

Photo by [David Leveque](#) on [Unsplash](#)

Photo by [CardMapr.nl](#) on [Unsplash](#).

Photo by [Ompia_](#) on [Unsplash](#)

**UNIVERSITÄT
ERFURT**

Willy Brandt School
of Public Policy

Navigating Technological Change on Work: Online Media Discourse in Indonesia

Viddy Ranawijaya & Achim Kemmerling

Funded by

DFG

Deutsche
Forschungsgemeinschaft

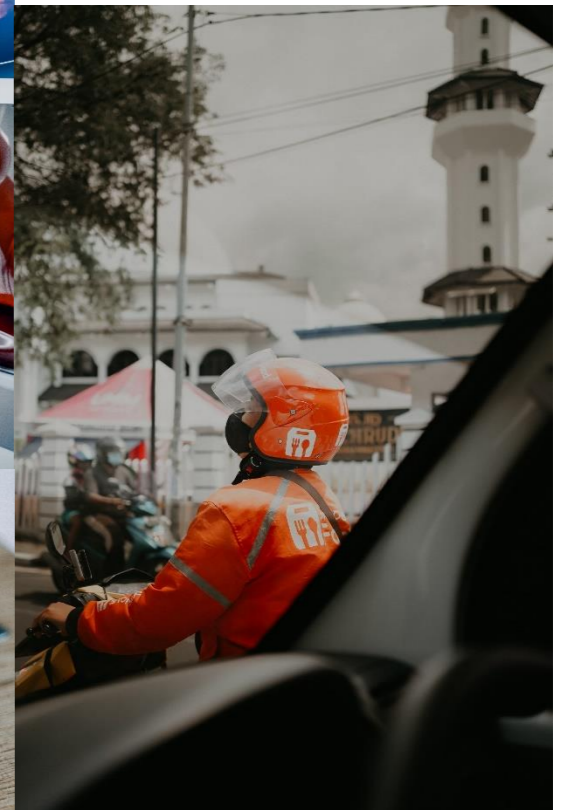
German Research Foundation

Presentation Content

- Introduction, Objective & Case Study Significance
- Theorizing the Future of Work
- Method of Data Collection
- Results & Analysis
- Conclusion

