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The PUBLIC ADMINISTRATION ISSUES journal has been published at the National Research University Higher School of Economics (HSE) in Moscow, Russian Federation since 2007.

The mission of the journal is to create a modern platform of full value for discussion, exchange of international and national experience and specific knowledge among professionals in the field of Public Administration; for working out and further correcting the development strategy of public and municipal administration.

The editorial policy is to provide a very clear emphasis on the specific subject along with a focus on the interconnection of the proper public administration problems with the relative economic, legal, political science and managerial problems, including the interaction of the state and civil society.

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INTRODUCTION

The current issue of the journal «Public Administration Issues» is published in challenging times. It seemed that 2020 and 2021, the years of the spread of COVID-19, mass lockdowns, the slowdown of country economies and restrictive measures in the field of governance, were the «bottom»; an upswing was expected ahead, a return to «normal life». However, these expectations have not been fulfilled, and the new threats and contradictions of 2022 and 2023 have surpassed in scope and consequences for international stability what was previously considered catastrophic. It becomes necessary for public administration to find a new solid ground to be able to go beyond the previous theories and practices of «prosperous times» since they are poorly applicable in survival conditions.

Researchers from different countries and regions are responding to the situation of a complex political, economic, social, civilizational, and inter-country crisis in several spontaneously emerging directions. We have tried to select the articles of this issue in such a way that they reflect the most popular areas of crisis public governance in both theoretical and practical terms. It should be noted that articles on the problems of governance under the conditions of COVID-19 were almost not present in the current editorial portfolio, thereby confirming the thesis about the transition to a new phase of crisis governance priorities.

Traditional priorities of governance and theoretical approaches have become a weak component of national administrative systems and its analytics in the context of the recent crisis. Today it becomes clear that the carriers of administrative systems are not governments, nor individual political actors, but states as a whole. States have their own history, embodied in values, in the vision of relations with other states, in alliances and civilizational missions. The value-based approach to state management does not coincide with the focus on efficient service provision. It raises questions about what is more important: the development of new services, prosperity at any cost, or values; state-public partnership, which is a product of a compromise between lobbying active social groups and business, on the one hand, and the political and bureaucratic elites, on the other, or following the country's non-compromising strategic priorities? These issues are especially acute in countries outside the so-called «developed Western democracies», since researchers of public administration in these countries are less exposed to the traditions of considering governance in the context of the established concepts of NPM, GG/NPG, Neo-Weberian ethics-centric approach. The article from South Africa is fully driven by the quest for a «new theory», it represents one of the «first swallows» of the emerging wave of non-Western-oriented theorizing in the field of public administration.

The search for new theoretical foundations of public administration forces us to rethink the ideas of a steady growth in civic participation in governance, characteristic of «prosperous» times and traditional democracies. In particular, the participation of ethnic minorities at the local level of government may not only expand, but also reduce due to the processes of urbanization, increased unemployment and

poverty (the example of Vietnam). Moreover, the participation of civil society in the management of the resources of national parks in Indonesia encounters fundamental limitations associated with insufficient resources, relationships with the authorities, and the capabilities of local civil society structures themselves.

Human capital is currently becoming the central link in the formation of national public administration systems. It is the human capital that can ensure the adaptation of governance systems to negative changes and crises. The role of human capital in its social, ethnic, and labor aspects is clearly underestimated in traditional concepts of public administration, which assume that exclusively innovative and meritocratic qualities of human capital, regardless of national characteristics and traditions, division into migrants and indigenous people, without a targeted program of social support for special groups of the citizens can improve the quality of management and provision of public services. Authors of the articles in this section pay special attention to national employment programs for the unemployed (Israel), a comparative analysis of programs to support migrant workers and workers of Thai indigenous nationality (Thailand), an affirmative policy regarding the social capital of special social groups at the local level (Indonesia). All these articles show that the regulation of human capital in the current situation needs to be carried out on the basis of country conditions and specifics, and that for developing countries this regulation differs significantly from standard recommendations.

The last section of this issue of the journal deals with the problems of supporting innovation, interaction of urban development projects, and combating corruption in crisis conditions. What unites these seemingly different problems is the fact that the solutions proposed by the authors take into account the complexity of the declining resources for management. So, at the city level, it is proposed to look for a way out, ensure sustainable development and optimize costs due to the synergy of various urban projects (Russia). The energy crisis generated by a combination of corruption, circular debt and insufficient incomes of the population can be overcome only by increasing GNP and improving energy transmission and distribution mechanisms (Pakistan). Finally, the survival of innovative processes in crisis management, as the literature review shows (the last article of the issue, Brazil) should be based on the experience of business, flexibly responding to unstable development. Despite difficult times, it is highlighted in the articles in this section that the progress of administrative systems is possible, but this requires going beyond the established governance schemes, taking into account the specifics, flexibility in development and implementation of managerial solutions.

Concluding the introduction, I would like to draw attention to the wide representation of countries and different regions of the world in this issue of the journal. Nine articles of the issue were written by authors from eight countries, spanning different continents and regions outside of North America and Europe. This feature was also traced in the two previous issues of the journal; it evokes ideas about the emerging trend in research which has both regional specifics and a vector of going beyond the standard theories of public administration.

Issue Guest Editor
Alexey G. Barabashev

Original article

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RE-IMAGINING THE ROLE OF GOVERNMENT (STATE)

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Abstract. This paper responds to calls for more research into public entrepreneurship, for delivering public value as opposed to the narrower view of public goods, and for re-organising states for alternative post-capitalist governance by revisiting a long-term but unresolved academic debate: the role of the state (government). It presents conceptually relevant arguments from seminal and contemporary academic debates on the role of the state and state establishments. It demonstrates that an understanding of the role of the state is a starting point in the reorganisation of states and proposes a novel additional role that most states have not yet considered, as well as identifying the state establishments that are available to assist states in fulfilling the extended role. Propositions were developed to sustain the extended role and to indicate that the approach to re-imagining the role of the state adds value for academic, practice, and policymaker observers. The report concludes by providing avenues for further research opportunities.

Keywords: government role; public enterprises; public entrepreneurship; public value; state; state role; state-owned enterprises.

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Introduction

“In the 19th and 20th centuries, national states were a dominant force, but it seems that a reorganisation of the states in the 21st century is taking place, created by both internal and external reasons (Eichhorn, 2017, p. 51).”

In a bid to better enable states to achieve their socioeconomic mandates and the quest for good governance, two sets of factors began to interact in the 1980s raising questions about some of the core precepts of the administrative state. First, there was a rise in support for a smaller, less intrusive government that burdened people and property owners less financially and administratively (Turner, Donnell and Kwon, 2017). The second reason was a claim that the national debt was out of control and that state and local governments would soon be unable to finance employee health and retirement programmes (Grönblom and Willner, 2014). Two approaches almost immediately emerged in response to these pressures for change, before a third one subsequently emerged. New public management (NPM), which adopted the business or market model as the yardstick for measuring government success, and new public governance (NPG), which emphasises the need for a collaborative approach when providing public services and collaborating with partners within and between public and non-profit organisations. Kettl (2022) refers to a third approach to change, which Pollitt and Bouckaert (2017) call the ‘neo-Weberian strategy’. This more recent approach links non-profit sector social traits with market principles. These three approaches declare themselves to be inclusive: each focusing on a unique set of strategies for reducing the scope, cost, and inefficiencies of the government (Kettl, 2022; Adebayo, 2018; Morgan & Shinn, 2014). However, our experiences with the recent COVID-19 pandemic appear to indicate that it is unlikely that states will remain small (Kettl, 2022; Tam, 2022). Rich states paid for vaccines, and poor states had to rely on the rich ones for supplies (Tam, 2022). This sort of intervention is inevitable (Sancino et al., 2020).

What Pollitt and Bouckaert dubbed ‘neo-Weberian government,’ promoted by ‘continental modernisers,’ has emerged across continental Europe (Kettl, 2022). These authors point out parts of the continental approach to public management that made it ‘Weberian’ and ‘neo’. They argued that what was Weberian has had to do with the state’s role in problem-solving; the representative democracy’s role in securing and ensuring the legitimacy of governmental systems, the crucial role of administrative law in defining the relationship between citizens and the government, and the significance of the public service and its employees in enforcing the law. It seems that Weber himself believed that representational democracy could be a source of legitimacy if it could provide the desired rational policy and results needed (Kettl, 2022; Samier, 2020). They noted that ‘neo’ involved changing the primary focus of bureaucracy from an internal organisation based on expertise and control, to an external focus based on citizens’ needs; creating new methods for incorporating citizen input; changing budgeting to accommodate more emphasis on results than just procedures; and raising the professionalisation of the public service to embrace skills in serving citizens (Kettl, 2022).

Although detailed enough, these approaches are not without limitations (as we will observe below) (for a summary see: Kettl, 2022; Sriram, 2019; Pollitt and Bouckaert, 2017; Mazzucato, 2013). The main limitation is that they pay limited attention to public value. As a result of these limitations, this paper responds to calls for further research into public entrepreneurship (Bernier, 2014), for delivering public value as opposed to the narrower view of public goods

(Mazzucato, 2018), and for re-organising states for an alternative post-capitalist governance (Mazzucato, 2020; Zanoni, Contu, Healy and Mir, 2017).

This conceptual paper revisits a long-term but unresolved academic debate: the role of government. An understanding of this role of government is a starting point in re-organising states for the alternative post-capitalist governance. Thus, this paper further articulates government role, identifies the role which government ought to be performing in order to deliver public value but which is not yet articulated; and aligns the role of the state with government establishments available for delivering public value.

Acknowledging that states usually proceed along different paths in terms of their role and that each state tweaks different forms of approaches to its circumstances (Kettl, 2002), this paper does not address the role of the state in particular states or continents, but generally. Nevertheless, the intention is not to develop a one-size-fits-all argument, but rather to hope that the arguments in this paper trigger some form of reasoning among practitioners, policy makers and public sector role players, which may eventually lead to exploring the broader aspects of the role of the state in this paper.

This paper makes three primary contributions. The first identifies the established role of state. The second extends the role of state by taking into account seven separate but relevant theoretical views (Adam Smith, Beveridge, Keynes, NPM, NPG, Marx and neo-Weberian), in setting the context and developing arguments for the appropriate minimum role of the state necessary for meaningfully re-organising states. The third aligns established and extended state role with state organs that could assist states in fulfilling their role.

Following the introduction, this paper proceeds thus: Section 2 discusses the role of state and forces shaping state's role. Section 3 discusses re-organising states, extends the role of state and presents a synopsis on extended state role and private enterprises, before discussing extended role of state and state establishments. It concludes by providing avenues for further research.

Role of the state and forces shaping the state's role

Although not often debated, there is a clear demarcation between the terms 'government' and 'state'. 'Government' refers to the aggregate of persons that form the system by which a nation or territory is ruled or governed¹, while the 'state' represents an institution of national administration, and it comprises the government, the public service, the judiciary, the police, and the armed forces (Stilwell, 2012). Since government changes over time, the term 'state' may better represent government for the purposes of this study. The role discussed in this paper is for states in general and not for a particular government, considering that different governments usually have different ideologies that determine how they operate. This paper thus proceeds with the term state instead of govern-

¹ Collins. (n.d.). Definition of government. URL: <https://www.collinsdictionary.com/dictionary/english/government> (accessed 16 August 2021); Merriam-Webster (2017). Definition of government. URL: <https://www.merriam-webster.com/dictionary/government> (accessed 16 August 2021).

ment (when referring to states generally and government when referring to particular governments within states), having introduced the subject matter in line with earlier studies (role of government). Also, for the purposes of this study and as used in similar studies, 'state' means the same thing as 'country'.

