smith, L. (2020) 'Sedentary behaviours and cognitive function among community dwelling adults aged 50+ years: Results from the Irish longitudinal study of ageing', *Mental health and physical activity*, 19, pp. 100344.

- Orr, J., Scarlett, S., Donoghue, O., McGarrigle, C. (2016) Housing conditions of Ireland's older population. Implications for physical and mental health: The Irish Longitudinal Study of Ageing, <https://www.doi.org/10.38018/TildaRe.2016-02>.
- Patthi, B., Prasad, M., Gupta, R., Singla, A., Kumar, J. K., Dhama, K., Ali, I. and Niraj, L. K. (2017) 'Altmetrics – A collated adjunct beyond citations for scholarly impact: A systematic review', *Journal of clinical and diagnostic research*, 11(6), pp. ZE16-ZE20.
- Peeters, G., Cooper, R., Tooth, L., van Schoor, N.M. and Kenny, R.A. (2019) 'A comprehensive assessment of risk factors for falls in middle-aged adults: co-ordinated analyses of cohort studies in four countries', *Osteoporosis International*, 30(10):2099–2117.
- Peeters, G., van Schoor, N.M., Cooper, R., Tooth, L. and Kenny, R.A. (2018) 'Should prevention of falls start earlier? Coordinated analyses of harmonised data on falls in middle-aged adults across four population-based cohort studies', *PLoS One*, 13(8).
- Peklar, J., Henman, M. C., Kos, M., Richardson, K. and Kenny, R. A. (2014) 'Concurrent Use of Drugs and Supplements in a Community-Dwelling Population Aged 50 Years or More: Potential Benefits and Risks', *Drugs & aging*, 31(7), pp. 527-540.
- Peklar, J., Henman, M. C., Richardson, K., Kos, M. and Kenny, R. A. (2013) 'Food supplement use in the community dwelling population aged 50 and over in the Republic of Ireland', *Complementary therapies in medicine*, 21(4), pp. 333-341.
- Peklar, J., Kos, M., O'Dwyer, M., McCarron, M., McCallion, P., Kenny, R. A. and Henman, M. C. (2017) 'Medication and supplement use in older people with and without intellectual disability: An observational, cross-sectional study', *PloS one*, 12(9), pp. e0184390-e0184390.
- Peklar, J., O'Halloran, A., M, and Maidment, I., D, 2015. New Healthcare Management Findings from Trinity College Outlined (Sedative Load and Frailty Among Community-Dwelling Population Aged >= 65 Years). NewsRX LLC.
- Pinto, M., Fernández-Pascual, R., Caballero-Mariscal, D., Sales, D., Guerrero, D. and Uribe, A. (2019) 'Scientific production on mobile information literacy in higher education: a bibliometric analysis (2006–2017)', *Scientometrics*, 120(1), pp. 57-85.
- Pierse, T., Barry, L., Glynn, L., Murphy, A.W., Cruise, S. and O'Neill, C. (2020) 'A comparison, for older people with diabetes, of health and health care utilisation in two different health systems on the island of Ireland', *BMC Public Health*, 20(1):1446–1446.
- Palumbo, P., Klenk, J., Cattelani, L., Bandinelli, S., Ferrucci, L., Rapp, K., Chiari, L. and Rothenbacher, D. (2016) 'Predictive Performance of a Fall Risk Assessment Tool for Community-Dwelling Older People (FRAT-up) in 4 European Cohorts', *Journal of the American Medical Directors Association*, 17(12):7.
- Polit, D. F. and Beck, C. T. (2006) *Study guide to accompany Essentials of nursing research: methods, appraisal, and utilization*. 6th edn. London;Philadelphia,Pa;: Lippincott Williams & Wilkins.
- Polit, D. F. and Beck, C. T. (2014) *Essentials of nursing research: appraising evidence for nursing practice*. Eighth, International edn. London;Philadelphia, Pennsylvania;: Wolters Kluwer Health/Lippincott Williams & Wilkins.
- Power, J. E. M., Sjöberg, L., Kee, F., Kenny, R. A. and Lawlor, B. (2019) 'Comparisons of the discrepancy between loneliness and social isolation across Ireland and Sweden: findings from TILDA and SNAC-K', *Social Psychiatry and Psychiatric Epidemiology*, 54(9), pp. 1079-1088.
- PRISMA (2021) *PRISMA Flow Diagram*. Ottawa: PRISMA. Available at: <https://prisma-statement.org/PRISMAStatement/FlowDiagram> (Accessed: July 31st).

- Ramos-Rodríguez, A.-R. and Ruíz-Navarro, J. (2004) 'Changes in the intellectual structure of strategic management research: a bibliometric study of the Strategic Management Journal, 1980-2000', *Strategic management journal*, 25(10), pp. 981-1004.
- Ravenscroft, J., Liakata, M., Clare, A. and Duma, D. (2017) 'Measuring scientific impact beyond academia: An assessment of existing impact metrics and proposed improvements', *PloS one*, 12(3), pp. e0173152-e0173152.
- Regan, C. O., Kearney, P. M., Savva, G. M., Cronin, H. and Kenny, R. A. (2013) 'Age and sex differences in prevalence and clinical correlates of depression: first results from the Irish Longitudinal Study on Ageing: Age and sex differences in clinical correlates of depression', *International journal of geriatric psychiatry*, 28(12), pp. 1280-1287.
- Retrouvey, H., Webster, F., Zhong, T., Gagliardi, A. R. and Baxter, N. N. (2020) 'Cross-sectional analysis of bibliometrics and altmetrics: comparing the impact of qualitative and quantitative articles in the British Medical Journal', *BMJ open*, 10(10), pp. e040950-e040950.
- Richardson, K., Bennett, K. and Kenny, R. A. n. (2015a) 'Polypharmacy including falls risk-increasing medications and subsequent falls in community-dwelling middle-aged and older adults', *Age and ageing*, 44(1), pp. 90-96.
- Richardson, K., Bennett, K., Maidment, I. D., Fox, C., Smithard, D. and Kenny, R. A. (2015b) 'Use of Medications with Anticholinergic Activity and Self-Reported Injurious Falls in Older Community-Dwelling Adults', *Journal of the American Geriatrics Society (JAGS)*, 63(8), pp. 1561-1569.
- Richardson, K., Kenny, R. A., Peklar, J. and Bennett, K. (2013) 'Agreement between patient interview data on prescription medication use and pharmacy records in those aged older than 50 years varied by therapeutic group and reporting of indicated health conditions', *Journal of clinical epidemiology*, 66(11), pp. 1308-1316.
- Rivadeneira, M. F., Mendieta, M. J., Villavicencio, J., Caicedo-Gallardo, J. and Buendía, P. (2021) 'A multidimensional model of healthy ageing: proposal and evaluation of determinants based on a population survey in Ecuador', *BMC geriatrics*, 21(1), pp. 1-615.
- Robertson, D. A., King-Kallimanis, B. L. and Kenny, R. A. (2016) 'Negative Perceptions of Aging Predict Longitudinal Decline in Cognitive Function', *Psychology and aging*, 31(1), pp. 71-81.
- Robertson, D. A., Savva, G. M., King-Kallimanis, B. L. and Kenny, R. A. (2015) 'Negative perceptions of aging and decline in walking speed: A self-fulfilling prophecy', *PloS one*, 10(4), pp. e0123260-e0123260.
- Robertson, D. A., Savva, G. M., & Kenny, R. A. (2013). Frailty and cognitive impairment--a review of the evidence and causal mechanisms. *Ageing research reviews*, 12(4), 840–851.
- Roe, L., McGarrigle, C., Hernández, B., O'Halloran, A., Scarlett, S., Ward, M., Normand, C., Kenny, R.A., (2020) Patterns in health service utilisation: Results from Wave 5 of The Irish Longitudinal Study on Ageing, The Irish Longitudinal Study on Ageing, <https://www.doi.org/10.38018/TildaRe.2020-04>.
- Roe, L., Normand, C., Wren, MA. *et al.* (2017) The impact of frailty on healthcare utilisation in Ireland: evidence from the Irish longitudinal study on ageing. *BMC Geriatr* 17(203).
- Romero-Ortuno, R., O'Connell, M. D., Finucane, C., Soraghan, C., Fan, C. W. and Kenny, R. A. (2013) 'Insights into the clinical management of the syndrome of supine hypertension - Orthostatic hypotension (SH-OH): The Irish Longitudinal Study on Ageing (TILDA)', *BMC geriatrics*, 13(1), pp. 73-73.
- Romero-Ortuno, R., May, P., Wang, M., Scarlett, S., Hever, A., Kenny, R.A., (2020) TILDA Nursing Home Data: A short report to inform COVID-19 responses for our most vulnerable: The Irish Longitudinal Study on Ageing https://tilda.tcd.ie/publications/reports/pdf/Report_Covid19NursingHomes.pdf

- Romero- Ortuño R and Kennelly S (2020) *COVID-19 deaths in Irish Nursing Homes: exploring variation and association with the adherence to national regulatory quality standards*. LTCcovid.org, International Long-Term Care Policy Network, CPEC-LSE
- Ryan, A., Murphy, C., Boland, F., Galvin, R. and Smith, S. M. (2018) 'What is the impact of physical activity and physical function on the development of multimorbidity in older adults over time? A population-based cohort study', *The journals of gerontology. Series A, Biological sciences and medical sciences*, 73(11), pp. 1538-1544.
- Santini, Z. I., Fiori, K. L., Feeney, J., Tyrovolas, S., Haro, J. M. and Koyanagi, A. (2016) 'Social relationships, loneliness, and mental health among older men and women in Ireland: A prospective community-based study', *Journal of affective disorders*, 204, pp. 59-69.
- Santini, Z. I., Koyanagi, A., Tyrovolas, S. and Haro, J. M. (2015) 'The association of relationship quality and social networks with depression, anxiety, and suicidal ideation among older married adults: Findings from a cross-sectional analysis of the Irish Longitudinal Study on Ageing (TILDA)', *Journal of affective disorders*, 179, pp. 134-141.
- Santini, Z. I., Koyanagi, A., Tyrovolas, S., Haro, J. M., Donovan, R. J., Nielsen, L. and Koushede, V. (2017) 'The protective properties of Act-Belong-Commit indicators against incident depression, anxiety, and cognitive impairment among older Irish adults: Findings from a prospective community-based study', *Experimental gerontology*, 91, pp. 79-87.
- Savva, G. M., Donoghue, O. A., Horgan, F., O'Regan, C., Cronin, H. and Kenny, R. A. (2013) 'Using timed up-and-go to identify frail members of the older population', *The journals of gerontology. Series A, Biological sciences and medical sciences*, 68(4), pp. 441-446.
- Savva, G.M., Maty, S.C., Setti, A. and Feeney, J. (2013) 'Cognitive and Physical Health of the Older Populations of England, the United States, and Ireland: International Comparability of The Irish Longitudinal Study on Ageing', *Journal of the American Geriatrics Society (JAGS)*, 61(s2):S291–S298.
- Scarlett, S., Kenny, R. A., O'Connell, M. D., Nolan, H., & De Looze, C. (2021). [Associations between cognitive function, actigraphy-based and self-reported sleep in older community-dwelling adults: Findings from the Irish Longitudinal Study on Ageing](#). *International Journal of Geriatric Psychiatry*, 36(5), 731-742.
- Setti, A., Stapleton, J., Leahy, D., Walsh, C., Kenny, R. A. and Newell, F. N. (2014) 'Improving the efficiency of multisensory integration in older adults: Audio-visual temporal discrimination training reduces susceptibility to the sound-induced flash illusion', *Neuropsychologia*, 61(1), pp. 259-268.
- Sexton, D. J., Canney, M. and Kenny, R. M. (2018) 'Limitations of Observational Data in Interpreting SPRINT Results—Reply', *JAMA internal medicine*, 178(1), pp. 155-155.
- Sexton, D. J., Canney, M., O'Connell, M. D. L., Moore, P., Little, M. A., O'Seaghdha, C. M. and Kenny, R.-A. (2017) 'Injurious Falls and Syncope in Older Community-Dwelling Adults Meeting Inclusion Criteria for SPRINT', *JAMA internal medicine*, 177(9), pp. 1385-1387.
- Sexton, E., King-Kallimanis, B. L., Morgan, K. and McGee, H. (2014) 'Development of the Brief Ageing Perceptions Questionnaire (B-APQ): A confirmatory factor analysis approach to item reduction', *BMC geriatrics*, 14(1), pp. 44-44.
- Sivertsen, G. (2014) 'Scholarly publication patterns in the social sciences and humanities and their coverage in Scopus and Web of Science', in *Proceedings of the Science and Technology Indicators Conference 2014 Leiden*. pp. 598-604 [Online]. Version.
- Sivertsen, G. (2016) 'Publication-Based Funding: The Norwegian Model', in *Research Assessment in the Humanities: Towards Criteria and Procedures* [Online]. Version.

- Sheehan, A., McGarrigle, C., O'Connell, B., (2017) Oral Health and Wellbeing in Older Irish Adults: The Irish Longitudinal Study on Ageing, <https://www.doi.org/10.38018/TildaRe.2017-04>.
- Sheridan, A., O'Farrell, A., Evans, D., Kavanagh, P. (2018) Adult Smoking in Ireland: A Special Analysis of the Healthy Ireland Survey and The Irish Longitudinal Study on Ageing (TILDA): Tobacco Free Ireland Programme, Health Service Executive, <https://www.hse.ie/eng/about/who/tobaccocontrol/tobaccofreeireland/adult-smoking-in-ireland.pdf>.
- Stickley, A., Santini, Z. I. and Koyanagi, A. (2017) 'Urinary incontinence, mental health and loneliness among community-dwelling older adults in Ireland', *BMC urology*, 17(1), pp. 29-29.
- Stokes, J. E. (2017) 'Two-Wave Dyadic Analysis of Marital Quality and Loneliness in Later Life: Results From the Irish Longitudinal Study on Ageing', *Research on aging*, 39(5), pp. 635-656.
- Stringhini, S., Carmeli, C., Jokela, M., Avendaño, M., McCrory, C., d'Errico, A., Bochud, M., Barros, H., Costa, G., Chadeau-Hyam, M., Delpierre, C., Gandini, M., Fraga, S., Goldberg, M., Giles, G.G., Lassale, C., Kenny, R.A., Kelly-Irving, M., Paccaud, F., ... the LIFEPAATH Consortium (2018) 'Socioeconomic status, non-communicable disease risk factors, and walking speed in older adults: multi-cohort population based study', *BMJ*, 360:k1046-k1046.
- Stufflebeam, D., L. (2015) *CIPP Evaluation Model Checklist: A Tool for Applying the CIPP Model to Assess Projects and Programs*. Kalamazoo MI: Western Michigan University.
- Stufflebeam, D., L. and Zgang, G. 2017. *The CIPP Evaluation Model: How to Evaluate for Improvement and Accountability*. Beaverton: Ringgold, Inc.
- The Economic and Social Research Council (2022) *Defining impact*. United Kingdom: UK Research and Innovation. Available at: <https://www.ukri.org/councils/esrc/impact-toolkit-for-economic-and-social-sciences/defining-impact/> (Accessed: 27th July).
- The Royal Society (2012) *Science as an open enterprise*, London. Available at: <https://royalsociety.org/-/media/policy/projects/sape/2012-06-20-saoe.pdf>.
- Theou, O., O'Connell, M. D. L., King-Kallimanis, B. L., O'Halloran, A. M., Rockwood, K. and Kenny, R. A. (2015) 'Measuring frailty using self-report and test-based health measures', *Age and ageing*, 44(3), pp. 471-477.
- Tracey, M. L., McHugh, S. M., Buckley, C. M., Canavan, R. J., Fitzgerald, A. P. and Kearney, P. M. (2016) 'The prevalence of Type 2 diabetes and related complications in a nationally representative sample of adults aged 50 and over in the Republic of Ireland', *Diabetic medicine*, 33(4), pp. 441-445.
- Trinity College Dublin (2022) *The Irish Longitudinal Study on Ageing (TILDA)*. Dublin: Trinity College Dublin. Available at: <https://tilda.tcd.ie/> (Accessed: 23rd June).
- Turner, N., Donoghue, O., Kenny, R.A. (2018) Wellbeing and Health in Ireland's over 50s 2009-2016: The Irish Longitudinal Study on Ageing, <https://tilda.tcd.ie/publications/reports/pdf/w4-key-findings-report/TILDA-Wave4-Key-Findings-report.pdf>
- Tyrovolas, S., Koyanagi, A., Lara, E., Ivan Santini, Z. and Haro, J. M. (2016) 'Mild cognitive impairment is associated with falls among older adults: Findings from the Irish Longitudinal Study on Ageing (TILDA)', *Experimental gerontology*, 75, pp. 42-47.
- Universities UK (2007) *The use of bibliometrics to measure research quality in UK higher education institutions*, London. Available at: <http://jfmela.free.fr/jfmblog/wp-content/bibliometrics.pdf>.
- University College Dublin (2022) *Statement On The Responsible Use of Research Metrics in UCD*. Responsible Use Of Metrics. Dublin: University College Dublin. Available at:

[https://www.ucd.ie/research/portal/responsibleuseofresearchmetrics/#:~:text=University%20College%20Dublin%20\(UCD\)%20is,to%20achieve%20their%20full%20potential](https://www.ucd.ie/research/portal/responsibleuseofresearchmetrics/#:~:text=University%20College%20Dublin%20(UCD)%20is,to%20achieve%20their%20full%20potential). (Accessed: 15th August).

University of Waterloo Working Group on Bibliometrics, Byl, L., Özsu, M., T., Kenyon, T. and Stirling, P. (Winter 2016) *White Paper on Bibliometrics, Measuring Research Output through Bibliometrics*, Waterloo University. Available at: [BibliometricsWhitePaper-Univ.Waterloo%20\(1\).pdf](#).

Vagetti, G. C., Barbosa Filho, V. C., Moreira, N. B., de Oliveira, V., Mazzardo, O. and de Campos, W. (2012) 'The prevalence and correlates of meeting the current physical activity for health guidelines in older people: A cross-sectional study in Brazilian women', *Archives of gerontology and geriatrics*, 56(3), pp. 492-500.

Vancampfort, D., Hallgren, M., Schuch, F., Stubbs, B., Smith, L., Rosenbaum, S., Firth, J., Van Damme, T. and Koyanagi, A. (2020) 'Sedentary behavior and depression among community-dwelling adults aged ≥50 years: Results from the Irish longitudinal study on Ageing', *Journal of affective disorders*, 262, pp. 389-396.

van Wijnen, V.K., Finucane, C., Harms, M.P.M., Nolan, H., Freeman, R.L., Westerhof, B.E., Kenny, R.A., ter Maaten, J.C. and Wieling, W. (2017) 'Noninvasive beat-to-beat finger arterial pressure monitoring during orthostasis: a comprehensive review of normal and abnormal responses at different ages', *Journal of Internal Medicine*, 282(6):468–483.

Vaughan, R. M., Coen, R. F., Kenny, R. and Lawlor, B. A. (2016) 'Preservation of the Semantic Verbal Fluency Advantage in a Large Population-Based Sample: Normative Data from the TILDA Study', *Journal of the International Neuropsychological Society*, 22(5), pp. 570-576.

Vaughan, R. M., Coen, R. F., Kenny, R. and Lawlor, B. A. (2018) 'Semantic and Phonemic Verbal Fluency Discrepancy in Mild Cognitive Impairment: Potential Predictor of Progression to Alzheimer's Disease', *Journal of the American Geriatrics Society (JAGS)*, 66(4), pp. 755-759.

Villiers-Tuthill, A., Copley, A., McGee, H. and Morgan, K. (2016) 'The relationship of tobacco and alcohol use with ageing self-perceptions in older people in Ireland', *BMC public health*, 16(1), pp. 627-627.

