Rethinking social policy in the era of digital transformation: Social policy and reinvigorated social contracts – a qualitative analysis

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Abstract

Digital transformation is fundamentally reshaping societies, presenting both opportunities and challenges for social policy. This qualitative analysis explores how digital transformation necessitates a rethinking of social policy frameworks to ensure social contracts remain relevant and effective. The research draws on in-depth interviews with policymakers, social service providers, and citizens to understand the evolving needs and expectations in a digitalised world. The analysis digs deeper into how digitalisation impacts areas such as employment, education, and social safety nets. It examines how existing social policies might fall short in addressing issues like digital exclusion, the changing nature of work, and the potential for algorithmic bias in social programmes. The study identifies key themes around the need for upskilling and reskilling programmes, which involve equipping individuals with the digital skills necessary to navigate the transformed job market: digital inclusion policies involve ensuring equitable access to technology and bridging the digital divide; redesigning social safety nets towards adapting social programmes to address the potential precariousness of work in the digital economy; and algorithmic fairness and transparency, enhancing transparency and mitigating potential biases in algorithmic decision-making within social programmes. By analysing these themes, the research aims to contribute to a dialogue around reinventing social contracts for the digital age. It argues for social policies that are adaptable and inclusive and leverage the potential of digital technologies to create a more just and equitable society.

Keywords: digital exclusion, digital transformation, employment, social policy, social safety nets, algorithmic bias, digital skills, digital inclusion, algorithmic fairness

Introduction

Digital transformation is reshaping societies, presenting both opportunities and challenges for social policy. As digital technologies become increasingly integrated into everyday life, there is a need to reconsider how social policies can remain relevant and effective in this rapidly evolving landscape (Aly, 2020). This study explores how digital transformation necessitates a rethinking of social policy frameworks to ensure that the social contract remains effective and adaptive to new realities occasioned by this pervasive change. Drawing on Anthony Giddens' structuration theory, which examines the dynamic relations between individual agency and social structures (Chatterjee, Kunwar and Hond, 2019), this research aims to provide a refined understanding of the reciprocal relationships between digital technologies, societal norms, and policymaking processes. Structuration theory provide a comprehensive framework for analysing how digitalisation impacts areas such as employment, education, and social safety nets, and how these impacts, in turn, influence policy development and implementation.

Digital transformation is a pervasive global phenomenon, reshaping the way individuals, businesses, and governments operate. It involves the integration of digital technology into all aspects of society, influencing communication, labour markets, governance, and social interactions (Ndemo and Weiss, 2017). To analyse how digital transformation affects the existing social contracts in countries globally, Anthony Giddens' structuration theory offers a competitive lens. Giddens' theory posits that social structures and human agency are inextricably linked, with each continuously shaping and being shaped by the other (Schneidewind *et al.*, 2018). This dynamic relationship helps illuminate how digital transformation is redefining the implicit agreements that govern societal roles, responsibilities, and expectations, especially in developing economies. Giddens' structuration theory emphasises the duality of structure, where structures both constrain and enable human behaviour, and human actions, in turn, recreate those structures (Elliott, 2020). Social structures, such as institutions, laws, norms, and roles, are continuously being reproduced through human agency. This theory implies that as societies undergo digital transformation, the pre-existing social contracts – which are essentially the rules and expectations governing societal roles – are subject to renegotiation and reformation.

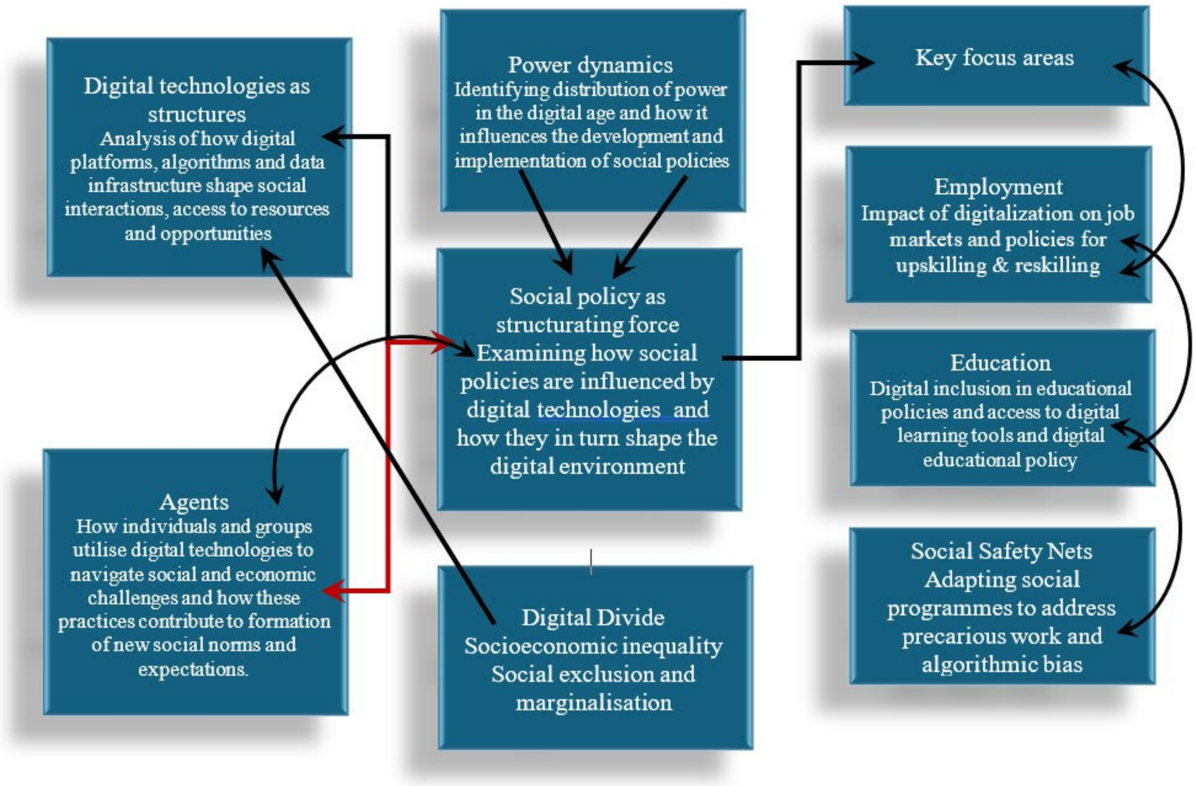
The digital transformation that has taken place globally is marked by the rise of the internet, artificial intelligence, automation, and digital platforms (Dengler and Matthes, 2018), all of which are disrupting traditional labour markets, governance systems, and social hierarchies.

These disruptions create tensions and opportunities, leading to shifts in the social contract – the unwritten agreement between citizens and institutions about their roles and responsibilities in society (Ossewaarde, 2019). Historically, these agreements have evolved in response to changing social and economic conditions, and the digital age represents the latest disruption to this delicate balance. In developing countries like South Africa, Brazil, and India, the effects of digital transformation on the social contract are particularly profound (Manda and Ben Dhaou, 2019). These nations face unique challenges related to inequality, unemployment, and governance. Each country's trajectory of digital adoption showcases how human agency and existing structures interact, and how digital transformation is reshaping social expectations.