Deciding what states should do and not do remains a difficult task (Kettl, 2022; Abramov, Radygin and Chernova, 2017). The generally accepted role of the state in any country is complex (Stiglitz and Rosengard, 2015). This complexity stems from three determining factors: ecological, political and ideological (Abramov et al., 2017). Moreover, the role of the state depends on existing socio-economic factors as well as long-term influences on current behaviour. In addition to these, the role of the state is influenced by the demands of groups present within a state and the political tussle between these groups and the state (Marx (1867), 1967). Further, this role depends on people's ideas about what is right, appropriate, necessary and legitimate (Morgan and Shinn, 2014), as well as the willingness of the state to pay for public goods and services (Milicz, 2016). This explains why the role of the state has changed tremendously over time in most countries and has varied among countries at any given point in time (Abramov et al., 2017; Friedman and Friedman, 1980).

Even though the role of the state has been a topical issue for many decades, it is still as relevant now as ever. This is as a result of the fact that the perceived role of the state in a country affects the socioeconomic and political policies in place as well as the objectives of public organs. The discourse below points out that many insights regarding the role of the state have not been documented, partly as a result of excessive focus on the role of the state according to Smith (1776), so that there is more focus on the public goods that states create instead of the public value that states create (Mazzucato, 2020; 2018). Value creation entails the ways in which different types of resources (human, tangible and intangible) are created and interact to produce new goods and services (Mazzucato, 2018). In this context, public value entails democratic and social outcomes that are valued by the public and that add value to the public arena.

Evaluating the state's role as an owner is a starting point in choosing socioeconomic policy (Abramov et al., 2017). Since the perceived role of the state in a country affects the socioeconomic policy in place (Mazzucato, 2018), as well as the objectives of public enterprises, it is important to review the role of the state from time to time in order to identify the combination of socioeconomic policies for which state establishments are to be used (Abramov et al., 2017; Del Bo, Ferraris and Florio, 2017). Aside from this, reviewing the state's role over time also brings to the fore the forces that have been shaping the state's role, which are discussed below.

NPM, NPG and neo-Weberian approaches

As indicated earlier, the quest to ensure that governments are comprehensively involved in citizens' welfare gave rise to NPM and NPG. NPM aims to improve the citizen-responsiveness and accountability of government services. An approach used by NPM is the quantification of performance, which some academics and practitioners generally agree has had a variety of benefi-

cial results (Morgan and Shinn, 2014). However, NPM encourages performance assessment at the expense of fairness, equity, the protection of human rights, transparency, and other values that are essential for determining the legitimacy of democratic institutions, practices, and outcomes (Adebayo, 2018; Morgan and Shinn, 2014). The lack of attention to these aspects is one of the reasons for its unacceptance in many parts of the world. Hence, practitioners and academics have launched a countermovement to firmly position substantive political values at the centre of the governance debate in response to concerns about the narrow instrumental focus of NPM. Three components of public governance that promote trust and legitimacy but are either ignored or undervalued by NPM are given a lot of attention in the NPG approach (Adebayo, 2018; Morgan and Shinn, 2014). The first is that NPG places a strong emphasis on values, holding that governments should focus on furthering the common good. Further, NPG appears to enhance the value offered by all government initiatives as well as provide greater efficiency, effectiveness, or responsiveness in the implementation of a specific programme. NPG also emphasises creating government policies that make it simpler for various parties to come to practical agreements (Morgan and Shinn, 2014; Alford, 2002). This is as a result of the NPG viewing politics as the politically mediated manifestation of collectively determined choices that the population considers desirable, in contrast to the NPM philosophy, which sees politics as the accumulation of individual preferences (Morgan and Shinn, 2014; O'Flynn, 2007). Nevertheless, both movements encourage cooperation.

The neo-Weberian argument frames an alternative approach to both the NPM and NPG approaches to bureaucracy – as well as the significance of Weber's fundamental work in structuring contemporary bureaucracy. Although parts of Weber's key principles have been rejected by each of the other two approaches described above, Weberian principles, it appears, influenced the foundation for the approaches. The neo-Weberian approach has its shortcomings as well, in that it excessively focuses on businesses in the economy (Kettl, 2022; Samier, 2020), at the expense of debating key aspects of the role of the state, and that in terms of modern public administration, especially in the areas of technical and operational complexity, Weberian theory leaves us with far more questions than answers (Kettl, 2022). However, it is impossible to enter the twenty-first century or begin administrative changes without taking into account the fundamental Weberian strands of bureaucratic thought, thus emphasising the importance of Weber's work on public administration (Kettl, 2022; Netelenbos, 2020; Samier, 2005). As we will observe below, Kettl (2022) might have rightly pointed out that in attempting to re-organise states, classical sources are still relevant to the post-capitalist era. Compared with the 20th century, as indicated in the quote in the introductory stage above, in this post-capitalist era, national states are no longer a dominant force. On the one hand, there is fierce competition between states and private sector enterprises (PSEs) (Zingales, 2017). On the other hand, citizens are demanding increased provision of public goods and services without wanting an increase in taxation (Bird, 2015; Micklethwait and Wooldridge, 2014). In this context, Micklethwait and Wooldridge (2014), in arguing for a fourth industrial revolution, note

that the welfare state has grown too large to afford and that there is a need to forge a limited state that reduces costs. They contend that by giving as many powers as possible to local governments, this limited state will be able to involve citizens and also use non-partisan technocrats or specially appointed commissions to decide on issues that affect the long-term and common good, like monetary policy or cutting back on spending on entitlements. One thing that commentators are often silent about when discussing approaches to public management is that a shift from one approach to another approach results in either an increased or reduced state role.

The quest for good governance is the key to the shifts in these approaches to public management (Arva, 2019). Arva (2019) notes that in the post-millennial years, significant advances in public administration have included changes in the role of the state and the definition of the term 'good governance'. If the state considers and works within the parameters of the public good, it can be said to be good if it meets the needs of people, communities and companies in the best possible manner (Lisiecka and Papaj, 2008). Lisiecka and Papaj (2008) contend that the idea of NPM should be seen as the origin of good governance and that the terms public governance and good governance may be used interchangeably. With the involvement of stakeholders, good governance entails the proper identification and implementation of social problems by public authorities. For the purposes of this study, good governance may be seen as re-organising the role and capacity of states to create laws and policies, delivering high-quality services, and fostering partnerships. Good governance is when public officials work in collaboration with stakeholders in the management of societal issues, such as effective and efficient government (Phago, 2013; Lisiecka and Papaj, 2008).

Although the approaches described above encourage cooperation, it is important to distinguish between NPG, NPM and neo-Weberian approaches when working with the commercial and non-profit sectors: while NPG is interested in enhancing the capacity of local organisations (such as state establishments) as a way to develop civic infrastructure and a community's overall capacity to be self-authoring, NPM is primarily interested in using the non-profit and private sectors to provide goods and services at a low cost and efficiently and effectively (Adebayo, 2018). The neo-Weberian approach, in addition to combining the models of intervention in the NPM and NPG, also involves strategies for carrying citizens along (Kettl, 2022). Thus, as indicated earlier, they support collaborations. This collaborative role appears to point out that these approaches originate from some of the classical sources discussed below.

Following from the above, the missing link between NPM, NPG, neo-Weberian and the state role discussed in this paper is that NPM, NPG and neo-Weberian approaches pay limited attention to public value. While it is acknowledged that compared with NPM, NPG and neo-Weberian pay attention to public value, as we will observe below, there are several other aspects of public value that they all do not cover, like involving citizens in the process of value creation. In this regard, the role of the state is key, as policy choices heavily rely on a state's perspective on the role of the state in the economy. The traditional view of the

role of the state has constrained states abilities to create public value. As a result, states are unsure of their role (Li and Maskin, 2021; Stiglitz, 2021). The debate about state role should focus more on the question of what value a state creates, because to question state role is to question its value in and of itself. The stories regarding the role of the state, as we will note below, have undermined state confidence, and limited the contribution of states in shaping the economy. It has further undervalued states' contributions to national output and wrongly led to excessive privatisation and outsourcing, following NPM and NPG arguments. This has resulted in ignoring the call for taxpayers to share in the rewards of a collective public process of value creation while enhancing more value extraction (Mazzucato, 2018). Part of these stories is that a state is susceptible to corruption and laziness as there is no clear-cut demarcation between agent and principal (Peng, Bruton, Stan and Huang, 2016) instilling fear of failure in several states and resulting in states watching PSEs take centre stage while emulating them (Li and Maskin, 2021; Mazzucato, 2018). Thus, states have been at the backstage of innovation, with observers documenting that innovation and entrepreneurship come from PSEs (Stiglitz, 2021). In this regard, Mazzucato (2018) notes that PSEs are able to convince states that they are being subjected to too much regulation and red tape, ignoring that they are simultaneously dependent on government-funded R&D. However, the opposite is true, as these PSEs receive more support than core public service organisations while failing to provide the jobs or innovation necessary to justify such support. To achieve public value, the role of the state must shift from one of stimulating demand to one of being a more targeted, proactive, and entrepreneurial state capable of taking risks by establishing a networked system of actors charged with harnessing private sector competencies and efficiency for delivering the national good over a medium-to-long time horizon (Mazzucato, 2016; 2015; 2013; Tonurist and Karo, 2016; Johnson, 1982; Marx (1867), 1967; Beveridge, 1944; Keynes, 1926). In this regard, the states need to better understand how their investments lead to the emergence of the most successful companies in order to structure a better risk-reward initiative. Thus, in re-organising the state for alternative post-capitalist governance, there is a need for a functional risk-reward dynamic that will replace the dysfunctional 'socialised risk'. Currently, in the dysfunctional 'socialised risk' system, the public sector establishes platforms for PSEs to thrive, resulting in 'privatised rewards', in which PSEs take it all (Stiglitz, 2021), which characterises the current economic crisis and is evidenced in modern industry as well as in finance (Li and Maskin, 2021; Mazzucato, 2013).

In this context, Li and Maskin (2021) and Mazzucato (2020) note that the state's spending, especially on stimulus packages, does not involve creating structures geared towards rewarding public investment that turn short-term remedies into the means for an inclusive, sustainable economy. Mazzucato (2020), thus contends that there is a need for structures like a citizens' dividend in which citizens own equal shares in a fund tied to the national wealth, which is necessary for transforming the story of state intervention and creating a more equitable economy. She argued that in addition to aiding in the establishment

of a better system of reducing inequality and socialising both risks and rewards, this is also necessary to ensure that the states have the capacity to spearhead future innovation, noting that it promises useful returns since reducing the ability of the state to either collect tax or to receive its fair share of the returns affects its future ability to take such a risk. Many observers are against direct returns to the state for reasons that it earns a return through taxation (Stiglitz, 2021). However, the unsustainability of this taxation system needs to be unpacked. The first issue with this is that the taxation system is usually not fair and square (Li and Maskin, 2021). The second is that the tax system was conceived only to support the delivery of public goods and not to support large-scale innovation drives, for which states are often involved, and emergencies like the recent COVID-19 pandemic. The third is that this argument does not take into account tax avoidance and tax evasion (Mazzucato, 2013). Hence, calls by Muzzacato (2020) and others to re-organise states are relevant.