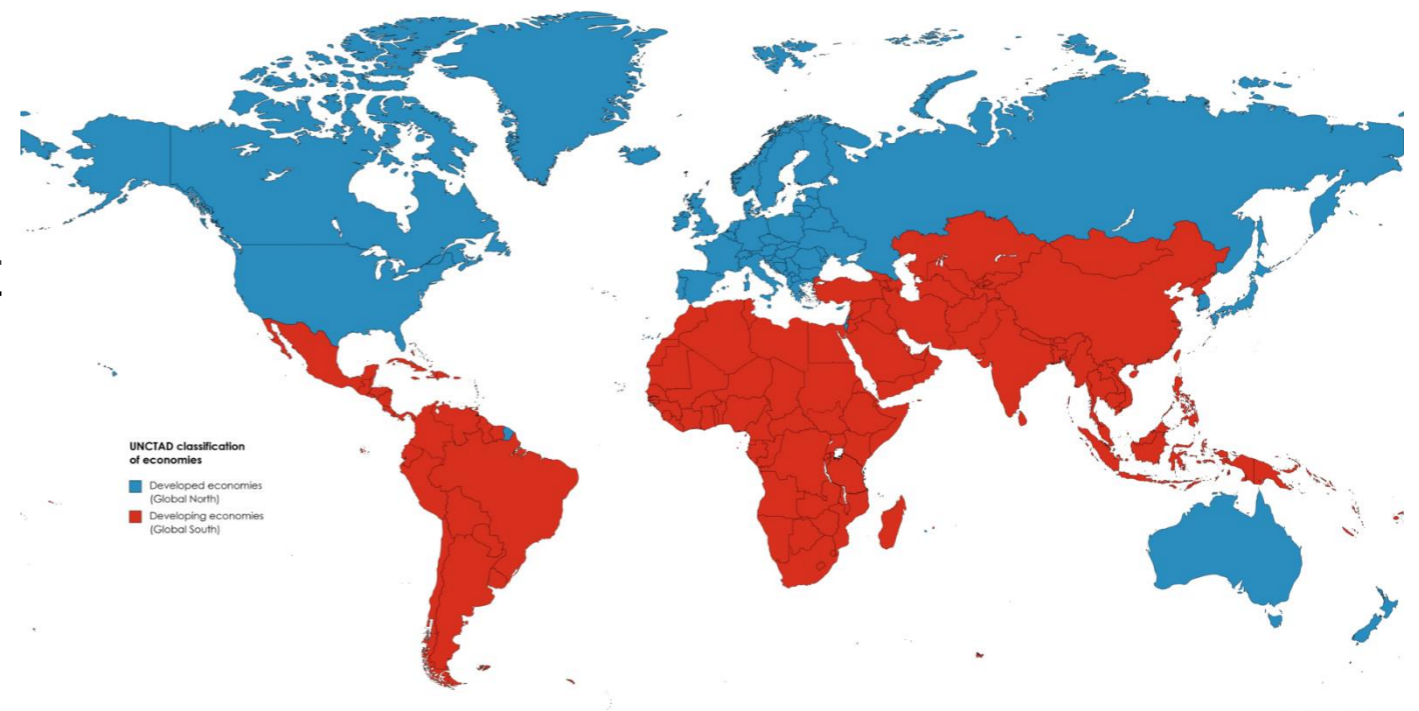
Introduction

- Technological advancement has developed economy and transform how people engage in work.
- On the other hand, it also unequally distributes its benefits, when many high skills jobs are emerging, while repetitive jobs are displaced (Bresnahan, 1999; Frey & Osborne, 2013).



Uneven Empirical Knowledge: Global North vs. Global South

- Prevalent discussions of digitalization and the future of work in the global north and OECD world (Frey & Osborne, 2013; Marengo & Seidl, 2021; Ghimire et al., 2020).