Theoretical framework

Structuration theory, developed by sociologist Anthony Giddens, offers a framework for understanding the relationship between individual agency and social structures (Chatterjee, Kunwar and Hond, 2019). Central to this theory is the idea of the duality of structure, which posits that social structures are both the medium and outcome of the practices they recursively organise – that structure and agency are mutually constitutive (Jones and Karsten, 2008; Chatterjee, Kunwar and Hond, 2019). This implies that while individuals' actions are constrained and enabled by structures, these same actions simultaneously produce and reproduce those structures. According to Giddens (1984), structures enable and constrain human action, while being produced and reproduced through these actions (Giddens, 1984; Jones and Karsten, 2008). Structures are conceptualised as norms, rules and institutions and considered as resources that individuals utilise to shape their actions, or define context of individual action and decision-making (Canary and Tarin, 2017). While possessing autonomy, human agency is embedded within and influenced by these structures. It is this dialectical relationship, termed 'duality of structure', which underscores that fluid and evolving nature of social reality (Canary and Tarin, 2017; Chatterjee, Kunwar and Hond, 2019).

In the present study, the interplay between digital technologies, social structures and individual agency provides the basis for understanding the complex processes shaping new social contracts. Understanding digital transformation as transforming the social arrangements of social and economic organising, the author argues that digital platforms and technologies both enable and constrain the development of social policies and structures which in turn shape social and economic outcomes.



Source: Author adaptation of structuration theory

Figure 1: Conceptualising Structuration theory and social policy

Recent research has applied structuration theory to explore various aspects of digital transformation, such as changes in organisational structures (Hanelt *et al.*, 2021), social interactions (Schneidewind *et al.*, 2018), and power dynamics (Potts *et al.*, 2016; Avelino, 2017, 2021). For instance, the rise of digital platforms has altered traditional business models and work environments, leading to new forms of organisational structures that are more fluid and decentralised (Hanelt *et al.*, 2021). Structuration theory helps explain these changes by highlighting how digital technologies serve as both resources and constraints, shaping and being shaped by human actions. Digital transformation, characterised by the rapid integration of digital technologies into various aspects of society, has profoundly reshaped how individuals interact, work, and communicate (Dengler and Matthes, 2018). This transformation is not merely technological but deeply social, affecting power dynamics, organisational practices, and societal norms (Ndemo and Weiss, 2017; ElMassah and Mohieldin, 2020). Structuration theory provides a lens through which to understand how digital change drives social transformation, as it accounts for the complex interplay between technological advancements and social structures.

A study by Mead and Neves (2018) examined influences of household-level technology adoption, using a synthesis of the actor-network theory and the structuration theory to examine reciprocal relationships between social structures and individual agency over time. The study found that in considering technology adoption over life course was an important consideration, with different stages of life influencing nature of technology adoption, consistent with structuration theory (Mead and Neves, 2018). A similar study by Avelino et al. (2019) examining transformative social innovation and disempowerment focused on concepts of social innovation, system innovation, game changers and narratives of change applied to case studies in impact hubs, time banks and credit unions. From these case studies, the study demonstrated that understanding these concepts and their empirical manifestation helps understand shifts in societal power relations and the changing role of the welfare state (Avelino *et al.*, 2019).

Digital platforms such as social media and e-commerce sites have introduced new power dynamics in society (Sutherland and Jarrahi, 2018). These platforms act as structures that influence how individuals and organisations operate, often centralising control in the hands of platform owners while dispersing agency among users (Sutherland and Jarrahi, 2018; Rushambwa and Ndhlovu, 2023). Structuration theory explains this by illustrating how these platforms are sustained by the actions of users who generate content, engage in transactions, and contribute to the platform's growth. Simultaneously, these platforms impose rules and norms that guide user behaviour, such as content moderation policies and algorithmic curation. Thus, digital platforms exemplify the duality of structure, as they are both shaped by and shape the actions of their users (Gautier, Madio and Shekhar, 2021).

Research method

Research design

The present research adopts a qualitative approach in analysing the effects of digital transformation on existing social contracts. In implementing this approach, the inductive thematic analysis (ITA) method proposed by Boyatzis (1988) is utilised. ITA is a widely used method in qualitative research, particularly for identifying, analysing, and reporting patterns (themes) within data (Clarke and Braun 2017). It allows researchers to move from specific observations to broader generalisations, providing insights into the underlying themes of a data set. Essentially, thematic analysis transforms qualitative unstructured data into quantitative structured data, with codes functioning as containers for evidence and their broader categorisation into themes functioning as variables at higher levels of abstraction (Boyatzis 1998). Boyatzis (1998) presents ITA as a systematic process for theme identification, enabling researchers to analyse qualitative data rigorously and transparently.

Table 1: Inductive thematic analysis (Boyatzis 1998)

Phase	**Information on procedural implementation**	**Implementation in present study**
Data familiarisation	The phase involves immersing oneself in the data through repeated readings or viewings of the material, whether it consists of interview transcripts, focus group discussions or field notes. Familiarisation is critical because it allows the researcher to develop an overall sense of the information and begin noticing potential patterns or recurring ideas. As a researcher reads and re-reads the material, the goal is not only to understand the content but to actively engage with it, asking questions such as: "What are the participants trying to say?" and "What insights can I derive from their words?" This step provides a foundation for identifying meaningful segments of	In this first phase, the transcripts from the Davos conference forum discussion were read while going through the conference presentations and discussions. The transcripts from Davos conferences on digital transformation (2018–2020) were thoroughly read with initial identification of broad themes and outlines such as artificial intelligence (AI) ethics, cybersecurity, global digital governance, sustainability, and the role of Big Tech. Repeatedly reading the transcripts allowed the researcher to gain a comprehensive understanding of the key discussions, arguments, and sentiments expressed by forum participants.

	data that will later be coded and analysed.	Notes were taken on recurring issues or notable comments that resonated with the broader conference themes. For instance, discussions on AI ethics might highlight tensions between technological innovation and ethical concerns, or conversations about cybersecurity might underscore the growing need for international regulation.
Generating initial codes	After gaining a comprehensive understanding of the data, the next step is to generate initial codes. Coding involves organising the data into manageable segments that reflect attributes or patterns within the material. Boyatzis emphasises that coding should be done in a systematic manner to capture all potentially relevant segments, even if they seem trivial at first. In this phase, the codes are descriptive and data-driven rather than theory-driven, meaning they emerge directly from the content without the imposition of preconceived theoretical constructs. This open coding method ensures that the analysis remains inductive, allowing the data to shape the	Each transcript was broken down into smaller segments (sentences or paragraphs) that captured a distinct point or idea. These segments were labelled with initial codes that summarised their content. Open coding was done through generating descriptive codes based on the data. For example: ▪ Statements about the risks of AI were coded as 'AI risks'. ▪ Comments on the need for better regulations were coded as 'governance needs'. ▪ Discussions of inclusive technology were labelled as 'digital inclusion'.

	themes that will eventually emerge. During this phase codes should be written in a clear and concise manner, using phrases or words that encapsulate the essence of the data being coded.	▪ References to using technology for sustainability were labelled 'tech for sustainability'. The codes at this stage were purely inductive, emerging from the data and hence data-driven.
Searching for themes	Once initial coding is complete, the next step is to search for themes. Boyatzis (1998) defines a theme as a pattern that captures something important about the data in relation to the research question. Themes are broader than codes and typically incorporate multiple codes that share a common feature or address a particular aspect of the research topic. In this stage, the researcher reviews the codes and examines how they can be grouped or connected to form overarching themes. These themes are not fixed but are often fluid and subject to revision. As themes emerge, the researcher may revisit the raw data to ensure that the identified patterns accurately reflect the content.	Once the coding process was complete, broader themes that connect the various codes were identified. This involved grouping similar codes together and determining overarching patterns. Theme identification: For instance, several codes like 'AI risks', 'data privacy', and 'job displacement' were grouped under a broader theme of 'AI ethics and societal impact'. Similarly, 'governance needs' and 'global digital regulation' were grouped under 'global digital governance'. Theme development: Some potential themes emerging from the Davos transcripts included; ▪ AI and automation ethics: Exploring concerns about the