Re-organising state

Traditional role of the state

The summary of the foregoing discussion is that there is a need to re-organise the state in such a way that its efforts towards innovating and creating public value are obvious and rewarded and that states take on new role. The call for a citizens' dividend by Mazzucato (2020; 2018; 2013) reflects one of the ways in which this could be achieved. This study in extending the role of government has further documented ways by which the state could be re-organised to ensure a fair risk-reward system between states and private actors, for states and citizens.

Regarding the role of the state, it appears Smith (1776) was the first documented scholar to have commented on the role of the state. This explains why Smith's (1776) arguments on the role of the state continue to be widely accepted, at least among practitioners, the masses, some academics, and, most importantly, laymen. The debate on the appropriate role of the state arguably cuts across two important topics: socialism and capitalism, which have been at the core of academic debate for some time now (Peng et al., 2016; Beveridge, 1944; Keynes, 1926). Thus, the debate about the state's role is far from conclusive.

In this context, at a time when many people did not see the importance of examining how the state should proceed, Smith (1776) presented the following argument relating to the role of the state: the state should be a night watch state; the state should be small and quiet (Keynes, 1926). Smith (1776) argued that individuals could look after themselves once the state had provided them with basic conduct guidelines, rules and regulations; basic survival needs; and protection. Consequently, Keynes (1926) submits that Smith (1776), in his role of state arguments, was probably ready to allow individuals to use their natural efforts in providing public goods in order to better their own condition. In addition, Smith (1776) added that, in doing so, the state should systematically withdraw from providing social welfare and public goods. Accordingly, the state should concentrate on and limit itself to protecting citizens from violence and regulating market transactions (Huat, 2016), be small and quiet.

Along these lines, Smith (1776, pp. 182–298) observes that the state has only three duties to perform, three duties which he refers to as being of great importance:

- The first duty is to protect the society from the violence and invasion of other independent societies;
- The second duty is to protect every member of the society from the injustice or oppression of every other member of the society, or in other words, the duty to establish an exact administration of justice;
- The third duty is to establish and maintain certain public works and certain public institutions, which can never be for the interest of any individual or a small number of individuals because the profit from the provision of these public goods and services will not be sufficient to cover the costs/expenditure incurred (Smith, 1776, p. 182–298).

From Smith's (1776) role of the state above, we can deduce what the first two duties entail – protecting individuals and society from internal and external coercion. Smith's (1776) third duty role, though arguably the most important, poses the most worrying issues because it is not clear whether it entails establishing state entities or public enterprises (Friedman and Friedman, 1980). Smith (1776, p. 211) himself acknowledged that the third duty is a complicated one. It appears this third role entails the establishment of state entities (SEs) or statutory boards (SBs), which virtually all states throughout the world have. While Smith (1776) did not aver that the state should own means of production for commercial purposes, he did not avow that the state should not own means of production in the first place. Smith's (1776) stance, though not expressly stated, appears to be that, in addition to erecting and maintaining public works for facilitating commerce, states should own public entities through which they can produce those public goods and services that private enterprises may not be interested in. This ambiguity in Smith's (1776) third role and the Marxist's socialist idea (Sappideen, 2017; Li, Xia, Long and Tan 2012; Fitriningrum, n.d) of state ownership of means of production (Marx (1867, 1967) have resulted in states justifying their roles on various grounds. In addition to these, there have been differences in states over the centuries. In this regard, given that the states of the 1770s and 1780s (the eighteenth century) were different from the states of the nineteenth century, and the states of the nineteenth century were not the states of the twentieth century, just as the states of the twentieth century are not the states of today (the 21st century), several states have used the above arguments to justify different ranges of state activities connected with means of provision and production of not just public goods but also of commercial goods as well. In this context, Bresser-Pereira (2016), in discussing models of the developmental state, has described the essence of a moment/period in state reforms.

This ambiguity of the role of the state partly explains the difficulty associated with stating the purpose of establishing a state institution, what such an institution should pursue, and justifying what the institution ultimately pursues. Thus, because the intentions of those who established state institutions and those who administer them are often different and not properly articulated and/or communicated, the outcomes too often differ from the intended ones. This uncertainty

on what constitutes and should constitute the third role of the state, pointed out by Smith (1776), partly explains why many states own means of provision and/or production in the capacity of state-owned enterprises (SOEs), SOEs-related state invested enterprises (SIEs) and sovereign wealth funds (SWFs). However, the mode of operation of these enterprises and their mandates differ from state to state, depending on the interpretation of the role of the state, in addition to the points made above.

Even though it is not entirely clear whether Smith's (1776) third state role stresses owning public enterprises as part of the role of the state, several authors after Smith (1776) have, while identifying a state role, communicated the importance of owning public enterprises as part of the state's role, albeit for delivering different ends. Notable among the commentators of this importance are Hanson (1958), Seidman (1954), Beveridge (1944), Keynes (1926) and Weber (1922; 1968). Hanson (1958), Seidman (1954), and Weber (1922; 1968) did not debate what role the state should play regarding ownership; they only pointed out that the state should own enterprises. However, Weber (1922; 1968) discussed bureaucracy generally, and Beveridge (1944) and Keynes (1926) debated the role that the state should play. In this context, Kettl (2022) notes that Weber's role as a founder of the study of administration is important for two things: capturing the essence of bureaucracy and connecting it to the role of business in the economy. Beveridge's (1944) and Keynes's (1926) arguments are especially helpful for this study.

Noting that Smith's (1776) first two roles of the state appear to entail protecting citizens and providing public goods, Beveridge (1944) helpfully submits that several other issues are connected with the state's role. Thus, Beveridge (1944) contends that the role of the state should include the provision of full employment for its citizens and the control of industry. The argument in this instance is that, in contrast to Smith's (1776) role of the state, which appears to have argued that the state should be a night watch state, Beveridge (1944) contends that the state needs to extend beyond a night watch state in order to fulfil its mandates. While writing on full employment, Beveridge summarises this argument thus:

To ask for full employment while objecting to these extensions of state activity is to will the end and refuse the means. It is like shouting for victory in total war while rejecting compulsory service and rationing (Beveridge, 1944).

Consequently, it becomes clear that even though the state possesses powers to protect its citizens, to make rules and regulations, and to enforce these through penalties and sanctions, the numerous ends it is expected to meet cannot be attained through the exercise of those powers alone. In order for the state to fulfil all its mandates, it will have to extend its role beyond that of a night watch state (Beveridge, 1944). That the state will need to move beyond a night watch state further prompted Beveridge to argue that:

The underlying principle ... is to propose for the state only those things which the state alone can do or which it can do better than any local authority or than private citizens either singularly or in association, and leave to these

other agencies that which, if they will, they can do as well as or better than the state ... The state must do new things and exercise some controls which are not now exercised by anyone (Beveridge, 1944).

Further, regarding extending the role of the state, Keynes (1926) simply agrees with Beveridge (1944), albeit with a few differences. In this instance, Keynes (1926, p. 46) submits that:

I come next to a criterion of *Agenda* which is particularly relevant to what it is urgent and desirable to do in the near future. We must aim at separating those services which are technically social from those which are technically individual. The most important *Agenda* of the state relate not to those activities which private individuals are already fulfilling, but to those functions which fall outside the sphere of the individual, to those decisions which are made by no one if the state does not make them. The important thing for state is not to do things which individuals are doing already, and to do them a little better or a little worse; but to do those things which at present are not done at all (Keynes, 1926, p. 47).

In this way, the main difference between Keynes' (1926) and Beveridge's (1944) arguments is that while Beveridge (1944) supports a collective role, Keynes (1926) was silent about a collective role. However, in discussing how a state should proceed, Keynes (1926, pp. 47–49) appears to have argued that collective action is a possibility. The reason for this support for a collective role can be linked to the assertion by Beveridge (1944) of the distinction between what PSEs will be willing to do and those decisions and actions PSEs will not be willing to take. As rightly observed by Smith (1776) in his third role, PSEs do not engage in providing public goods and services mainly because they cannot afford it, or because there will be no inflow of economic benefits to private role players from such decisions and actions. The reasoning by Beveridge (1944) is that these actions can be jointly taken by public and private role players. Further, Keynes (1926) submits that there should be a separation between the social role and the commercial role. This is because it will more likely be difficult to achieve both social and commercial roles at the same time using a single medium; in this case, any of the state establishments. However, it is possible to power some sort of social objectives into commercial objectives and vice versa, while structuring state establishments in a way to accommodate these.

Another difference between the arguments of Beveridge (1944) and Keynes (1926) presented above is that Beveridge (1944) asserts that the state should do what it can do better than other sectors, regardless of whether other sectors are already doing it or not, whereas Keynes (1926) does not support state action when other role players are already present. Moreover, while Beveridge (1944) argues that the state must do new things, he did not set out what new activities and new controls the state should undertake, but merely identified three areas on which the state could focus. However, Keynes (1926) did. The statements below, flowing directly from Keynes' (1926) argument above, summarise Keynes' (1926) arguments on the agenda of the state:

... Many of the greatest economic evils of our time are the fruits of risk, uncertainty, and ignorance. It is because particular individuals, fortunate in situation or in abilities, are able to take advantage of uncertainty and ignorance ... and that big business is often a lottery. The same reasons cause unemployment of labour, or the disappointment of reasonable business expectations, and of the impairment of efficiency and production ... I believe that the cure of these things is ... partly to be sought in the collection and dissemination of on a great scale of data relating to the business situation of all business facts which is useful to know. These measures would involve society in exercising directive intelligence through some appropriate organ of action over many of the inner intricacies of private business ... My second relates to savings and investment. I believe that some coordinated act of intelligent judgement is required as to a scale on which it is desirable that the community as a whole should save, the scale on which these savings should go abroad in the form of foreign investments, and whether the present organisation of the investment market distributes along the most nationally productive channels. I do not think these matters should be left entirely to the chances of private judgement and private profits, as they are at present (Keynes, 1926, pp. 47–49).

Though Beveridge did not give a direct account of the new thing(s) the state should do, as previously stated, Beveridge (1944) outlined three areas in which the state's outlay could cover:

There is communal outlay on non-marketable goods and services, including defence, order, free education, a national health service, roads, drains, and other public works. There is public business investment in industries now under public control or which can be brought under it hereafter, increasing the sector of enterprise in which investment can be expanded steadily. There is private business investment; here through a new organ – described as a National Investment Board – the state, while preserving private enterprises, can, by appropriate measures, coordinate and steady the activities of businessmen (Beveridge, 1944, p. 30).

The extended role of the state

Remember that the two established roles of the state, as argued by Smith (1776) and supported by Beveridge (1944), are:

- Protecting citizens (Smith, 1776, p. 689);
- Providing public goods (Smith, 1776, p. 689; Beveridge 1944, p. 30).

It was pointed out earlier that the third role is unclear and needs to be unpacked. From the above arguments, in unpacking the third role, this study is now able to extend the role of the state beyond the night watch state presented by Smith (1776). At a minimum, in addition to the two state's roles above, the state's role should include:

- Collecting and disseminating information about private enterprises as well as coordinating and steadying the activities of businessmen (as identified by Keynes, 1926, p. 48, and Beveridge, 1944, p. 30);

- Distributing and investing savings and reserves along productive channels nationally and internationally (as identified by Keynes, 1926, pp. 48–49);
- Engaging in public business activities (as identified by Beveridge, 1944, p. 30); and
- Engaging in private business activities (as identified by Beveridge, 1944, p. 30).