Vineis, P., Avendano-Pabon, M., Barros, H., Chadeau-Hyam, M., Costa, G., Dijmarescu, M., Delpierre, C., D'Errico, A., Fraga, S., Giles, G., Goldberg, M., Zins, M., Kelly-Irving, M., Kivimaki, M., Lang, T., Layte, R., Mackenbach, J., Marmot, M., McCrory, C., ... the LIFEPAATH Consortium (2017) 'The biology of inequalities in health: the LIFEPAATH project', *Longitudinal and Life Course Studies*, 8(4):417–449.

Wallace, E., Moriarty, F., McGarrigle, C., Smith, S. M., Kenny, R.-A. and Fahey, T. (2018) 'Self-report versus electronic medical record recorded healthcare utilisation in older community-dwelling adults: Comparison of two prospective cohort studies', *PloS one*, 13(10), pp. e0206201-e0206201.

Walsh, B., Lyons, S., (2021) Demand for the Statutory Home Support Scheme: The Economic and Social Research Institute, <https://doi.org/10.26504/rs122>.

Ward, M. (2019) Irish adults transition to retirement – wellbeing, social participation and health-related behaviours. Findings from The Irish Longitudinal Study on Ageing: The Irish Longitudinal Study on Ageing, <https://www.doi.org/10.38018/TildaRe.2019-00>.

Ward, M., McGarrigle, C. A., Carey, D. and Kenny, R. A. (2021a) 'Correction to: Social Capital and Quality of Life among Urban and Rural Older Adults. Quantitative Findings from the Irish Longitudinal Study on Ageing', *Applied Research in Quality of Life*, 16(3), pp. 1417-1417.

Ward, M., McGarrigle, C., Hever, A., O'Mahoney, P., Moynihan, S., Loughran, G., and Kenny, R.A. (2020) Loneliness and Social Isolation in the COVID-19 Pandemic amongst the Over 70s: Data from the Irish Longitudinal Study on Ageing (TILDA) and ALONE: The Irish Longitudinal Study on Ageing, <https://www.doi.org/10.38018/TildaRe.2020-07>

- Ward, M., McGarrigle, C. A. and Kenny, R. A. (2019) 'More than health: quality of life trajectories among older adults—findings from The Irish Longitudinal Study of Ageing (TILDA)', *Quality of life research*, 28(2), pp. 429-439.
- Ward, M., Layte, R., Kenny, R.A., (2019) Loneliness, social isolation, and their discordance among older adults. Findings from The Irish Longitudinal Study on Ageing (TILDA): The Irish Longitudinal Study of Ageing, <https://www.doi.org/10.38018/TildaRe.2019-03>.
- Ward, M., O'Mahoney, P., Kenny, R.A. (2021b) Altered Lives in a Time of Crisis: the Impact of the COVID-19 Pandemic on the Lives of Older Adults in Ireland: The Irish Longitudinal Study on Ageing, <https://doi.org/10.38018/TildaRe.2021-01>
- Whelan, B. J. and Savva, G. M. (2013) 'Design and Methodology of The Irish Longitudinal Study on Ageing', *Journal of the American Geriatrics Society (JAGS)*, 61(s2), pp. S265-S268.
- Williams, A. E. (2017) 'Altmetrics: an overview and evaluation', *Online information review*, 41(3), pp. 311-317.
- Williams, K. (2022) 'What counts: Making sense of metrics of research value', *Science & public policy*, 49(3), pp. 518-531.
- Wilsdon, J., Allen, L., Belfiore, E., Campbell, P., Curry, S., Hill, S., Jones, R., Kain, R., Kerridge, S., Thelwall, M., Tinkler, J., Viney, I., Wouters, P., Hill, J. and Johnson, B. (2015) *The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management*, United Kingdom. Available at: <https://www.ukri.org/wp-content/uploads/2021/12/RE-151221-TheMetricTideFullReport2015.pdf>.
- Wong, T. Y., Massa, M. S., O'Halloran, A. M., Kenny, R. A. and Clarke, R. (2018) 'Cardiovascular risk factors and frailty in a cross-sectional study of older people: implications for prevention', *Age and ageing*, 47(5), pp. 714-720.
- World Health Organization (2015) *World report on ageing and health*: World Health Organization. Available at: <https://apps.who.int/iris/handle/10665/186463>.
- Zupic, I. and Čater, T. (2015) 'Bibliometric Methods in Management and Organization', *Organizational research methods*, 18(3), pp. 429-472.

Appendix 1: TILDA publications in the top 10% of the most cited publications worldwide

Year of publication on TILDA website	Publication citation
2021	Boyle, R., Jollans, L., Rueda-Delgado, L.M., Rizzo, R., Yener, G. G., McMorrow, J. P., Knight, S. P., Carey, D., Robertson, I. H., Emek-Savaş, D. D., Stern, Y., Kenny, R. A. and Whelan, R. (2021) 'Brain-predicted age difference score is related to specific cognitive functions: a multi-site replication analysis', <i>Brain Imaging and Behavior</i> , 15(1):327–345.
2021	Briggs, R., McDowell, C.P., De Looze, C., Kenny, R.A. and Ward, M. (2021) 'Depressive Symptoms Among Older Adults Pre- and Post-COVID-19 Pandemic', <i>Journal of the American Medical Directors Association</i> , 22(11):2251–2257.
2021	Chintapalli, R. and Romero-Ortuno, R. (2021) 'Choice reaction time and subsequent mobility decline: Prospective observational findings from The Irish Longitudinal Study on Ageing (TILDA)', <i>Clinical Medicine</i> , 31.
2021	Ho, J.K., Moriarty, F., Manly, J.J., Larson, E.B., Evans, D.A., Rajan, K.B., Hudak, E.M., Hassan, L., Liu, E., Sato, N., Hasebe, N., Laurin, D., Carmichael, P.-H. and Nation, D.A. (2021) 'Blood-Brain Barrier Crossing Renin-Angiotensin Drugs and Cognition in the Elderly: A Meta-Analysis', <i>Hypertension</i> , 629–643.
2021	Hooyman, A., Malek-Ahmadi, M., Fauth, E.B. and Schaefer, S.Y. (2021) 'Challenging the relationship of grip strength with cognitive status in older adults', <i>International Journal of Geriatric Psychiatry</i> , 36(3):433–442.
2021	Maher, B.A., O'Sullivan, V., Feeney, J., Gonet, T. and Kenny, R.A. (2021) 'Indoor particulate air pollution from open fires and the cognitive function of older people', <i>Environmental Research</i> , 192.
2021	McCrary, C., Fiorito, G., Hernandez, B., Polidoro, S., O'Halloran, A.M., Hever, A., Ni Cheallaigh, C., Lu, A.T., Horvath, S., Vineis, P. and Kenny, R.A. (2021) 'Grim Age Outperforms Other Epigenetic Clocks in the Prediction of Age-Related Clinical Phenotypes and All-Cause Mortality', <i>Journals of Gerontology - Series A Biological Sciences and Medical Sciences</i> , 76(5):741–749.

2021	Swan, L., Warters, A. and O'Sullivan, M. (2021) 'Socioeconomic inequality and risk of sarcopenia in community-dwelling older adults', <i>Clinical Interventions in Aging</i> , 161119–161129.
2021	Ward, M., McGarrigle, C.A., Carey, D. and Kenny, R.A. (2021) 'Correction to: Social Capital and Quality of Life among Urban and Rural Older Adults. Quantitative Findings from the Irish Longitudinal Study on Ageing', <i>Applied Research in Quality of Life</i> , 16(3):1417–1417
2020	Curran, E., Rosato, M., Ferry, F. and Leavey, G. (2020) 'Prevalence and factors associated with anxiety and depression in older adults: Gender differences in psychosocial indicators', <i>Journal of Affective Disorders</i> , 267:114–122.
2020	McCrory, C., Fiorito, G., McLoughlin, S., Polidoro, S., Cheallaigh, C.N., Bourke, N., Karisola, P., Alenius, H., Vineis, P., Layte, R. and Kenny, R.A. (2020) 'Epigenetic clocks and allostatic load reveal potential sex-specific drivers of biological aging', <i>Journals of Gerontology - Series A Biological Sciences and Medical Sciences</i> , 75(3):495–503.
2020	Vancampfort, D., Hallgren, M., Schuch, F., Stubbs, B., Smith, L., Rosenbaum, S., Firth, J., Van Damme, T. and Koyanagi, A. (2020) 'Sedentary behaviour and depression among community-dwelling adults aged ≥50 years: Results from the Irish longitudinal study on Ageing', <i>Journal of Affective Disorders</i> , 262:389–396.
2019	Corish, C.A. and Bardon, L.A. (2019) 'Malnutrition in older adults: Screening and determinants', <i>Proceedings of the Nutrition Society</i> , 78(3):372–379.
2019	Domènech-Abella, J., Mundó, J., Haro, J.M. and Rubio-Valera, M. (2019) 'Anxiety, depression, loneliness and social network in the elderly: Longitudinal associations from The Irish Longitudinal Study on Ageing (TILDA)', <i>Journal of Affective Disorders</i> , 24682–24688.
2019	Fiorito, G., McCrory, C., Robinson, O., Carmeli, C., Ochoa Rosales, C., Zhang, Y., Muka, T., Voortman, T., Vineis, P., Polidoro, S., Lifepath, C., Consortium, B., Lifepath, c., the Lifepath, c. and the, B. C. (2019) 'Socioeconomic position, lifestyle habits and biomarkers of epigenetic aging: A multi-cohort analysis', <i>Aging</i> , 11(7):2045–2070.
2019	Schuch, F.B., Stubbs, B., Meyer, J., Heissel, A., Zech, P., Vancampfort, D., Rosenbaum, S., Deenik, J., Firth, J., Ward, P.B. and Carvalho, A.F. (2019) 'Physical activity protects from incident anxiety: A meta-

	analysis of prospective cohort studies', <i>Depression and Anxiety</i> , 36(9):846–858.
2019	McCrory, C., Fiorito, G., Ni Cheallaigh, C., Polidoro, S., Karisola, P., Alenius, H., Layte, R., Seeman, T., Vineis, P. and Kenny, R.A. (2019) 'How does socio-economic position (SEP) get biologically embedded? A comparison of allostatic load and the epigenetic clock(s)', <i>Psychoneuroendocrinology</i> , 104:64–73.
2019	Ward, M., McGarrigle, C.A. and Kenny, R.A. (2019) 'More than health: quality of life trajectories among older adults—findings from The Irish Longitudinal Study of Ageing (TILDA)', <i>Quality of Life Research</i> , 28(2):429–439.
2018	Briggs, R., Kennelly, S.P. and Kenny, R.A. (2018d) 'Does baseline depression increase the risk of unexplained and accidental falls in a cohort of community-dwelling older people? Data from The Irish Longitudinal Study on Ageing (TILDA)', <i>International Journal of Geriatric Psychiatry</i> , 33(2):e205–e211.
2018	Briggs, R., Carey, D., O'Halloran, A.M., Kenny, R.A. and Kennelly, S.P. (2018) 'Validation of the 8-item Centre for Epidemiological Studies Depression Scale in a cohort of community-dwelling older people: data from The Irish Longitudinal Study on Ageing (TILDA)', <i>European Geriatric Medicine</i> , 9(1):121–126.
2018	Briggs, R., Tobin, K., Kenny, R.A. and Kennelly, S.P. (2018) 'What is the prevalence of untreated depression and death ideation in older people? Data from the Irish Longitudinal Study on Aging', <i>International Psychogeriatrics</i> , 30(9):1393–1401.
2018	Dempsey, S., Devine, M.T., Gillespie, T., Lyons, S. and Nolan, A. (2018) 'Coastal blue space and depression in older adults', <i>Health and Place</i> , 54:110–117.
2018	Dempsey, S., Lyons, S. and Nolan, A. (2018) 'Urban green space and obesity in older adults: Evidence from Ireland', <i>SSM - Population Health</i> , 4:206–215.
2018	Donoghue, O.A., McGarrigle, C.A., Foley, M., Fagan, A., Meaney, J. and Kenny, R.A. (2018) 'Cohort profile update: The Irish Longitudinal study on ageing (TILDA)', <i>International Journal of Epidemiology</i> , 47(5):1398–1398.
2018	Laird, E., O'Halloran, A.M., Carey, D., Healy, M., O'Connor, D., Moore, P., Shannon, T., Molloy, A.M. and Kenny, R.A. (2018) 'The Prevalence of Vitamin D Deficiency and the Determinants of

	25(OH)D Concentration in Older Irish Adults: Data from the Irish Longitudinal Study on Ageing (TILDA)', <i>Journals of Gerontology - Series A Biological Sciences and Medical Sciences</i> , 73(4):519–525.
2018	Maguire, F.J., Killane, I., Creagh, A.P., Donoghue, O., Kenny, R.A. and Reilly, R.B. (2018) 'Baseline Association of Motoric Cognitive Risk Syndrome With Sustained Attention, Memory, and Global Cognition', <i>Journal of the American Medical Directors Association</i> , 19(1):53–58.
2018	McDowell, C.P., Dishman, R.K., Vancampfort, D., Hallgren, M., Stubbs, B., MacDonncha, C. and Herring, M.P. (2018) 'Physical activity and generalized anxiety disorder: Results from The Irish Longitudinal Study on Ageing (TILDA)', <i>International Journal of Epidemiology</i> , 47(5):1443–1453.
2018	Stringhini, S., Carmeli, C., Jokela, M., Avendaño, M., McCrory, C., d'Errico, A., Bochud, M., Barros, H., Costa, G., Chadeau-Hyam, M., Delpierre, C., Gandini, M., Fraga, S., Goldberg, M., Giles, G.G., Lassale, C., Kenny, R.A., Kelly-Irving, M., Paccaud, F., ... the LIFEPAH Consortium (2018) 'Socioeconomic status, non-communicable disease risk factors, and walking speed in older adults: Multi-cohort population based study', <i>BMJ (Online)</i> , 360:k1046–k1046.
2017	Connolly, D., Garvey, J. and McKee, G. (2017) 'Factors associated with ADL/IADL disability in community dwelling older adults in the Irish longitudinal study on ageing (TILDA)', <i>Disability and Rehabilitation</i> , 39(8):809–816.
2017	Finucane, C., O'Connell, M.D.L., Donoghue, O., Richardson, K., Savva, G.M. and Kenny, R.A. (2017) 'Impaired Orthostatic Blood Pressure Recovery Is Associated with Unexplained and Injurious Falls', <i>Journal of the American Geriatrics Society</i> , 65(3):474–482.
2017	Fiorito, G., Polidoro, S., Dugué, P.-A., Kivimaki, M., Ponzi, E., Matullo, G., Guarrera, S., Assumma, M.B., Georgiadis, P., Kyrtopoulos, S.A., Krogh, V., Palli, D., Panico, S., Sacerdote, C., Tumino, R., Chadeau-Hyam, M., Stringhini, S., Severi, G., Hodge, A.M., ... Vineis, P. (2017) 'Social adversity and epigenetic aging: A multi-cohort study on socioeconomic differences in peripheral blood DNA methylation', <i>Scientific Reports</i> , 7(1):16266–16312.
2017	Moore, P.V., Bennett, K. and Normand, C. (2017) 'Counting the time lived, the time left or illness? Age, proximity to death, morbidity and prescribing expenditures', <i>Social Science and Medicine</i> , 184:1–14.

2017	Sexton, D.J., Canney, M., O'Connell, M.D.L., Moore, P., Little, M.A., O'Seaghdha, C.M. and Kenny, R.-A. (2017) 'Injurious falls and syncope in older community-dwelling adults meeting inclusion criteria for SPRINT', <i>JAMA Internal Medicine</i> , 177(9):1385–1387.
2017	O'Brien, H., Mohan, H., Hare, C.O., Reynolds, J.V. and Kenny, R.A. (2017) 'Mind over matter? The hidden epidemic of cognitive dysfunction in the older surgical patient', <i>Annals of Surgery</i> , 265(4):677–691.
2016	Canney, M., O'Connell, M.D.L., Murphy, C.M., O'Leary, N., Little, M.A., O'Seaghdha, C.M. and Kenny, R.A. (2016) 'Single agent antihypertensive therapy and orthostatic blood pressure behaviour in older adults using beat-To-beat measurements: The Irish longitudinal study on ageing', <i>PLoS One</i> , 11(1):e0146156–e0146156.
2016	Moriarty, F., Bennett, K., Cahir, C., Kenny, R.A. and Fahey, T. (2016) 'Potentially inappropriate prescribing according to STOPP and START and adverse outcomes in community-dwelling older people: a prospective cohort study', <i>British Journal of Clinical Pharmacology</i> , 82(3):849–857.
2016	Robertson, D.A., King-Kallimanis, B.L. and Kenny, R.A. (2016) 'Negative perceptions of aging predict longitudinal decline in cognitive function', <i>Psychology and Aging</i> , 31(1):71–81.
2016	Santini, Z.I., Fiori, K.L., Feeney, J., Tyrovolas, S., Haro, J.M. and Koyanagi, A. (2016) 'Social relationships, loneliness, and mental health among older men and women in Ireland: A prospective community-based study', <i>Journal of Affective Disorders</i> , 204:59–69.
2015	Santini, I.Z., Koyanagi, A., Tyrovolas, S. and Haro, J.M. (2015) 'The association of relationship quality and social networks with depression, anxiety, and suicidal ideation among older married adults: Findings from a cross-sectional analysis of the Irish Longitudinal Study on Ageing (TILDA)', <i>Journal of Affective Disorders</i> , 179:134–141.
2015	McCrory, C., Dooley, C., Layte, R. and Kenny, R.A. (2015) 'The lasting legacy of childhood adversity for disease risk in later life', <i>Health Psychology</i> , 34(7):687–696.
2015	Moriarty, F., Bennett, K., Fahey, T., Kenny, R.A. and Cahir, C. (2015) 'Longitudinal prevalence of potentially inappropriate medicines and potential prescribing omissions in a cohort of community-dwelling

	older people', <i>European Journal of Clinical Pharmacology</i> , 71(4):473–482.
	Murphy, C., Bennett, K., Fahey, T., Shelley, E., Graham, I. and Kenny, R.A. (2015) 'Statin use in adults at high risk of cardiovascular disease mortality: Cross-sectional analysis of baseline data from The Irish Longitudinal Study on Ageing (TILDA)', <i>BMJ Open</i> , 5(7).
2015	O'Regan, C., Kenny, R.A., Cronin, H., Finucane, C. and Kearney, P.M. (2015) 'Antidepressants strongly influence the relationship between depression and heart rate variability: Findings from The Irish Longitudinal Study on Ageing (TILDA)', <i>Psychological Medicine</i> , 45(3):623–636.
2015	Richardson, K., Bennett, K. and Kenny, R.A. (2015a) 'Polypharmacy including falls risk-increasing medications and subsequent falls in community-dwelling middle-aged and older adults', <i>Age and Ageing</i> , 44(1):90–96.
2015	Richardson, K., Bennett, K., Maidment, I.D., Fox, C., Smithard, D. and Kenny, R.A. (2015b) 'Use of Medications with Anticholinergic Activity and Self-Reported Injurious Falls in Older Community-Dwelling Adults', <i>Journal of the American Geriatrics Society</i> , 63(8):1561–1569.
2014	Burholt, V. and Scharf, T. (2014) 'Poor health and loneliness in later life: The role of depressive symptoms, social resources, and rural environments', <i>Journals of Gerontology - Series B Psychological Sciences and Social Sciences</i> , 69(2):311–324.
2014	Donoghue, O.A., Savva, G.M., Cronin, H., Kenny, R.A. and Horgan, N.F. (2014) 'Using timed up and go and usual gait speed to predict incident disability in daily activities among community-dwelling adults aged 65 and older', <i>Archives of Physical Medicine and Rehabilitation</i> , 95(10):1954–1961.
2014	Finucane, C., O'Connell, M.D.L., Fan, C.W., Savva, G.M., Soraghan, C.J., Nolan, H., Cronin, H. and Kenny, R.A. (2014) 'Age-related normative changes in phasic orthostatic blood pressure in a large population study: Findings from the Irish longitudinal study on ageing (TILDA)', <i>Circulation</i> , 130(20):1780–1789.
2014	Frewen, J., Finucane, C., Savva, G.M., Boyle, G. and Kenny, R.A. (2014) 'Orthostatic hypotension is associated with lower cognitive performance in adults aged 50 plus with supine hypertension',

Journals of Gerontology - Series A Biological Sciences and Medical Sciences, 69(7):878–885.