	Boyatzis suggests that themes should be flexible enough to capture the richness of the data while also being specific enough to provide clarity and insight.	implications of AI for jobs, privacy, and bias. ▪ Cybersecurity and trust: Examining the need for stronger global frameworks to address cyber threats and build trust in digital systems. ▪ Digital inclusion and inequality: Discussions around ensuring access to digital technologies for marginalised communities. ▪ Tech for sustainability: How digital technologies, like AI and IoT, are being used to address climate change and environmental challenges.
Reviewing themes	After identifying preliminary themes, it is essential to review and refine them. Boyatzis advises researchers to assess whether the themes are coherent, internally consistent, and reflective of the data. During this stage, it is common for themes to be split, combined, or even discarded if they do not hold up on closer inspection.	After developing initial themes, they were reviewed and refined. This ensured that the themes accurately represent the data and are neither too broad nor too narrow. • Internal consistency: The coded data within each theme was re-examined to ensure coherence. For example, does the theme 'AI and automation ethics' consistently capture all the concerns expressed

	The review process involves two levels: the first is a review of the coded extracts to ensure that they accurately represent the themes, and the second is a more global review, where the researcher evaluates how the themes work together to tell a compelling narrative about the data set. It is crucial to consider whether the themes make sense in relation to the broader research context and research questions.	about AI, or are there codes that don't quite fit? • Checking against the data: The original transcripts were revisited to confirm that the themes reflect the underlying content of the discussions. If some data points did not fit neatly into any theme, new themes were created, or existing ones modified to accommodate them.
Defining/ conceptualising and naming the themes	Once the themes have been refined, the next step is to define and name them. Boyatzis highlights that defining themes involves clearly articulating the essence of each theme and identifying what makes it distinct from other themes. The goal is to create a detailed description of each theme that includes both the core idea and the various nuances and complexities that emerged during the analysis. Naming the themes is also important, as it helps capture their	Once the themes were finalised, they were defined and named. This involved creating clear and concise descriptions of each theme, detailing what it captures and why it is significant in the context of digital transformation at Davos. Theme definitions: • AI and automation ethics: This theme captures the concerns raised by participants regarding the ethical implications of AI, including job displacement, data privacy, bias in

	meaning in a succinct and easily understandable way. The names should be informative and reflective of the content they represent, ensuring that anyone reading the analysis can grasp the central idea of each theme in brief.	algorithms, and the need for ethical AI frameworks. • Cybersecurity and trust: This theme reflects discussions about the increasing importance of cybersecurity in an interconnected world, and the need for global cooperation to safeguard against cyber threats. • Global digital governance: This theme highlights the discussions surrounding the creation of a coherent international framework to govern the digital economy, focusing on data privacy, cross-border data flows, and regulation of big tech companies. • Digital inclusion and inequality: This theme covers discussions on the need to address the digital divide, ensuring that technological advancements benefit all, including marginalised communities in developing countries. • Tech for sustainability: This theme encapsulates how digital technologies, such as

		AI and IoT, can be used to address global sustainability challenges, including climate change, renewable energy, and precision agriculture. • Theme naming: The researcher ensured that each theme is named in a way that encapsulates its essence and is easily understandable to others, succinctly conveying the content of the themes.
Substantive writing or writing a report	The final step in inductive thematic analysis is producing the report or presenting the findings. Boyatzis (1998) stresses the importance of weaving the themes together into a coherent narrative that addresses the research question and contributes to understanding of the data. In the report the researcher explains how the themes were identified and offers a rich, detailed description of each, often supported by illustrative quotes from the data. The aim is to present the analysis in a way that provides meaningful insights while remaining	The final step involved writing a report based on the thematic analysis. The report presented the findings in a clear and logical manner, demonstrating how the themes were developed and how they answer the research question or reflect key issues discussed in the Davos forums. • Narrative development: The researcher organised the themes in a way that tells a compelling story about the evolution of digital transformation discussions at Davos. For example, concerns about how AI ethics have evolved over time or how global digital

	transparent about how the conclusions were reached. Boyatzis emphasises the need for the report to be clear, logical, and grounded in the data, allowing the reader to understand both the process and the findings.	governance has become more urgent considering recent technological advancements. • Supporting data: Quotes from the transcripts were used to illustrate each theme, providing direct evidence from the forum participants. • Conclusion: Concluding was accomplished through summarising the key insights gained from the thematic analysis and how they contribute to understanding the direction of digital transformation as discussed at Davos.

Data and data analysis

This study uses data obtained from focus group discussions on digital transformation conducted between 2018 and 2020 with representatives from different countries across the world by the World Economic Forum (WEF 2021). The Davos conferences organised annually by the WEF in Davos, Switzerland, have long been a platform for global leaders, industry experts, and academics to discuss pressing issues facing the world. From 2018 to 2020, digital transformation was a recurring theme at these conferences, reflecting its growing importance in shaping economic, political, and societal trends (WEF 2021). These conferences highlighted key issues like the impact of the Fourth Industrial Revolution (4IR), artificial intelligence (AI), cybersecurity, and the role of technology in addressing global challenges.

From Davos 2018 to 2020, the WEF's discussions on digital transformation shifted from exploring the opportunities offered by the 4IR to focusing on the need for governance and regulation in an increasingly digitalised world. Over these three years, the importance of harnessing technology for sustainable, inclusive development became clear, along with the growing challenges related to cybersecurity, AI ethics, and digital inclusion. As digital transformation continues to evolve, the discussions and initiatives from these conferences remain critical to shaping how societies and economies adapt to the changes brought by technology. The data recordings are distributed on the YouTube channel of the WEF under the Creative Commons Public License which permits use and sharing of the materials provided in the public domain (WEF 2021).

Using Boyatzis' (1998) ITA framework, we analysed forum discussion transcripts from the Davos conferences on digital transformation (2018–2020) to provide a structured and data-driven approach. This method allowed the researcher to identify recurring themes, patterns, and insights that emerged directly from the data. The implementation of this framework in the present data analysis for this study is shown in Table 1, and the results are presented in the next section.

Using Boyatzis' (1998) ITA framework to analyse forum discussions from the Davos conferences (2018–2020) provided a systematic approach to understanding the evolving discourse on digital transformation. By following the steps of familiarisation, coding, theme identification, reviewing, and reporting, a robust analytical strategy that captured the diverse perspectives, challenges, and opportunities related to technology and governance raised at these global forums was developed. This method ensured that the analysis remained grounded in the data, allowing for meaningful insights to emerge directly from the participants' discussions.

Findings

Theme 1: Challenges posed by digital transformation

The key points revolve around the challenges and implications of digital transformation, including job displacement, labour market changes, economic vulnerability, and social implications. From job displacement and economic restructuring to the rise of gig economies and globalised production, these themes provide a structured way to understand the profound societal and economic shifts underway in the 4IR.