Extended role of the state and private enterprises: a synopsis

The extended role mirrors what Mazzucato (2020; 2018; 2013) has been clamouring for. Four propositions guide the extended state role discussed in this section. The issue regarding the first role of the state identified by Keynes (1926) – collecting and disseminating information about private enterprises – and Beveridge (1944) – coordinating and steadying the activities of businessmen – is that it may be difficult to collect reasonable information about PSEs and steady their activities without the state partnering with these PSEs. The first proposition (**P1**) is that a partnership between the relevant state establishments and PSEs is likely to make the collection of information on the activities of private companies feasible and cost-effective. In this regard, Aiken and Hage (1968) concur that such collective organising methods lead to higher rates of internal communication while reducing formalisation and centralisation. Further, Ackers (2014) submits that such an organising method promotes individual and societal interests while incorporating social welfare into economic transactions. The argument in this instance is that the state needs to partner with PSEs in order to collect the reasonable information necessary to keep the profit motives of private enterprises in check. Uncovering the truth about private business activities not only helps states to better design policies but also has the tendency to help the market system work better (Mazzucato, 2013). This backs up Beveridge's (1944) argument that states will have to do business in both the private and public sectors in order to get this information.

Citizens are not equipped to carry out this information collection on PSEs. The states, on the other hand, might be equipped to collect information on PSEs, but at a cost that depends on the mode of collection. Thus, aside from the high cost of collecting such information, information collected at arm's length will not be as detailed as when the state itself is involved in the activities of these PSEs. As Jacobs (1974) rightly admits, you can only control an enterprise to the extent that you have sufficient intelligence about the enterprise's activities. This is, in fact, one of the reasons why Beveridge (1944) suggested that the state should own both public and private business enterprises in order to use the private-oriented enterprises owned by the state to coordinate and steady the activities of private businesses, leading to the second proposition (**P2**): that states may need to engage in both private and public businesses in order to be able to curtail and steady the activities of businessmen. Consequently, Aiken and Hage (1968) contend that some objectives can only be achieved through some form of collaboration because, in addition to the reasoning that objectives may sometimes be complicated, there is usually also the presence of tremendous risk. Thus, an organisation may be forced to enter into some form of collaboration in order to achieve those complicated objectives and reduce risk along the way.

In the fourth, fifth and sixth role, Beveridge and Keynes were concerned with three entirely different things. While Keynes (1926) was concerned about investing national savings and reserves, Beveridge was concerned about public and private investment aimed at coordinating and controlling private sector investment activities and about public investment targeted at contributing to the national budget. Thus, from the above, it is clear that there is a difference between investing savings and engaging in commercial activities and that there are different state establishments to deliver these (SBs, SOEs, SIEs and SWFs). In this regard, while the capital of enterprises engaged in investing savings will come from all sorts of national reserves, the capital of enterprises engaged in commercial activities will be from commercial operations and other forms of funding, for example, loans. Further, the role of investing savings is an important one. Huat (2016), writing on the Singaporean case, relays this importance, noting how the decision to save and invest savings protects a country's domestic economy against financial crises and keeps interventionist organisations, such as the IMF and the World Bank, at bay (Huat, 2016).

This indicates the third proposition (**P3**): that a state's savings may likely protect a state's domestic economy against unforeseen financial crises while limiting the activities of interventionist organisations. While the state should make the decision on saving and investing public funds, as Keynes (1926) correctly points out, it may be prudent to involve PSEs in making and implementing these investment decisions. The reason for this is that, as Beveridge (1944) and Grossman (2012) rightly observe, PSEs can sabotage the activities of the state in maximising returns on savings. The argument in this context is that the state needs to partner with private enterprises in investing savings and reserves efficiently and effectively (Keynes, 1926), leading to the fourth proposition (**P4**): that PSEs can sabotage the activities of the state establishments operating in the private domain as a result of PSEs' superiority in terms of market information. A solution is for state establishments to partner with PSEs. This idea does not suggest that states cannot make sound investments on their own. The argument is that the involvement of private role players will, among other things, mean that the activities of states will not be sabotaged by private role players who, even though they are, to an extent, controlled and regulated by the state, are already present in the markets where the state may want to invest and who, arguably, have more information on these markets than states do; and hence, may decide to frustrate the activities of states since some are big and even compete with states (Zingales, 2017; Berle and Means, 1932). In this context, Berle and Means (1932) argue thus:

The rise of the modern corporation has brought a concentration of economic power which can compete on equal terms with the modern state – economic power versus political power, each strong in its own field. The state seeks in some respects to regulate the corporation, while the corporation, steadily becoming more powerful, makes every effort to avoid such regulation ... The future may see the economic organism, now represented by the corporation not only on an equal plane with the state, but possibly even superseding it as the dominant form of social organisation (Berle and Means, 1932, p. 82).

Extended role of the state and state establishments

Since there are establishments owned by states, their existence is in line with fulfilling certain public-sector policy objectives. These policy objectives for which state establishments are to be used depend on the interpretation of the role the state by their owning states. Bearing the above discussion in mind, Keynes (1926) rightly notes that while the most important task of economists is to distinguish the agenda (role) of the state from the non-agenda, the complementary task of politicians, and politics generally, is to design forms of the state capable of achieving the agenda within a democracy. Equally, the role of organisational sociology and organisational economics is to design organisational forms capable of delivering organisational objectives. While the role of the state regarding the agenda has been discussed above, it is important to discuss the associated role of the state establishments as a means by which the state can achieve its role.

These state establishments – SBs, SOEs, SIEs and SWFs – should be fulfilling the last four of the six extended state role above and, in the course of doing so, providing a means for achieving the second role – providing public goods. In this context, SBs, which are those state entities usually established within a state ministry and charged with the responsibility of providing public goods and services (Huat, 2016; Matui, 2010), are to fulfil the first and second role – protecting citizens and providing public goods, while all public enterprises in conjunction with SBs should be fulfilling the third role in various capacities – collecting and disseminating information about private enterprises and coordinating and steady-ing the activities of business men. Specifically, SWFs, which are enterprises that invest state reserves (Huat, 2016), are better placed to fulfil the fourth role – distributing and investing savings and reserves along productive channels nationally and internationally. SOEs, which are enterprises that are created to attain states' social and economic goals (Grossi, Papenfuß and Tremblay, 2015) should be fulfilling the fifth and sixth role – engaging in private business activities and engaging in public business activities. Thus, the importance of the state's investment in SIEs, which are enterprises in which states have stakes (Clo, Fiorio and Florio, 2017), becomes obvious. Accordingly, even though SOEs may at present be doing other things, they are part of the mechanisms (public enterprises) through which the state can undertake some of the items on the agenda highlighted above. Additionally, SBs and SWFs are the other establishments through which the state can achieve its role. Attempting to specify the role of the state is a basis for arguing which particular role public establishments should undertake and how these public establishments can be made to work with each other in achieving the role of the state. These establishments, in fulfilling the role of the state, especially SOEs, SIEs and SWFs, are often able to contribute to the national budget – thereby ensuring that the states can take on more risks in terms of creating platforms for businesses to thrive while further delivering more public value to citizens that demand more in provisions but less in taxation. Taken together, Mazzucato's (2020; 2018; 2013) call for a citizens' dividend could be achieved by mandating these establishments in working with PSEs to contribute to such a fund; otherwise, they could contribute to the national budget, which will in turn improve citizens' standards of living if properly channelled.

Conclusion

This conceptual paper reimagined the role of the state with the aim of properly articulating the established role of the state, identifying the role of the state that has not yet been articulated, and aligning the role of the state with the state establishments. In doing this, the importance of engaging PSEs in order to facilitate states' achieving certain role came to light. Furthermore, the role of the states' establishments in serving as states' information gathering agents, among other roles came to the fore. As such, this paper has extended the role of the state, identified the state establishments that are key actors in the fulfilling state role and matched the role with the establishments.

As with any study of this nature, there are bound to be limitations, providing avenues for further research. Future studies could explore in detail the extent of PSEs' commitment to partnering with the states in fulfilling public-sector mandates, considering that, as pointed out earlier, PSEs are not really engaged in providing public goods and services, mainly because they cannot afford it or because there will be no inflow of economic benefits to private role players from such decisions and actions. Future studies could also converge on the relevance of the extended role of the state and further debate how best to achieve it. At this stage, an important future study would be one that explores role separation between the different state organs: SOEs, SBs, SIEs and SWFs, as this is, in most cases, blurry at the moment. This is important for indicating avenues where state establishments and PSEs could work together and for identifying state establishments that could easily work with PSEs and achieve the benefits of partnering with PSEs described above.

REFERENCES

1. Abramov, A., Radygin, A. and Chernova, M. (2017) 'State-owned enterprises in the Russian market: Ownership structure and their role in the economy', *Russian Journal of Economics*, 3(1), pp. 1–23.
2. Ackers, B. (2014) *Characteristics of corporate social responsibility*. PhD Thesis, University of South Africa, South Africa.
3. Adebayo, A. O. (2018) 'Comparative Public Management Systems', *Global Encyclopedia of Public Administration, Public Policy, and Governance*, pp. 1–10.
4. Aiken, M. and Hage, J. (1968) 'Organizational interdependence and intra-organizational structure', *American Sociological Review*, 33(6), pp. 912–930.

5. Alford, J. (2002) 'Defining the Client in the Public Sector: A Social Exchange Perspective', *Public Administration Review* 62(3), pp. 337–346.
6. Arva, Z. (2019) 'Local governments and the concept of good governance', *Juridical Current*, 22(3), pp. 53–65.
7. Berle, A. and Means, G. (1932) *Modern corporation and private property*. New Jersey: Transaction Publishers.
8. Bernier, L. (2014) 'Public enterprises as policy instruments: The importance of public entrepreneurship', *Journal of Economic Policy Reform*, 17(3), pp. 253–266.
9. Beveridge, W. (1944) *Full employment in a free society: A report*. Crows Nest: Allen & Unwin.
10. Bird, M.G. (2015) 'Canadian state-owned enterprises: A framework for analyzing the evolving crowns', *Policy Studies*, 36(2), pp. 1–24.
11. Bresser-Pereira, L.C. (2016) Models of developmental state. *Working Papers*, 426. Sao Paulo.
12. Del Bo, C. D., Ferraris, M., and Florio, M. (2017) 'Governments in the market for corporate control: evidence from M&A Deals involving state-owned enterprises', *Journal of Comparative Economics*, 45(1), pp. 89–109.
13. Eichhorn, P. (2020) 'Federal states instead of national states,' in Andebner, R, Greiling, D (eds.) *Public sector management in a globalised world*. Wiesbaden: Springer Gabler pp 51–58.
14. Fiorio, Clo. S. and Florio, M. (2017) 'The targets of state capitalism: Evidence from M&A deals', *European Journal of Political Economy*, 47, pp. 61–74.
15. Fitriningrum, A. (n.d.) *Are State-owned enterprises successful vehicles for attaining their government stated objectives*. Master's dissertation. Australian National University, Australia.
16. Friedman, M. and Friedman, R. (1980) *Free to choose*. Boston: Mariner Books.
17. Grönblom, S. and Willner, J. (2014) 'Organisational form and individual motivation: public ownership, privatisation and fat cats', *Journal of Economic Policy Reform*, 17(3), pp. 267–284.
18. Grosman, A., Okhmatovskiy, I. and Wright, M. (2016) 'State control and corporate governance in transition economies: 25 years on from 1989', *Corporate Governance*, 24(3), pp. 200–221.
19. Grossi, G., Papenfuß, U. and Tremblay, M.S. (2015) 'Corporate governance and accountability of state-owned enterprises', *International Journal of Public Sector Management*, 28(4/5), pp. 274–285.
20. Hanson, A.H. (1958) 'Public enterprise in Nigeria: Federal public utilities', *Public Administration*, (Winter), pp. 366–384.
21. Huat, C. (2016) 'State-owned enterprises, state capitalism and social distribution in Singapore', *The Pacific Review*, 29(4), pp. 499–521.
22. Jacobs, D. (1974) 'Dependency and vulnerability: An exchange approach to the control of organizations', *Administrative Science Quarterly*, 19(1), pp. 45–59.
23. Johnson, C. (1982) *MITI and the Japanese miracle: The growth of industrial policy, 1925–1975*. California: Stanford University Press.
24. Kettl, D.F. (2022) 'Weberian Bureaucracy and Contemporary Governance', *Perspectives on Public Management and Governance*, 5(2), pp. 111–120.
25. Keynes, J. M. (1926) *The End of laissez-faire*. London: Leonard & Virginia Woolf.