2014 Galvin, R., Moriarty, F., Cousins, G., Cahir, C., Motterlini, N., Bradley, M., Hughes, C.M., Bennett, K., Smith, S.M., Fahey, T. and Kenny, R.A. (2014) 'Prevalence of potentially inappropriate prescribing and prescribing omissions in older Irish adults: Findings from the Irish Longitudinal Study on Ageing study (TILDA)', *European Journal of Clinical Pharmacology*, 70(5):599–606.

2014 O'Halloran, A.M., Finucane, C., Savva, G.M., Robertson, I.H. and Kenny, R.A. (2014) 'Sustained attention and frailty in the older adult population', *Journals of Gerontology - Series B Psychological Sciences and Social Sciences*, 69(2):147–156.

2014 Robertson, D.A., Savva, G.M., Coen, R.F. and Kenny, R.A. (2014) 'Cognitive Function in the Prefrailty and Frailty Syndrome', *Journal of the American Geriatrics Society*, 62(11):2118–2124.

2013 Cronin, H., O'Regan, C., Finucane, C., Kearney, P. and Kenny, R.A. (2013) 'Health and aging: Development of the Irish Longitudinal Study on Ageing health assessment', *Journal of the American Geriatrics Society*, 61(2):S269–S278.

2013 Donoghue, O.A., Cronin, H., Savva, G.M., Meaney, J. and Kenny, R.A. (2012a) 'Effects of fear of falling and activity restriction on normal and dual task walking in community dwelling older adults', *Gait and Posture*, 38(1):120–124.

2013 Finucane, C., O'Connell, M.D.L., Fan, C.W., Savva, G.M., Soraghan, C.J., Nolan, H., Cronin, H. and Kenny, R.A. (2014) 'Age-related normative changes in phasic orthostatic blood pressure in a large population study: Findings from the Irish longitudinal study on ageing (TILDA)', *Circulation*, 130(20):1780–1789.

2013 Feeney, J., Finucane, C., Savva, G.M., Cronin, H., Beatty, S., Nolan, J.M. and Kenny, R.A. (2013) 'Low macular pigment optical density is associated with lower cognitive performance in a large, population-based sample of older adults', *Neurobiology of Aging*, 34(11):2449–2456.

2013 Frewen, J., Finucane, C., Cronin, H., Rice, C., Kearney, P.M., Harbison, J. and Kenny, R.A. (2013) 'Factors that influence awareness and treatment of atrial fibrillation in older adults', *QJM*, 106(5):415–424.

2013	Kenny, R.A., Coen, R.F., Frewen, J., Donoghue, O.A., Cronin, H. and Savva, G.M. (2013) 'Normative values of cognitive and physical function in older adults: Findings from the Irish Longitudinal Study on Ageing', <i>Journal of the American Geriatrics Society</i> , 61(2):S279–S290.
2013	Robertson, D.A., Savva, G.M. and Kenny, R.A. (2013) 'Frailty and cognitive impairment-A review of the evidence and causal mechanisms', <i>Ageing Research Reviews</i> , 12(4):840–851.
2013	Savva, G.M., Donoghue, O.A., Horgan, F., O'Regan, C., Cronin, H. and Kenny, R.A. (2013) 'Using timed up-and-go to identify frail members of the older population', <i>Journals of Gerontology - Series A Biological Sciences and Medical Sciences</i> , 68(4):441–446.
2013	Whelan, B.J. and Savva, G.M. (2013) 'Design and methodology of the Irish Longitudinal Study on Ageing', <i>Journal of the American Geriatrics Society</i> , 61(2):S265–S268.
2012	Donoghue, O.A., Horgan, N.F., Savva, G.M., Cronin, H., O'Regan, C. and Kenny, R.A. (2012) 'Association between timed up-and-go and memory, executive function, and processing speed', <i>Journal of the American Geriatrics Society</i> , 60(9):1681–1686.

Section 2 Evaluating the reach of TILDA: an analysis of discourses on ageing and health in print and online media

1 Introduction

This section discusses the findings of a study to conduct an evaluation of the reach of the Irish Longitudinal Study on Ageing (TILDA), as represented in traditional print media and in social media. The focus of our evaluation was an analysis of discourse that existed within the content of reportage and commentary associated with TILDA. Specifically, our study focused on public media content that reported on TILDA study findings and the subject of those findings, namely the health, life course, and circumstances of people aged 50 years and older, through an analysis of published items in a sample of two national newspapers and online posts on the Facebook social media platform.

Through the method of critical discourse analysis (CDA), we aimed to identify recurring narratives concerning the work of TILDA and how ageing and health are discursively constructed through the reportage and commentary on that work. In this way, we aimed to inform and dialogue with the evaluative elements of the study thereby locating and integrating our data gathering strategy and the analysis of the empirical evidence within the broader study. Our evaluation method was designed to both align with and complement the other data collection and analysis elements of the evaluation. With reference to the overall evaluation frameworks, our method informs the ‘product’ element of the Context, Input, Process, Product (CIPP) evaluation model (Stufflebeam and Zhang, 2017) and the ‘reach’ element of the Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) framework (Green and Glasgow, 2006).

1.1 Aim and objectives

With a focus on its outputs and public reach, the aim of our study was to describe the ways in which the TILDA project and its findings are talked about in public media in Ireland. Based on analysis of a sample of newspaper copy and online posts concerning TILDA and its findings, we aimed to identify and name the discourses that existed within the texts of the sample and to uncover discursively constructed meanings of ageing and health. We used the CDA method to conduct our study. Our study objectives were to:

1. Generate a purposive sample of media items, from both print and online media, that were concerned with TILDA and its research findings
2. Apply the CDA method in order to uncover, describe, and name recurring narratives (or discourses) concerning TILDA and its findings
3. Examine whether differences exist between print and online media in the ways that ageing and health are discursively constructed

4. Examine whether the media narratives on ageing and health changed over time from the earlier to the later selected media items examined
5. Examine whether the public narratives are coherent and unified or if there are competing narratives within and among the various media texts examined, and
6. Examine whether identifiable political or ideological subtexts exist within the discourse concerning TILDA and its findings.

1.2 Literature review

There is a substantial body of published research evidence concerning representations of ageing and older people in both traditional print media (e.g. Fealy *et al.*, 2012; Williams *et al.*, 2010; Yläne *et al.*, 2009) and in online media platforms (e.g. Brooke and Jackson, 2020; Fraser *et al.*, 2020). Much of this evidence appears in the social gerontological literature, which has highlighted various aspects of the media discourse on ageing and older people, including concern with the sustainability of health and welfare, as well as the allocation of resources, given the demography of aging (Ellerich-Groppe *et al.*, 2021). A recurring theme in much of the literature on media discourses is the tendency to represent older people as a homogenous group and with reference to their family roles (Wilińska, 2015; Fealy *et al.*, 2012); hence, media representations of older people tend to negate their past identities, instead constructing identities with reference to older people's adult offspring, such that they are referred to as 'older parents' or 'grandparents' (Fealy *et al.*, 2012).

1.3 Negative and positive stereotypes

Identified in several studies, a generally held negative stereotype of ageing is that of older people as being frail and vulnerable (e.g. Allen and Ayalon, 2021; Fealy *et al.*, 2012; Williams *et al.*, 2010). This inherently ageist stereotype contrasts with more recent trends in media discourses which construct more positive images of ageing, and positive ageing stereotypes have variously positioned older people as happy, affluent, leisure-oriented, and wise (e.g. Williams *et al.*, 2010; Nussbaum and Coupland, 2004; Uotila *et al.*, 2010; Yläne *et al.*, 2009). In addition to traditional media images depicting old age as a time of frailty and loss, or as a time of wisdom and experience, Uotila *et al.* (2010) identified the emergence of an image of successful ageing, characterised by the active and productive 'third age' of agelessness and incessant activity.

The more positive media portrayals of ageing are particularly evident in the case of media such as TV and magazines, which carry advertisements for products aimed at older adults. For example, through an analysis of print media advertisements in 140 British magazines relating to health and ageing, Yläne *et al.* (2009) identified positive depictions of older adults in the underlying discourse of the advertisements; the products being advertised encouraged older adults to take positive action to maintain their own health and well-being, and the discourse reflected the health and activity orientation to ageing of 'third agers'. In magazine advertising, the most common images of older people are those of typical happy retired people, but as Williams *et al.* (2010) caution, these images are nevertheless of concern, since they reinforce traditional stereotypes about how older people are or should be.

Media discourses reflect societal expectations of ageing and ageing roles, and where media portrayals of older people carry a discourse that is in contradiction to societal norms and expectations, older people are positioned as 'deviant' (Fealy *et al.*, 2012). Hence, media discourses are more likely to offer the more traditional 'proper old folk' version of ageing (Williams *et al.* 2010).

1.4 Older people and COVID-19

Arriving with limited prior warning, the global COVID-19 pandemic of 2020–2021 presented global health systems with a momentous challenge (Cash and Patel, 2020; Liu *et al.*, 2020). It challenged public health and care systems to respond speedily and effectively to develop public health measures and healthcare interventions in order to save lives. Since the pandemic was found to present a greater threat to some groups than to others, societies were placed in a unique situation in which all generations were asked to act to protect those considered to be at particular risk of contracting a potentially life-threatening infection. This situation was a watershed moment in that it tested the willingness of individuals, entire sections of communities, and the wider society to accept social and economic privations in the interest of subsets of their communities. Since older adults were identified as one high-risk group, this tested the extent of intergenerational solidarity, and as Ellerich-Groppe *et al.* observed, “intergenerational solidarity and responsibility became central normative points of reference in political speeches, press conferences, and public media discourses” (2021, p. 159). Hence, the pandemic generated copious copy in both traditional print and online media concerning older people and their risk status.

The tendency to present older people as a homogenous group was explicitly demonstrated in media discourses concerning older people and COVID-19, and several authors identified ageing and ageist media discourses associated with the pandemic (e.g. Zhang and Liu, 2021; Allen and Ayalon, 2021; Ayalon *et al.*, 2020; Fraser *et al.*, 2020; Lichtenstein, 2020; Vervaecke and Meisner, 2021, including ageist discourses associated with residential care (Allen and Ayalon, 2021; Fraser *et al.*, 2020). Mainstream media outlets in China represented older people through the adoption of a biomedical-centred framework, presenting them as a homogenous group that was vulnerable to the pandemic (Zhang and Liu, 2021). In Ireland, ageism and paternalism were evident in the early policy response to the pandemic (Kelleher *et al.*, 2020), and there was evidence of overt ageist discourses concerned with resource allocation (O’Neill, 2020). Reporting on an analysis of 1,331 sampled print and online newspaper articles covering COVID-19 in Canada, the United States of America (USA) and the United Kingdom (UK), Mach *et al.* found that reporting had “moderate scientific quality and low sensationalism” (2021, p. 1) across the articles in 12 selected newspapers. The authors contended that newspaper coverage with low scientific quality that also failed to alert readers to health risks, misinformation, or policy failures may have exacerbated the public health effects of the disease.

Several authors gave examples of social media discourse around COVID-19, specifically the Twitter hashtag #BoomerRemove (Brooke and Jackson, 2020; Fraser *et al.*, 2020), which propagated the notion that the virus killed only the baby boomer generation and, by implication, was not a threat to younger people. Lichtenstein also noted the use of other demeaning referencing phrases like “YOLO grandparents”, “grey shufflers”, and “mouldy oldies” (2020; e209). Pointing to evidence of a discourse positioning people aged 70 years and older as being helpless, frail, and unable to contribute to society, Ayalon *et al.* concluded: “with the pandemic there has been a parallel outbreak of ageism” (2020, p. e49).

2 Methodology and methods

Informed by discourse theory, we took as our starting point the view that the ways in which people talk about a topic, people, or social structures can constitute a discourse. Discourse is produced through everyday language in use that contains ideas, beliefs, and assumptions. Discourse theory also holds that public discourse can construct social identities, and these discursively constructed identities themselves become social realities (Fairclough, 2000; Gee, 1999; Phelan, 2018). Furthermore, language may be deployed to persuade others (Wetherell *et al.*, 2001); that is, to construct variable, inconsistent, self-interested, and persuasive versions of the social world (Fealy and McNamara, 2007).

In addition, public discourses are vehicles that carry ideology (Fairclough, 1993). When examined through an analytic framework, public discourse can reveal recurring narratives that exist in both the text and subtext of language, and which do not merely describe but also constitute the social world. Through systematic analysis, it is possible to identify the content and forms of the language that make up a particular discourse, and some narratives become dominant through repeated use or from dominant groups that can, in turn, manifest commonly held ideas (Fealy *et al.*, 2018; Phelan, 2018). CDA provides the means for such analysis since it is a rigorous method of revealing publicly conducted narratives.

2.1 Methodology and conceptual arsenal: CDA

CDA has a social constructionist epistemology that is sensitive to the processes of social and discursive constructions of the social world and its constituents through language as a social practice and which is imbued with generative potentials. The roots of CDA are varied, ranging from critical theory to genealogy and social constructionism, among other sources, and the literature is replete with different critical approaches to discourse, texts, and language (e.g. Fairclough, 1995; Foucault, 1972; Wodak and Meyer, 2001). Nevertheless, these approaches share what Di Placido refers to as “a semi-unanimous recognition of the productive power of language and discourse to create that of which they speak, a social constructionist framework and a commitment to critical scholarship” (Di Placido, 2021, p. 508). Through CDA, it is possible to expose particular subject positions and identities ascribed to social groups (like older adults), and to reveal how particular discourses legitimate the dominance of populist views and ways of seeing the world (Phelan, 2018). As Fealy and McNamara write, “Critical discursive approaches are interested in the ways in which some discourses come to dominate under certain historical and cultural conditions, and ask whose interests are served by these hegemonic formulations” (2007, p. 1189).

A prominent feature of CDA is its interest in unveiling “latent ideology” and “taken-for-granted-assumptions” through its concern with “language as natural data and as social action” (McNamara *et al.*, 2012, p. 31) rather than focusing on single sentences or linguistic/grammatical units. For the purpose of our study, CDA afforded us a method with which to study how TILDA’s public representations and discursive construction in Irish media are shaped by, and, in turn, contribute to shaping, a particular episteme regarding scientific social research on older people, ageing, and health.

The main conceptual building blocks of our CDA are the concepts of discourse and discursive formation. We define discourses as historically contingent social systems that produce knowledge and meaning through “practices that systematically form the objects of which they speak” (Foucault, 1972, p. 49). As Di Placido argues, “discourses therefore transcend the mere written or spoken word and carry with them the power to normalize, categorize, and thus create that which does not yet exist” (2021, p. 510).

Since discourse can carry ideology, the productive power of language is imbued with specific ideological undertones and is invariably aimed at specific objectives. As Hallam writes, “the ‘reality’ constructed by the media suits a particular vision of the world, sustaining beliefs in particular ideas and institutions and the power relations they inscribe” (2000, p. 25). It is precisely the unveiling of these ideological undertones, specific objectives, and power relations to which CDA is devoted.

Following Foucault’s (1972) definition, a discursive formation, in turn, can be defined as an ensemble of texts constituting, or contributing to the constitution of, a specific object of analysis. In the case of the present study, the discursive formation that we examined was a particular selection of that body of texts that contributes to the discursive construction and the public representation of TILDA, its work, and the principal subject of that work. It is within this discursive formation that we sought to analyse specific ‘situated discourses’ as data (Coupland, 2009) so that we might examine how language “simultaneously reflects and constructs the situation or context in which it is used” (Gee, 1999, p. 97).

In conclusion, our methodological and theoretical positioning is summarised with the following formulation: CDA is the critical study of specific discourses as situated within TILDA's public representation and discursive construction in Irish media, understood as a coherent discursive formation.

2.1.1 Media as sites of discourse

As sites of public discourse, newspapers and social media provide a window into public opinion, culture, politics, and social life (Fairclough, 1995), and are influential in setting agendas and forming and legitimating public attitudes (Murphy, 2004; Phelan, 2018). Newspaper language is contextually situated and rarely neutral; it may deploy discursive strategies to shape public discourse (Richardson, 2017), and it has the power to discursively construct, sustain, and privilege particular social identities, including ageing identities (Fealy *et al.*, 2012; Phelan, 2018; Wilińska, 2015). Similarly, language in social media has the constitutive power to construct social identities for particular social groups (Kelly *et al.*, 2012). Starting from these epistemological, theoretical, and empirical premises, we deployed the method of CDA to analyse a total of 43 newspaper articles and 60 Facebook posts selected through the following data collection and sampling strategy.

Method: sampling and selection of texts

Within a specific discursive formation, we analysed the discourse in our sampled newspaper texts and social media posts concerned with the reach and public representation of the TILDA project. We generated a purposive sample of national newspaper items published from 2009 to July 2022, and a sample of social media posts on Facebook (now Meta) from 2020 onwards.

For newspapers, we selected two national broadsheet newspapers – *The Irish Times* and the *Irish Independent* – on the basis that they represented a broad national demographic of readers of traditional print media. We also selected these two newspapers based on the assumption that they most likely reproduce different discursive constructions of TILDA aligned with their readership and broader positioning in the political field. Regarding the selected social media platform, we selected Facebook on the basis that it represents the most influential and most frequently accessed online social media platform to date, accounting for a plurality of sources (Kepios, 2022; Walsh, 2022). In addition, according to Kepios, (2022) and Walsh, (2022), Facebook also reaches a younger audience than either of the two selected newspapers do. We excluded Instagram, since we verified that TILDA has invested significantly less in this platform than in the other social media selected; Twitter, because it is mainly used by educators and other professional communities to disseminate their findings (Xing and Gao, 2018) rather than by a variety of stakeholders; TikTok, because it appeals to a very young audience (Wallaroo, 2020), although there are signs that it is 'ageing up'; and YouTube, because, following a preliminary analysis (Appendix 1), we ascertained that TILDA's YouTube channel is very much a repository of lectures and webinars (which is also partly advertised on the TILDA Facebook page), which we have thoroughly analysed in the present study. For the purposes of this study, we focused our analysis solely on TILDA's official page on Facebook. Moreover, in an effort to track some of the discursive changes undergone both within the project itself and in its public representation across time, we sampled items across three different time periods, as follows:

1. Early Period: 2009 to 2013
2. Mid Period: 2014 to 2019, and
3. Current Period: 2020 to the present.

This tripartite division enabled us to account for outputs related to TILDA Wave 1 (2009–2011) and TILDA Wave 2 (2012–2013) in what we identified as the Early Period; TILDA Wave 3 (2014–2015), TILDA Wave 4

(2016), and TILDA Wave 5 (2017-2018) in what we termed the Mid Period; and the current and ongoing recruitment process and its promotion in relation to the COVID-19 Self-Completion Questionnaire (SCQ) and TILDA Wave 6 (2022–2023) in what we called the Current Period.

According to these schemata, we purposefully selected a finite number of items per media source, per time period, with the aim of accumulating a minimum of 25 media items per time period, and a minimum of 75 items in total. Due to time constraints, we did not apply a data saturation logic to the sampling process and sample size. In our searches, we included only those media items that cited results from TILDA and/or that mentioned TILDA research or TILDA researcher(s) in an article or post on ageing or on ageing and health. We excluded items on ageing and health that exclusively cited studies from sources other than TILDA, such as the World Health Organization (WHO), the Economic and Social Research Institute (ESRI), or reportage of other longitudinal study reports. We conducted our searches using the keywords ‘TILDA’ and ‘ageing’.