Table 2: Development of themes on challenges of digital transformation

Initial codes	Themes	Theme definition

Job displacement: References to the potential loss of jobs due to automation and technological change Blended jobs: Idea of jobs being a blend of human and technological elements New job environment: Creation of new types of jobs – self-employment through digital platforms Disrupted jobs: Jobs being negatively impacted or displaced by technology Just transitions: The need for fair transitions for workers impacted by technological disruption	Job displacement and economic restricting (job displacement, blended jobs, disrupted jobs, new job environment, just transitions)	This theme captures the challenges digital transformation poses for traditional jobs and employment structures. Automation and technology are displacing some jobs while blending others with tech, and there is a need for fair transitions for workers impacted by these changes.
Remote production: The ability to produce in one country while residing in another due to digital connectivity Cross-border economic changes: Discussions on tax and labour market issues across borders in the digital economy	Globalised labour and production (remote production, cross-border economic changes, new job environment)	Digital platforms are enabling labour and production to become more global, allowing workers to innovate in one country and produce in another. This theme captures the cross-border implications of digitalisation in terms of

New job environment: Creation of new types of jobs – self-employment through digital platforms		labour, production, and taxation.
Innovation disruption: The notion that innovation while beneficial disrupts industries and job structures	Disruption through innovation and technology (innovation disruption, IoT hype, tech and economic models)	Innovation drives disruption not only in industries but also in labour markets and economic systems. This theme explores how the overhyped focus on technologies like IoT can overshadow the broader structural changes they bring to industries and the economy.
IoT hype: Overemphasis on the Internet of Things (IoT) without fully understanding its broader implications		
Tech and economic models: The relationship between technology and the economic systems they are integrated into		
Economic vulnerability: Economic challenges tied to the global adoption of technology, especially in struggling economies	Economic vulnerability and government challenges (economic vulnerability, government challenges, wealth inequality)	This theme deals with the economic instability caused by rapid technological change, particularly in struggling economies. It highlights the difficulties governments face in managing these shifts and the discrepancy between the promised wealth creation and the reality of economic inequality.
Government challenges: Struggles faced by governments in responding to economic and technological shifts		
Wealth inequality: Disparities in economic benefits promised by technology versus the real		

challenges of infrastructure funding		
Social safety net gaps: Limitations in the social protections for workers engaged in gig and platform economies	Worker control and social protections in the gig economy (social safety net gaps, algorithmic control)	This theme focuses on the experiences of workers in gig and platform economies, such as Uber drivers, who lack full employment protections and are subjected to algorithmic control. It highlights the limitations in the social safety net for these workers.
Algorithmic control: The control that digital platforms (e.g. Uber) exert over workers who rely on these systems for employment		

Reviewing the themes above shows that the themes on job displacement and economic restructuring and globalised labour and production are closely linked, as they both focus on the effect of digital transformation on employment. The difference lies in the former focusing more on job loss and restructuring, while the latter emphasises the cross-border nature of digital labour; that is. a focus on the local dimension of job loss and restructuring in the former theme and global dimensions of such change in the latter. Disruption through innovation and technology connects with both themes, as technological innovation is the underlying cause of job displacement and globalisation. Economic vulnerability and government challenges reflect the larger-scale societal and governmental challenges in responding to these disruptions. Finally, worker control and social protections in the gig economy introduce a focus on the individual worker's experience, particularly in precarious gig-economy jobs.

Job displacement and economic restructuring

This theme covers the ways in which digital transformation is causing significant shifts in the employment landscape. It includes job loss due to automation, the creation of new types of blended jobs, and the need for just transitions for displaced workers:

> *"And we need to add a few more things now because there will be displaced workers. I mean, the jobs – we can argue about whether there will be more jobs or less jobs."*

"We're not prepared to give up on full employment, so we hope those statistics are right, and more. But it will be, in fact, the case that, while there will be melded or blended jobs with technology, there will be displacement"

"Now, there are going to be jobs that are disrupted as well and we can, again, within the social contract, above that labour guarantee, we can actually put the just transitions principles, so they're worked out with the B team. We're trying the ILO's just transition principles translated into business-speak about how you engage the workforce in the change from the beginning."

Globalised labour and production

This theme explores how digital platforms are enabling remote production and cross-border labour markets, creating new opportunities but also new challenges in terms of taxation and labour rights:

"The second thing which is also challenged with all of this because when you do global digital platform you have a total new job environment."

"People that can sit in one country, innovate a product and 3D print it in another country, they are self- employed."

"Labour market, you're going to sit in one country and produce in another country. Borders being the way you deal with things. Labour market, products, and of course taxes we're discussing constantly right now between countries, but there's so many other things that this economy will give you and it has to be there; if not we're going to have urbanisation, centred on a few places on earth."

Disruption through innovation and technology

This theme highlights the disruptive power of innovation, focusing on the challenges industries face in adapting to new technologies like IoT and the broader economic implications of integrating these innovations. The theme also discusses technology and innovation as a constant feature of historical development and advance, with solutions always being required. What is different about the current phase of technology change is the rapidity and pervasiveness of change and transformation and the ability of policy to meet the demands of rapid technological change:

“There's definitely a rapid change going on right, innovation is always disruptive and every technology that's ever been invented has caused great fears”

“Because in many cases what's happened? Is that with IoT? Everybody has fallen in love with the word and the technology behind it, without really understanding how it's fundamentally shaking up everything from design to aftermarket value.”

“It's not about technology because we've been dealing with technological change Displacement, the issues around upskilling new industries for decades, we accept that it will be deeper and faster for us.”

“I think the biggest opportunity is the people who are getting into the workforce are really not well trained on some of the new skills that are really required. That's what I call this, digital literacy and some of the emerging areas. The academics need to focus a lot more on making the graduates highly employable and well trained”

Economic vulnerability and government challenges

This theme discusses the economic challenges that arise from digital transformation, particularly in vulnerable economies, and the difficulties governments face in managing these changes and funding infrastructure:

“It's about what kind of economic model is technology being grafted onto, if you look at the global environment right now you all know the economic vulnerability”

“I think we have a huge divide, you know governments are struggling. It's that simple. You know the economic vulnerability and the orthodoxy that demand will come back if we are just actually, you know, graft on technology.”

“I've heard some massive figures – three trillion dollars will be added to wealth – you know, I just don't believe it when we can't raise about 700 billion for the G20 commitment to infrastructure ... the fastest, indeed medium to moderate, a multiplier of jobs, then you know that's just a massive overstatement”

Worker control and social protection in the gig economy

This theme focuses on the experiences of gig economy workers who lack full employment protections and are often controlled by the algorithms of digital platforms, highlighting gaps in social safety nets:

"Just in my brief conversations with Uber drivers, I can sense that their behavioural options are limited, so in a way they don't enjoy the benefits of full employment right, the social safety nets of full employment, and yet they are in a way subservient to the algorithm, they have to answer the call"

"When I take Uber, because actually in a city like San Francisco it has positively transformed the city. I used to live in San Francisco and it's a nightmare getting taxis at that time, you know, 15–20 years ago was a nightmare getting taxis. Hills make it not easy to walk everywhere."

Theme 2: Digital inequalities and the digital divide

This ITA reveals how digital transformation is shaping social, economic, and political structures, with a clear focus on inequality and opportunities.

Table 3: Developing themes on digital inequalities and the digital divide

Initial codes	Themes	Theme definition
Digital access and resource inequality: "Existing technology is not implemented on an equitable basis across the world" "More advanced systems and entrepreneurship … becoming more and more elite-oriented" "There was going to be this massive divide between people who were online and people who were not" "Cloud technology that's available all over … access to world-class technologies"	Digital inequality and access to technology (digital access and resource inequality, global digital divide)	This theme focuses on unequal access to digital resources and technologies, highlighting disparities between developed and developing countries, urban and rural populations, and the need for equitable access to the digital economy.