- Dearth of knowledge from the Global South (Fietz & Lay, 2023). Although some research from China and India have emerged.



Case Study: Indonesia

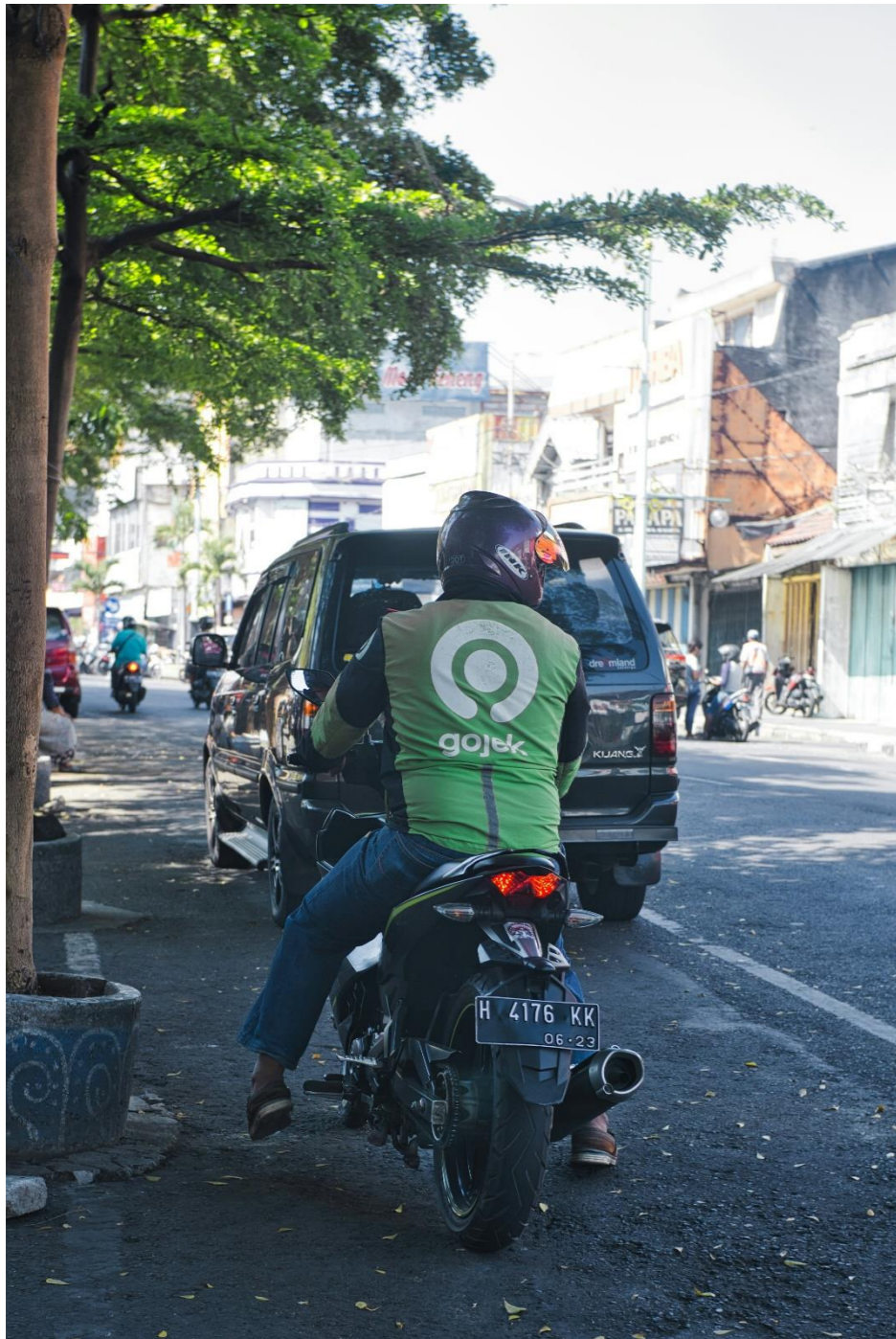


Photo by [Visual Karsa](#) on [Unsplash](#)

- High emphasis on digital economy: The growth of digital economy surpasses digital economy growth (CNN Indonesia, 2019).
- Government priority on digital economy and automation: “E-Commerce Roadmap” (Utami et al., 2022) and “Making Indonesia 4.0” (Hidayatno, 2019).
- Demographic bonus 2030 – 2040 (Andriani & Yustini, 2021). Does digitalization threatening Indonesian surplus workforces to be unemployed?