3 Findings

3.1 Discourses in traditional print media

Using the LexisNexis database, we conducted an initial search of all daily newspapers printed in Ireland during the period from 1 January 2006 to the 1st October 2022 in order to establish the total number of newspaper items published in that period. The search yielded a total of 269 items (mean=15.82; standard deviation (SD)=10.54) in 6 daily newspapers which were searchable online (Appendix 1). We conducted a similar search for Sunday newspapers and one weekly newspaper, the *Irish Farmers Journal*, and this search yielded a total of just 20 items (mean=1.17; SD=1.33) (Appendix 2). The trend in the number of items indicated a general increase in items published over the period covered by our search, with highs following the release of findings from Waves 1 and 4 (Figure 1).

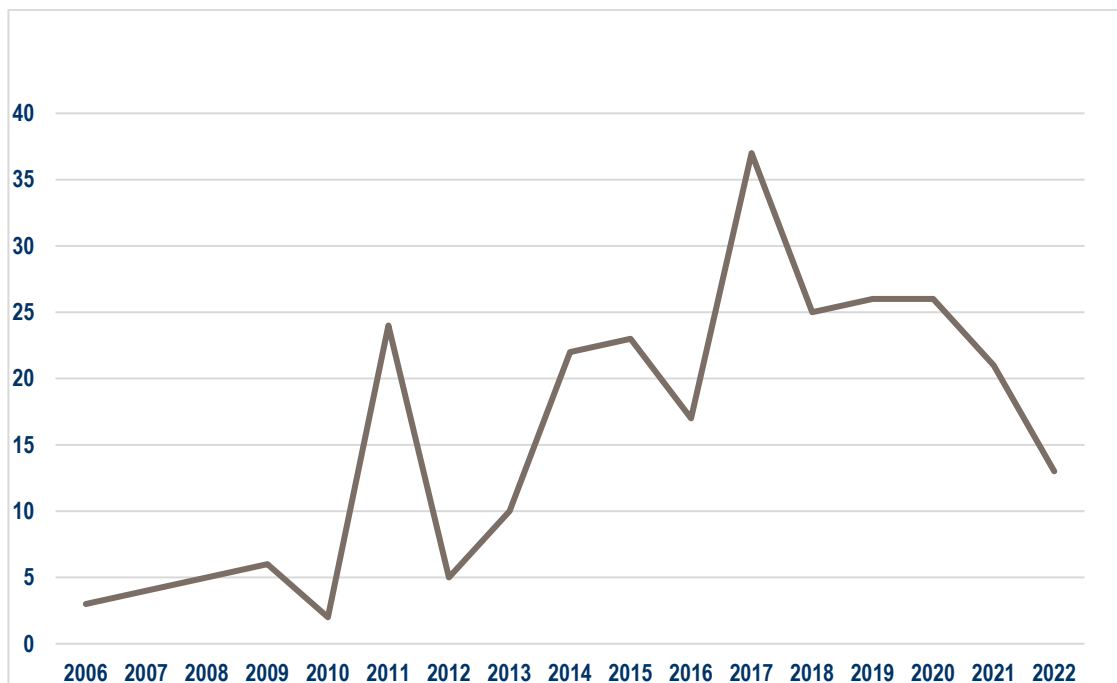


Figure 1 TILDA’s reach in print media: items printed per year in six daily newspapers

Based on the findings from the search of all daily newspapers, we selected for analysis the two newspapers with the highest number of published items over the 17-year period; these were *The Irish Times* (n=115; mean=6.76; SD=4.38) and the *Irish Independent* (n=78; mean=4.58; SD=3.89) (Appendix 1). Hence, a total of 193 items represented our sampling frame, from which we selected items that were published to coincide with key time periods that reflected the release of findings from TILDA Waves 1 to 5, inclusive, and the findings from the COVID-19 SCQ, issued in 2020 (the first year of the COVID-19 pandemic). This yielded a total of 182 newspaper items (Table 1), from which we sampled items per newspaper, per period, to yield a final purposive sample of 43 items (*The Irish Times*: n=22; *Irish Independent*: n=21) as a single dataset for analysis (Appendix 3).

Table 1 TILDA wave releases and newspaper reportage

Period	TILDA waves and dates*		Published item count	
	TILDA wave	Dates	<i>The Irish Times</i>	<i>Irish Independent</i>
Early Period	Wave 1	October 2009 to July 2011	27	10
	Wave 2	February 2012 to March 2013		
Mid Period	Wave 3	March 2014 to October 2015	60	49
	Wave 4	January 2016 to December 2016		
	Wave 5	January 2018 to December 2018		
Current Period	COVID-19 SCQ	July 2020 to November 2020	16	17
		2021 to 2022		
Total (N=179)			103	76

*Source: ISSDA, Available online at: <https://www.ucd.ie/issda/data/tilda/wave5/> (Retrieved 12 July 2022)

The newspapers items that we sampled represented reportage concerning research findings published by TILDA with or without associated commentary. Newspaper reportage and commentary items tended to coalesce around the dates of the publication of the results from TILDA Waves 1 to 5, inclusive, and from the results of the COVID-19 SCQ (Appendix 3). In a small number of items, reportage incorporated individual biographical pieces, used as exemplars of the experiences of an older person, such as an older parent. We retrieved one editorial for analysis.

3.2 ‘Filling a knowledge gap’: TILDA in print media

Our analysis of the two newspapers indicated trends over time in the content and focus of reportage and commentaries. It is assumed that items were primarily generated from press releases issued by TILDA to coincide with the release of findings from each consecutive wave. Commencing in 2006, the reports during the early years concerned the establishment of TILDA and its 10-year programme of research that aimed to answer the question: “How can we age better?” (*Irish Independent*: 17/08/09). The early reports gave some contextual information about ageing in Ireland, such as the fact that “the Irish population is getting older at an unprecedented rate” (*Irish Independent*: 17/08/09).

Several of the early newspaper items reporting on the establishment of the TILDA study provided details of the study, which aimed to “examine and understand the trend in ageing in Ireland and its implications for economic, social and healthcare planning” (*The Irish Times*: 02/11/06) and to study “the interaction of social, economic and health factors before, during and after retirement” (*Irish Independent*: 04/12/06). Reportage also mentioned the fact that TILDA was to be “one of the world’s most comprehensive longitudinal studies of the effects of ageing” (*The Irish Times*: 21/08/08), which would “fill a knowledge gap” regarding older people (*The Irish Times*: 07/05/09). The study would also “make Ireland a better place to grow older” (*The Irish Times*: 08/03/11). Readers were introduced to Professor Rose Anne Kenny, who would lead the “researchers at Trinity College”, and were told that the study would also involve “inter-institutional collaboration” (*The Irish Times*: 31/01/08).

Following the release of results from Wave 1, *The Irish Times* editorialised on the value of TILDA, which it described as “the most comprehensive study of its kind ever undertaken in the State”, continuing that “This study is a valuable and strategic investment for the nation. The Minister for Health must ensure that its first report does not gather dust and that these early findings are acted upon by policymakers” (*The Irish Times*: 14/03/11).

Also commenting on the findings from Wave 1 of TILDA, the writer of an opinion item in the same newspaper similarly remarked on the impact of TILDA, stating that, “Some five years in, it is already beginning to bridge a significant knowledge gap, providing policymakers in health and social care with valuable information ... [that will] change the assumptions decision-makers will bring when it comes to making policy” (*The Irish Times*: 09/09/11).

In the period from 2009 to 2018, the number of newspaper items increased to reflect reportage of the publication of findings from the successive TILDA waves and the findings from the COVID-19 SCQ. In some of the reportage, such as items relating to the publication of Professor Kenny’s book on ageing (*Irish Independent*: 26/02/22), preconceptions of getting older (*Irish Independent*: 29/05/17), and a threatened bus strike (11/13/04/17), TILDA was referenced in a somewhat tangential way, with a passing reference only. Nevertheless, on the basis of the newspaper items sampled, the evidence indicates that the aims of the longitudinal study were extensively reported in the selected newspapers. Unless otherwise identified, we refer to the writers of the reports and commentaries as journalists.

3.3 ‘Ageing well’: media discourses and TILDA’s reach

Our analysis of a sample of items from two national newspapers indicated the emergence of a broad underlying metadiscourse on ageing and health that we have termed ‘ageing well’. This broad discourse contained recurring narratives associated with the value of ageing, the means of staying healthy in older age, and the fact that older people represent an important social and economic resource. This discourse was broadly affirmative with reference to ageing and the value placed in older people. Several articles were included as feature articles in the health sections of the newspapers. Some articles reporting on TILDA’s research findings also highlighted the phenomenon of ageism and negative stereotypes of older people.

3.3.1 Naming and referencing older people

While the reportage generally represented a broad discourse on ageing well, some enduring ageist tropes persisted in the ways in which journalists referred to older people. Specifically, the evidence in the sampled texts contained language that carried an implied othering discourse in the ways that words and phrases were deployed to collectively name and reference older people. Our review of the initial sample of newspaper items indicated fairly extensive use of the word ‘elderly’ as both a noun (‘the elderly’) and

an adjective (e.g. ‘elderly parents’). In addition, othering language was evident in texts that otherwise valorised older people and/or celebrated ageing and longevity. For example, one features editor who was an ageing coach wrote of “our cherished elders” (*Irish Independent*: 27/04/20), and another who wrote of the risks of negative ageing stereotypes collectively referenced older people as “the elderly”, “the over-70s” and “elders” (*The Irish Times*: 17/08/21), while a third referenced “elders” when highlighting older people’s dislike of the word “cocooning” (*The Irish Times*: 17/08/21). When discussing older people and the economy, some journalists referenced older people as “pensioners” and “retirees” (*Irish Independent*: 30/11/12), and one journalist referenced older people as “silver spenders” with “grey power” and wrote of the “grey power ... generation” (*Irish Independent*: 18/07/19).

Notwithstanding the persistent use of othering language to name and reference older people, our analysis of the newspaper texts revealed a discourse that constructed ageing in generally positive ways, and we have identified three distinct but interrelated discourses within the broader discourse and discursively constructed identity of ‘ageing well’, which we have named as follows: ‘valorising ageing’, ‘staying healthy as you age’, and ‘older people as a social resource’. In addition, several newspaper items arising out of TILDA study findings addressed ageism and negative ageing stereotypes which, when taken together, represent a discourse that we have named ‘railing against ageism’ (Figure 2).

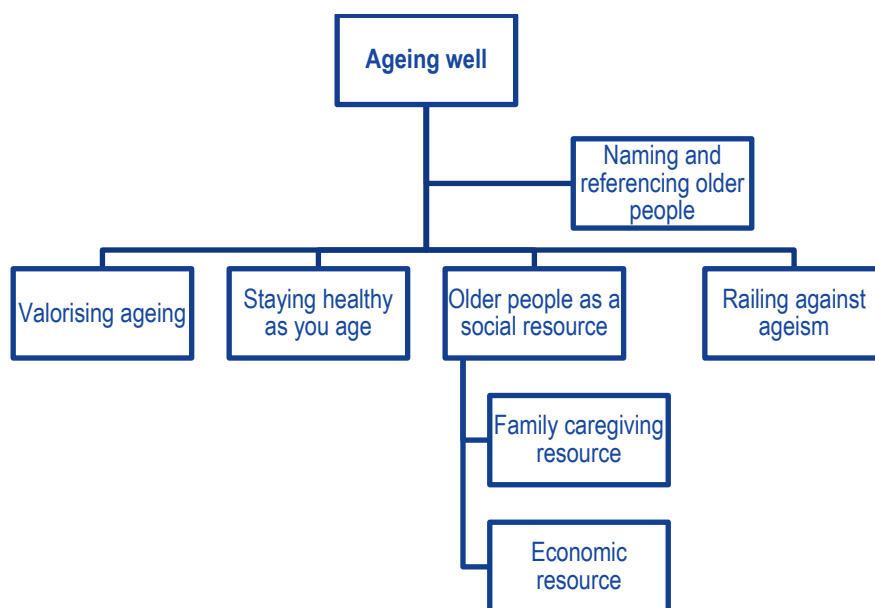


Figure 2 Ageing and health discourses in print media

3.3.2 Valorising ageing

Our analysis of newspaper reportage and commentary on the TILDA study findings revealed textual descriptions of ageing as a positive life stage and one that should be celebrated. These affirmative descriptions gave rise to a discourse on ‘valorising ageing’, which incorporated notions of longevity, good health, and good quality of life in older age. Drawing on the evidence of TILDA studies, the texts offered a counter-narrative to the more usual ageist tropes found in mass media, which have tended to position older people as decrepit, dependent, and disengaged from productive society. Rather, there were textual references that presented ageing as positive. For example, the “remarkable gain in longevity” among Western populations was viewed as a positive achievement that should be celebrated (*The Irish Times*: 17/08/21).

Following the presentation of TILDA study findings at a conference, a banner headline in *The Irish Times* declared: “Ageing is the new cool thanks to a better quality of life” (*The Irish Times*: 08/09/18). The reporting of the conference (which was organised by an active retirement group) included evidence that “people’s quality of life improves as they grow older” and that older Irish people had “a very healthy social life” (*The Irish Times*: 08/09/18). In a letter to the same newspaper, one writer observed that the TILDA study had provided “the good news” that “self-reported quality of life peaks around 65 to 67 years and declines after 80” (*The Irish Times*: 06/08/18).

Directly citing “the latest report” from TILDA, which was published in 2017, one journalist wrote that “far from being reliant on social supports”, older adults in Ireland were “net contributors to their extended families and the communities in which they live” (*The Irish Times*: 25/04/17). Moreover, the journalist reported that the report had shown that the contribution of older adults was “a ‘pervading theme’ which has ‘resonated at each wave of data collection’ since the study began in 2009” (*The Irish Times*: 25/04/17).

In an article on positive ageing titled “Secrets of the superagers”, the journalist wrote how, in the course of her research, Professor Kenny was “struck by the large proportion of superagers she meets who embrace life and its possibilities and cherish the company of others” (*Irish Independent*: 02/10/18). On the evidence that older people were “healthier and wealthier”, another journalist asked rhetorically, “Why not celebrate longer life, change our attitudes, stop regarding older people as frail and incompetent and ensure that age is emboldened, that older people live life to the full [and are] included and involved in society?” (*The Irish Times*: 17/08/21).

Writing after the release of findings from TILDA in 2020, an article in the news section of the *Irish Independent* cited a study out of the USA which reported that “participants who had a positive self-perception of ageing lived, on average, 7.5 years longer than those with a bleaker view of what it means to grow old” (*Irish Independent*: 27/04/20). The writer listed, at the time of publication, some “vibrant examples of positive ageing” to demonstrate how later life has changed; her examples included the broadcaster David Attenborough (aged 93 years) and the actors Judi Dench (aged 85 years) and Clint Eastwood (aged 89 years), all of whom continued to contribute to society.

Nevertheless, successful ageing depended on older people themselves proactively attending to health and lifestyle behaviours in order to promote and maintain their health and ensure successful ageing. Through their reporting of TILDA findings, the newspaper texts carried recurring accounts of the social determinants of health and successful ageing.

3.3.3 Staying healthy as you age

Based on research evidence accumulated over several years, TILDA issued a series of recommendations concerning lifestyle strategies that older people could deploy to remain healthy, age well, and thereby live longer. These strategies were widely reported in the newspapers that we examined. One journalist referenced such strategies as “the secrets of successful ageing” (*Irish Independent*: 18/03/19), while another wrote of “the secrets of the superagers” (*Irish Independent*: 02/10/18). Citing Professor Kenny and using the second person singular, the writer of an article on threats to health in older age entreated the reader to “shun isolation and loneliness and seek out the company of others ... [and] stop being so sedentary and get moving around” (*Irish Independent*: 02/10/18). The writer further advised that “communities are essential in order to help people have long and happy lives” and that “fresh fruit and vegetables [were] key” (*Irish Independent*: 02/10/18). Also referencing Professor Kenny and TILDA study findings, another journalist wrote about the role of “personal power” in promoting and maintaining health in older age: “We already know that not smoking, eating properly, and avoiding too much alcohol

lead to good health. Keeping fit is good for us. But exposure to high stress hormones is really damaging to our health” (*Irish Independent*: 26/02/22).

Reportage on TILDA study findings also stressed the role of social engagement and the importance of avoiding loneliness and of doing things “in moderation in company” (*Irish Independent*: 02/10/18). Friendship, social activity, having a purpose, and religious observance were all reported as being “indisputably good” for physical and mental health, and the research evidence from TILDA showed “a positive relationship” between religious practice and health, with “lower blood pressure and better immunity in religious Irish adults” (*Irish Independent*: 26/02/22). With manifest denial of any acknowledgement of either denominational or ethnic diversity among older people in Ireland, the same journalist added: “Getting out to mass is good for you”. The reporting on TILDA’s study findings also highlighted the relationship between attendance at religious services and having “a bigger social network, which in turn, had a positive effect on the mental health of the population” (*Irish Independent*: 02/08/19).

The role of social integration more generally was also reported as being important in promoting health in older age. This included having a “community spirit”, which was “a major contributor to positive ageing”, getting “to know your neighbours”, volunteering, and “increasing your social network”, all of which were associated with a “higher quality of life in older people” (*Irish Independent*: 18/03/19). Getting involved in the wider community was reported to be “the key to longevity” (*The Irish Times*: 21/02/19).

Prior to and during the period in which the COVID-19 pandemic was at its height in Ireland, there was much reporting on the role of vitamin D in protecting against infection. Several newspaper articles were published on foot of evidence from TILDA that vitamin D deficiency was prevalent among older people and that reduced levels of the vitamin exposed older people to an increased risk of contracting the coronavirus responsible for COVID-19 disease (e.g. *The Irish Times*: 04/04/20; *Irish Independent*: 30/12/20). For example, prior to the COVID-19 pandemic, newspapers reported findings from TILDA concerning “high rates of deficiency [of vitamin D] seen in the older adult population”, which represented a threat to health (*Irish Independent*: 05/09/17). During the COVID-19 pandemic, one journalist, who invoked Professor Kenny of TILDA and Dr Mike Ryan of the WHO, urged older readers to: “Wash your hands. Keep your distance. Hold firm. Take vitamin D. Now” (*Irish Independent*: 06/02/21). Vitamin D was reported to be “cheap ... widely available and ... shown to mitigate the severity of the Covid-19 virus” (*Irish Independent*: 14/12/20).

On the basis of TILDA evidence that large proportions of the population aged 50 years and older were overweight or obese (*The Irish Times*: 18/07/14; *Irish Independent*: 04/02/13), maintaining health in older age also requires older people to maintain a healthy weight and avoid obesity. Accordingly, there was much reportage and commentary on weight gain, which served to position older people as both old and obese. This identity of fatness was evident in headlines like “Ireland the ‘fat man’ of Europe” (*The Irish Times*: 22/05/15), “Obesity levels in over 50s as bad as in United States” (*Irish Independent*: 18/07/14), and “Fighting fat over 50” (*The Irish Times*: 21/07/14). Reportage conveyed a sense of alarm at the evidence on excess weight in older age; however, one commentary article cautioned against a labelling discourse: “It is vital that efforts to deal with the public health aspects do not encourage an ‘us and them’ attitude to obesity. Stigmatisation, involving a labelling of overweight people, must be resisted” (*The Irish Times*: 01/06/15).

3.3.4 Older people as a resource

As a result of TILDA study findings related to the economics of post-retirement age, newspaper reportage and commentary indicated a focus on older people as a social and economic resource, principally to adult

children. Within this reportage, there emerged a discourse of ageing that positioned older people as holders of accumulated wealth or as a valuable resource in family caregiving. Within this discourse, there was also evidence of concerns related to the gender disparity in terms of wealth in older age.