Global digital divide: "85% of households have access to internet … in Africa it's 18%, in the least developed counties it's 14%" "Countries like India, Bangladesh, Sri-Lanka… for us technology is not a question of if and when, it's got to be used now"		
Digital literacy and skills development: "Digital literacy is the biggest divide … skills development" "People getting into the workforce are really not well trained on some of the new skills" "… concerned about the skills they need to acquire"	Skills development and digital literacy (digital literacy and skills development)	This theme explores the concern about the lack of digital literacy and necessary skills for new jobs emerging from the digital transformation. It emphasises the need for education systems to focus on equipping the workforce with relevant skills.
Economic inequality and job displacement: "Technology has created opportunity and divides … how do we absorb this technology, so we make sure people are reskilled" "Technology makes the pie bigger, but there is no	Economic inequality and technological disruption (economic inequality and job displacement)	This theme discusses the economic consequences of digital transformation, including job displacement, stagnation of median incomes, and the widening gap between those who benefit from technological

economic law that says everyone is going to benefit" "Not everyone has access to this transformative technology"		advancements and those left behind.
Role of public versus private sector: "The data capabilities of the private sector … lack of those capabilities in the public, civic and non-profit sectors" "Private sector is developing … must be made available for public purposes" AI and global power dynamics: "The country that controls AI will control the world" "Technology inequality … is AI held by certain companies or countries?"	Power dynamics in the digital age (AI and global power dynamics, role of public vs private sector)	This theme highlights the global competition for technological dominance, particularly in AI, and discusses the power dynamics between the public and private sectors in controlling and utilising technology for societal impact.
Opportunities for technology leapfrogging: "Marginalised communities … Africa leapfrogging" "Low-developed countries can mitigate their absence of	Leapfrogging and opportunities for marginalised communities (opportunities for technological leapfrogging)	This theme covers the potential for developing countries, especially in Africa, to leapfrog traditional development stages through the rapid adoption of digital technologies, thus

physical infrastructure by way of technology"	compensating for the lack of physical infrastructure.

Digital inequality and access to technology

This captures the pervasive digital divide and the challenges of providing equal access to transformative technologies globally:

> *"We want to make sure that this cloud technology that's available all over, so we're going to, you know, make it possible for them to get a billion dollars versus NGOs, civic organisations and researchers, so that they can access the world-class technologies, not just to consume it but to create their own world-class solutions"*

> *"In least developed countries the biggest gap is in rural areas and that's what those countries rely on, the rural economies to develop. So if we have no access there, we will have highly distorted economies that don't work."*

Skill development and digital literacy

This theme reflects concerns about the preparedness of the workforce to adapt to new digital economies, highlighting gaps in education and training:

> *"They are concerned they, 40% of them believe that a robot and AI system will take away the job that they see today or that they do today. But surprisingly that also is not something that they are concerned about, because they believe that that will free them up and will create an opportunity for them to do something else."*[i]

> *"However, their concern around the skills that they need to acquire around the education, around the availability of the jobs and around in particular inclusion, because there is a sense that more advanced systems and entrepreneurship, and so forth are becoming more and more elite-oriented and applicable to a small percentage of the population."*

> *"Just not provide access to the technology, which is important because that will drive opportunity and quality and eliminate that divide. But how do we absorb this technology, so we make sure people are reskilled in the workforce, that people are able to embrace that technology, that we don't have massive job loss without massive job creation and just transition?"*

> *"From my perspective, I think digital literacy is the biggest divide, from a digital literacy perspective. I think the biggest opportunity and area where we can make the biggest impact will be in the area of skill development."*

Economic inequality and technological disruption

This theme discusses the uneven distribution of the benefits of digital transformation, focusing on job displacement and economic stagnation for certain groups:

> *"Will technology play a role helping us achieve that? Well we share technology because we know now existing technology is not implemented on an equitable basis around the world, which might do something about development."*

> *"Even in those early days of the digital revolution, the digital economy, we understood that there was going to be this massive divide between people who were online and people who were not."*

> *"I think we obviously live in this world where we have massive digital transformation in this Fourth Industrial Revolution. And this is very different than any of the other industrial revolutions, because the convergence of all these amazing technologies has created opportunity and divides, as you suggested."*

> *"While the technology makes the pie bigger, there is no economic law that says everyone is going to benefit, and unfortunately the challenge that I've been worrying about a lot is that median income has stagnated, which means half of the population in the US and other developed countries has not been participating in this bounty that the digitisation has created."*

Power dynamics in the digital age

This theme emphasises the role of AI in reshaping global power structures and the need for collaboration between the public and private sectors to ensure equitable technological progress:

> *"I think about that is not so much a technology, it's society, government, public sector, private sector, working together hand in glove to effectively absorb those technologies."*

> *"I agree with much of this, but the divide I'm most focused on is the emerging gap between the data capabilities of the private sector, which are immense and growing*

exponentially, and the lack of those capabilities in the public, civic and non-profit sector."

"AI aspects or some of the potential to displace jobs, then of course there's the issue about digital inequality and the fact that not everyone has access to this amazing new transformative technology."

Leapfrogging and opportunities for marginalised communities

This area explores how digital technologies offer opportunities for rapid development in less-developed regions, bypassing traditional infrastructure challenges:

"Directed towards technologies that will ensure that the underdeveloped countries, low-developed countries and emerging markets adopt use of these technologies. These countries don't have the luxury of 30, 40, 50 years of economic development to build their physical infrastructure, the roads, ports, airports, etc. – they don't have the luxury but thankfully they can mitigate their absence of those hard infrastructure by way of technology."

Theme 3: Platforms and employment

The analysis reveals critical themes around the evolving nature of work in the gig and platform economies. The displacement of workers and the precarious nature of gig work require solutions like reskilling, while platforms are seen as enablers of entrepreneurship and economic participation. The global reach and network effects of platforms highlight their potential to transform industries, although issues of trust, accountability, and cybersecurity remain prominent concerns. Finally, platforms are emerging as powerful ecosystems fostering innovation and long-term growth.

Table 4: Developing themes on platforms and employment

Initial codes	Themes	Theme description or definition
Precarity in work (job instability, gig economy, displacement of workers, and lack of long-term planning)	Precariousness in the gig economy	This theme emerges from the highlighted precarity of workers who rely on platform-based jobs.

		These workers face constant instability, with little ability to plan their financial future or career trajectory. Precariousness of platform work, where displaced workers cannot effectively plan their working life or income, raising the need for intervention to 'fix' this problem.
Reskilling imperative (continuous education, individualised training, upskilling amortisation, and the impact of rapidly diminishing skills)	Reskilling and upskilling for the future	The discourse emphasises the necessity of continuous education in response to the rapid obsolescence of skills. The concept of amortising reskilling costs shows a shift toward recognising the value of human capital in the digital economy.
Customisation and personalisation of training (the call for individualised approaches to training and upskilling, aided by platforms like social media)	Customisation of training and education	The rise of digital platforms provides a pathway for customised education solutions tailored to individual needs.
Platforms as facilitators of micro-entrepreneurship (platforms like Airbnb and YouTube empowering individuals, the importance of tools provided to creators,	Micro-entrepreneurship through platforms	Platforms like Airbnb and YouTube allow ordinary individuals to become micro-entrepreneurs, enabling them to participate in the global economy without significant