26. Li, D.D. and Maskin, E.S. (2021) 'Government and economics: An emerging field of study', *Journal of Government and Economics*, 1(June), 100005.
27. Li, S., Xia, J., Long, C.X. and Tan, J. (2012) 'Control modes and outcomes of transformed state-owned enterprises in China: An empirical test', *Management and Organization Review*, 8(2), pp. 283–309.
28. Lisiecka, K. and Papaj, T. (2008) 'Good governance in the polish public administration', *Economics & Management*, 4, pp. 87–97.
29. Marx, K. (1867) (1967) *Capital: A critique of political economy*. New York: International Publishers.
30. Matui, M. (2010) *Developing a corporate governance regime for state owned enterprises in Papua New Guinea*. PhD Thesis, The University of Waikato, New Zealand.
31. Mazzucato, M. (2013) *The Entrepreneurial State. Debunking public vs. private sector myths*. London: Anthem Press.
32. Mazzucato, M. (2015) *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*, rev. ed. New York: Public Affairs.
33. Mazzucato, M. (2016) 'From market fixing to market-creating: a new framework for innovation policy', *Industry and Innovation*, 23(2), pp. 140–156.
34. Mazzucato, M. (2018) *The value of everything. Making and taking in the global economy*. New York: Public Affairs.
35. Mazzucato, M. (2020) 'We socialize bailouts. We should socialize successes, too', *New York Times*, July 1, 2020. Available at: <https://www.nytimes.com/2020/07/01/opinion/inequalitygovernment-bailout.html>, (accessed 15 June 2021).
36. Micklethwait, J. and Wooldridge (2014) 'The fourth revolution: Reinventing the state and democracy for the 21st Century', *New Perspectives Quarterly*, 31 (3), pp. 24–9.
37. Milicz, Á. (2016) 'Market role of the state and possibilities to control this role at public enterprises', *Public Finance Quarterly* (0031-496X), 61(2), pp. 199–223.
38. Morgan, D.F. and Shinn, C.W. (2014) 'The foundations of public governance', in Morgan, D. F, Cook, B J. (eds.) *New Public Governance: A regime-centred perspective*. Milton Park: Routledge, pp. 413–430.
39. Netelenbos, B. (2020) 'Bringing back Max Weber into Network Governance Research.' *Critical Policy Studies*, 14(1), pp. 67–85.
40. O'Flynn, J. (2007) 'From New Public Management to Public Value: Paradigm change and managerial implications', *Australian Journal of Public Administration*, 66(3), pp. 353–356.
41. Peng, M.W., Bruton, G.D., Stan, C.V. and Huang, Y. (2016) 'Theories of the (state-owned) firm', *Asia Pacific Journal of Management*, 33, pp. 293–317.
42. Phago, K. (2013) 'Good governance and effective public administration in Africa', *Africa Insight*, 43(1), pp. 105–117.
43. Pollitt, C. and Bouckaert, G. (2017) *Public management reform: A comparative analysis – Into the age of austerity*, 4th ed. Oxford, UK: Oxford Univ. Press.
44. Samier, E. (2005) 'Toward a Weberian public administration: The infinite web of history, values, and authority in administrative mentalities', *Halduskultuur*, 6, pp. 60–93.

45. Sancino, A., Garavaglia, C., Sicilia, M. & Braga, A. (2020) 'New development: Covid-19 and its publics – implications for strategic management and democracy', *Public Money & Management*, 41(5), pp. 404–407.
46. Sancino, A., Rees, J. and Schindele, I. (2018) 'Cross-sector collaboration for public value co-creation: A critical analysis', *Critical Perspectives on International Public Sector Management*, 6(October), pp. 59–73.
47. Sappideen, R. (2017) 'Corporate governance with Chinese characteristics: The case of state-owned enterprises', *Frontiers of Law in China*, 12(1), pp. 90–113.
48. Seidman, H. (1954) 'The government corporation: Organization and controls', *Public Administration Review*, 14(3), pp. 183–192.
49. Smith, A. (1776) *An inquiry into the nature and causes of the wealth of nations*. London: T. Nelson and Sons, Paternoster Row.
50. Sriram, N., Misomnai, C., Metasuttirat, J. and Rajphaetyakhom, C. (2019) 'A Comparative analysis of new public management, new public service and new public governance', *Asian Political Science Review*, 3(2), pp. 32–39.
51. Stiglitz, J.E. (2021) 'The proper role of government in the market economy: The case of the post-COVID recovery', *Journal of Government and Economics*, 1(April): 100004.
52. Stiglitz, J.E. and Rosengard, J.K. (2015) *Economics of the Public Sector*, (4th ed.). New York: W.W Norton & Company, Inc.
53. Stilwell, F. (2012) *Political economy: The contest of economic ideas*. South Melbourne: Oxford University Press.
54. Tam, N., V. (2022) 'Towards achieving “two parallel objectives” during the COVID-19 pandemic in Vietnam: A response strategies analysis', *Public Administration Issues*, 6(II), pp. 7–32.
55. TÖnurist, P. and Karo, E. (2016) 'State owned enterprises as instruments of innovation policy', *Annals of Public and Cooperative Economics*, 87(4), pp. 623–648.
56. Turner, M., Donnell, M.O. and Kwon, S.-H. (2017) 'Privatisation and authoritarian regimes in East Asia the politics of state-owned enterprise reform in South Korea, Laos and Vietnam', *ASian Perspective*, 42, pp. 181–184.
57. Weber, M. (1922) *Economy and society: An outline of interpretative sociology*, eds Guenther Roth and Claus Wittich. Berkeley: Univ. of California Press.
58. Weber, M. (1968) *Economy and society*, ed. Guenther Roth and Claus Wittich, and trans. Ephraim Fischhoff and others. New York: Bedminster Press.
59. Zaroni, P., Contu, A., Healy, S. and Mir, R. (2017) 'Post-capitalistic politics in the making: The imaginary and praxis of alternative economies', *Organization*, 24(5), pp. 575–588.
60. Zingales, L. (2017) *Towards a political theory of the firm*. New Working Paper Series, 10, pp. 1–26. Chicago.

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REPRESENTATIVE BUREAUCRACY AND INCLUSION: CITIZEN PARTICIPATION OF ETHNIC MINORITIES IN VIETNAM

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Abstract. In the context of Vietnam, with fifty-four ethnic minority groups and sixty-three provinces/municipalities, this study aims to fill a gap in the literature by looking at ethnic representation and its influence on citizen participation at the local level based on Representative Bureaucracy and Inclusion theory. We use the combination of three datasets: the Public Administration Performance Index (PAPI), the Committee for Ethnic Minorities Affair, and the General Statistics Office of 63 provinces in Vietnam from 2012 to 2017. We run a panel data analysis random-effects model (REM) with White-Huber standard errors to correct heteroskedasticity in current years to estimate the effects. Findings support the research hypothesis that ethnic minority groups in Vietnam are negatively associated with citizen participation in the local government, particularly in civic knowledge. Additionally, the level of citizen participation is also negatively related to the urbanization, unemployment, and poverty rates of each province. However, it is positively associated with the education level of each province's population. With these findings, this study also proposes some policy implications to ensure the development rights of ethnic minorities in Vietnam.

Keywords: citizen participation, ethnic minorities, representative bureaucracy, PAPI, Vietnam.

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Introduction

As the governance concept emerged, citizen participation has become a central principle of local development. It is not only a core element of “good governance” and “sound governance” (OECD, 2001a; Farazmand, 2004) but also enhances “democratic governance” (Fung, 2015). Through citizen participation, local governments can understand more about the needs and concerns of citizens. Simultaneously, citizens can get information, monitor the quality of public services, and correct their governments’ actions (Speer, 2012). Citizen participation refers to diverse groups within the local government’s decision-making process, and ethnic minority groups are frequently discerned as complex communities to involve (Beebeejaun, 2006). Indeed, ethnic minorities deserve special attention as they have been marginalized and discriminated against in society (Rex and Moore, 1967; Pilkington, 2003). Ethnic inequality is often a big challenge for constructing a civilized democratic society, especially in terms of citizen participation. Unfortunately, very few studies compare ethnic minority representation across countries or that address the underrepresentation of different groups within countries (Bird, 2003; Bird, 2005). Therefore, citizen participation of ethnic minority groups has become a critical matter.

In Vietnam, after three decades of *Doi moi* (Renewal), in line with rapid economic growth, state agencies have become more open to social organizations in the policy-making processes (Kerkvliet, Nguyen, and Bach, 2008). As a result, citizens’ expectations of public governance are changing, and the concept of citizen participation has been gradually improving in the Vietnamese socio-political system. Many social organizations formed by citizens have also emerged, and hence citizens have become more actively involved in policy-making (Bui, 2013). However, citizen participation of ethnic minority groups is often perceived as a problematic issue. Vietnam is a multiethnic country with fifty-four different groups and sixty-three provinces, each having a different proportion of ethnic groups. The largest group, called “*Viet*” or “*Kinh*”, accounted for 85.4% of the total population (General Statistics Office of Vietnam, 2015). They live mainly in the inland deltas and coastal areas (Imai et al., 2001), while the remaining population lives in the mountainous areas. Most of them live below the poverty line and often have only a weak voice over policies. Therefore, to exercise the democratic rights of ethnic minorities as well as to improve local socio-economic development, Vietnam has a broader range of programs for citizens, such as the National Target Program for Poverty, the Socio-economic Development Program for Most Vulnerable Communes in Ethnic Minority and Mountainous Areas (known as Program 135) or the New Rural Development Program.

Meanwhile, the Grassroots Democracy Ordinance of Vietnam empowers ethnic minorities a more prominent voice in development strategies (Shanks et al., 2004; World Bank, 2009), as well as encourages them to participate in the political system, social management, and state management such as through both directly (through in-person engagement at the local level) and indirectly (through voting for People’s Council and National Assembly delegates). In the National Assembly XIV

from 2016 to 2021, there are 86 ethnic minority representatives, accounting for 17.3 percent. Nevertheless, the role of the ethnic minority communities participating in these programs, mainly being the “beneficiary”, has not yet shown the proper function of this community (Luu and Pham, 2013). To date, there is a large number of studies in Vietnam documenting significant gaps in access to public services between rural, and urban populations, *Kinh* people, and ethnic minorities (Pham et al., 2011; World Bank, 2009; World Bank, 2013). Yet, too little discussion has analyzed the citizen participation of ethnic minorities at the local level in Vietnam, despite the fact that they represent an important community.