Evidence from early TILDA findings on “intergenerational transfers” was widely reported, with reportage and commentary focusing on the role of women in their 50s and 60s acting as caregivers to both their older parents and their grandchildren. Based on findings of women’s multiple caregiving roles, newspaper reports and commentaries wrote of the “sandwich generation” (*The Irish Times*: 14/11/13; *Irish Independent*: 03/12/13), “the middle generation” (*The Irish Times*: 14/11/13), and the “rise of the granny nannies” (*Irish Independent*: 12/05/11). One article demonstrated the experience of the ‘sandwich generation’ through a detailed case study of Penny, who cared for her three young children and her mother who had Alzheimer’s disease and “who can’t be left on her own” (*Irish Independent*: 03/12/13). Reporters also wrote of the personal impact on women of their multiple caring roles, including an “increasing negative impact on health” (*The Irish Times*: 14/11/13) and “significantly more depressive symptoms” (*Irish Independent*: 15/04/15). The newspapers also reported that the TILDA evidence showed how the burden of family caregiving for the ‘sandwich generation’ fell to women, one-half of whom also worked (*The Irish Times*: 14/11/13).

The reporting on TILDA findings relating to the economic dimension of older age concerned the economic asset that older people represent for their adult offspring. In addition to contributing to family caregiving and related practical household help, parents were reported to be providing financial support to their adult children: “people in their old age are more often still financially supporting their adult children rather than vice-versa” (*Irish Independent*: 15/09/11). Evidence from TILDA showed that one-quarter of older households had given “financial or material” support to their adult children (*Irish Independent*: 15/09/11; *The Irish Times*: 25/04/17), and this was in addition to their provision of non-financial support to their children (*The Irish Times*: 14/11/13). The claim that older people represented an important social and economic resource was summarised in the following editorial:

People aged over 50 are a huge source of support to their adult children, and more than a quarter of them undertake voluntary work at least once or twice a month. Among those with surviving parents, some 25 per cent provide an average of 18 hours personal care each week for their parents. These [TILDA] findings underline the valuable societal role played by older people among their extended families as well as in the wider community. (*The Irish Times*: 14/03/11)

A number of journalists drew attention to evidence from TILDA that men’s income post-retirement was higher than that of women. Reportage highlighted this income disparity when reporting that, whereas one-half of men had income from an employer pension in addition to the State pension, just one-third of women had an employer pension to supplement their State pension (*Irish Independent*: 30/11/12). While there was a gender pay gap throughout people’s working lives, reportage from TILDA highlighted the fact that “the gaps in earnings ripple all the way to retirement, meaning women ultimately experience a pension gap, too” (*The Irish Times*: 03/03/20). This gap meant that “on average, women’s pensions in retirement were 35 per cent lower than those of men” (*The Irish Times*: 11/09/19). Explained in part as “differences in income from private and occupational pensions” and the number of years worked, the gender disparity in post-retirement income was also reported as being more deep-rooted within cultural norms and practices that presented barriers to promotional opportunities for women, including “a lack of flexible working arrangements in senior roles; a long-hours work culture that ignores care constraints; lack of supports in the transition to senior roles; and gender inequalities in access to experiences that enhance promotion opportunities” (*The Irish Times*: 03/03/20).

One journalist also highlighted the disparity in the amount of income tax which ‘pensioners’ pay when compared with taxpayers aged under 65 years, with the former paying less tax than the latter (*Irish Independent*: 30/11/12).

Aside from entreating working people to commence saving for a pension early in life, reportage on post-retirement income was conducted with little supplementary commentary from the reporting journalists. In discussing the TILDA evidence, one journalist cited a pensions expert, who observed that “the strong association between income and quality of life in older age again highlights the need for people to save for retirement” (*Irish Independent*: 20/06/17).

3.3.5 Railing against ageism

The reportage and associated commentary on TILDA research resulted in a number of articles which highlighted societal ageism, including the subtle ways in which ageism is expressed and its impact on older people. The texts revealed a discourse that railed against ageism. For example, writing about “blatant ageism” in the media, one journalist berated fellow media commentators for their “usual handwringing” when commenting on the “supposed burden” that older people place on the younger “working people”, and how they contribute to ageism “by continuing to ignore research which shows that, far from being a burden, older people are net contributors to society” (*The Irish Times*: 20/06/17). Another columnist, a consultant geriatrician, similarly observed: “I am also troubled as a columnist at the degree to which casual ageism is tolerated in newspapers and the media. While huge sensitivity is taken with terminology relating to race and gender preference, it remains open season for attitudes and descriptors related to ageing” (*The Irish Times*: 20/06/17).

That columnist was addressing a number of factors in society that contributed to ageism and wrote of the need to move away from a social discourse that speaks of “doing something for older people” and towards one that stresses “the lifespan and shared intergenerational aspects of ageing” (*The Irish Times*: 20/06/17).. The columnist also took TILDA to task for its exclusion of those with dementia and those living in nursing homes from the longitudinal study. Referring to the use of collective nouns and phrases such as ‘seniors’ and ‘the elderly’ when referring to older people, the columnist expressed concern at “the clear erosion of our citizenship as we age” (*The Irish Times*: 20/06/17)..

Addressing the risks of stereotyping older people as being at greater risk of contracting the virus and dying during the COVID-19 pandemic, one journalist wrote that “the coronavirus stereotype adds to existing negative stereotypes especially where the increase in numbers of over-65s is seen as a burden and regularly described as ‘an ageing time bomb’ and ‘bed-blockers’” (*Irish Independent*: 27/04/20). The journalist cited TILDA’s finding that “negative stereotypes of ageing threaten the health of older people”, such that older people who themselves hold negative attitudes towards ageing tend to have reduced mobility and cognition. Also reporting on the threat of negative ageing stereotypes, one reporter railed against the “dysfunctional narrative”, which is the typical response to reports of the demographic shift towards an ageing population, writing: “This shift is invariably greeted with headlines moaning about the rising cost of pensions and elder health care” (*The Irish Times*: 17/08/21).

Citing TILDA’s Professor Kenny, another journalist wrote that “it was ageism that enabled the introduction of arbitrary cocooning rules in the pandemic” (*The Irish Times*: 26/01/22). The journalist also wrote of how people are defined with reference to their chronological age and how “an accretion of ‘normal for your age’ comments can seed a sense of confidence-draining vulnerability and decline” (*The Irish Times*: 26/01/22).

Reporting on the TILDA public seminar series titled “How to Age Well”, a journalist reported on how the seminars aimed to “take new knowledge out to the Irish people ... [and] ‘debunk some myths [about

ageing]” (*Irish Independent*: 18/03/19). Also citing TILDA’s Professor Kenny, the journalist wrote that “one of the most persistent myths about ageing is the idea that quality of life dwindles after the age of 50. On the contrary, researchers at TILDA found that quality of life continues to improve after the age of 50 until age 68” (*Irish Independent*: 18/03/19).

3.4 Discourses on TILDA’s Facebook page

For our analysis of the discursive constructions of ageing and health in proximity to TILDA’s online media presence, we analysed posts on the official Facebook page of the TILDA study. We commenced our analysis by counting the totality of posts shared on the page between its inception on 11 May 2020 and 18 July 2022. In our preliminary analysis, we read 335 posts, noting the date, transcribing the text of the posts, and conducting initial coding of each post with one or more codes referring to specific emerging discourses. Through this strategy, we identified the most common recurring narratives in the texts that represented emerging discourses and their sub-discourses. We identified four underlying discourses, which we have named promotion and dissemination, healthy ageing, health risks, and COVID-19 (Figure 3), and within which we identified several sub-discourses, as follows:

- Promotion and dissemination: academic and lay dissemination
- Healthy ageing: active ageing; happy ageing; creative ageing as a resource
- Health risks: obesity; dementia; nutrition; stress; socioeconomic factors; and
- COVID-19: vitamin D; social isolation, loneliness, and depression and anxiety; intergenerational support.

We performed an in-depth analysis of 15 posts for each of the four discourses, resulting in a total sample of 60 posts (Figure 3).

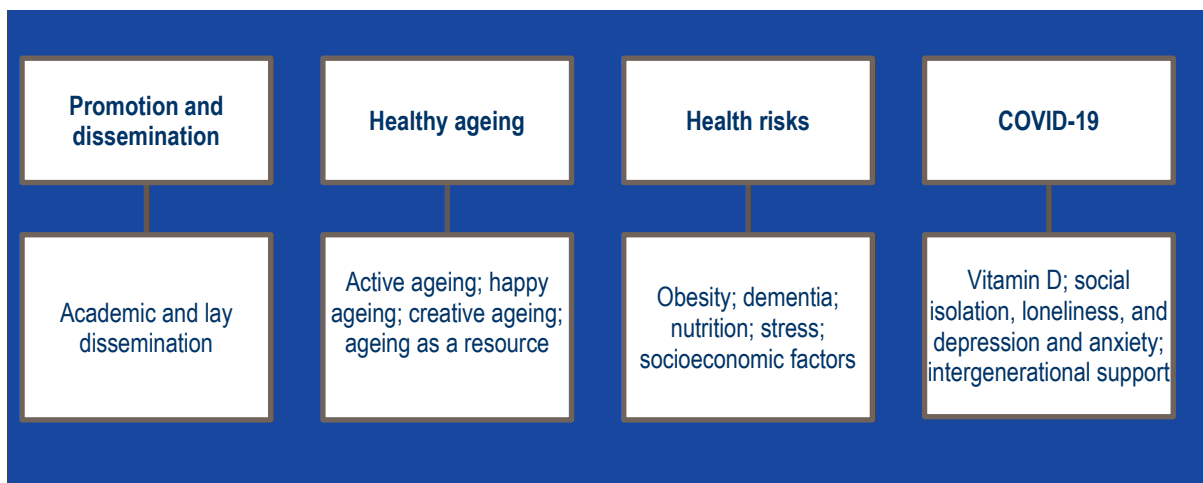


Figure 3 Ageing and health discourses in online media

Our analysis of the selected posts showed that while there were discernibly different discourses, individual posts could simultaneously represent one or more of the named emerging discourses, and in this way the discourses were, in large part, interrelated. In our analysis, we focused solely on the content of the posts themselves and not on that of the embedded links to other posts, such as links to a newspaper article, a TILDA report, or a radio interview. This careful boundaries-making process concerning what to include and what to exclude from our analysis was guided by the primary intention to study discursive constructions of ageing and health that existed on TILDA’s Facebook page and not those

contained in several other sources that were more or less associated with the dissemination of TILDA's research outputs.

3.5 Emerging discourses on TILDA's Facebook page

As already observed, based on our analysis of 60 posts on the TILDA Facebook page, we identified four overarching discourses – promotion and dissemination, healthy ageing, health risks, and COVID-19 – each of which contained a number of sub-discourses.

3.5.1 Promotion and dissemination

The first discursive construction of ageing and health concerns what we have labelled a promotion and dissemination discourse (84 posts); that is, the framing of TILDA's main activities and research outputs as widely available to both professional and lay audiences. Examples of the promotion and dissemination discourse varied greatly, ranging from purely promotional posts in which TILDA's activities were advertised, to others concerning a specific aspect of TILDA's research, such as research on lifestyle and health, participant recruitment for Wave 6, and job opportunities. For instance, in a post dated 16 June 2022, TILDA's Facebook page informed its followers:

We are now officially on Instagram!

[instagram.com/tilda_tcd/?hl=en](https://www.instagram.com/tilda_tcd/?hl=en)

Follow us for glimpses inside the study, pictures and the latest TILDA news

Another example of this discursive representation of TILDA openly sharing the results of its activities was posted on 11 September 2020, wherein TILDA's Gateway on the Health Research Board (HRB) Open Research Platform was advertised:

We are delighted to announce the launch of TILDA's Gateway on the [#HRB](#) Open Research Platform. This key gateway will serve as a central point for a variety of stakeholders to access, from researchers to HSE [Health Service Executive] Ireland staff, patient and advocacy groups to those planning and delivering healthcare in Ireland.

Learn more about the gateway below which will highlight [#TILDA](#) outputs, increase knowledge and help to extend our reach to policymakers, public service professionals & the public.

<https://bit.ly/33nIcXm>

*Trinity College Dublin School of Medicine Trinity Science Foundation Ireland Roinn Sláinte,
Department of Health*

The Atlantic Philanthropies Irish Life

The core of this discursive representation, however, is in regard to the promotion and dissemination of TILDA's main activities and research outputs, whether through specialised channels of dissemination (such as academic articles and lectures) or through dissemination to a broader audience via radio interviews, newspaper articles, and so forth. For example, regarding the construction and dissemination of expert knowledge, the following post (dated 14 January 2022) typifies this promotion and dissemination:

A new study from scientists at The Irish Longitudinal Study on Ageing - TILDA has revealed important findings linking low [#folate](#) (the natural form of the dietary supplement, [#folicacid](#)) to [#cognitivedecline](#) in later life.

Older adults in Ireland face a notable risk of #folate deficiency, as TILDA research shows 1 in 7 have low or deficient folate levels. Low folate status is a modifiable risk factor for cognitive decline. Learn more: <https://www.tcd.ie/.../low-folate-linked-to-risk-of.../>

Other prominent examples of this kind are related to the promotion of TILDA's reports, such as in this post shared on 22 November 2022:

Have you seen TILDA's new report on 'Creative Activity in the Ageing Population'?

Commissioned by CreativeIrl, our research shows that creative activity is high among the older population in Ireland, but lower participation is visible in those with lower education, income or for those with worse health.

Read the full report: <https://doi.org/10.38018/TildaRe.2021-05>

Key findings and conclusions: <https://www.doi.org/10.38018/TildaRb.2021-01>

In addition to posts specifically targeting the scientific community, a large share of the posts constituting the promotion and dissemination discourse concerned the propagation of TILDA's main research findings to a lay audience. An example of this sub-discourse is largely demonstrated by alerting the followers of TILDA's Facebook page to newspaper and radio interviews, as the following post dated 31 January 2022 testifies:

Read about some of the science behind 'Laughter is the best' medicine in The Sunday Times this weekend, with tips from TILDA Principal Investigator Professor Rose Anne Kenny's new book 'Age Proof'

Another aspect of the promotion and dissemination discourse concerned the recruitment of both research professionals (seven posts) and research participants (six posts). Regarding the former, the Facebook page included a post (dated 17 April 2022) which sought a research assistant position, while a post dated 24 May 2022 is concerned with the recruitment of participants for Wave 6 of TILDA:

TILDA is hiring a Research Assistant to help with health assessments of participants in Wave 6 of the study at our health centre on Pearse St, Dublin 2. Details and job spec: <https://www.universityvacancies.com/.../research...>

TILDA is recruiting new study participants for Wave 6.

We are seeking adults aged 50-62 years to replenish our study sample.

A promotion and dissemination discourse not only contributed to the discursive representation of TILDA and its activities, as demonstrated by its Facebook page, but the page itself is structured with the aim of promoting and disseminating TILDA's activities and research outputs. In this way, the promotion and dissemination discourse was rendered as a form of metadiscourse that informs and invests in all the other discursive presentations, from healthy ageing and health risks to COVID-19.

3.5.2 Healthy ageing

'Healthy ageing' describes a discourse that exists on TILDA's Facebook page that constructs ageing and health as something to be acquired and maintained through individual behaviours, and it comprises four interrelated sub-discourses: active ageing; happy ageing; creative ageing; and older people as a resource. Given the overarching role of TILDA, it was unsurprising that 'healthy ageing' should feature as a recurring discursive construction of ageing and health (47 posts). The discourse avoided any sense of framing ageing as a process of progressive decline and frailty, but rather positioned it as a life stage that involves self-responsible older people making choices to maintain and enhance their own health. This

discourse was substantially akin to the ‘ageing well’ metadiscourse evident in the print media that we examined. For example, a post dated 27 January 2022 reads:

We know we can't live forever. But there are simple steps we can take to boost our health, wellbeing, and longevity as we age.

Listen in to the following shows today to discover more!

Tune in to hear Professor Kenny from 10.25am on Shannonside FM with Joe Finnigan: <https://www.shannonside.ie/>

Listen to Galway Bay FM live with Keith Finnegan at 11.20am: <https://galwaybayfm.ie/>

This overall discursive representation of ageing as being primarily concerned with enhancing and maintaining health in older age is rooted in a specific understanding of ‘health promotion’, which is defined as “the process of enabling people to increase control over, and to improve, their health” (WHO, 2022). This construction of healthy ageing is differentiated into a plurality of partially overlapping sub-discourses that, in turn, speak of active ageing, happy ageing, creative ageing, and the social and discursive construction of older people as a resource for their families and the broader community.

Regarding ‘active ageing’, 34 posts referred to the pivotal role of exercise and regular physical activities “as an important part of ageing well”, as posted on 4 November 2021:

We know that regular physical activity is an important part of ageing well. But did you know that [#exercise](#) can slow the rate of [#biologicalageing](#) & brief high-intensity exercise can even help to reverse the effects of [#ageing](#)?

Discover a useful fitness formula to help you keep fit and healthy as you age.

Similarly, quoting Niamh Griffin’s article in the *Irish Examiner*, a post dated 9 September 2021 noted:

A big challenge in older adults is that when you stop exercising or don't use your muscles, you can have a big difference in your mobility. It can be much harder to get back to where you were. It can take a lot longer to recover than the time it took to lose the mobility.

‘Happy ageing’, in turn (identified in nine posts), contributed to the social and discursive construction of ageing as possibly being a happy or positive process, as the following post, dated 27 January 2022, demonstrates:

Tune into Times Radio at 8:30 pm this evening to hear one of the world's leading experts on [#ageing](#) discuss the joys of [#ageing](#), why your biological age matters most, and advice for living a long, happy and healthy life.

Learn more sage advice on [#ageingwell](#) from Trinity College Dublin Professor Rose Anne Kenny in her new book [#AgeProof](#), available in a bookstore near you.

Listen Live: <https://www.thetimes.co.uk/radio/live>

Another variant of the healthy ageing discourse was ‘creative ageing’ (10 posts), wherein ageing was explicitly associated with creative activities, such as poetry writing, storytelling, and music performance, as demonstrated in a post dated 25 August 2020:

In case you missed it: Watch the Creative Ireland “Creativity in Older Age” event which discusses the positive benefits of creativity on older people's [#mental](#) health and [#wellbeing](#). Watch here <https://bit.ly/2Q8w9ps>

We are delighted to be a recipient of key funding as part of this innovative programme where we will conduct a research project to measure the positive effects of participation in social and creative activities on the health and wellbeing of adults aged 50+. Find out more here:

<https://bit.ly/2EksJNQ>

[#tildaresearch](#) [#researchMATTERS](#)

Similarly, on 10 February 2021, TILDA's Facebook page shared a post of a piano performance from a French musician aged 106 years:

Music is food for the soul.

Meet French pianist and all-round inspiration Colette Maze. A 106-year-old Parisian who is whiling away time in lockdown with the piano and bringing joy to others. [#COVID19](#)

The final sub-discourse of healthy ageing identified through our analysis, 'older people as a resource' (11 posts), was a discourse that was also evident in TILDA's public representations in the newspaper texts that we analysed. In these posts, the role of older people was presented in antithesis to the more mainstream discursive construction of older people as a burden on society that is typical of ageism (Palmore, 1999). For example, in a post dated 23 December 2020, TILDA's Facebook page praised the role of 'the older generations':

The role of the older generation is to be the repository of life experiences & wisdom, we've denied society that wisdom.

