

**DIGITAL TRANSFORMATION IN INDONESIA:
IS IT ELDERLY-FRIENDLY?**

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Abstract

The acceleration of digital transformation in Indonesia has led to an increase in the country's Digital Competitiveness ranking, now at 45th in the world. However, it is important to further examine the community aspect of digital transformation in Indonesia, particularly in terms of digital readiness. The senior or elderly population is one group that is vulnerable in this regard. The objective of this study is to investigate the state of digital transformation in Indonesia, with a focus on the elderly population's digital readiness. The research employed the semi-systematic literature review method and the Publish or Perish application. The data collected was not computer-based or related to information systems for seniors or the elderly population. Instead, it was based on articles and papers collected from Scopus, Crossref, and Google Scholar journal databases. The research results indicate that digital transformation in Indonesia is a compelling topic. The Scopus, Google Scholar, and Crossref indexes contain 46, 185, and over 1000 articles on this theme, respectively. However, researchers in Indonesia have not studied the engagement and attention to seniors or the elderly population.

Keyword: Digital Transformation, Indonesia, Elderly, Publish or Perish

Introduction

Digital transformation accelerates in Indonesia due to COVID-19 pandemic (Kurniawati et al., 2021). According to data from the International Institute for Management Development (IMD) in the World Digital Competitiveness Ranking (IMD, 2023), in 2023 Indonesia ranked 45th in the world, up from 51st in the previous year. Meanwhile, the best ranking in Southeast Asia is still held by Singapore (ranked 3rd in the world). Forms of digital transformation in a country include the implementation of e-government, smart city to smart nation. One of the frameworks in implementing a smart nation is technological transformation (Przysucha, 2022) by paying attention to a) Economy (Digital economy framework for action), b) Government (Digital Government Blueprint and c) Society (digital readiness blueprint). These three aspects are considered so that the implementation of digital transformation in the form of a smart nation can be implemented successfully. In the community aspect (digital readiness blueprint), one of the vulnerable community groups is the elderly. The key to success in digital transformation is divided into two,

generic and specific (Mahboub & Mohammed, 2023). Generic means that it is multidimensional and applied in various types of business fields, while specific relates to specialised functions or in certain industrial fields.

In 2021, a BPS survey provided information that almost 30% of Indonesia's households was in the elderly population category (it's almost 29.3 Million people). In fact, the survey shows that almost 60% of the elderly population are heads of households (Badan Pusat Statistik, 2021). This means that one of the key factors in the aspect of Society is that the elderly population needs to get a special portion including the interest of the elderly population (Lu, 2021) to use products resulting from digital transformation. This factor is influenced by social life, convenience and also the self-efficacy of the elderly population (Perdana & Mokhtar, 2022). The problem that occurs is whether Indonesia has provided a special portion for the elderly population in the application of digital transformation?

Based on the above, this research tries to find out the digital transformation in Indonesia, especially in terms of the Community aspect (digital readiness) in the elderly population. This study is to provide recommendations and provide additional studies on the planning and design of digital transformation in Indonesia.

Literature Review

Semi-sytematic literature review

Literature review can be used as a research methodology. The approaches used in literature review consist of systematic, semi-systemic and integrative (Snyder, 2019). The semi-systematic approach was used with consideration parameters according to the following table.

Table 1 Semi-Systematic approach in literature review research

Approach	Semi-Systematic
Typical purpose	Overview research area and track development over time
Research questions	Broad
Search strategy	May or may not be systematic
Sample characteristics	Research articles
Analysis and evaluation	Qualitative/quantitative
Examples of contribution	State of knowledge, Themes in literature, Historical overview, Research agenda, Theoretical model

Source: (Snyder, 2019), pp.334

Publish or Perish

Is a software created (Anne-Wil Harzing, 2007) to search and analyse academic citations. The data obtained in this tool are papers/articles that have parameters: citation, rank, author, title, year, publication, and publication type, the Publish or perish software used is version 8.9.4554.8721. The software interface is shown in the following figure.