Based on the theories of representative bureaucracy and inclusion, this paper will help fill a gap in the literature by looking at ethnic representation and its influence on citizen participation at the local level in the unique context of Vietnam – a socialist republic and a developing country. We also focus on the status of the representatives of ethnicity concerning citizen participation in four detailed sub-dimensions: civic knowledge, opportunities for participation, equality elections, and voluntary contributions. With these findings, some suggestions are set out to actively enhance citizen participation for ethnicity in the local government’s equality policies. It may also help ensure that no individual or group is excluded from citizen participation based on their race in the future.

The study proceeds as follows. The first section of this paper examines the theoretical perspectives developed in the literature concerning the effects of ethnic minority groups on citizen participation. Next, it reviews the extent of empirical research on the issue. In the third section, we develop a research model and describe the data to test the influence of ethnic minority groups on citizen participation at the local level. The results section presents the model and discusses its implications. Finally, a conclusion offers some suggestions for further research on enhancing citizen participation of ethnic minority groups effectively.

Literature Review

The theory of representative bureaucracy

Kingsley first interpreted “representative bureaucracy” when referring to the economic, political, and social elites holding important policymaking positions in British government agencies. Still, he ignored the interests of other remaining groups. The representative bureaucracy would suit a less privileged, less class-based civil service system. Additionally, the term “representative bureaucracy” is also used to describe the relationship between demographic characteristics (such as race, ethnicity, language and religion, and gender) and the society that it is supposed to serve (Van der Meer and Roborgh, 1996). Generally, this term can be described as the “body of thought and research examining the potential for government agencies to act as representative political institutions if their personnel is drawn from all sectors of society” (Dolan and Rosenbloom, 2003, p. xi). One of the common issues that representative bureaucracy emphasizes is integrating minorities into society, such as giving them chances to participate in government management or control a bureaucracy (Dolan and Rosenbloom, 2003; Van Gool, 2008).

The theory of representative bureaucracy suggests that public agencies that represent disadvantaged communities will ensure the interests and values of these groups in bureaucratic decision-making processes (Bradbury and Kellough, 2011). There are two ways of representing bureaucracy (Mosher, 1968), including passive and active representation. The former refers to the extent to which bureaucracies reflect the special composition of such as racial or ethnic minorities and women. The latter means that bureaucrats “press for the interests and desires of those whom they purport to represent” (Mosher, 1968, p. 11). In other words, core attitudes, values, and beliefs are shared by bureaucrats with the social groups from which they are drawn. Furthermore, this theory emphasizes seeking the search for a way to legitimize the political power of the bureaucracy based on democratic values such as equal representation, majority rule, and minority rights (Frederickson, 2012). When a bureaucracy reflects the interests and values of the people in terms of race, ethnicity, and sex, it can be considered a representative institution. Lim (2006) illustrates that minority group bureaucrats can also change the behavior of other policy participants like the majority group bureaucrats to produce benefits for their social group indirectly. To recognize the positive right of the ethnic minority and enable their voices to be heard in official bodies, representation is becoming increasingly important for participation in the local policymaking process (Ghai, 2008). In short, although there were concerns about whether all social classes or minority groups were represented in the policymaking process, the representative bureaucracy was necessary to meet the interests of all social classes (Lind, 2016).

Inclusion, citizen participation, and ethnic minorities

The body of literature on inclusion shows that inclusion refers to diverse individuals’ full participation and contributions to an organization (Roberson, 2006; Miller, 1998; Lirio et al., 2008). Notably, inclusion not only emphasizes a theme of belongingness with some keywords like “accepted,” “insider,” and “sense of belonging” but also a theme of uniqueness with critical phrases such as “valuing contributions from all employees,” “contribute fully,” and “to have their voices heard and appreciated” (Shore and et al., 2011). Meanwhile, diversity may be defined as differences in perspectives causing potential behavioral differences among group members and identifying differences among group members concerning other groups (McGrath, Berdahl and Arrow, 1995; Larkey, 1996). There are observable characteristics of diversity that include gender, race, ethnicity, and age (Milliken and Martins, 1996) and non-observable dimensions, including cultural, cognitive, and technical differences among employees (Kochan et al., 2003). Generally, inclusion focuses on a sense of belonging and feeling valued by individuals, while diversity mainly emphasizes the belongingness theme and not the uniqueness theme (Shore et al., 2011).

As one of the critical themes in theories of participation in governance, inclusion refers to the diversity of status of people taking part in citizen participation, such as ethnicity, race, and gender (Quick and Bryson, 2016). In addition, it may be associated with concerns about the representativeness of people interested in decision-making about policies, plans, or programs. Citizen participation

can be variously defined through different perspectives (Involve, 2005). This study will mainly focus on the democratic view. In particular, we consider it a vital aspect of democracy that “gives citizens a say in decision-making as well as their voice can be heard; encourages civic skills and virtues; leads to rational decisions; and increases the legitimacy of decisions” (Michels, 2011, p. 279). Accordingly, citizen participation can be considered a community-based process by which citizens’ public concerns, needs, and interests are incorporated into decision-making (Pateman, 1970; Holdar, 2002; AbouAssi, 2013).

Although citizen participation has been deepening democracy, the system for ethnic minorities remains inaccessible. Their participation can be characterized by “low rates of registration and voting, distrust towards the middle and higher levels of representation, and difficult coordination, if any, between local and national levels of representation” (Marques and Santos, 2004, p. 114). Ethnic minorities are generally less active compared to the majority population (Hero and Tolbert, 2004; Just, 2017; Kaya, 2013). Ethnicity and race should be differentiated; “race is a socially defined categorization system based loosely on physical characteristics such as skin color, that serves to maintain a sociopolitical hierarchy”; whereas ethnicity is made of traditional values which are transmitted from the ancestors (Umaña-Taylor and Shin, 2007, p. 178).

Notably, ethnic minority groups in the UK and African-Americans in the USA are not treated as well as the white majority (Wilson, 1987; Pilkington, 2003). In American history, citizen participation has been limited to different groups, especially the poor and non-white groups. Only propertied, well-educated, white males have always been eligible to participate in government, and recently full participation has become likely for the poor, and black (Strange, 1972). Nevertheless, Verba (1993) argues that there is no significant difference among the three groups in political participation after accounting for differences in politically relevant resources among Latinos, African-Americans, and Anglo-Whites. For him, disparities in education, income, and occupation associated with race and ethnicity that help to interpret participatory differences do not define an ethnic group (Verba, 1993). Reversely, in the UK, although the local government offered opportunities for participation for ethnic minorities, there has not been a more enlightened and transformative policy-making process (Beebejaun, 2006).

Through surveys that sampled minorities both in the US and New Zealand, Banducci et al. (2004) found out that the effects of minority empowerment vary by the context. In terms of descriptive representation are positive. This means that minority citizens will vote where minorities hold office. In other words, minority representation can symbolic links, bring about more positive attitudes towards government and encourage political participation. In particular, Maori are also more likely to vote if their representatives are also of Maori descent in New Zealand. Blacks living in minority-majority districts also score higher on these indicators than blacks outside these districts in the US. Regardless of state environmental contexts, compared to Whites and Latinos, African-Americans and Asian-Americans have less confidence in government responsiveness (Hero and Tolbert, 2004). In the same vein, Just (2017) also asserts that members of ethnic minorities are generally less active in politics than majority populations. In the US, compared

to white Americans, all ethnic minorities are less likely to be involved in politics, whether as voters, campaigners, or candidates. The significant minorities do not implicate those, ethnic minorities are represented well or can effectively participate in politics (Kaya, 2013).

There is some evidence suggesting that citizen participation varies concerning political, cultural, and historical contexts. Hence, in Vietnam, this study focuses on citizen participation by definitions of the Public Administration Performance Index (PAPI). In 2009, United Nations Development Program (UNDP), the Center for Community Support Development Studies (a Vietnamese research center on policy impact assessment), and the Vietnam Fatherland Front launched the PAPI – the most effective tool in Vietnam to assess the performance of governance and public administration based on citizens' experiences. From 2009 to 2019, the PAPI survey was conducted through face-to-face interviews with 117,363 respondents from different demographic groups in rural and urban areas (63 provinces, 207 districts, 414 communes, and 828 villages). Hence, respondents' opinions are reflected more comprehensively and closely with the local government that they are evaluating.

According to PAPI, citizen participation means that citizens have a voice in decisions that affect their lives, including choosing their government leaders, designing, and monitoring the implementation of policies. Thus, we analyze citizen participation by ethnicity concerning four sub-dimensions: civic knowledge, opportunities for participation, equality elections, and voluntary contributions. These sub-dimensions can be defined as the four steps of the slogan “Dan biet, dan ban, dan lam, dan kiem tra” (People know, People discuss, People do, and People monitor). In this study, civic knowledge focuses on citizens' awareness of political life and participation rights, including elections and elected representatives. It refers to the comprehensive understanding of Vietnamese citizens about the local governance structures, such as the Grassroots Democracy Ordinance, the above two familiar slogans, and the correct term of the local office.

Recent research suggests essential links between citizen participation and civic knowledge. First, civic knowledge is positively associated with citizen participation (Galston, 2007; Coley, 2012; Leigh, 2018). All other things being equal, the more knowledge citizens have, the more likely they are to participate in public affairs. First, because civic knowledge is related to the content or what citizens must know, they can better understand the effects of public policies on their interests if they have more ability. They can effectively promote their interests in the political process (Galston, 2007). Second, regarding opportunities for participation, Vietnamese citizens typically participate through groups or associations, including officially established ones such as mass organizations, and informal and unregistered ones such as local clans or cultural groups. They are enabled to discuss and contribute to formulating specific policies or programs. Regarding deliberative democratic theory (Parvin, 2018), citizen participation also refers to the process during which whereby citizens possess the opportunity to participate in the public decision-making process. It means that citizens have the opportunity to directly participate in elections at various different levels. All Vietnamese citizens also have an equal chance to vote in all

elections at the local and grassroots groups elections. Third, the quality of village elections refers to how the elections observe the participatory regulations provided in the Grassroots Democracy Ordinance (GRDO). Elections are traditionally central means to realizing the core values of democracy, especially citizen participation. The quality of elections significantly affects citizens' trust, showing a higher level of citizen participation. Therefore, the quality of elections is considered an indicator to ensure the quality of governance and the accountability of elected officials (Alemika, 2007). Finally, citizen participation is also related to social networks and voluntary organizations (Putnam, 2000). Vietnamese citizens can voluntarily or compulsorily contribute to community development by participating in local government activities. This refers to the latent citizen participation in "actions" such as voluntary work for the community charity (Emorine et al., 2015). Residents realize that they must commit to improving their quality of life, so they actively participate in local activities through voluntary work. Voluntary contributions mean citizens' willingness to improve local living standards. In other words, citizens are genuinely voluntary for payments and are not coerced by local authorities or through other forms such as informal taxation.

This research considers citizen participation as the process of providing people with knowledge and opportunities to participate in political, social, and administrative activities that influence public decisions. We attempt to apply the representative bureaucracy and inclusion theory to examine the influence of ethnic minorities on citizen participation at the local level in Vietnam. According to this theory, the members of minority group are less likely to be registered to vote and are less involuntarily contributing to local socio-economic development programs and policies than the members of majority group. In the case of Vietnam, we investigate whether the distribution of ethnic minorities of each province significantly affects citizen participation at the local level, especially in different sub-dimensions such as civic knowledge, opportunities for participation, equality elections, and voluntary contributions (Figure 1).