Research Objective

This research aims to explore public perceptions, hopes, and fears regarding digitalization and the future of work.

Research Question:

How do online news outlets shape and influence public perceptions, expectations, and concerns regarding technological change and its impact on the future of work?

Online Media in Indonesia



- Online media possess a pivotal role in shaping public opinion, and further reflect public opinion (Kruikemeier, 2012; Pu-Ning, 2004).
- Paper to web conversions of Indonesian media anticipating digital content demand. (Nurhayati-Wolff, 2024; Degenhard. 2024).

Theoretical Framework: The Future of Work

The Optimists

- Soroko & Richter (2016): The Future of Work as changes and challenges from digitalization and automation. It emphasizes new employees/workers competences and the role of digitalization in boosting productivity and job creation.
- Tabares (2019): Digitalization boosts productivity, and cultivate a more flexibility and mobility in work.

The Alarmists

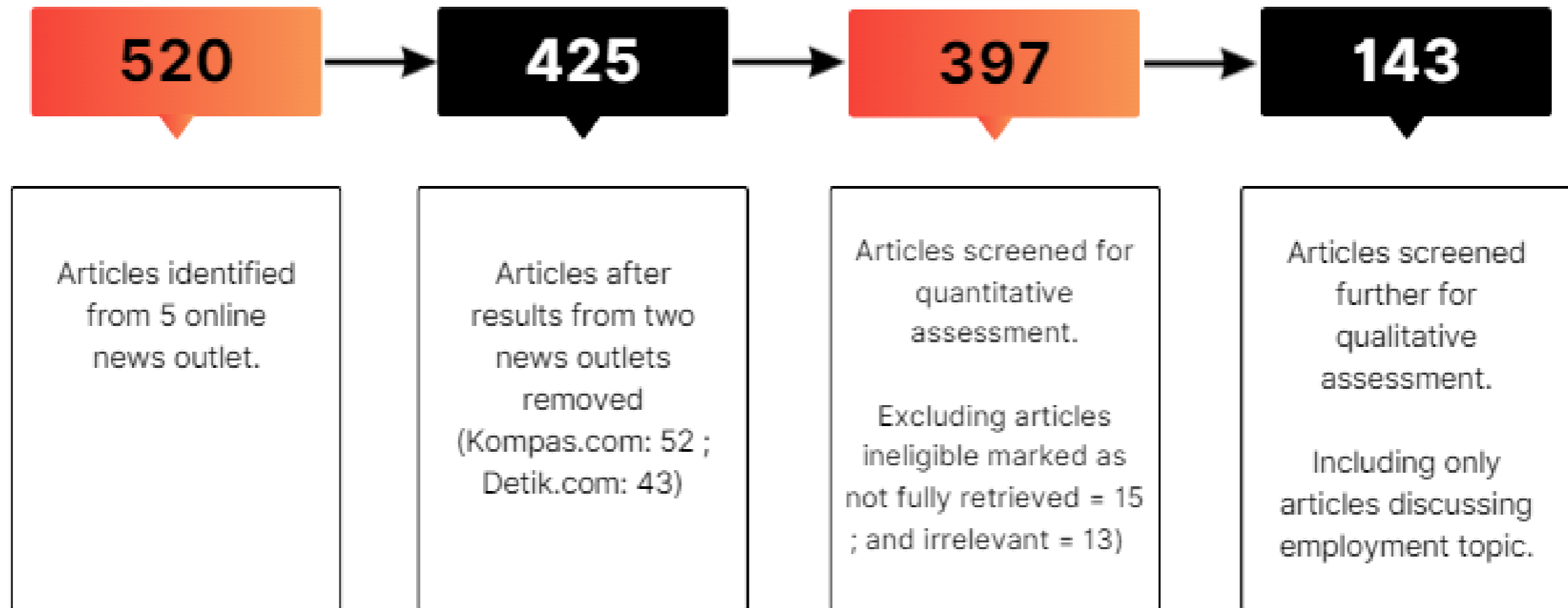
- Frey & Osborne: Almost half of repetitive jobs in the US will diminish in 2030.
- Balliester & Elsheiki (2018): Technological changes influencing the future of jobs, quality, wage and income inequality, social protection systems, and social dialogue and industrial relations.