and platform effects on global participation)		upfront investment. Airbnb hosts are likened to micro-entrepreneurs who can leverage platform-provided tools to deliver hospitality services. These platforms democratise access to global markets, empowering small actors to contribute to and benefit from the global economy.
Regulation, trust and accountability (platform governance, the shifting role of regulation from governments to platforms, and the issue of maintaining trust in platform systems)	Regulation and accountability of platforms	The increasing role of platforms in regulating economic activities traditionally controlled by governments raises questions about accountability. Platforms are taking on roles typically handled by government regulators, using machine learning to set and enforce standards. However, the need for trust in these systems is crucial for their long-term success.
Network effects and ecosystems (the concept of platforms creating ecosystems of value exchange, leveraging network effects for business growth and innovation)	Technological ecosystems and network effects	Platform economies create ecosystems where value is exchanged across interconnected actors. This theme is especially evident where the discussion of network effects shows how

		platforms like Airbnb benefit from the vast user-generated content and data, enabling rapid scaling and business success. The interconnectedness of these ecosystems leads to innovation and stronger collaboration across industries.
Data privacy and security (concerns surrounding cybersecurity, data integrity, and the complexity of ensuring privacy when platforms handle vast amounts of information)	Cybersecurity and data privacy	As platforms scale, concerns about data privacy and security become paramount. Data privacy and security focuses on the technical and ethical challenges of managing data within platform ecosystems, particularly in industries like healthcare where sensitive information must be protected. This highlights the need for robust cybersecurity frameworks to ensure the trust and integrity of platforms.
Industry expansion and monopolisation (expansion of platforms into neighbouring industries, the risks of monopolisation, and	Expansion of platforms into new industries	Platforms are expanding into adjacent industries, transforming traditional business models. Platforms like Google and Facebook have gradually

how these platforms navigate new sectors)	blurred the lines between their core businesses and new sectors, demonstrating the adaptive nature of platform capitalism. However, this expansion brings concerns about monopolisation and the consolidation of power within a few dominant platforms.

Displacement and precarity of workers in the gig economy

Workers in the gig economy are experiencing job displacement and precarious working conditions. This theme emphasises the inability of gig workers to plan their careers or income, highlighting the need for innovative solutions to improve work stability. Several excerpts highlight issues faced by workers in the gig economy, including job insecurity and lack of income stability:

> *"So, as we're seeing displaced workers by platform work, where you are terribly precarious, you can't actually plan your working life or your income ..."*

> *"Yes, I think we should use the Fourth Industrial Revolution to solve this problem ..."*

Need for reskilling and lifelong learning

The necessity for continuous reskilling, especially in the gig economy, was emphasised. The French government's initiative of individualised reskilling programmes is seen as a model to follow. The loss of skills over time underlines the need for lifelong learning, with a focus on continuous education and the need for workers to reskill as the technological landscape rapidly evolves. There was a call for individualised approaches to training and upskilling, aided by platforms like social media:

> *"Instead of taking a risk in upskilling and reskilling as a cost, let's take it as a capital amortisation and amortise your cost of reskilling ..."*

"And have them develop their own dashboard about their customised, personal needs for training and overcoming poverty."

Platform economy as an enabler of entrepreneurship

Platforms like Airbnb and YouTube are portrayed as empowering individuals to engage in entrepreneurial activities. These platforms provide the necessary tools and support systems to regular individuals, enabling them to participate in the global economy. Platforms such as these have enabled regular people to become entrepreneurs who participate in global markets:

"Nathan Blecharczyk, exactly, we're actually not the service provider, we are the facilitator ..."

"I like to think of the host as a micro entrepreneur, and we're giving them a hospitality toolkit ..."

Platform effects and global market reach

The global reach of platforms and their network effects are highlighted, where word-of-mouth and user-generated content increase participation and market reach. These platforms create opportunities for providers and consumers globally, aggregating demand that might not be accessible otherwise. Platforms foster collaborative ecosystems that benefit from network effects, creating value exchanges and fostering innovation:

"Yeah, as we start getting properties around the world, the Airbnb service becomes better ..."

"We see this in other forms of sort of advertising-supported content through Google and Facebook..."

Shifting roles of platforms and traditional companies

The distinction between platforms and traditional companies is becoming blurred. Platforms like Uber and Airbnb are playing a role traditionally reserved for companies or regulators, influencing pricing, inventory control, and even regulatory functions:

"I mean if you think about Airbnb as an example, they are a marketplace ..."

"I see a blurring of lines between platforms and regulators ..."

Trust, accountability, and security in the platform economy

Platforms are increasingly trusted to manage complex data flows, privacy, and security, but this delegation of responsibility also raises questions about accountability. The ability of platforms to manage cybersecurity and data integrity is crucial, particularly when dealing with sensitive information like health data. There are concerns about the expanding power of platforms in regulatory spaces traditionally controlled by governments, and the challenges of maintaining trust and accountability. The importance of secure data management within platforms and the complexities involved when platforms share data across industries were also mentioned:

> *"So, we have to sort of come up with systems in which the platforms sort of are the entity to which you delegate some of that responsibility ..."*

> *"Important in the platform economy is the cybersecurity ..."*

Platform innovation and ecosystem creation

Platforms are not just intermediaries but are seen as ecosystems that foster innovation, value exchange, and loyalty. By creating interconnected systems where value is shared, platforms are able to drive growth and maintain competitiveness in a rapidly changing digital landscape. The ongoing evolution of platforms expanding into adjacent industries raised concerns about monopolisation and value extraction:

> *"The other thing I thought about is that we actually embraced ... the power of creating a platform ..."*

> *"What we created was an ecosystem of value exchange ..."*

The analysis reveals critical themes around the evolving nature of work in the gig and platform economies. The displacement of workers and the precarious nature of gig work require solutions like reskilling, while platforms are seen as enablers of entrepreneurship and economic participation. The global reach and network effects of platforms highlight their potential to transform industries, although issues of trust, accountability, and cybersecurity remain prominent concerns. Platforms are emerging as powerful ecosystems fostering innovation and long-term growth.

Theme 4: New social contract

The data provided excerpts related to the theme of social contracts, economic inequality, labour market dynamics, and skill development in the context of the Fourth Industrial Revolution. There is a consistent discussion about the need for a new, reinvigorated social contract that addresses the evolving labour needs, worker security, and the impact of globalisation and technology.

Table 5: Developing themes on new social contracts

Initial codes	Theme	Theme definition
Social contract: The need for a renewed social contract, the role of government, unions, and companies in building a collaborative labour market	Renewed social contract	This theme encapsulates the necessity of creating a more inclusive and fairer social contract to address inequality and the shifting dynamics of the labour market in the Fourth Industrial Revolution. Multiple stakeholders, including the government, unions, and companies, need to collaborate to establish labour guarantees and social protection measures.
Upskilling and reskilling: The importance of continuous skills development and lifelong learning due to the rapid pace of technological changes.	Skills development and labour market flexibility	The rapid pace of technological advancement requires workers to reskill and upskill more frequently. Companies and governments must provide frameworks for continuous learning while balancing the flexibility needed by employers with the security desired by employees.
Flexibility and security in employment:		

Balancing and flexibility in labour markets with social protections for workers.		
Inequality and economic participation: Historical levels of inequality and wealth concentration, stagnant wage growth, and minimum living wage.	Economic inequality and wealth distribution	There is a strong focus on economic inequality, wealth concentration, and stagnant wage growth. Calls for universal social protection and minimum living wages are positioned as essential measures to ensure fair wealth distribution and economic participation.
Universal social protection: Calls for universal social protection, minimum living wages, and labour guarantees.		
Globalisation and regulatory framework: The implications of globalisation, the need for international coordination on labour and taxes and	Globalisation and labour regulation	Globalisation has created cross-border labour markets and complicated issues related to tax, labour, and social protections. This theme highlights the need for coordinated international regulatory frameworks to ensure that globalisation benefits all workers.

the role of social regulations.		
Corporate models and labour dynamics: Different employment models offered by companies to address workforce needs, such as entrepreneurial tracks.	Corporate innovation in employment models	Companies are adapting to the needs of Millennial workers by offering flexible employment models, such as entrepreneurial tracks that offer less security but more ownership over innovation. This highlights a shift in employment dynamics within the corporate sector.