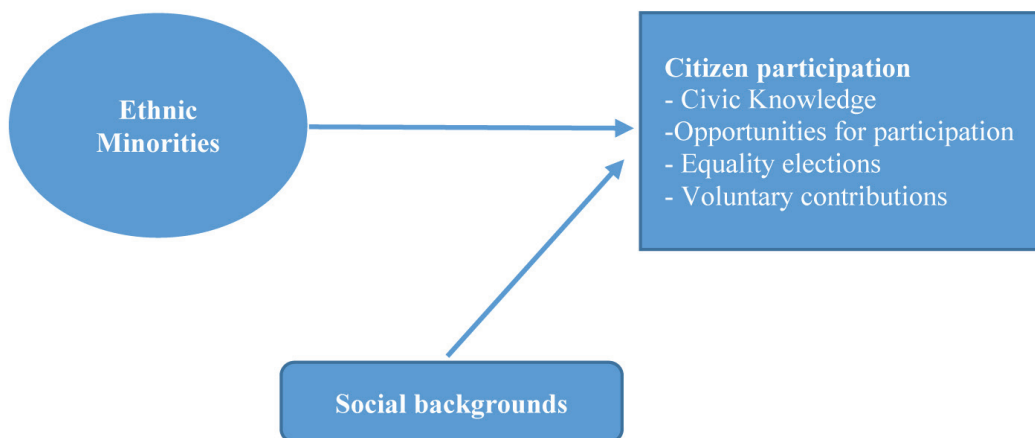


Figure 1. Research Model

In the regression, we take into account the fragmentation of ethnic minorities (EM) and estimate that in the province with a higher population density of ethnic minorities, citizen participation at the local level is lower. This leads to the main hypotheses of the present study:

H1. *The proportion of ethnic minorities is negatively associated with citizen participation at the local level.*

Concerning four sub-dimensions of citizen participation, there may be differences between the ethnic minority group and the majority group in Vietnam. Theoretically, minority groups are less likely than the majority group to have political and civic knowledge (Hart and Atkins, 2002; Torney -Putta et al., 2001; 2007). The hypothesis is raised:

H1a: *The higher proportion of ethnic minorities is, the lower level of civic knowledge will be.*

Compared with the majority group, ethnic groups have considerably fewer opportunities for participation (Stodolska et al., 2014). Therefore, it hypothesizes the following:

H1b: *The higher proportion of ethnic minorities is, the lower opportunities for participation will be.*

A previous study reveals that voter-identification legislation, specifically for minority, low-income, and less-educated people, might not influence the quality of elections (Jones, 2020). Although ethnic minorities have fewer opportunities to participate in socioeconomic matters than the majority group, they are likely to contribute to public affairs, such as monetary or in-kind, voluntary, or required (Wells-Dang et al., 2015). Therefore, in this study, we predict that the proportion of ethnic minorities will not affect the quality of local elections and voluntary contributions at the local level. Socio-demographic status explains changes in citizen participation in community management (Shamai, Abya, and Ebrahimi, 2015; Kinyanjui et al., 2013). Therefore, we also hypothesize the following:

H2. *Socio-demographic variations affect citizen participation at the local level.*

Research Methods

Data collection

We use the secondary data collected from the Public Administration Performance Index (PAPI), the Committee for Ethnic Minorities Affair, and the General Statistics Office of 63 provinces of Vietnam from 2012 to 2017. It is likely a pioneering project to use four data sets to investigate the influence of citizen participation on government performance at the provincial municipal level, at least in Vietnam. A good reason for using multiple data sets is to prevent common method bias (Alasuutari et al., 2008; Ongaro and van Thiel, 2018). This study estimates the influence of ethnic minorities group and socio-economic backgrounds on citizen participation at the local level. Hence, we use panel data analysis random-effects model (REM) with White-Huber standard errors to correct heteroskedasticity in current years. Typically, in panel data, if N (observation) is big and T (time) is short, the random-effects model (REM) is more suitable than the fixed-effect model – FEM (Clark et al., 2010).

Measures

Dependent variables. Citizen participation at the local level is interpreted explicitly by four sub-dimensions, including Civic Knowledge (CK), Opportunities for participation (OP), Quality of election (QE), and Voluntary contribution (VC) according to PAPI's definition.

Independent variable. In this study, the proportion of ethnic minorities in each province is measured as an independent variable, and we also control four factors that we hypothesize influence our independent and dependent variables, including unemployment rate, educational level, urbanization rate, and poverty rate.

Control variables

Unemployment rate. It is argued that people participate more when they have resources (time, money, civic skills) and when they are recruited (Brady et al. 1995; Gaxie, 2002; Schur, 2003). They show that employed people participate more (in all activities except voting). A recent review of the literature presents a low level of political participation of unemployed compared to employed people, although this effect may be contingent upon socio-economics status (Chabanet, 2007; Lorenzini and Giugni, 2012). In this study, we consider the unemployment rate for the regression. We estimate that in a province where the unemployment rate is higher, citizen participation in local government is lower.

Urbanization rate. Urbanization is a worldwide megatrend. It has significantly changed interactions between people and the environment in recent decades. Although theories on the relationship between social environment and civic participation are still lacking, it could be argued that the level of urbanization influences citizen participation (Davidson and Cotte, 1989; Kakumba, 2010). The place of residence shows some tendencies toward political participation. People who live in rural areas participate politically more than their urban counterparts (Richardson, 2014). Maybe rural people have fewer resources hence they have more "sense of community" than urban people (James, 2001). This study predicts that provinces with higher urbanization rates have lower levels of citizen participation.

Education level. There are great pieces of evidence that the education level of each individual affects political participation (Bovens and Wille, 2010; Berinsky and Lenz, 2011; Persson, 2014, 2015; Gidengil et al. 2017). The social network argument implies that well-educated people have a more significant stake in various policy areas. Hence, they are more inclined to participate in political affairs (Aars and Christensen, 2018). Carreira et al. (2016), on the other hand, argue that education level influences citizen participation only in the way they perceive and carry out their involvement in public policies. This study claims that provinces with higher levels of education tend to have higher levels of citizen participation.

Poverty rate. Along with education, income level is considered one of the indicators to form opinions and communicate effectively in the participation process. Typically, higher-income people have a more significant stake in various policy areas; hence income is positively associated with political interest

and participation (Campbell, 2002). It is well known, Americans with higher incomes tend to participate more actively in politics than lower-income citizens. Higher-income people are more likely to vote, participate in political discussions, attend campaign events, donate money, and contact public officials (Verba, Schlozman, and Brady 1995; Schlozman, Verba, and Brady, 2012). According to Clark and Wise (2018), this study also advocates that provinces with higher poverty rates have lower citizen participation rates.

The definitions and sources for all variables used in this study are summarized in Table 1.

Table 1

Variables definitions

Variable	Citation	Measurement	Source
Dependent variables – Citizen participation (CP) – Civic Knowledge (CK) – Opportunities for participation (OP) – Quality of election (QE) – Voluntary contribution (VC)	Andrew-Wells Dang and et.al, 2015; Giang, Nguyen and Tran, 2016; Nguyen, 2015; Jairo, Nguyen, Tran and Phung, 2015	Assess different mechanisms for citizen participation in the processes of governance and public administration.	www.papi.org.vn
Independent variables Ethnic Minorities (EM)	Hero and Tolbert, 2004; Just, 2017; Kaya, 2013	The proportion of ethnic minorities of each province	The Committee for Ethnic Minorities Affair
Control variables Unemployment rate (Un)	Chabanet, 2007; Lorenzini and Giugni, 2012	Percentage in each province	The General Statistics Office of 63 provinces
Urbanization rate (Urb)	Davidson and Cotte, 1989; Kakumba, 2010; Richardson; 2014; James, 2001.	Percentage in each province	
Education level (Edu)	Bovens and Wille, 2010; Berinsky and Lenz, 2011; Persson 2014, 2015; Gidengil and et al. 2017	Percentage of the education level of the adult population in each province	
Poverty rate (Pov)	Clark and Wise, 2018	Percentage in each province	

Sources: Composed by the author.

Models

Taken together with ethnic minorities and a set of control variables unique to each province, a basic model has been developed to examine citizen participation.

$$CP_t = f(EM, \text{other control variables}), \text{ including } CP_{i,t} = \beta_0 + \beta_1 EM_{i,t} + \beta_2 Un_{i,t} + \beta_3 Urb_{i,t} + \beta_4 Edu_{i,t} + \beta_5 Pov_{i,t} + \varepsilon$$

In which:

$CP_{i,t}$: Citizen participation in the year t

$EM_{i,t}$: the rate of ethnic minorities in each province in the year t

$Un_{i,t}$: the unemployment rate in each province in the year t

$Urb_{i,t}$: urbanization rate in each province in the year t

$Edu_{i,t}$: education level in each province in the year t

$Pov_{i,t}$: poverty rate in each province in the year t

ε : an error term.

We run a set of two models to investigate the effects of ethnic minorities and socio-demographic backgrounds on citizen participation at the local level. Model 1 examines the influence of ethnic minorities and demographic, social backgrounds on citizen participation at the local level. Model 2 estimates these effects in terms of four sub-dimensions of citizen participation, including Civic Knowledge (CV), Opportunities for participation (OP), Quality of elections (QE), and Voluntary contributions (VC), respectively.

Results

Citizen participation (including its four sub-dimensions), the proportion of ethnic minorities, unemployment rate, urbanization rate, education level, and poverty rate in 63 provinces of Vietnam are varied. Table 2 presents descriptive statistics on these variables.

Table 2

Descriptive Statistics

Variable	Obs	Min	Max	Mean	Std. Dev.
Dependent variables					
CP (citizen participation at the local level)	376*	3.75	6.81	5.19	.5081427
CV (Civic Knowledge)	376	0.62	1.92	1.14	.2680549
OP (Opportunities for participation)	376	1.19	2.13	1.73	.1886285
QE (Quality of elections)	376	1.05	1.87	1.53	.1601344
VC (Voluntary contributions)	376	0.47	1.795	.89	.2140561
Independent Variable					
EM (Ethnic Minorities)	378	.05	92.69	22.3	28.61
Control Variables					
Un	378	.14	4.96	2.02	1.077189
Urb	378	9.72	87.62	27.70	17.06517
Edu	378	5.1	42.7	16.82	6.930949
Pov	378	0	43.5	10.49	8.496367

Sources: Calculated by author.

Note: *The database has missing values of two provinces (Bac Giang and Dong Thap) in 2014.

Based on data from the PAPI's report, we found that citizen participation at the local level is differentiated by geographical characteristics (Table 3). From 2012 to 2015, the average level of citizen participation at the local level decreased with fluctuation, reaching the lowest of 4.85 out of 10 in 2015. This was, followed by a dramatic increase, and peaked at 5.4 out of 10 in 2016.

Then, it decreased slightly in 2017. Northern people tend to be more active in participation compared to Southern people. For instance, from 2012 to 2017, the average citizen participation score of the Northern region was 5.38 out of 10, compared to 4.98 out of 10 in the Southern region. Most of the provinces that achieved the highest scores were in the North. This phenomenon of regional convergence dates back to 2011 and has intensified over the last six years.