Discover words of wisdom from those aged 70-90 to help us through the pandemic. There is much to learn from those who have lived through some of life's greatest challenges from WWII to the TB [tuberculosis] epidemic, to help us through the [#COVID19crisis](#). [#HoldFirm](#) <https://bit.ly/3aGVAKn>

Similarly, a post shared on 6 January 2021 to coincide with the celebration of the Irish Grandparents Day declared:

Today is a special day to honour Grandparents & the unique bond they share with Grandchildren.

Did you know that over 29.1% of the population (aged 70+) provide childcare for their grandchildren?

Let's remember to [#StayConnected](#) with our Grandparents and older people today!

Read more about the contributions of older people here: <http://doi.org/10.38018/TildaRe.2020-01>.

From our analysis, it is noteworthy how the overall discourse concerned with healthy ageing (or ageing well) is a constellation of examples of virtuous older people who, despite their age, are still capable of achieving great deeds. In addition to the case of the 106-year-old French pianist Colette Maze, TILDA's Facebook page also mentioned the cases of Giuseppe Paternò (aged 96 years) and Joan MacDonald (aged 76 years). Regarding Giuseppe, the post, dated 6 August 2020, eloquently states:

You are never too old to achieve your goal!

Giuseppe Paternò, a former railway worker and second world war veteran has made history as Italy's oldest graduate, graduating with a first-class honours degree in philosophy at 96 years of age.

"I've finally realised my dream," said Paterno, who is living proof that you can continue to inspire and persevere to achieve your dreams at any age.

Read more:

In a post dated 23 July 2021, TILDA's Facebook page introduced Joan and her virtuous physical training as an inspiration:

Here's the content you need to give you that [#FridayFeeling!](#)

Getting fit and healthy is not always defined by age as proven by 76-year-old Joan, a woman who is single-handedly shattering preconceptions about [#ageing](#) & what is possible in your eighth decade!

A new start after 60: 'I was sick, tired and had lost myself – until I began lifting weights at 76

In broader sociological terms, the case of Joan may be interpreted as an example of what Frank terms the “wounded storyteller” and their “disciplined body” (2013). In Frank's formulation, the former refers to the narrative of self-transformation and meaning ascribed to one's own pain that an ill person uses to share their journey of recovery, while the latter denotes a specific mode of healing: that is, the total subjection of one's own desires and misbehaviours to the primary aim of recovery through disciplined self-management of one's own habits and the cultivation of virtuous behaviours.

Moreover, as in the other posts identified, the discursive repertoire in TILDA's Facebook page is consistent with the sociocultural and economic milieu of contemporary Euro-American societies in the way that healthy ageing is framed, first and foremost, as an option at the disposal of older people. In other words, healthy ageing is not an impossibility but an achievable goal if older people are willing and sufficiently disciplined to diligently embrace the challenge of changing unhealthy behaviours in favour of healthier ones, becoming more active, more creative, and following a more positive lifestyle. This framing of self-responsibility is evident in a post dated 21 August 2020:

It is known that longevity of life is determined by not only a person's genes but by their environment and lifestyle, with lifestyle undoubtedly having a much larger effect than our genetics.

Research shows that in the world's 'Blue Zones', people's lifestyles contribute to their living exceptionally long and healthy lives. Here's what we can learn from them. <https://bit.ly/3kGReWd> [#fridayfeeling](#) [#ageingwell](#)

The post also hints at the role of medical science in legitimising a specific discursive construction of ageing and the centrality of self-responsibility that this construction entails.

3.5.3 Health risks

The third discursive construction of ageing and health concerns, what we have called the ‘health risks’ discourse (31 posts), is itself internally articulated through a series of partially overlapping threats to health, including obesity (5 posts), dementia (12 posts), nutrition (7 posts), stress (10 posts), and socioeconomic factors (10 posts). It also included the risk of contracting COVID-19; however, due to the high number of posts on that topic, we identified COVID-19 as a distinct discursively constructed threat. The essential feature of the health risks discourse is the social and discursive construction of threats to health as being grounded in risk factors that, once known, can be counteracted if the individual makes the appropriate choices and adopts the related behavioural changes (for example, in food and nutrition), as well as structural level changes, by implementing the right types of policies (for example, in the area of social inclusion).

The first sub-discourse of the health risks discourse is related to obesity, a particularly sensitive topic given the projection that, according to the *WHO European Regional Obesity Report 2022*, no member state, including Ireland, is on track to reach the target objective by 2025 (Houses of the Oireachtas 2022). A particularly exemplary post concerning the health risks associated with obesity was shared on 3 March 2021, on the occasion of World Obesity Day:

Today is [#WorldObesityDay](#), a day to drive awareness of the root causes of obesity & improve our understanding of the actions required to tackle them.

Obesity in older adults impacts not only morbidity and mortality but impacts upon quality of life too. Read some of TILDA's obesity research addressing implications for health, function and service use as we age. <https://doi.org/10.38018/TildaRe.2014-01>

Take a look at some great resources from the World Obesity Federation detailing the health risks and causes of obesity. <https://www.worldobesityday.org/.../information-resources>

In addition, dementia featured prominently as an integral part of the health risks discourse. For instance, in a post dated 5 May 2021, TILDA's Facebook page shared the results of a study which reported that obesity and dementia were partially interrelated:

Researchers at The Irish Longitudinal Study on Ageing - TILDA have published a new study that shows that being overweight or [#obese](#) significantly reduces blood flow in the [#brain](#).

This study contains important information for the public, with this reduced blood flow, serving as an early mechanism in vascular [#dementia](#) and [#alzheimers](#) disease.

Significantly, the study also reveals that increased physical activity can positively modify and lessen this decrease in brain blood flow. Read more <https://bit.ly/2RvqbmV>

Behavioural changes, such as increased physical activity, are presented as a viable strategy at the disposal of older adults to gain control over their health and prevent the onset of dementia. Additionally, nutrition was found to contribute to the content of the health risks discourse, as demonstrated in the following post dated 19 April 2021:

We are delighted to have important [#biomarker](#) and [#nutrition](#) research from TILDA help to shape this key Food Safety Authority of Ireland report.

Read some of the excellent recommendations below which give guidance on food-based dietary habits to help older adults live healthier lives.

What emerges from the aggregated text of these posts, which advertise a series of scholarly and lay resources concerning the importance of nutrition, is the role of the 'right diet' in helping older adults live healthier lives, and in fighting fatigue and preserving their cognitive functions well into old age. In this respect, nutrition is socially and discursively constructed as a protective factor against, or as contributing to, the onset of a number of illnesses (or health risks), such as obesity and dementia.

A further sub-discourse of the broader health risks discourse regarded stress, identified by the relevant scientific literature as widely linked to negative health outcomes (O'Connor *et al.*, 2021). Shared on 23 January 2022, a post on TILDA's Facebook page cautioned: "Stress can make you [#age](#) faster". The post continued, repositioning stress as also being a positive resource for older people:

But did you know that a bit of [#stress](#) can actually be good for your mental & physical wellbeing?

Read an excellent article on why it's important to learn how to become more stress-resilient as we age.

<https://theconversation.com/how-to-remain-youthful-and...>

Moreover, TILDA's discursive representation of stress is closely connected with the last sub-discourse of the health risks discourse: socioeconomic factors. In the following post, dated 20 May 2021, the two sub-discourses of stress and socioeconomic factors are approached together, and while beyond the scope of

the present analysis, it is unclear from the post if the advertised blog draws significant conclusive relationships between the two:

Read an excellent HRB blog, coinciding with [#EuropeanPublicHealthWeek](#) that details the important ageing research carried out by Psychologist and Research Fellow at TILDA, Dr. Cathal McCrory.

Dr. McCrory is investigating how long-term stress & socio-economic differences affect the rate at which we age and how it affects health outcomes in later life.

Read more: <https://bit.ly/3oBWvko>

Learn more about [#epigeneticlocks](#) and how they affect ageing in health and disease in the Royal Society of Medicine webinar on June 14th. <https://lnkd.in/gqEFQad>

In summary, the health risks discourse appears as a central tenet of the public representation of TILDA's activities and research outputs on its Facebook page. This is not surprising, considering the overall focus of the TILDA project and the prevalence of health issues among older people, as both the scientific literature and the broader ageist discourse claim. What is important to note, however, is the manner in which health risks are largely described as manageable by willing individuals; that is, they are potentially mitigable if one chooses to follow the expert knowledge provided by TILDA and other expert voices regarding, for example, good nutrition and physical exercise.

3.5.4 COVID-19

The final discursive representation that we identified as particularly pervasive and multi-layered on TILDA's Facebook page was COVID-19 (130 posts) and its sub-discourses concerning vitamin D intake; social isolation, loneliness, and depression and anxiety; and intergenerational support. In the content of the selected Facebook posts, COVID-19 is addressed in a way that is consistent with TILDA's research objectives, since COVID-19 presented a particularly complex illness which had particular implications for older people. For example, in a post shared on 23 May 2020, TILDA's Facebook page recognised that:

It cannot be disputed that nursing home residents have been disproportionately affected by the [#Covid 19](#) pandemic. Read TILDA's new report to inform [#COVID19](#) responses for our most vulnerable. [#ResearchMatters](#)

<https://www.doi.org/10.38018/TildaRe.2020-08>

Similarly, on 26 April 2021, the dissemination efforts on TILDA's Facebook page focused on the issue of vaccination, while eschewing any text that might induce distress or panic:

It's [#WorldImmunisationWeek](#), a week that draws special attention on the importance of vaccines in fighting disease.

Learn all about the variety of [#Covid 19](#) vaccines available by watching back the IGS [Irish Gerontological Society] public lecture here <http://bit.ly/2RRHfDu> & discover TILDA's report outlining how to prepare oneself ahead of COVID-19 vaccination

<http://doi.org/10.38018/TildaRe.2021-00>

These are typical of the posts on the TILDA Facebook, and all the promotional information provided by the TILDA Facebook page, whether aimed at a scientific or lay audience, maintained this informative and fact-based approach. Within this framing of COVID-19, there was a recurring narrative which pointed to the correlation between COVID-19 severity and vitamin D intake in older people. A post dated 22 May 2020 typifies this:

Fascinating article in BBC Future with Trinity College Dublin Professor, and Principal Investigator of TILDA, Rose Anne Kenny revealing TILDA's latest research on [#vitamind](#) and its association with severity of infection from [#COVID19](#).

This key research suggests that European populations that have the highest death rates from Covid-19, including Spain and Italy, have the lowest levels of vitamin D. Find out more: <https://bbc.in/3cYTwwC>

The second sub-discourse of the discursive representation of COVID-19 on the TILDA Facebook page represented what we have termed the 'social isolation, loneliness, and depression and anxiety' sub-discourse. The central tenet of this sub-discourse focused on the direct link between COVID-19, the social distancing imposed by the Government, and its detrimental effect, especially on older (and presumably the most vulnerable) members of the community. The brief post, published on 19 July 2020, addresses the dimensions of social isolation and loneliness:

Excellent article featuring P.I. [principal investigator] of TILDA. Rose Anne Kenny who speaks on the impact that [#COVID 19](#) public health measures such as lockdown and 'cocooning' have had on older people.

Read more on the joint report by TILDA and ALONE Ireland on loneliness and social isolation in the over 70s:

doi.org/10.38018/TildaRe.2020-07

Anxiety was also an integral part of this sub-discourse, as the following post, shared on 5 December 2020, demonstrates:

"Isolation is strongly linked to depression, anxiety and cognitive decline, and reduces resilience factors such as self-worth, sense of purpose and feeling valued."

[#COVID 19](#) pandemic is 'perfect storm' for older people's [#mentalhealth](#).

<https://www.irishtimes.com/.../pandemic-perfect-storm-for...>

The other sub-discourse concerning COVID-19 concerned intergenerational support; that is, how the pandemic has mobilised older adults as well as younger citizens to stay connected and support each other. Most notably, this narrative suggested that younger people have a key role in supporting older citizens, whether through the spread of digital literacy, bringing joy and support to older people (as per a post dated 5 August 2020), or setting up volunteer groups (as per a post dated 7 May 2021):

What a beautiful example of intergenerational solidarity from the British Geriatrics Society. Discover some of the inspirational ways that young people are bringing joy and supporting older adults during the [#COVID 19](#) pandemic. [#wednesdaywisdom](#)

Listen back to Research Fellow at TILDA, Dr Silvin Knight on "The Exchange", West Limerick 102 discussing TILDA's latest research findings linking [#obesity](#) to reduced blood flow to the brain.

Hear a clear and concise breakdown of the [#health](#) implications of the study & the importance of exercise to mitigate against health consequences, especially as we age. <https://bit.ly/3bjMenm> [#thursdaythoughts](#)

What a wonderful example of what young people can do to help their community, particularly the [#COVID19](#) crisis.

Well done to Jack for setting up a volunteer group to serve the elderly and most vulnerable with much-needed food and items. A great example of intergenerational solidarity! [#FridayFeeling](#)

However, in line with the sub-discourse concerning older people as a resource, TILDA's Facebook page was careful in also underlining the contribution of older people to intergenerational solidarity, as articulated in a post shared on 11 December 2020:

There were a lot of initiatives to create links with older people but we wanted also to highlight the fact that older people can be useful to the younger generation.

A fantastic initiative building intergenerational solidarity and friendship and gives you that [#FridayFeeling](#)

<https://www.bbc.com/news/world-europe-55235378>

In summary, the discursive construction of COVID-19 and the risk it poses to older people, as produced by TILDA's Facebook page, approached the pandemic from a plurality of standpoints (or discursive frames), ranging from the biomedical standpoint and its underlying scientism to the psychosocial standpoint. However, what the sub-discourses share is an attention to framing the subject in constructive terms, avoiding sensationalism, and keeping the attention on what older people, and other key actors, may do to increase their chances of successfully resisting COVID-19 infection and its associated illness. The suggested measures included, for example, taking vitamin D, or suggesting possible corrective measures to stave off the adverse consequences of the pandemic (including social isolation, loneliness, and depression and anxiety) on older people's lives and marshalling intergenerational support.

4 Discussion and conclusion

A social constructionist view holds that understandings and meanings of 'objective facts' like age and health change over time and within cultural assumptions, and that understandings and meanings are constructed through discourse (Phelan, 2018). Accordingly, both connoted and denoted meanings of ageing and health are discernible in and through discourse, and these discursively constructed meanings can change over time and within particular social and cultural contexts. Drawing on the tenets of discourse theory and using critical discourse analysis (CDA) as our method, this study identified public discourses in print and online media that constructed particular meanings and understandings of ageing and health. The public discourses of interest were those generated by newspaper reporting of and associated commentary on the TILDA study and through posts on TILDA's official Facebook page. In our analysis of the texts of these sources, we examined how the underlying discourses that existed in and emerged from those texts constructed the concepts of ageing, older people, and health.

4.1 Newspaper discourses

Our analysis of the selected newspaper items was conducted on the basis that the texts not only contained objective facts from the TILDA study, but also carried a discourse on ageing and health. Aside from the volume of scientific papers and other dissemination and outreach events and activities (as represented, for instance, by the unexplored social media platforms of Twitter and YouTube), the reach of TILDA in traditional print media was fairly extensive in the years after the release of the findings from Wave 1. For example, in the two leading national newspapers, a combined total of 182 items were generated during the period from 2009 to July 2022. Through their reporting of TILDA's study findings, the newspapers represented important carriers of health information, and in this way they also made available certain discourses and vocabularies that were resources for age and health identity, enabling older people and their families to think about and manage their own health (Ylänne *et al.*, 2009).

Despite the prevalence of negative media portrayals of ageing and older people, there is growing evidence of media presenting older people in positive ways, and our study demonstrated such evidence. For example, the discourse that valorised ageing framed older age as a positive life stage that accorded with other reported media discourses that framed ageing as positive (Uotila *et al.*, 2010; Williams *et al.*, 2010; Ylänne *et al.*, 2009). While the emergence of more positive images of ageing in the media are welcome, as Uotila *et al.* observe, "overly positive portrayals of later life as a care-free zone are as unrealistic as the portrayals of later life as a zone of decline and sickness" (2010, p. 106).

When compared with other mass media, newspapers have been noted for their negative portrayals of older people (Zhang and Liu, 2021; Fealy *et al.*, 2012; Uotila *et al.*, 2010). However, as previously observed, much of the texts that we analysed valorised ageing, and in this way offered a counter-narrative to the more common ageist tropes found in mass media, which tend to position older people as decrepit, dependent, unproductive, and a burden on services and the economy.

While the newspapers that we analysed primarily contained reports of the findings from TILDA Waves 1 to 5, inclusive, and while these reports faithfully reported the findings, the newspaper copy contained much material that was distilled through the viewpoint of the journalist or commentator. Hence, the extracts from and emphasis placed on the TILDA findings and the language used to communicate the findings constituted a particular discourse. Through our analysis, we were able to uncover recurring narratives that themselves constituted ageing discourses, and which incorporated ageing identities. Unlike ageing discourses reported elsewhere in the scientific research literature that implicitly and explicitly carry ageist stereotyping (see, for example, Fealy *et al.*, 2012; Koskinen *et al.*, 2014; Zhang and

Liu, 2021), the discourses identified in our study maintained largely positive constructions of ageing and age identities. Additionally, the ways in which journalists represented TILDA were positive. Nevertheless, some of the reporting maintained implicit stereotyping in what were otherwise positive constructions of ageing and of health in ageing. Newspapers reporting the results of the COVID-19 Self-Completion Questionnaire focused on maintaining health and avoiding the negative health consequences of isolation and COVID-19 infection.

The use of othering language that was evident in texts that otherwise affirmed and valorised older people and/or celebrated ageing and longevity was perhaps not unexpected. ‘Naming’ words and phrases are commonplace in mass media, especially in broadcast media. For example, there were multiple references to ‘the elderly’ as vulnerable during the short-lived heatwave that occurred Ireland and the United Kingdom (UK) in July 2022. The use of the noun ‘the elderly’ is so ubiquitous in mass media that its exclusion from the lexicon of journalese is unlikely to happen in the absence of clear editorial guidelines. Naming and referencing older people as ‘the elderly’ connotes frailty (Allen and Ayalon, 2021) and confers on older people enduring characteristics that demand policy and service responses.

Over much of the period covered by the reporting of TILDA results, there was evidence of a discourse entreating older people to stay healthy and offering strategies for maintaining health. Yläne *et al.* similarly reported discursive constructions of health identity in older age in magazine advertising, uncovering an underlying discourse of the “possibility, necessity and desirability to take positive action to maintain health and wellbeing in older age” (2009, p. 33). In reportage of TILDA results, the advice proffered on exercise, on maintaining social connectedness, and on the role of Vitamin D in infection prevention constructed health and ageing as a process of managing risks and finding solutions to health problems (Yläne *et al.*, 2009).

With its focus on actions that older adults should take to stay healthy, the newspaper discourse associated with TILDA may represent a somewhat paternalistic attitude towards older adults (Koskinen *et al.*, 2014). Moreover, while the discourse on staying healthy in older age proffered advice on health-promoting lifestyle behaviours, the media’s tendency to single out older people for particular attention during the COVID-19 pandemic itself constituted a form of othering discourse. Nevertheless, public messaging through media was important during the COVID-19 pandemic, and the ways in which both older and younger adults perceived their level of susceptibility to the virus and its effects influenced their own health behaviours (Fraser *et al.*, 2020). Staying healthy in older age was one of a number of “normative points of reference” in the media discourses concerned with the COVID-19 pandemic (Ellerich-Groppe *et al.*, 2021, p. 159), and this was especially evident in the newspaper reportage concerning vitamin D, which represented important public health messaging that complemented other messaging in broadcast media in particular.

4.2 Facebook page discourses

Similar to print media, online media such as TILDA’s Facebook page are producers of discourses that contribute to the social and discursive construction of normative conceptions of ageing and health (Ellerich-Groppe *et al.*, 2021). In contrast to the discourses we analysed in print media, which were largely generated through journalistic reception and interpretation of TILDA’s research outputs, those identified on TILDA’s Facebook page are first and foremost emerging directly from the conception of ageing and health of TILDA itself. The discourses identified and categorised using the labels of ‘promotion and dissemination’, ‘healthy ageing’, ‘health risks’, and ‘COVID-19’ are simultaneously characterised by their own specific representational logics, while also being nested within three broader metadiscourses.