Reinvigorated social contract

This theme underscores the importance of establishing a new social contract that involves multistakeholder participation, including governments, unions, and companies, to create a more equitable labour market. The contract should include labour guarantees, universal social protection, and a collaborative framework for addressing worker needs:

> *"We must get the social contract right. The ILO's report released yesterday, already we have inequality at historic levels, so we need to have a renewed social contract for that basis. But, yesterday, the report gives you a very good frame on this. Reinvigorated social contract with a floor of a labour guarantee."*

> *"So of course we need a new social contract because we probably every three to five years need new type of skills in the company … So, we need to get with the public sector of course, seeing that we have a long-time learning from the public sector, but as a company, I mean, the drive for education and self-learning in a company is enormous."*

> *"I'm convinced that globalisation without social regulation – globalisation without regulation will go to the end … And for instance, in the ILO report we will support the idea of universal social protection minimum."*

Continuous skill development

With the rapid evolution of technology, workers need to engage in lifelong learning, reskilling, and upskilling. Both public and private sectors have a role in facilitating these opportunities for workers, while ensuring that employment remains secure:

> *"It means that, yes, we need to reinvigorate the social contract, but this social contract must be a three partite solution, it must be a multistakeholder solution. You have heard Minister Penicaud about the great initiative the French government has taken regarding reskilling."*

> *"This is very good because we see also that it is the responsibility of government in the world to put in place the right framework to allow this transition to upskill and reskill people."*

Addressing economic inequality

This theme captures the need for addressing growing economic inequality through measures like minimum living wages, universal social protection, and fair wealth distribution. Ensuring that workers have a living wage is essential for sustaining economic growth:

> *"So, a minimum living wage, universal social protection, so you have income when you have times when you've been displaced or when, you know, you're raising a family or whatever it might be."*

> *"Universal social protection, a minimum living wage, and the right to bargain collectively."*

Globalisation and regulation

Globalisation has created a complex labour market that requires robust regulatory frameworks. Coordinated efforts between countries are necessary to ensure fair labour practices and address the challenges of cross-border production and taxation:

> *"Now, there are going to be jobs that are disrupted as well and we can, again, within the social contract, above that labour guarantee, we can actually put the just transitions principles … if you engage your work force, if you have secure pensions for those who are going to retire, perhaps earlier than they might want, if you have the skills support we're talking about redeployment support and income through the transition, it works."*

Corporate innovation in labour models

The corporate sector is responding to the evolving demands of workers by offering flexible employment models. Entrepreneurial tracks are becoming popular, particularly among millennials, reflecting a shift in how companies engage with their workforce:

> *"... two tracks now in terms of employment that they offer when people come into the company: they offer a traditional track, you have benefits and slow and steady path, more security, and they offer an entrepreneurial track and when you come in, you don't get the same kind of benefits, but you have a piece of whatever innovation that is more of kind of a venture capital model. 70% of the millennials are choosing that model, which I found was quite fascinating."*

Discussion of results

In the age of digital transformation, the structuration theory offers a dual perspective: how technological changes and global economic trends (as structural forces) shape human behaviour, and how individual and collective agency can challenge or reinforce these structures to reshape the social order.

The need for a renewed social contract

The thematic analysis highlighted the urgency of creating a renewed social contract, which incorporates the participation of governments, unions, and corporations to ensure that workers' rights and security are maintained. This echoes Giddens' concept of duality of structure, where institutions (such as labour markets and governments) serve both as a medium and outcome of social practices. In the age of digital transformation, as businesses adopt new technologies and automation replaces traditional jobs, workers face unprecedented levels of insecurity. The traditional social contract – built on the assumption of stable, long-term employment – no longer fits the rapidly evolving labour market. A 'reinvigorated' social contract must account for the changing nature of work, where temporary, freelance, and gig economy jobs are becoming more prevalent. While these labour market changes seem structurally imposed, individuals and social groups (such as unions or collective movements) have the power to reshape policy by engaging in social dialogue and advocating for rights like universal social protection, minimum living wages, and flexible employment arrangements. Therefore, social policy must be rethought to ensure that it fosters an enabling environment for both labour flexibility and security. Policies such as lifelong learning, unemployment benefits, and inclusive labour laws can provide the structural support workers need in this era of flux.

Continuous skill development and flexibility in employment

Another theme emerging from the analysis is the importance of continuous skill development. Technological advancements require workers to reskill and upskill more frequently, and as Giddens' theory posits, structures such as educational institutions and corporate training programmes play a pivotal role in either enabling or constraining individuals' ability to adapt to these changes (Canary and Tarin 2017). Structuration theory emphasises that agency is constrained by access to resources, and in this case access to educational opportunities becomes the key to survival in a digitised economy. However, current social structures are ill-equipped to provide the rapid, ongoing training that workers require. Governments, businesses, and educational institutions must therefore collaborate to create institutional frameworks that allow for lifelong learning. As Giddens (1981) suggests, reflexivity – the ability of individuals and institutions to reflect upon and adapt to changing conditions – must become a central feature of educational and labour policies.

Social policy must evolve to support public-private partnerships that facilitate learning in the workplace, as indicated by the analysis. Employers, particularly in large companies, need to implement training programmes that equip workers with skills for the digital economy, while governments should provide frameworks for upskilling the unemployed. Policies could include tax incentives for businesses offering in-house education and subsidised training programmes for disadvantaged groups. This would enable workers to exercise their agency in shaping their future in the labour market, while reinforcing the structure of continuous learning and development.

Addressing economic inequality and wealth distribution

Economic inequality emerged as another key theme from the analysis. Structuration theory is especially pertinent here, as it helps explain how the structural distribution of resources – such as income and wealth – shapes opportunities for individuals to exercise agency. Digital transformation has exacerbated existing inequalities, concentrating wealth in the hands of a few, while large segments of the workforce face precarious working conditions and stagnant wages. Giddens (1981) argues that unequal distribution of resources within a structure limits the agency of those at the bottom of the socio-economic ladder. The analysis reveals growing concern over the need for universal social protection and living wages to address this inequality. In this context, social policy reform must focus on redistributing resources in a way that empowers marginalised groups and enables greater social mobility. Policies aimed at redistributing wealth, such as progressive taxation, universal basic income, or enhanced social welfare programmes, could provide workers with the financial security they need to participate more fully in the digital economy. Moreover, restructuring global supply chains to ensure fair labour practices and wage distribution would allow for a more equitable system in which individuals have the means to thrive in the age of digital transformation.

Globalisation and labour regulation

Digital transformation has blurred geographical boundaries, leading to globalised labour markets, which pose unique challenges in terms of regulation. In the globalised economy flexibility and mobility are emphasised, often at the expense of worker security. The analysis points to the need for international coordination on labour regulations, particularly in areas such as taxes and social protections, to ensure that globalisation does not exacerbate inequality. Global structures are often seen as immutable forces, but structuration theory posits that individual actors (e.g. governments, international organisations) can enact policies that challenge these structures. Rethinking social policy in this context means advocating for global labour standards, enforcing regulations that ensure fair wages and working conditions across borders, and implementing policies that mitigate the negative effects of globalisation on local workers. This might involve strengthening institutions like the ILO and encouraging countries to adopt binding international agreements on labour rights.