Research Design

- Systematic media review through 5 online news channels antaranews.com; cnnindonesia.com; detik.com; Kompas.com; liputan6.com.
- Data: online news articles (2014 – 2023).
- The search was conducted on Google search engine's news section, and prompted by a search strings formed by keywords relevant with main concepts of this research: "technological change" and "work", separated with operator OR and AND.
- Further the collected news articles will be downloaded and analyzed quantitative and qualitatively (content analysis) using MAXQDA.

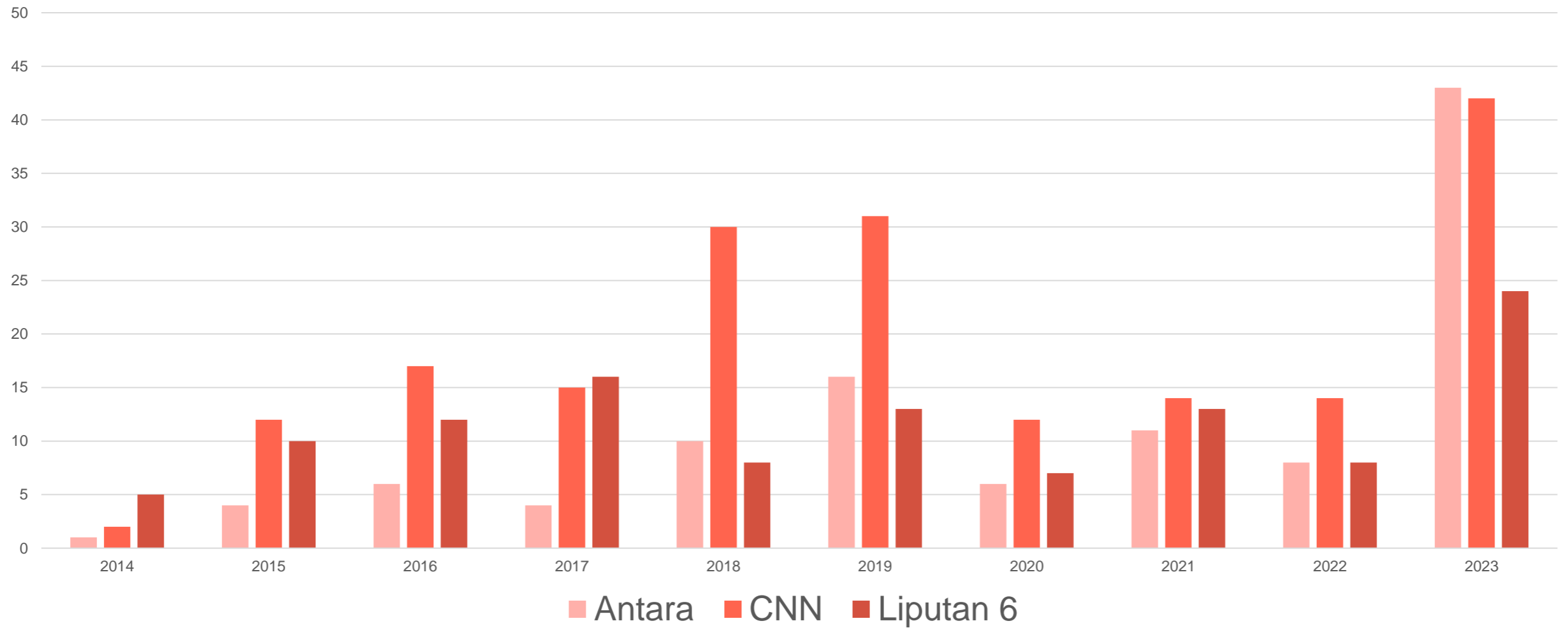
Results

Screening Flow Diagram



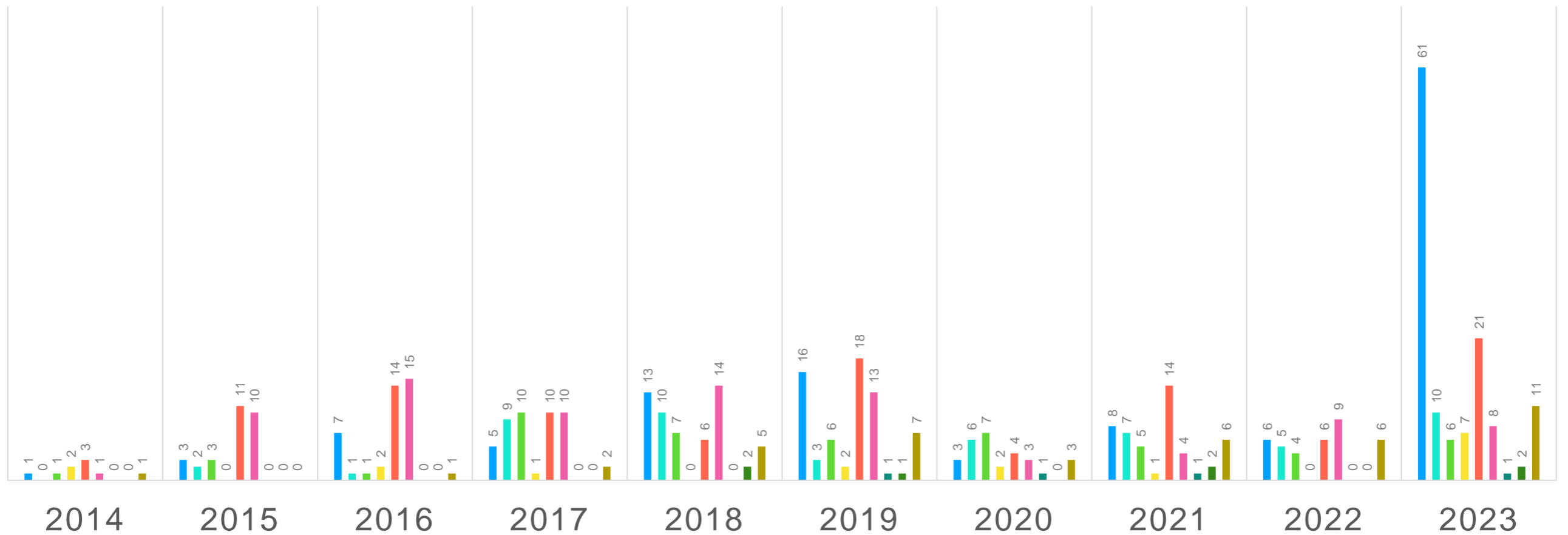
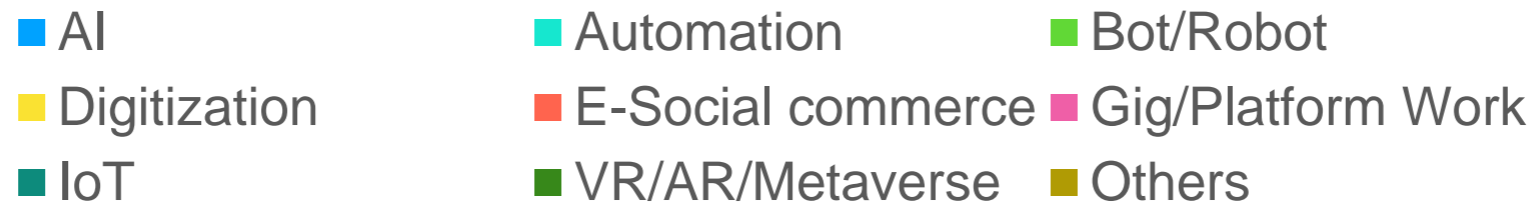
Results