More specifically, TILDA's Facebook page is, overall, reproducing what we term a very specific kind of 'promotional discourse'; that is, the effort to widely disseminate TILDA's key research findings and rationale, accounting for academic outputs, lay initiatives, and the voices of a plethora of stakeholders. This promotional discourse is also very much evident on TILDA's YouTube page. The discourse is performed in several ways, whether in reference to TILDA's conception of healthy ageing based on the vision of ageing as a potentially active, happy, creative, and resourceful life phase, or to the promotional and dissemination efforts regarding a plurality of both academic and lay resources, such as TILDA's reports, newspaper articles, radio interviews, specialised books, or scientific articles. The discourse is also performed in narratives associated with the most hazardous health risks for older people, such as obesity, dementia, nutrition, stress, and socioeconomic factors, which are framed as largely preventable so long as older people are willing to enact a series of recommended behavioural changes.

The socioeconomic factors associated with healthy ageing imply specific policies aimed at social inclusion and fighting stratification processes within Irish society. The overall promotional metadiscourse is also crucial in framing the discourse around COVID-19 and its sub-discourses concerning vitamin D intake; isolation, loneliness, and depression and anxiety; and the opportunities offered by intergenerational support. Without such a promotional metadiscourse, all the other discourses identified would be transient and not properly communicated to the desired audience. The emerging narrative associated with COVID-19 was consistent with what Mach *et al.* (2021) observed in their analysis of news media reportage of COVID-19 and public health and policy information in Canada, the UK, and the United States of America (USA), namely that it was largely non-sensationalist. Additionally, contrary to Mach *et al.*'s findings (which indicated that newspaper media sources displayed a low level of scientific quality), TILDA's Facebook page relied on scientific knowledge as one of its defining discourses.

Moreover, this promotional metadiscourse colours and animates all the other discourses that emerged from TILDA's Facebook page. It is also closely interrelated with the implicit assumption about older people's self-responsibility in adjusting and changing their behaviour – for instance, in reference to exercise and fitness habits or food and nutrition supplements – in order to achieve the desired result of 'healthy ageing' or 'ageing well'. Such a focus on self-responsibility, as paradoxical as it might appear, also seems to be connected with a certain paternalistic attitude towards older adults (Koskinen *et al.*, 2014) in a context in which health and ageing are constructed in the light of risk management strategies and solutions to health problems (Ylänne *et al.*, 2009). This is so because older people's self-responsibility is mediated by the promotional and dissemination efforts of TILDA, and as such, when successfully embraced, is largely the result of a process of socialisation to a new normative apparatus of behaviours and risk management strategies in which individuals are the primary target of health promotion. However, healthy ageing is, in large part, contingent on factors outside of the individual's locus of control, as it is also the result of wider socioeconomic factors like social connectedness, geography, and services and resources, and requires policy interventions in areas such as food safety, transport, environment, and climate. Our analysis suggests that this could be an area where TILDA's research efforts, and the policies that they inform, could be further strengthened in the future.

This discourse of self-responsibility corresponds to Foucault's (2008) concept of 'biopolitics', defined as the control of the welfare, wealth, longevity, and health of the population through the pervasive government of individuals' conduct. At a micro level, this form of governance of people's behaviours "works by individualization, or more precisely, by *producing individuality* as the focal point of all the different techniques for monitoring the body politic" (Wallenstein, 2013, p. 11–12, emphasis in original), while at the macro level (that is, at the level of population control), individuals are "treated as statistical phenomena, in terms of collective health and collective forms" (Wallenstein, 2013, p. 12). In other words,

a certain paternalistic ethos is instrumental to the instillation of self-responsible behavioural changes in older people so that, through their own self-monitoring, preventive, and health-enhancing behaviours, they can also make an impact on the broader community and the country, largely in terms of reduced health costs and other 'burdens' for society.

Finally, TILDA's promotional metadiscourse is also connected with a certain 'scientism' – that is, the reliance on the legitimising discourses of medical sciences to strengthen the aims and objectives of TILDA's dissemination activities. These broader metadiscourses on promotion, self-responsibility, and scientism that inform the discourses around healthy ageing, health risks, and COVID-19 are inherently interrelated, and they reciprocally reinforce each other. For example, as is evident from the Facebook posts, the promotional metadiscourse relies on the idioms of self-responsible choices as much as on the scientific evidence discovered by TILDA's research to increase its appeal and reach among older people. It is this specific cluster of metadiscourses, discourses, and sub-discourses that grants TILDA's Facebook page quite a layered and effective reach among its audience and valorisation of its publications and research findings. Hence, for the purposes of this wider evaluation study, the reach and the products of TILDA's discourses of dissemination on Facebook represent, in part, the 'reach' and 'product' elements of the Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) framework and the Context, Input, Process, Product (CIPP) evaluation model, respectively.

4.3 Print and online media discourses compared

In our analysis, we aimed to identify whether there were any differences between traditional and new media in the content of the emergent discourses, and to discover whether these differences, if they existed, might stem from the characteristics of the form of media and of the particular culture and system in Ireland (Uotila *et al.*, 2010). Accordingly, we were sensitive to the use of language concerning older people, their life course from midlife to later years, their health, and their social and economic circumstances. As with previous studies in Ireland on the topic of the media discourses of ageing (Martin *et al.*, 2009; Murphy, 2004; Fealy *et al.*, 2012), we were also sensitive to the particular words and phrases that journalists used to name and reference older people. Such words and phrases can betray latent biases or serve to render older people as *others*, outside of society (Fealy *et al.*, 2012). Moreover, based on the evidence from previous studies that analysed media discourses on ageing and older people, we wished to uncover changes over time in the ways that older people were talked about and to reveal changes in ageing discourses over the lifetime of TILDA in Ireland.

The main similarities that we identified across the media sources analysed concerned the positive construction of ageing and growing old, termed 'ageing well' and 'healthy ageing' in print and online media, respectively. For the purpose of this report, we have reported the print and online media discourses separately and have used different labels for their respective discourses, despite the obvious overlaps and concurrences. This was in order to afford each source of discourse a more thorough analysis and thereby more explicitly represent the internal coherence and complexity of these complementary, yet somewhat differing, discourses. In terms of the print media, the 'ageing well' metadiscourse may be viewed as the journalists' own interpretations of TILDA evidence on healthy ageing, and is thus a public representation and a mediation of TILDA's own discursive construction of healthy ageing. Nevertheless, the discourses of both the newspaper copy and the Facebook posts largely corresponded in relation to their framing of ageing and health in such topics as lifestyle, exercise, nutrition, and the role of vitamin D in maintaining good health.

Where differences exist between the print and online media, they lie in the fact that in print media, the public representation and the social and discursive construction of health and ageing are filtered through

the lenses of specific newspapers and their journalists' writing styles and personal understanding of the subject matter. These mediated texts mean that the journalists, by sharing TILDA's evidence with their readership, are themselves constructing the discourses of ageing and health. This means that the newspapers' discursive repertoire substantially exceeds TILDA's own discursive repertoire and scientific agenda.

Although the emergent metadiscourses are largely similar across both print and online media, substantial intrinsic differences exist in their use of language, their objectives, and, to a lesser extent, their respective target audiences. Hence, a Facebook post referencing an academic paper or other scholarly output will differ in both content and narrative style from a newspaper item on the same topic; in the former, the text is narrated by the academic researcher, while in the latter, the text is narrated by the journalist who prepares copy through a process of extrapolation and reframing. As places of public discourses, neither source is more or less superior to the other.

Max Weber writes that social scientists can formulate "concepts and judgements that are neither empirical reality, nor reproductions of empirical reality, but that allow empirical reality to be ordered intellectually in a valid manner" (2012, p. 137). In this way, Weber (2004) reminds us that in the social sciences, while there is nothing like a value-free, objective representation of reality, individual value judgements and meaning creation processes regarding, for example, health and ageing, signal the continuously changing and socially constructed nature of the categories that we use to make sense of reality. This same maxim may be applied to the other sciences, to politics, and to mass media, and represents the social constructionist premise on which we conducted our analysis of the discourses on ageing and health. The discourses differed according to the internal logic of the type of medium within which they were constructed.

While displaying similarities and overlapping discursive constructions of ageing and health, the discourses that we analysed across the selected sources contribute to the 'intertextuality' (Alfaro, 1996; Allen, 2021) that characterises the broader outreach and discursive representation of ageing promoted by TILDA. Similar to Foucault's concept of 'discursive formation', 'intertextuality' refers to the degree to which a specific text, whether available in a newspaper or from an online source, contributes to and dialogues with other texts. In the texts analysed, intertextuality is demonstrated where, for example, a post on the TILDA Facebook page cites a newspaper article on TILDA or its researcher(s) or a scientific study finding from TILDA.

Intertextuality helps to clarify the extent to which TILDA's outreach and discursive constructions of ageing and health are largely coherently represented across media sources, despite the intrinsic differences in the form of communication and/or the target groups with which each communicates. Moreover, intertextuality also demonstrates the solidity of the promotional and dissemination efforts of TILDA, which can be framed in terms of the 'product' element of the CIPP evaluation model and the 'reach' element of the RE-AIM framework. In this regard, the outputs of TILDA seem to be widely disseminated in selected print and social media, suggesting that, in terms of product and reach, TILDA is communicating effectively, either directly through its social media presence or indirectly through journalists.

4.4 A new discourse on ageing

Our analysis indicates the emergence of a new discourse on ageing, particularly in relation to some of the subcategories of the discursive construction of healthy ageing and ageing well, as conducted by TILDA and by journalists. In contrast to common ageist tropes, this new discourse framed older people as self-responsible and resourceful subjects. Ageing was not framed with reference to the declining body, but as a life course stage that can be cultivated, enjoyed, diligently nurtured by older people themselves, and

exploited for its positive aspects, in terms of leisure and in terms of older people acting as a resource to their families and communities. This emerging new discourse may be considered as one of the most important contributions of the TILDA study, since the messages associated with TILDA's research – whether propagated directly by TILDA itself or mediated through the texts of journalists – serve to counteract prevailing negative stereotypes of ageing and older people and their health.

4.5 Discourses consolidated

When taken together, the discourses emerging from the print and online media that we analysed suggest three broad metadiscourses, as follows: 'positive ageing', 'ageing well', and 'promoting TILDA' (Figure 4). The metadiscourse of positive ageing framed ageing as a life stage that should be celebrated, wherein the textual descriptions of ageing valorised longevity and constructed older adults as a social and economic resource. This discourse also expressed disdain at the ageism that exists in everyday language and in popular ideas about growing old. As already illustrated, the discourse of positive ageing inherent in the texts offered a counter-narrative to the more typical ageist tropes that are carried in the language and ideas propagated by mass media, and which tend to position older adults with reference to the ageing body and decline.

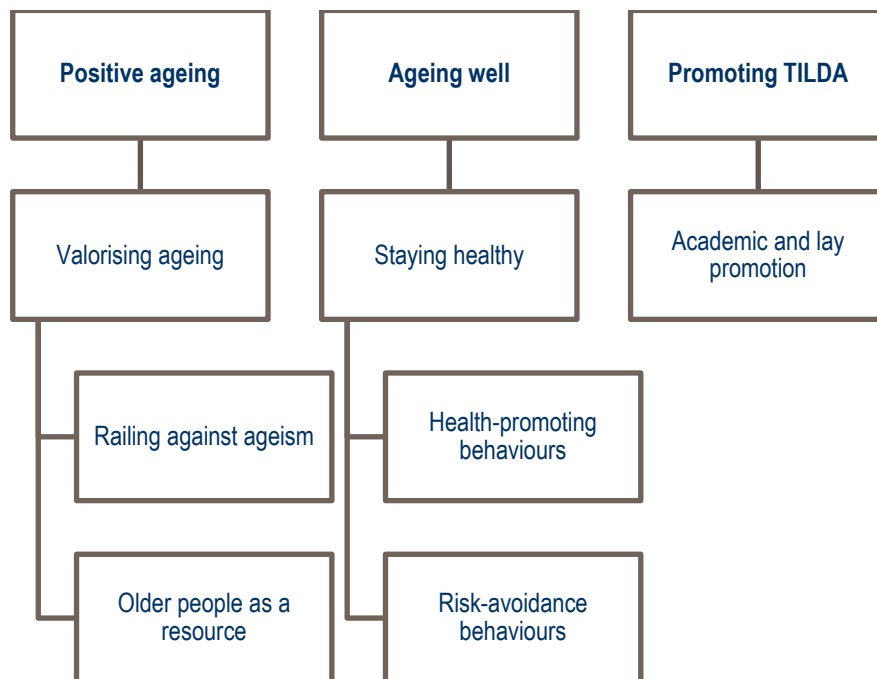


Figure 4 Metadiscourses and supporting discourses in TILDA's reach

The metadiscourse of ageing well was a dominant narrative in TILDA's reach. With a focus on staying healthy in older age, ageing was discursively constructed with reference to the social determinants of health and the means for staying healthy. This metadiscourse eschewed any notion that might frame ageing as a passive process of progressive decline and decay, and instead constructed older adults as active agents in their own health. Conferring agency on older adults implied self-responsibility in adopting health-promoting behaviours (such as remaining socially engaged and staying physically active) and risk-avoidance behaviours (such as avoiding obesity and excess alcohol, and taking measures to reduce the risk of contracting COVID-19). Ageing well was thereby constructed within a discourse of self-agency.

Within the texts that we analysed, the discursive representation of TILDA, its role, and its activities were performed, for the most part, on the TILDA Facebook page. As a metadiscourse, 'promoting TILDA'

informed and invested all the other discursive presentations. It was conducted through a range of both academic and lay resources, including TILDA reports, scientific articles, newspaper articles, and radio interviews. The discourse was also performed in narratives associated with healthy ageing and the risks to health in older age, which were framed as largely preventable and contingent on older adults choosing a range of actions to maintain their own health.

4.6 Limitations

Whether and to what extent the Irish national newspaper items and the items retrieved from social media that we analysed constitute a publicly conducted discourse may be open to interpretation. Nevertheless, in examining the texts of the selected items, we took as our starting point the view that all language in use carries both explicit and implicit ideas, beliefs, and assumptions that serve to position both the writer of the text and the subject of the text. In this way, the language used has a constitutive capacity, serving to construct ageing and health identities and counter-identities, and to render these identities as legitimately existing. We also took as our starting point the view that public mass media, including both traditional and so-called 'new media', represent the beliefs and assumptions of the society in which they exist.

We are aware of the limitations of our sampling strategy, namely that our sample may represent only a portion of the newspaper articles and the social media posts concerned with TILDA and its research and that, as a consequence, other public representations and their associated discursive constructions may exist. However, this intrinsic limitation to our sampling strategy was balanced by the use of other complementary data collection methods in the evaluation overall. Our use of multiple data sources should render a more coherent picture of the topic of the evaluation study and from a number of methodological vantage points.

5 References

- Alfaro, M.J.M. (1996) 'Intertextuality: Origins and Development of the Concept', *Atlantis*, 18(1/2):268–285.
- Allen, G. (2021) *Intertextuality*, 3rd edn, Routledge, London.
- Allen, L.D. and Ayalon, L. (2021) "'It's Pure Panic": The portrayal of residential care in American newspapers during COVID-19', *Gerontologist*, 61(1):86–97, doi:10.1093/geront/gnaa162
- Ayalon, L., Chasteen, A., Diehl, M., Levy, B., Neupert, S.D., Rothermund, K., Tesch-Römer, C. and Wahl, H.W. (2020) 'Ageing in times of the COVID-19 pandemic: Avoiding ageism and fostering intergenerational solidarity', *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 76(2):e49–e52, doi: 10.1093/geronb/gbaa051
- Brooke, J. and Jackson, D. (2020) 'Older people and COVID-19: Isolation, risk and ageism', *Journal of Clinical Nursing*, 29(13–14):2044–2046, doi: 10.1111/jocn.15274
- Cash, R. and Patel, V. (2020) 'Has COVID-19 subverted global health?', *The Lancet*, 395(10238):1687–1688.
- Coupland, J. (2009) 'Discourse, identity and change in mid-to-late life: interdisciplinary perspectives on language and ageing', *Ageing & Society*, 29(6):849–861.
- Di Placido, M. (2021) 'The Yoga Studies Dispositif: The Discursive Study of Religion and the Birth and Development of a Discipline', *Method & Theory in the Study of Religion*, 33(5):505–529.
- Doyle, B. (21 March 2023) 'TikTok Statistics – Updated Mar 2023', Wallaroo, accessed Day Month Year. <https://wallaroomedia.com/blog/social-media/tiktok-statistics/#:~:text=The%20percentage%20of%20U.S.%2Dbased,All%20data%20via%20Comscore>
- Ellerich-Groppe, N., Pfaller, L. and Schweda, M. (2021) 'Young for old—old for young? Ethical perspectives on intergenerational solidarity and responsibility in public discourses on COVID-19', *European Journal of Ageing*, 18: 159–171, doi: 10.1007/s10433-021-00623-9
- Fairclough, N. (1993) 'Critical discourse analysis and the marketization of public discourse: The universities', *Discourse and Society*, 4(2):133–168, doi: 10.1177/0957926593004002002
- Fairclough, N. (1995) *Critical Discourse Analysis: The Critical Study of Language*, Longman Publishing, Harlow, UK.
- Fealy, G., Hegarty, J.M., McNamara, M.S., Casey, M., O'Leary, D., Kennedy, C., O'Reilly, P., O'Connell, P., Brady, A.M. and Nicholson, E. (2018) 'Discursive constructions of professional identity in policy and regulatory discourse', *Journal of Advanced Nursing*, 74(9):2157–2166, doi: 10.1111/jan.13723
- Fealy, G.M. and McNamara, M.S. (2007) 'A discourse analysis of debates surrounding the entry of nursing into higher education in Ireland', *International Journal of Nursing Studies*, 44(7):1187–1195.
- Fealy, G.M., McNamara, M., Treacy, P. and Lyons, I. (2012) 'Constructing ageing and age identities: A case study of newspaper discourses', *Ageing and Society*, 32(01): 85–102, doi: 10.1017/S0144686X11000092
- Foucault, M. (1972) *The Archaeology of Knowledge and the Discourse on Language*, Pantheon Books, New York.
- Foucault, M. (2008) *The Birth of Biopolitics: Lectures at the Collège de France, 1978 -1979* (Senellart, M. (ed)), Palgrave Macmillan, New York.

Frank, A.W. (2013) *The Wounded Storyteller: Body, Illness, and Ethics*, 2nd edn, The University of Chicago Press, Chicago.

Fraser, S., Lagacé, M., Bongué, B., Ndeye, N., Guyot, J., Bechard, L., Garcia, L., Taler, V., Adam, S., Beaulieu, M.D., Bergeron, C.D., Boudjemadi, V., Desmette, D., Donizzetti, A.R., Éthier, S., Garon, S., Gillis, M., Levasseur, M., Lortie-Lussier, M., ... Tougas, F., (2020) 'Ageism and COVID-19: What does our society's response say about us?', *Age and Ageing*, 49(5):692–695, doi: 10.1093/ageing/afaa097

Gee, J.P. (1999) *An Introduction to Discourse Analysis*, Routledge, New York.

Green, L.W. and Glasgow, R.E. (2006) 'Evaluating the relevance, generalization, and applicability of research: issues in external validation and translation methodology', *Evaluation & Health Professions*, 29(1):126–153, doi: 10.1177/0163278705284445

Hallam, J. (2000) *Nursing the Image: Media, Culture and Professional Identity*, Routledge, New York.