Conclusion

This study examined the role of social policy in the age of digital transformation, with a particular focus on the evolving labour market dynamics, economic inequality, and globalisation. Using Anthony Giddens' structuration theory as a conceptual lens, the analysis illuminated the interplay between human agency and social structures, highlighting how individuals, organisations, and governments can actively shape and respond to the structural shifts brought about by technological advancements. The findings emphasised the urgent need for a renewed social contract, the importance of continuous skills development, and the necessity of addressing economic inequality in a globalised digital economy.

Digital transformation is changing the landscape of employment, creating new opportunities while simultaneously exacerbating social and economic disparities. The thematic analysis revealed that policies promoting universal social protection, fair wage distribution, and lifelong learning are critical to ensuring that workers can navigate this new reality. Furthermore, the analysis showed that global labour regulation must be strengthened to mitigate the negative effects of globalisation, particularly in industries that span international borders.

Future research should explore adaptive policy frameworks that can accommodate the rapid pace of technological change while promoting social equity. Specifically, future research should focus on the effectiveness of universal basic income models in different socio-economic contexts as a means of mitigating the impact of job displacement due to automation and digitalisation. Comparative studies across developed and developing economies, including regions such as South Africa, would provide valuable insights into how universal basic income and other social safety net programmes can be tailored to local conditions while addressing global challenges like inequality and labour market instability.

References

Aly, H. (2020) 'Digital transformation, development and productivity in developing countries: is artificial intelligence a curse or a blessing?', *Review of Economics and Political Science* [Preprint].

Avelino, F. (2017) 'Power in Sustainability Transitions: Analysing power and (dis)empowerment in transformative change towards sustainability', *Environmental Policy and Governance*, 27(6), pp. 505–520. Available at: https://doi.org/10.1002/eet.1777.

Avelino, F. *et al.* (2019) 'Transformative social innovation and (dis) empowerment', *Technological Forecasting and Social Change*, 145, pp. 195–206.

Avelino, F. (2021) 'Theories of power and social change. Power contestations and their implications for research on social change and innovation', *Journal of Political Power*, 14(3), pp. 425–448. Available at: https://doi.org/10.1080/2158379X.2021.1875307.

Boyatzis, R. (1998) *Transforming qualitative information: Thematic analysis and code development*. Sage. Available at: https://books.google.com/books?hl=en&lr=&id=_rfClWRhIKAC&oi=fnd&pg=PR6&dq=transforming+qualitative+information+thematic+analysis&ots=ECoMCmal3n&sig=8tDicivEEIRbNeJSHodtQ23oA1g (Accessed: 30 September 2024).

Canary, H.E. and Tarin, C.A. (2017) 'Structuration theory', *The international encyclopedia of organizational communication*, pp. 1–15.

Chatterjee, I., Kunwar, J. and Hond, F. den (2019) 'Anthony Giddens and structuration theory', in *Management, Organizations and Contemporary Social Theory*. Routledge.

Clarke, V. and Braun, V. (2017) 'Thematic analysis', *The journal of positive psychology*, 12(3), pp. 297–298.

Dengler, K. and Matthes, B. (2018) 'The impacts of digital transformation on the labour market: Substitution potentials of occupations in Germany', *Technological Forecasting and Social Change*, 137, pp. 304–316.

Elliott, A. (2020) 'Structuration theories: Giddens and Bourdieu', in *Routledge handbook of social and cultural theory*. Routledge, pp. 57–75. Available at: https://www.taylorfrancis.com/chapters/edit/10.4324/9781315149714-5/structuration-theories-anthony-elliott (Accessed: 29 September 2024).

ElMassah, S. and Mohieldin, M. (2020) 'Digital transformation and localizing the Sustainable Development Goals (SDGs)', *Ecological Economics*, 169, p. 106490.

Gautier, A., Madio, L. and Shekhar, S. (2021) 'Platform duality and network externalities', in *CESifo Area Conference on Economics of Digitization*. Available at: https://www.tse-fr.eu/sites/default/files/TSE/documents/conf/2021/madio.pdf (Accessed: 30 September 2024).

Giddens, A. (1984) 'Elements of the theory of structuration', in *Practicing history: new directions in historical writing after the linguistic turn*. Routledge New York. Available at: https://books.google.com/books?hl=en&lr=&id=Gpd4LAwZrGsC&oi=fnd&pg=PA121&dq=Anthony+Giddens+structuration+theory+&ots=gcubcZfQBa&sig=wcY_CJ4yh6v0WE1oZBUo9_G9Gtg (Accessed: 28 February 2025).

Hanelt, A. *et al.* (2021) 'A Systematic Review of the Literature on Digital Transformation: Insights and Implications for Strategy and Organizational Change', *Journal of Management Studies*, 58(5), pp. 1159–1197. Available at: https://doi.org/10.1111/joms.12639.

Jones, M.R. and Karsten, H. (2008) 'Giddens's Structuration Theory and Information Systems Research', *MIS Quarterly*, 32(1), pp. 127–157. Available at: https://doi.org/10.2307/25148831.

Manda, M.I. and Ben Dhaou, S. (2019) ‘Responding to the challenges and opportunities in the 4th Industrial revolution in developing countries’, in *Proceedings of the 12th International Conference on Theory and Practice of Electronic Governance*. *ICEGOV2019: 12th International Conference on Theory and Practice of Electronic Governance*, Melbourne VIC Australia: ACM, pp. 244–253. Available at: https://doi.org/10.1145/3326365.3326398.

Mead, G. and Neves, B.B. (2018) ‘Recursive approaches to technology adoption, families, and the life course: Actor network theory and strong structuration theory’, in *Connecting Families?* Policy Press, pp. 41–58. Available at: https://bristoluniversitypressdigital.com/edcollchap/book/9781447339953/ch003.xml (Accessed: 10 September 2024).

Ndemo, B. and Weiss, T. (2017) ‘Making sense of Africa’s emerging digital transformation and its many futures’, *Africa Journal of Management*, 3(3–4), pp. 328–347.

Ossewaarde, M. (2019) ‘Digital transformation and the renewal of social theory: Unpacking the new fraudulent myths and misplaced metaphors’, *Technological Forecasting and Social Change*, 146, pp. 24–30.

Potts, R. *et al.* (2016) ‘Exploring the usefulness of structural–functional approaches to analyse governance of planning systems’, *Planning Theory*, 15(2), pp. 162–189. Available at: https://doi.org/10.1177/1473095214553519.

Rushambwa, T. and Ndhlovu, E. (2023) ‘Digital Transformation and Social Change in Africa: Issues in Technology Governance and Social Participation’, in D. Mhlanga and E. Ndhlovu (eds) *The Fourth Industrial Revolution in Africa*. Cham: Springer Nature Switzerland (Advances in African Economic, Social and Political Development), pp. 255–272. Available at: https://doi.org/10.1007/978-3-031-28686-5_13.

Schneidewind, U. *et al.* (2018) *Structure Matters: Real-World Laboratories as a New Type of Large-Scale Research Infrastructure: A Framework Inspired by Giddens’ Structuration Theory*. oekom verlag. Available at: https://doi.org/10.14512/gaia.27.S1.5.

Sutherland, W. and Jarrahi, M.H. (2018) ‘The sharing economy and digital platforms: A review and research agenda’, *International Journal of Information Management*, 43, pp. 328–341.

WEF (2021) *World Economic Forum: Davos 2018 to 2020 Digital Transformation of societies*. Available at: https://www.youtube.com/@wef (Accessed: 30 September 2024).