Frequency of Publication per Year



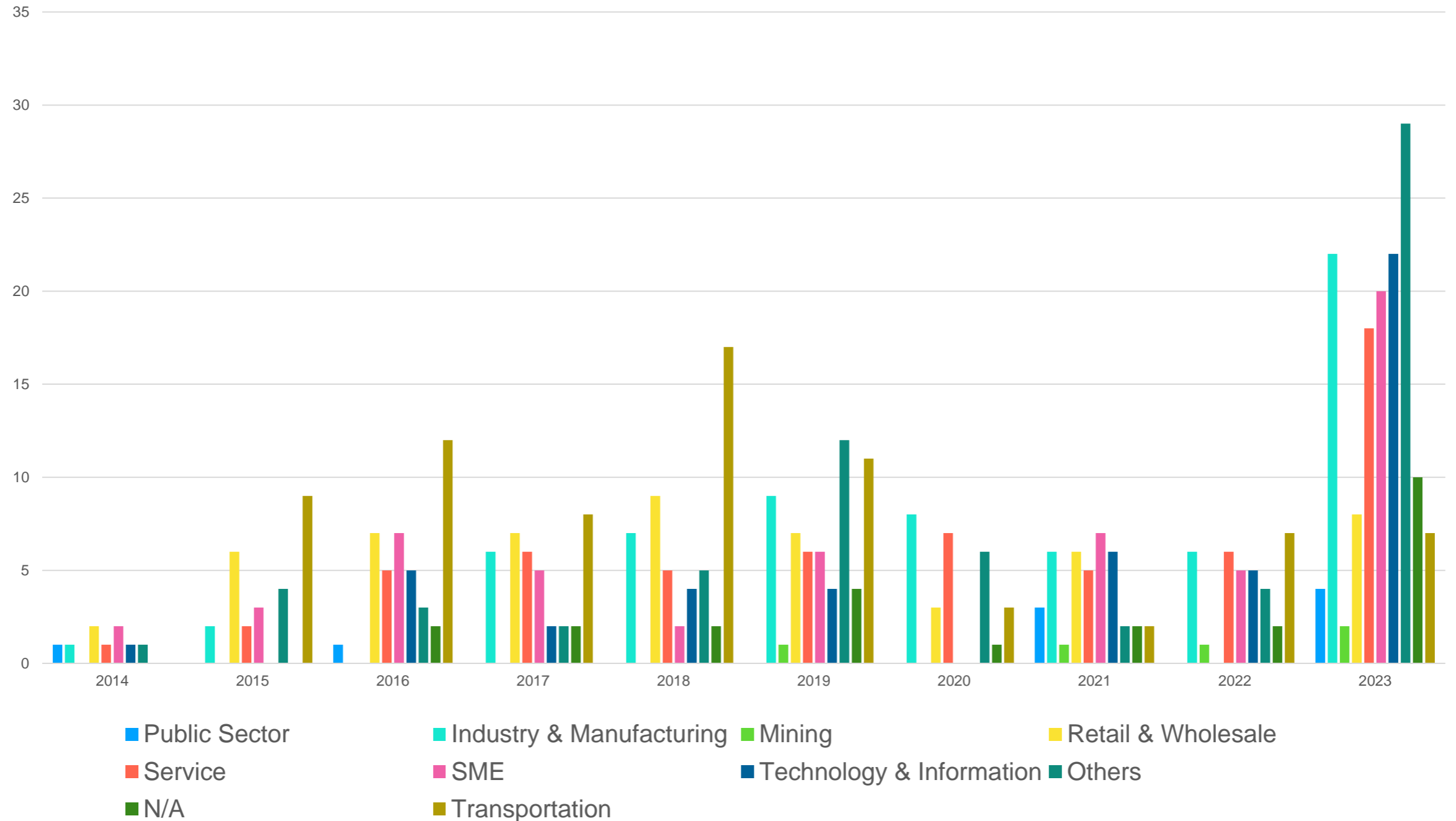
Results

FREQUENCY OF DISCUSSED FORM TECHNOLOGICAL CHANGE PER YEAR



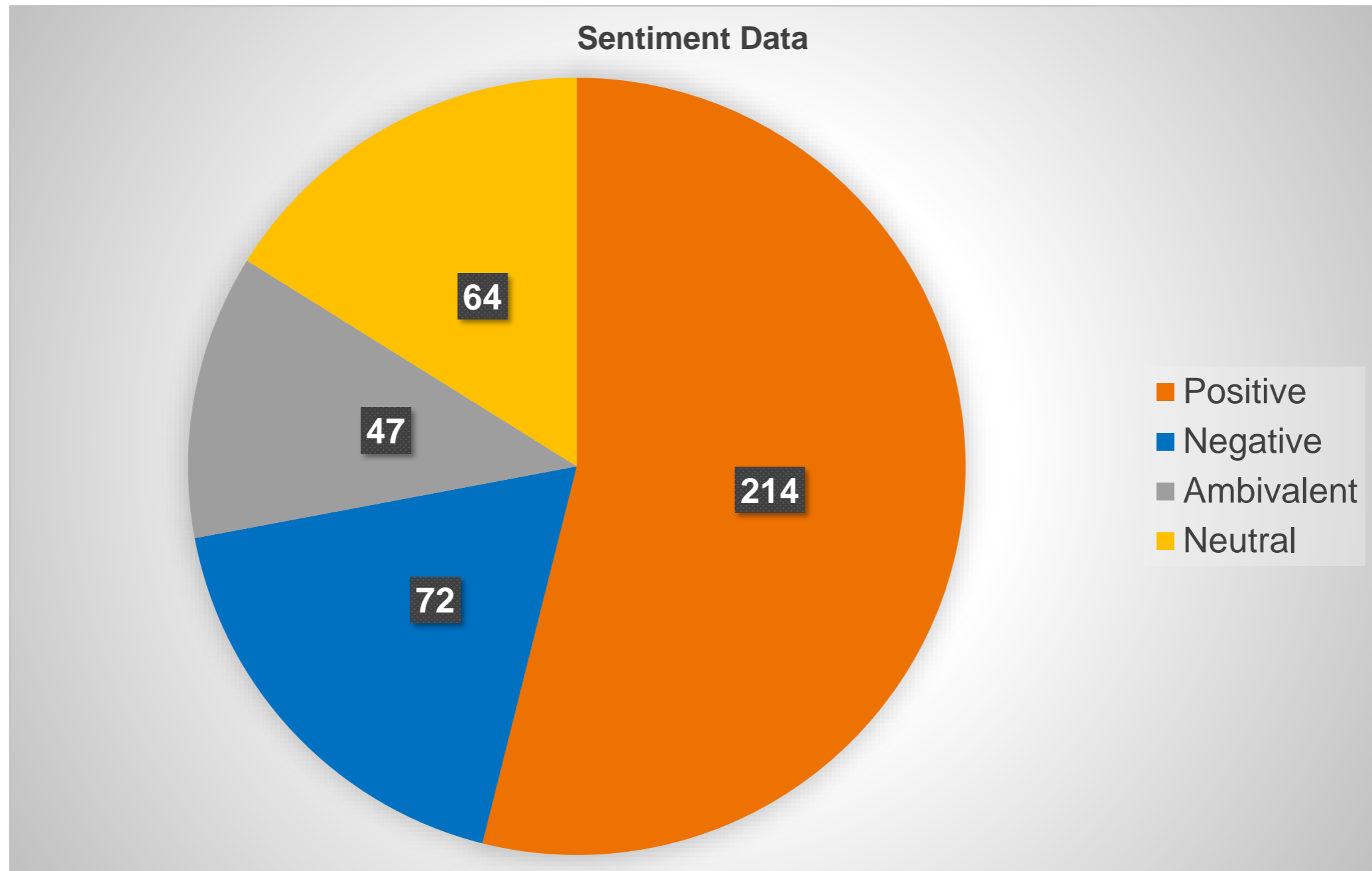
Results

FREQUENCY OF DISCUSSED SECTOR PER YEAR



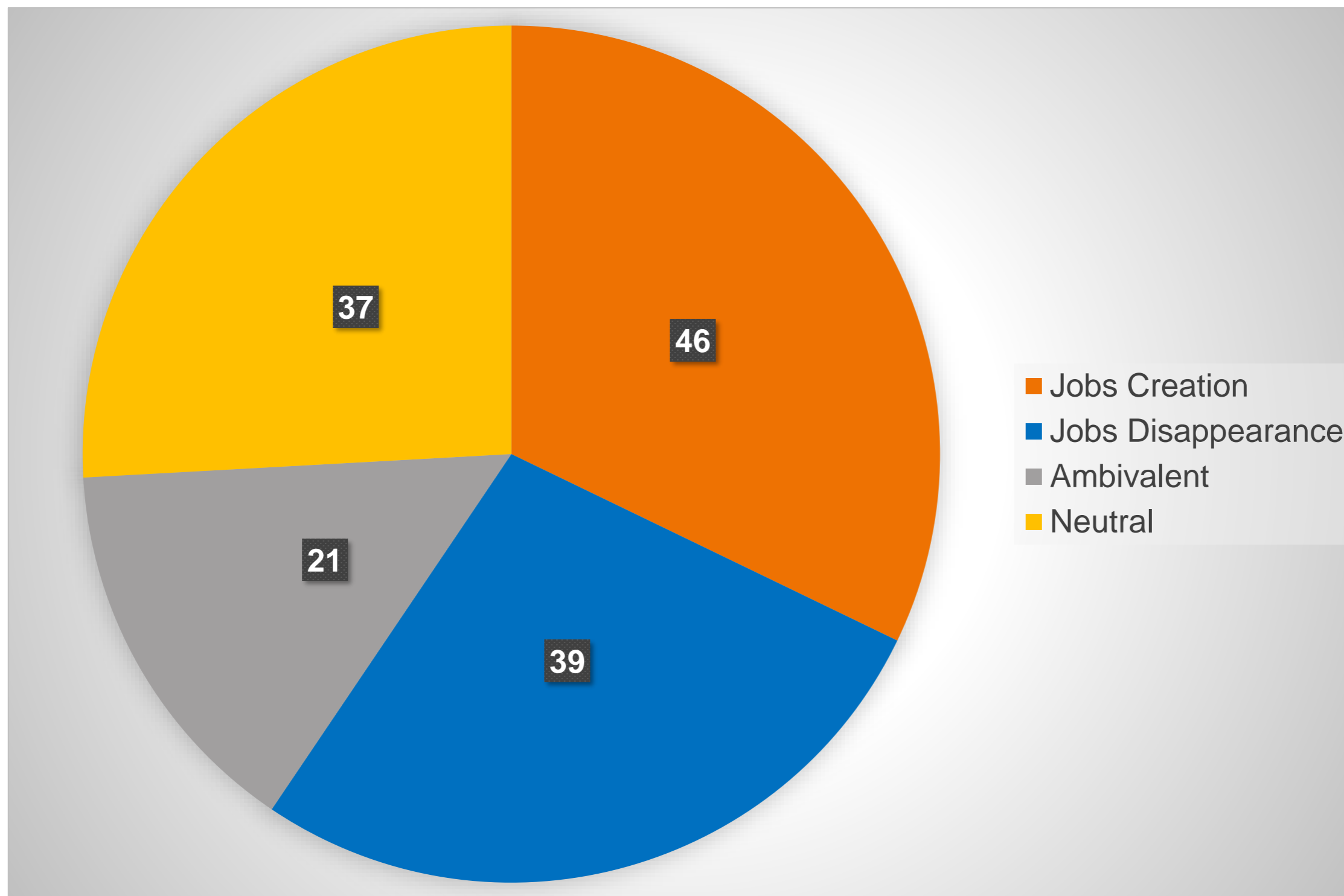
Results

SENTIMENT DATA



Results

HOPES AND FEARS ON DIGITALIZATION AND THE FUTURE OF WORK



Analysis of Articles with Employment Focus

Job Creation

- New technologies create new jobs

“The ride-hailing or online motorcycle taxi industry is considered to be sufficient to help the community as a buffer to be able to earn income amidst the uncertain economic situation due to the pandemic.” (Antara, 2019, “Ojol researchers become a buffer when work opportunities are difficult”)