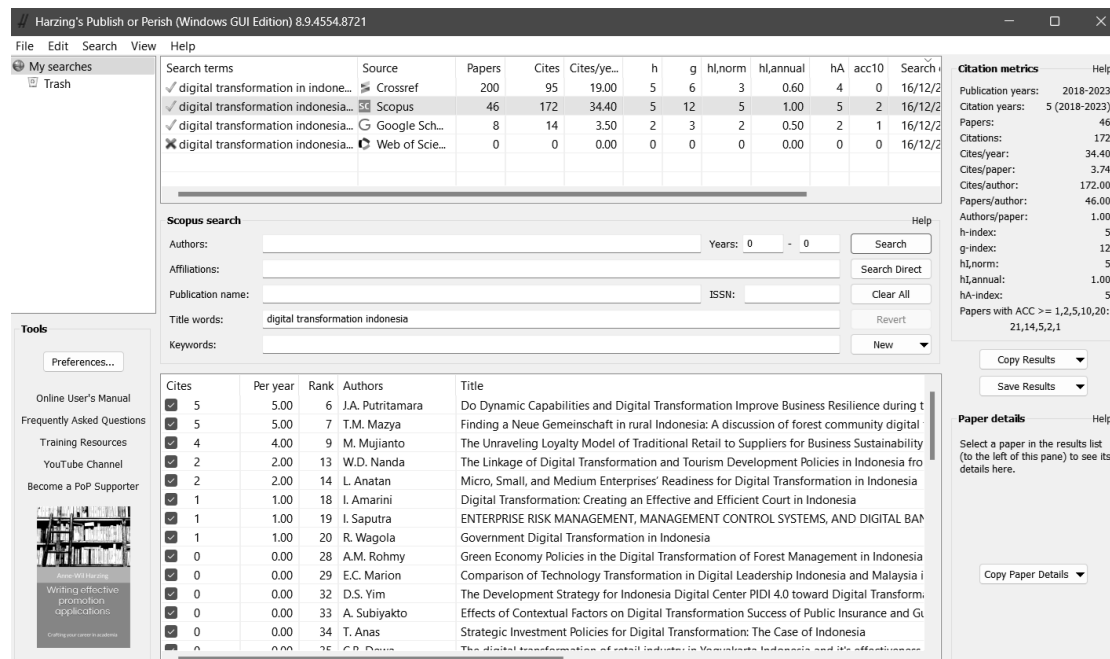


Figure 1 Publish or perish software interface

The software provides a list of Titles and properties of papers that can be used for paper quality analysis. Papers that appear in the list can be downloaded directly using the "Open Article in Browser" function.

Research Methods

The method used in this research is literature review (Snyder, 2019) using a semi-systematic approach. Harzing's Publish or Perish software (Anne-Wil Harzing, 2007) was used as a tool to identify papers indexed on Scopus, Crossref and Google Scholar.

The procedure of this research is shown in the following flowchart:

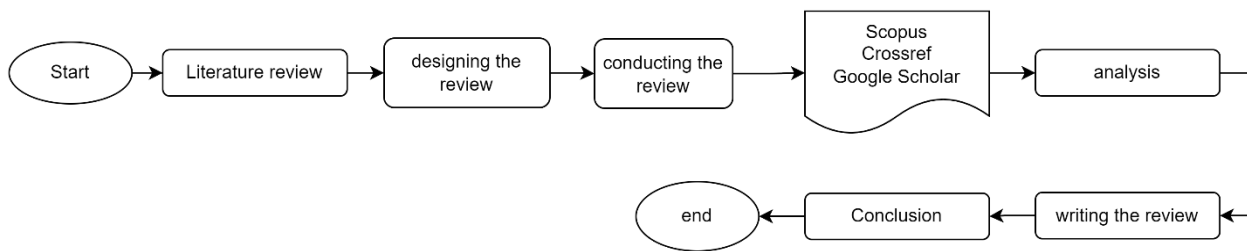


Figure 2 research flow diagram (modified from (Snyder, 2019))

The details of each process above follow the following explanation.

Literatur review

This process emphasises the formulation of the research problem.

Designing the review

Determining the type of approach, the research index database used and the articles selected. This will determine the accuracy and quality of the review and research results (Tranfield et al., 2003). The approach used in this literature review is semi-systemic with the aim of finding a theme in a collection of literature (Snyder, 2019).

Conducting the review

The data collected was not data on the number of apps that have features for the elderly population group, but in the form of indicators that the elderly are considered in the development of digital technology. Data that indicates this is research data on article databases in Scopus, Crossref and Google Scholar. This selection is related to the availability of access rights to each database. Google Scholar and Crossref represent Free data sources and Scopus represents Free Registration data sources. The Web of Science database was not included in this research as it requires an external subscription.

The data was collected using Harzing's publish or perish software (Anne-Wil Harzing, 2007). The figure below shows the selection of data sources in the desired indexing database in Harzing's publish or perish software.

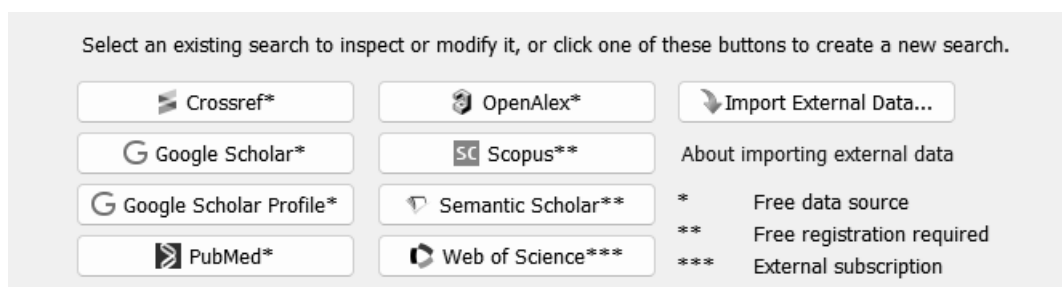


Figure 3 Data source using Harzing's publish or perish Software

In addition to database selection, there are some basic settings to get the desired data. The search settings on Harzing's Publish or Perish software are explained as follows:

1. Database: Scopus, Crossref, and Google Scholar
2. API Key for Scopus : 6ea363fbce266bd1726fa54035fdd424
3. Maximum number of results : 1000
4. The year of publication is limited from 2018-2023
5. Title word : [Digital] [Transformation] [Indonesia]
6. Keyword : [elderly], [senior residence], [old age], [lansia], [lanjut usia], [Indonesia]

Analysis

Data analysis was conducted by finding data papers that pay attention to or are closely related to the research topic. To measure the relevance, the use of special words in the Title, keywords, abstract, results and discussion and conclusions were used as parameters.

Writing the review

Writing the results of the review in tabular form, determining the selected papers and narrating the conclusions.

Discussion

The results of the data search resulted in a recapitulation of papers containing the title "digital transformation", "Indonesia" and specific keywords, shown in the following table.

Table 2 The paper data between 2018 - 2023

No	Database	with title words [digital transformation][Indonesia]	using specific keyword	Selected paper
1	Crossref	1000	1000	0
2	Scopus	46	0	0
3	Google Scholar	185	8	4

Based on the table above, it is known that in the Scopus index database, there are only 46 paper titles with titles that contain digital transformation in Indonesia. Of these titles, there are no topics that discuss systems related to elderly or senior residence.

In the Google Scholar index database, 185 titles related to digital digital transformation in Indonesia were found, but only 4 paper titles were confirmed to have discussions on the theme of

digital transformation that paid attention to senior residence, although during the search process, there were 8 paper titles detected in Harzing's Publish or Perish software. However, when the further analysis process is carried out from these four titles, the discussion of senior residence or elderly only as an additional discussion without specific discussion is in the paper : Abdulloh, 2023; Chong et al., 2023 and Pitaloka & Nugroho, 2021. Discussion of features for senior residence is in the article Mahardiestya, 2021 even though it is in the form of a Fintech product that has been issued since 2016.

The Crossref database gave more promising results, finding 1000 articles (within the software limitations) that matched. When specific keywords were added to the results, the numbers were similar. However, based on further analysis of these 1000 articles, there are no papers that show engagement or design in various forms of digital transformation that consider seniors or the elderly.

Based on the above facts, literature searches have not been able to find articles that clearly show elder-friendly in digital transformation in Indonesia for the Community aspect (digital readiness blueprint). Despite this, digital transformation in Indonesia is still progressing, various applications of technology such as Augmented Reality in various fields (Zein & Agustin, 2020) continue to be implemented. Research, development and application of technology in various sectors are still in motion. Even the use of technology in society such as for MSMEs (Kurniawati et al., 2021), community (Agustin et al., 2023) and others are being implemented in Indonesia.

Examples of elder-friendly forms of digital transformation that have been implemented in Singapore can be seen in the following aspects and examples:

1. There are specialised services for seniors in either interfaces (Kim et al., 2011; Rodrigues et al., 2014), purposes (Ahmad, 2022), or any other type of service (Kong & Woods, 2018). An example of application in this point is the existence of services that guide and direct seniors to use digital products. This is exemplified by the Singapore government through Mobile Access for Seniors (IMDA, 2023)
2. A programme that invites seniors to partake the digital transformation (Perdana & Mokhtar, 2022). An applied example of this is the Senior Go Digital (SG:Digital) programme (IMDA, 2020; Lu, 2021) that teaches the basic use of smartphones to: a) make life easier; b) teach access to government services; c) use e-payments; d) communicate with family and friends; e) protect against scams and hackers.

3. There is a mentoring and socialisation programme to all levels of society. Singapore has a Smart Nation Builder programme (Singapore, 2022). This programme aims to explore, engage and enjoy, including prototype testing of all government digital services and products. This programme is not specifically for seniors only, but also for early childhood and all levels of society and age.

The explanation above shows that Indonesia still has a lot of work to do to get all levels of society to embrace digital transformation.

Conclusion

Based on the results above, it can be concluded that digital transformation in Indonesia still requires more attention to the senior generation. There is no programme that invites senior residence in digital transformation in Indonesia as a whole.

Suggestions for the development of this research are a) the need for real measurement of elder-friendly factors in e-government systems in Indonesia, especially in User Interface (UI) and User Experience (UX); b) complete data is needed on computer-based systems built by various sectors (both state and private) that show attention to the elderly population; c) further checking of Indonesian government programmes for the elderly population, especially regarding digital transformation.

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