Houses of the Oireachtas (2022) Obesity Levels. Dáil Éireann Debate, Wednesday - 11 May 2022.

Kelleher, C., Doherty, B., Donnelly, P. and Twomey, C. (2021) *COVID-19 Nursing Homes Expert Panel: Examination of Measures to 2021*, Department of Health, Dublin.

Kelly, J., Fealy, G.M. and Watson, R. (2012) 'The image of you: constructing nursing identities in YouTube', *Journal of Advanced Nursing*, 68(8):1804–1813.

Kepios (2022) *Global Social Media Statistics*, DataReportal, accessed 28 July 2022.
<https://datareportal.com/social-media-users>

Koskinen, S., Salminen, L. and Leino-Kilpi, H. (2014) 'Media portrayal of older people as illustrated in Finnish newspapers', *International Journal of Qualitative Studies on Health and Well-being*, 9(1):25304, doi: 10.3402/qhw.v9.25304

Lichtenstein, B. (2020) 'From "Coffin Dodger" to "Boomer Remover": Outbreaks of ageism in three countries with divergent approaches to coronavirus control', *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 76(4)e206–e212, doi: 10.1093/geronb/gbaa102

Liu, Y., Lee, J.M. and Lee, C. (2020) 'The challenges and opportunities of a global health crisis: the management and business implications of COVID-19 from an Asian perspective', *Asian Business Management*, 19:277–297.

Mach, K.J., Salas Reyes, R., Pentz, B., Taylor, J., Costa, C.A., Cruz, S.G., Thomas, K.E., Arnott, J.C., Donald, R., Jagannathan, K. and Kirchhoff, C.J. (2021) 'News media coverage of COVID-19 public health and policy information', *Humanities and Social Sciences Communication*, 8:220, doi: 10.1057/s41599-021-00900-z

Martin, R., Williams, C. and O'Neill, D. (2009) 'Retrospective analysis of attitudes to ageing in the Economist: Apocalyptic demography for opinion formers?', *British Medical Journal*, 339(b4914):1435–1437.

McNamara, M.S., Fealy, G.M. and Geraghty, R. (2012) 'The visibility of the discipline on the websites of academic nursing schools', *Nursing Outlook*, 60(1):29–36.

Murphy, E. (2004) 'Older people and ageing issues in Irish newspapers: A preliminary analysis', *Age and Opportunity*, Dublin.

Nussbaum, J.F. and Coupland, J. (eds) (2004) *Handbook of Communication and Aging Research*, 2nd edn, Lawrence Erlbaum Associates, Mahwah, New Jersey.

- O'Connor, D.B., Thayer, J.F. and Vedhara, K. (2021) 'Stress and Health: A Review of Psychobiological Processes', *Annual Review of Psychology*, 72(1):663–688, doi: 10.1146/annurev-psych-062520-122331
- O'Neill, D. (2020) 'Protecting our longevity dividend during Covid-19', *Irish Medical Journal*, 113(4):50.
- Palmore, E. (1999) *Ageism: Negative and Positive*, 2nd edn, Springer, New York.
- Phelan, A. (2018) 'Researching ageism through discourse', in Ayalon, L. and Tesch-Römer, C. (eds), *Contemporary Perspectives on Ageism*, Springer Open, Cham, Switzerland.
- Richardson, J.E., 2017. *Analysing newspapers: An approach from critical discourse analysis*. Bloomsbury Publishing.
- Stufflebeam, D.L. and Zhang, G. (2017) *The CIPP Evaluation Model: How to Evaluate for Improvement and Accountability*, Guildford Press, New York.
- Uotila, H., Lumme-Sandt, K. and Saarenheimo, M. (2010) 'Lonely older people as a problem in society: Construction in Finnish media', *International Journal of Ageing and Later Life*, 5(2):103–130.
- Vervaecke, D. and Meisner, B.A. (2021) 'Caremongering and assumptions of need: The spread of compassionate ageism during COVID-19', *The Gerontologist*, 61(2):159–165, doi: 10.1093/geront/gnaa131
- Wallenstein, S.O. (2013) 'Introduction: Foucault, Biopolitics, and Governmentality', in Nilsson, J. and Wallenstein, S.O. (eds), *Foucault, Biopolitics and Governmentality*, Södertörn University, Södertörn, Sweden.
- Walsh, S. (30 May 2022) 'The Top 10 Social Media Sites & Platforms', *Search Engine Journal*, accessed Day Month Year. <https://www.searchenginejournal.com/social-media/biggest-social-media-sites/#:~:text=1.%20Facebook&text=Sure%2C%20the%20platform%20that%20you,WhatsApp%20are%20now%20Meta%2C%20Inc>
- Weber M (2004) The "objectivity" of knowledge in social science and social policy. In: Whimster S (ed) *The Essential Weber*. London: Routledge, 359–404.
- Wetherell, M., Taylor, S. and Yates, S.J. (2001) *Discourse Theory and Practice*, London, Sage.
- Wilińska, M. (2015) 'An older person and new media in public discourses: Impossible encounters?' [conference paper], in Zhou, J. and Salvendy, G. (eds), *Human Aspects of IT for the Aged Population. Design for Aging*, ITAP 2015, Lecture Notes in Computer Science, 9193, Cham, Switzerland, Springer, doi: 10.1007/978-3-319-20892-3_40
- Williams, A., Wadleigh, P.M. and Ylänne, V. (2010) 'Images of older people in UK magazine advertising: Toward a typology', *International Journal of Ageing and Human Development*, 71(2):83–114, doi: 10.2190/AG.71.2.a
- Wodak, R. and Meyer, M. (2001) *Methods of Critical Discourse Analysis*, Sage Publications, London.
- World Health Organization (2022) *Health Promotion*, accessed 24 July 2022. <https://www.who.int/westernpacific/about/how-we-work/programmes/health-promotion>
- Xing, W. and Gao, F. (2018) 'Exploring the relationship between online discourse and commitment in Twitter professional learning communities', *Computers & Education*, 126:388–398.
- Ylänne, V., Williams, A. and Wadleigh, P.M. (2009) 'Ageing well? Older people's health and well-being as portrayed in UK magazine advertisements', *International Journal of Ageing and Later Life*, 4(2):33–62.

Zhang, J. and Liu, X. (2021) 'Media representation of older people's vulnerability during the COVID-19 pandemic in China', *European Journal of Ageing*, 18(2):149–158, doi: 10.1007/s10433-021-00613-x

Appendix 1 TILDA's reach: yearly count of daily newspaper items reporting on TILDA

Wave/release period	Year	<i>The Irish Times</i>	<i>Irish Independent</i>	<i>Irish Examiner</i>	<i>Daily Mirror</i>	<i>Irish Daily Mail</i>	<i>Financial Times**</i>	<i>Irish Daily Star***</i>	<i>Daily Express***</i>	TOTAL
	2022	2	2	7	0	2	0	0	0	13
	2021	6	6	7	1	1	0	0	0	21
COVID-19 Self-Completion Questionnaire	2020	8	9	7	0	2	0	0	0	26
Wave 5	2018	10	10	1	1	4	0	0	0	26
	2018	12	8	3	0	2	0	0	0	25
	2018	12	13	6	3	3	0	0	0	37
Wave 4	2016	7	6	2	2	0	0	0	0	17
Wave 3	2015	10	6	3	0	4	0	0	0	23
	2014	9	6	3	2	2	0	0	0	22
Wave 2	2013	3	5	2	0	0	0	0	0	10
	2012	4	1	0	0	0	0	0	0	5
Wave 1	2011	17	3	4	0	0	0	0	0	24

	2010	2	0	0	0	0	0	0	0	2
	2009	4	1	1	0	0	0	0	0	6
	2008	4	0	1	0	0	0	0	0	5
	2007	3	1	0	0	0	0	0	0	4
	2006	2	1	0	0	0	0	0	0	3
Mean		6.76	4.58	2.76	0.52	2.22	0	0	0	15.82
Standard deviation		4.38	3.89	2.58	0.94	1.46	0	0	0	10.54
TOTAL		115	78	47	9	20	0	0	0	269

*Searched in LexisNexis with zero items retrieved. **Not searchable in LexisNexis and not searchable in Irish Newspapers.

Source: LexisNexis Available online at: <https://advance.lexis.com/bisnexishome/?pdmfid=1519360&crd=bfde7d31-f4a5-4b77-9d1b-46764b7d547f&ecomprdfxk&prid=233c14c0-51a6-46cb-9696-2b67d8f742d6>

Appendix 2 TILDA's reach: yearly count of weekly newspaper items reporting on TILDA

Wave/release period	Year	<i>Sunday Times</i>	<i>Sunday Independent</i>	<i>Sunday World**</i>	<i>Daily Star Sunday*</i>	<i>Sunday Mirror*</i>	<i>People**</i>	<i>Sunday Express*</i>	<i>Irish Farmers Journal***</i>	TOTAL
	2022	1	2	0	0	0	0	0	0	3
	2021	1	0	0	0	0	0	0	2	3
COVID-19 Self-Completion Questionnaire	2020	1	0	0	0	0	0	0	0	1
Wave 5	2018	0	0	0	0	0	0	0	0	0
	2018	2	1	0	0	0	0	0	0	3
	2017	1	0	0	0	0	0	0	0	1
Wave 4	2016	0	3	0	0	0	0	0	0	3
Wave 3	2015	1	1	0	0	0	0	0	0	2
	2014	0	3	0	0	0	0	0	0	3
Wave 2	2013	0	0	0	0	0	0	0	0	0
	2012	0	1	0	0	0	0	0	0	1
Wave 1	2011	0	0	0	0	0	0	0	0	0

	2010	0	0	0	0	0	0	0	0	0
	2009	0	0	0	0	0	0	0	0	0
	2008	0	0	0	0	0	0	0	0	0
	2007	0	0	0	0	0	0	0	0	0
	2006	0	0	0	0	0	0	0	0	0
Mean		1.16	1.57	0	0	0	0	0	0	1.17
Standard deviation		0.41	0.98	0	0	0	0	0	0	1.33
TOTAL		7	11	0	0	0	0	0	2	20

*Searched in LexisNexis with zero items retrieved. **Not searchable in LexisNexis. ***Items retrieved on the journal's website.

Appendix 3 Items selected from two national newspapers

TILDA waves	<i>Irish Independent</i> (n=21)	<i>The Irish Times</i> (n=22)
Wave 1: October 2009 to July 2011 Wave 2: February 2012 to March 2013	<i>Irish Independent:</i> 04/12/06	<i>The Irish Times:</i> 02/11/06
	<i>Irish Independent:</i> 17/08/09	<i>The Irish Times:</i> 21/08/08
	<i>Irish Independent:</i> 12/05/11	<i>The Irish Times:</i> 31/01/08
	<i>Irish Independent:</i> 15/09/11	<i>The Irish Times:</i> 07/05/09
	<i>Irish Independent:</i> 30/11/12	<i>The Irish Times:</i> 08/03/11
	<i>Irish Independent:</i> 04/02/13	<i>The Irish Times:</i> 14/03/11
	<i>Irish Independent:</i> 03/12/13	<i>The Irish Times:</i> 09/09/11
		<i>The Irish Times:</i> 14/11/13
Wave 3: March 2014 to October 2015 Wave 4: January 2016 to December 2016 Wave 5: January 2018 to December 2018	<i>Irish Independent:</i> 18/07/14	<i>The Irish Times:</i> 18/07/14
	<i>Irish Independent:</i> 15/04/15	<i>The Irish Times:</i> 21/07/14
	<i>Irish Independent:</i> 13/04/17	<i>The Irish Times:</i> 22/05/15
	<i>Irish Independent:</i> 20/06/17	<i>The Irish Times:</i> 01/06/15
	<i>Irish Independent:</i> 05/09/17	<i>The Irish Times:</i> 25/04/17
	<i>Irish Independent:</i> 02/10/18	<i>The Irish Times:</i> 20/06/17
	<i>Irish Independent:</i> 18/03/19	<i>The Irish Times:</i> 06/08/18

	<i>Irish Independent:</i> 18/07/19	<i>The Irish Times:</i> 08/09/18
	<i>Irish Independent:</i> 02/08/19	<i>The Irish Times:</i> 21/02/19
		<i>The Irish Times:</i> 11/09/19
COVID-19 Self-Completion Questionnaire: July 2020 to November 2020 Wave 6: 2021 to 2022	<i>Irish Independent:</i> 27/04/20	<i>The Irish Times:</i> 03/03/20
	<i>Irish Independent:</i> 14/12/20	<i>The Irish Times:</i> 04/04/20
	<i>Irish Independent:</i> 30/12/20	<i>The Irish Times:</i> 17/08/21
	<i>Irish Independent:</i> 06/02/21	<i>The Irish Times:</i> 26/01/22
	<i>Irish Independent:</i> 26/02/22	
	N=43	

Appendix 4 Items selected from TILDA's Facebook page

	Date	Discourse
Tilda wave		
COVID-19 Self-Completion Questionnaire: July 2020 to November 2022 Wave 6: 2021 to 2022	11/05/20	Promotion and dissemination
	22/05/20	COVID-19
	23/05/20	COVID-19
	27/05/20	COVID-19
	18/06/20	Health risks
	08/07/20	Promotion and dissemination
	30/07/20	COVID-19
	19/07/20	COVID-19
	04/08/20	Health risks
	05/08/20	COVID-19
	06/08/20	Healthy ageing
	12/08/20	Healthy ageing
	15/08/20	COVID-19
	21/08/20	Healthy ageing
	25/08/20	Healthy ageing
	26/08/20	Healthy risks
	31/08/20	COVID-19
	11/09/20	Promotion and dissemination
	21/09/20	Health risks
	27/09/20	COVID-19
	01/10/20	Healthy ageing
	05/12/20	COVID-19
	11/12/20	COVID-19
	22/12/20	Promotion and dissemination
	23/12/20	Healthy ageing
	02/01/21	COVID-19
	20/01/21	COVID-19
	06/01/21	Healthy ageing
	10/02/21	Healthy ageing
	03/03/21	Health risks
	04/03/21	Health risks
	13/04/21	COVID-19
	19/04/21	Health risks
	26/04/21	COVID-19
	30/04/21	Health risks
	05/05/21	Health risks
	07/05/21	COVID-19
	13/05/21	Health risks
	20/05/21	Health risks
	14/06/21	Health risks

23/07/21	Healthy ageing
09/09/21	Healthy ageing
21/09/21	Health risks
24/09/21	Promotion and dissemination
04/11/21	Healthy ageing
17/12/21	Promotion and dissemination
14/01/22	Promotion and dissemination
22/01/20	Healthy ageing
23/01/22	Health risks
27/01/22	Healthy ageing
30/01/22	Promotion and dissemination
31/01/22	Promotion and dissemination
09/02/22	Healthy ageing
28/03/22	Healthy ageing
05/04/22	Healthy ageing
17/04/22	Promotion and dissemination
01/06/22	Promotion and dissemination
16/06/22	Promotion and dissemination
15/07/22	Health risks
22/11/22	Promotion and dissemination
N=60	

Appendix 5 Videos posted on TILDA's YouTube page

Date posted	Video title	Video type	TILDA-produced?		Views ³
			Yes	No	
31 December 2021	Building a healthy ageing society: TILDA celebrates 10 years of impact with Participants	Webinar	✓		612
24 November 2021	Engaging Older People – Reflections from Covid-19 - TILDA and Cork City Partnership	Webinar	✓		90
10 November 2021	TILDA and Creative Ireland - Creativity in the Ageing Population Report	Webinar	✓		208
10 November 2021	TILDA Webinar: Steve Horvath - DNA Methylation Studies of Ageing in Different Mammals	Webinar	✓		416
11 October 2021	Stepping Forward with Confidence: IGS/All Ireland Frailty Network Webinar	Webinar	✓		45
6 September 2021	Women's Mental Health and COVID Webinar: TILDA research	Webinar		✓	44
23 August 2021	TILDA Health Assessment	TILDA information	✓		161
17 August 2021	TILDA COVID-19 Report: Voices of Older Adults Through COVID	TILDA information	✓		53
8 July 2021	TILDA Research: Clinical Frailty Scale and Older Adult Care	TILDA information	✓		69
26 March 2021	What is TILDA's Biobank?	TILDA information	✓		36
25 March 2021	TILDA - Why are older people more susceptible to COVID?	TILDA information	✓		39
25 March 2021	How Older Adults can Look After Health During Covid	TILDA information	✓		12
24 March 2021	TILDA on 10 Things to Know About Viruses	TILDA information	✓		40
16 March 2021	TILDA Research on Volunteering: GAA Dub Health Week 2021	Webinar	✓		32

³ Number of views as of 1 August 2022.

25 February 2021	TILDA: The importance of age in predicting mortality with the frailty index	TILDA information	✓		47
28 January 2021	TILDA Report Launch: Impact of COVID-19 Pandemic on Older Population	Webinar	✓		303
12 January 2021	Research highlights: Associations between Neurocardiovascular Signal Entropy and Physical Frailty	TILDA information	✓		21
12 January 2021	Update on Vitamin D, COVID 19 and Dr Fauci	Lecture		✓	2,426
20 December 2020	TILDA Wave 5 Launch: The Older Population on the Eve of the Pandemic	Webinar	✓		214
14 October 2020	Secrets to Successful Ageing in a COVID 19 World with Prof Rose Anne Kenny	Webinar	✓		203
23 July 2020	The TILDA Biobank	TILDA information	✓		17
5 July 2020	TILDA Research: Functional Analysis of Continuous, High-Resolution Measures in Aging Research	TILDA information	✓		62
24 Jun 2020	TILDA How to Age Well Public Lecture at Trinity College Dublin	Lecture	✓		48
24 Jun 2020	TILDA at the Primary Care Partnership Conference	Conference	✓		28
24 Jun 2020	Health, Wellbeing and Multimorbidity in adults aged 50 and over	Conference	✓		27
10 Jun 2020	How healthy communities will help you live longer	TILDA information	✓		12
8 Jun 2020	The End of Ageing: A documentary	TILDA information	✓		24
3 Jun 2020	Mobility in Older Irish Adults: TILDA evidence presented at Canadian Longitudinal Study on Ageing	Webinar	✓		27
26 May 2020	Take a look inside the Mercer Institute for Successful Ageing at St. James Hospital, Dublin	TILDA information	✓		696
26 May 2020	MISA Annual Public Lecture 2020: Frailty in the time of COVID-19	Lecture		✓	330
26 May 2020	Interview with Rose Anne Kenny on Aljazeera English: Coronavirus and Vitamin D	TILDA information	✓		169
25 May 2020	Dr Mark Ward: Social Participation among Middle-Aged Men: Findings from TILDA	Lecture	✓		18

23 May 2020	Mercer's Institute for Successful Ageing Annual Public Lecture 2020	Lecture	✓		106
22 May 2020	Creating Opportunities in Retirement: Evidence from TILDA and Dr Christine McGarrigle	Lecture	✓		24
20 May 2020	GAA and TILDA: 'How to Age Well' webinar featuring Mícheal Ó Muircheartaigh	Webinar	✓		165
18 May 2020	How have older people been affected by the COVID-19 pandemic?	TILDA information	✓		79
17 May 2020	TILDA, a participant's perspective	TILDA information	✓		8
17 May 2020	How to Age Well - A TILDA and GAA Partnership	TILDA information	✓		24
17 May 2020	TILDA: The contributions of older adults to society	TILDA information	✓		33
17 May 2020	TILDA: The Over 50s in a Changing Ireland (Results of Wave 2)	TILDA information	✓		26
17 May 2020	TILDA's legacy in a changing Ireland	TILDA information	✓		1
17 May 2020	Brain Health and the TILDA study	TILDA information	✓		14
17 May 2020	The purpose of TILDA	TILDA information	✓		11
17 May 2020	The first ten years of TILDA	TILDA information	✓		59