“The popularity of artificial intelligence (AI) platforms such as ChatGPT produces a new profession called prompt engineer. Can this career long lasting or just seasonal?” (CNN Indonesia, 2019, “Getting to Know Prompt Engineer, a Profession Born in the Result of ChatG Fever”)

- New technologies and the rise of new entrepreneurs

“However, Andri pays more attention to Bukalapak (e-commerce) because its vision is more grounded and targets SMEs, inviting everyone to start doing business independently or become entrepreneurs.” (Liputan6.com, 2015, “Original Indonesian E-commerce is No Less Than Global Players”)

Analysis of Articles with Employment Focus

Job Disappearance

- Technology will replace conventional jobs

"Work sectors that are vulnerable to being completely replaced by robots, according to him, 87 percent of those at high risk are accommodation and food services, 75 percent transportation and warehousing and 67 percent real estate. In contrast, only around 10 percent of workers in the information, software developer and software management sectors are impacted by automation." (CNN Indonesia, 2015, "20 More Years of Human Jobs Replaced by Robots")

- Technology creates unfair competition

"However, the presence of online taxis has also hit the old players or conventional taxis. Chairman of DPD Organda DKI Jakarta, Shafruhan Sinungan, said that in Jakarta alone there were 35 only four taxi companies are currently surviving." (Liputan6.com, 2017, "31 Taxi Companies Close in 2 Years - Business Coverage")

Analysis of Articles with Employment Focus

Ambivalent

- Technology will Create and Diminish Jobs

"Based on survey results in the WEF's latest report entitled 'Future of Jobs 2023' quoted on Thursday (4/5), at least 83 million jobs will be lost in the next five years and this will impact millions of workers. However, technological advances also open up other new business opportunities." (CNN Indonesia, 2013, "List of Jobs That Survive and Disappear Due to Intelligence")

- Technology will diminish jobs, but there's positive side of it

"Concerned about the impact of industry 4.0, which prioritizes technology over using human labor, which could result in high rates of unemployment and poverty, according to Satya, this can be taken from the positive side, namely developing the creative industry as much as possible in Indonesia so that people's purchasing power is also boosted." (Antara, 2019, "Satya Yudha Superior quality of human resources is the main support for industry")

Analysis of Articles with Employment Focus

Neutral

- Humans are irreplaceable

"The reason is that using technology is much more expensive than using workers with certain skills in the short term. However, this does not mean that this condition will not occur. Therefore, a number of executives at the meeting called for the need to develop a skilled workforce." (Liputan6.com, 2017, "Robots Take Human Jobs, Company Bosses Prepare Strategy")

- Not labor diminishment, just shifting and rotation

"Previously, Ridwan Kamil said that as many as 400 civil servants (PNS) within the West Java Provincial Government had to be shifted or rotated due to the presence of artificial intelligence (AI) technology." (CNN Indonesia, 2021, "Young BRIN Engineers Respond to RK Rotation of 400 Civil Servants with AI")

- Technology won't disrupt conventional business

"Alphon does not agree with the opinion that online business will kill mall entrepreneurs. Because essentially the two have fundamental differences, where malls can offer direct physical interactions that cannot be facilitated online." (Liputan6.com, 2021, "Online Shopping Skyrockets, What Are the Prospects for Mall Business")

Analysis of Articles with Employment Focus

Neutral

- Technology Complementing Human's Job

"He stated that at least until 2020, ABB will still focus on human companion robots." (CNN Indonesia, 2015, "Factory Robots, Smart But No Need for Artificial Intelligence")

- Miscellaneous

"He said that the majority of people in Indonesia are actually not too worried if technology takes over their jobs. It's just that the worry will come if there will be no more income or income to be earned from the people themselves." (Liputan6.com, 2019, "The Presence of Robots Will Not Take Human Jobs")

Conclusion

- Discussions of technological change and the future of work were focusing on AI, E/Social-Commerce, and Gig/Platform work.
- The sentiments towards digitalization on work are predominantly corresponding the optimists.
- Dissenting opinions (minority) on the risks of technological change on employment correspond the alarmists.
- Humans are indeed irreplaceable but technological change is unstoppable.
- Some alarmistic articles bring up issues such as wage & income inequality, (digital) skill divides, and social security issues.
- Second degree problem: the rise of informality within gig/platform work.

Limitation

- This research only explore online media segments, although it is emerging, it is relatively smaller than traditional media.
- A further investigation on discourses on each sector and form of technological change will enrich knowledge on public opinion of technological change on work.
- Interesting insights can be traced from government discourses.

**UNIVERSITÄT
ERFURT**

**Questions, Suggestions, and Comments
will be so much appreciated!**