Additionally, most of the provinces that got received the lowest score to scores have a high proportion of ethnic minorities, such as Lai Chau (85.98%), Cao Bang (92.69%), and Lang Son (87.46%). Most strikingly, Ha Tinh is the only province that got achieved the highest score in citizen participation at the local level from 2015 to 2017. In fact, in Ha Tinh, opportunities for the participation of citizens as well as the quality of elections are also extremely high. Perhaps the success of this participatory process is largely due to the will and ability of the Ha Tinh authorities to undertake participatory planning (Dang and et al., 2016).

We also found that the average percentage of ethnic minorities in Vietnam is over 22%, spread over 63 provinces. All provinces with the highest proportion of ethnic minorities, such as Cao Bang (92.69%), Lang Son (87.46%) and Lai Chau (85.98%), are located in rural mountainous areas. The other provinces with the lowest proportion of ethnic minorities, such as Hai Phong (0.05%) and Ha Nam (0.1%), are located in urban or delta areas.

Table 3

Citizen Participation at Vietnam provinces from 2012 to 2017

	N	Minimum		Maximum		Mean	Std. Deviation
CP2012	63	4.17	(Dak Lak ²)	6.19	(Binh Dinh ²)	5.2760	.46096
CP2013	63	4.32	(Lai Chau ¹)	6.48	(Quang Binh ¹)	5.2068	.43856
CP2014	61	3.96	(Ninh Thuan ²)	5.89	(Quang Tri ¹)	4.9880	.41806
CP2015	63	3.75	(Lai Chau ¹)	6.44	(Ha Tinh ¹)	4.8522	.50862
CP2016	63	4.43	(Tra Vinh ²)	6.81	(Ha Tinh ¹)	5.4006	.52227
CP2017	63	4.33	(Binh Duong ²)	6.41	(Ha Tinh ¹)	5.3714	.44774

Sources: Calculated by the author.

Notes: ¹ Provinces belong to the North region.

² Provinces belong to the South region.

As the data revealed in Table 4 shows, ethnic minorities, and socio-demographic characteristics can explain 36% of the Vietnamese provinces' variance in citizen participation.

Furthermore, these variables can explain the variations of the four sub-dimensions of citizen participation from 2% (opportunities for participation) to approximately 22% (civic knowledge), and around about 30% (voluntary contribution) to 47% (quality of election).

The proportion of ethnic people living in each province is negatively associated with citizen participation at the local level and one sub-dimension (civic knowledge).

The coefficient of ethnic minorities is consistently negative and significant in Model 1 and Model 2, except for the last three sub-dimensions of CP ($\beta_1 = -0.002$, $p \leq 0.05$; $\beta_2 = -0.004$, $p \leq 0.01$, respectively). These results strongly support hypotheses H_1 and H_{1a} that the proportion of ethnic minorities in each province is negatively associated with citizen participation at the local level and civic knowledge.

Additionally, there is no significant effect of ethnic minorities on opportunities for participation (OP).

Additionally, even though there is no significant effect of ethnic minorities on opportunities for participation (OP), the negative sign is as expected ($\beta = -0.0009$).

Especially, ethnic minorities have no effect on the quality of elections (QE) and voluntary contributions (VC), which supports our original arguments.

These results do not support hypothesis H_{1b} . To summarize, citizens who belong to non-ethnic people groups are more likely to participate in local affairs than ethnic ones in Vietnam. Furthermore, Model 1 shows that four socio-demographics (unemployment rate, urbanization rate, education level, and poverty rate) are statically significant in explaining citizen participation at the local level.

The results support our hypothesis H_2 . In general, our findings also support other scholars' arguments (Nguyen et al., 2015; Jairo, Nguyen, Tran, and Phung, 2015). In provinces with a higher education level population, citizen participation is more robust than in regions with lower educational attainment ($\beta = 0.026$, $p < 0.01$).

The most noticeable point of these findings is that citizens in provinces with higher unemployment rates, higher urbanization rates, and higher poverty rates tend to participate less actively in local government. ($\beta = -0.066$, $p < 0.1$; $\beta = -0.013$, $p < 0.01$; $\beta = -0.008$, $p < 0.1$, respectively).

One striking finding is that comparing Model 2 to Model 1; the socio-demographic conditions are only statistically significant in explaining the first sub-dimension of CP-civic knowledge. Individual provinces having a higher unemployment rate and higher poverty rate can lead to lower civic knowledge ($\beta = -0.06$, $p < 0.01$; $\beta = -0.008$, $p < 0.1$).

Additionally, education level is still positively related to civic knowledge ($\beta = 0.06$, $p < 0.01$). Even though there is no significant effect of the urbanization rate on civic knowledge, a positive sign is expected ($\beta = 0.00$).

Table 4

**The effect of ethnic minorities and socio-demographic backgrounds
on citizen participation at the local level**

	Model 1	Model 2			
	CP	CV	OP	QE	VC
Model	(n=376)	(n=376)	(n=376)	(n=376)	(n=376)
EM	-0.002**	-0.004***	-0.0009	0.00	0.000
	(0.0014)	(0.0008)	(0.0005)	(0.000)	(0.000)
Un	-0.066*	-0.06***	-0.02*	-0.008	-0.02
	(0.038)	(0.013)	(0.012)	(0.012)	(0.002)
Urb	-0.013***	0.000	0.000	-0.004***	0.006***
	(0.003)	(0.001)	(0.000)	(0.000)	(0.001)
Edu	0.026***	0.006***	0.001	0.01***	0.175***
	(0.007)	(0.002)	(0.002)	(0.002)	(0.075)
Pov	-0.008*	-0.008***	(0.003)*	-0.001	-0.02***
	(0.006)	(0.003)	0.003	(0.002)	(0.002)
Costant	5.37***	1.16***	1.72***	1.48***	1.16***
	(0.178)	(0.04)	(0.05)	(0.05)	(0.06)
R-squared	0.36	0.22	0.02	0.47	0.30

Source: Calculated by the author.

Notes: Robust standard errors in parentheses: *** P < 0.01; ** P < 0.05; * P < 0.1.

Discussion and Conclusion

The findings in Model 1 support our hypotheses H_1 , H_{1a} , and H_2 and the arguments of other scholars (Nguyen, 2015; Jairo, Nguyen, Tran, and Phung, 2015) that the disparities between the majority Kinh population and the ethnic minorities and the regional differences in socio-demographic background, all these factors influence citizen participation at the local level in Vietnam. Individual provinces with a higher percentage of ethnic minorities have a lower level of citizen participation including civic knowledge.

Although the Vietnamese government has prioritized many policies for ethnic minorities, they also less fully and formally participate in local government. This issue may be originated from a lack of education and poverty. It is evident that the percentage of college-educated ethnic minorities is deficient, and nearly 21% of the ethnic minority people in Vietnam are illiterate (MOET, 2019). In addition, the proportion of poor and near-poor ethnic minority households

is 35.5 percent, nearly 3.5 times higher than the national average of 10.2 percent (GSO, 2019). Hence, *non-Kinh* people have lower civic knowledge than the majority Kinh group.

Additionally, in provinces with higher unemployment rates, urbanization rates, and higher poverty rates, citizens tend to participate less actively in local government. Most ethnic minority people live in rural and mountainous areas; their life is tough. According to the results of the national survey of 53 ethnic minority groups in 2015, the rate of ethnic minority poverty still accounts for over 23%, which is four times higher than the average national rate. Especially in some places, the poverty rate of *non-Kinh* people is also around 50% (UNDP, 2017). Thus, they definitely cannot afford voluntary contributions to local governments rather than the majority group. These disparities in citizen participation between ethnic minorities and the *Kinh* majority still stand in sharp contrast to evidence of the Grassroots Democracy Ordinance in favor of citizen participation to increase empowerment and equality. More precisely, in the province where *Kinh's* population density is high, citizen participation at the local level is higher. Therefore, promoting citizen participation for ethnic minorities also becomes an issue.

After the *Doi moi* (Renovation) of 1986, Vietnam has become one of the most dynamic and impressive countries in South East Asia. Accordingly, citizens have a greater awareness of their civil rights as they have more opportunities to access information and education. This issue is one of the most important cornerstones for promoting democracy in Vietnam. The Vietnamese government has implemented many policies to improve ethnic minorities' lives, but the results have not been achieved. Most supported policies are likely built in centralization – a “top-down” approach, not being informed, and consulted through citizen participation.

Despite the Vietnam 2015 Law setting a minimum quota for members of ethnic minorities to be nominated for the election of deputies to the National Assembly, in reality, ethnic citizens do not participate in the formulation and implementation of policies and oppose some unreasonable policies. In Vietnam, the government has implemented many different measures to democratize economic, political, and social life and enhance citizen participation. However, the effects of democratization need to be carefully scrutinized. Theoretically, “members of ethnic minorities are generally less active in politics.” Our results support the arguments that the disparities between the majority of Kinh people and ethnic minority groups and the socio-economic conditions among 63 provinces all influence citizen participation at the local level in Vietnam.

Perhaps the most critical challenge for governments in the 21st century is how to build a fairer and equal society to achieve sustainable development goals, with the role of citizen participation coming into play. With these findings, this study proposes some policy implications for enhancing citizen participation to ensure the development rights of ethnic minorities. First, policymakers should implement equal policies and strategies to truly empower ethnic minorities in remote areas through more effective mass organizations because they mainly live in the mountainous and remote regions where there are few mass

organizations. According to the Western theory of democracy, interest groups or mass organizations often initiate and organize various kinds of events to rally support. Therefore, the more organizations and the more members in mass organizations are in one place, presumably the higher citizen participation is.

Additionally, the transformation of mass organizations to become more open and democratic instead of simply serving as the propaganda agency of the State is also important. Significantly, the Vietnamese government should emphasize policies concerning education and training for ethnic minorities. This strategy might be more fruitful because it would lead to more robust support for citizen participation, which is important for democracy.

To suit the unique conditions and culture of each region, minority groups should be directly involved in the formulation and implementation of local policies, rather than following the centralization policies of the central government. When the draft of the procedure is completed, they should be invited to independently participate in the consultations and directly implement and supervise local civil works.

Several significant limitations need to be considered in this study. First, we use the secondary data from multiple datasets from 2012 to 2017 because the National data of Ethnic minorities have not been updated until now. Second, besides the representative bureaucracy and inclusion theory, this study should have broader, more generalized theoretical implications to both the theoretical framework and analysis specific to Vietnam. Third, because Vietnam belongs to the ASEAN community, further study should focus on comparison among these countries.

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REFERENCES

1. Aars, J. and Christensen, D.A. (2018) 'Education and political participation: the impact of educational environments', *Acta Politica*, DOI:10.1057/s41269-018-0101-5
2. AbouAssi, K., Nabatchi, T. and Antoun, R. (2013, Nov 15) 'Citizen participation in public administration: Views from Lebanon', *International Journal of Public Administration*, 36(14), pp. 1029–1043.
3. Alemika, E.E. (2007) 'Quality of elections, satisfaction with democracy and political trust in Africa', in: E.G.-B. Michael Bratton (ed.) *Afrobarometer Working Papers*. Globalbarometer.

4. Wells-Dang, A., Nguyen Tran Lam, Le Kim Thai and Do Thanh Huyen (2015) *Increasing citizen participation in governance in Vietnam*. October 29. Available at: <https://vietnamlawmagazine.vn/increasing-citizen-participation-in-governance-in-vietnam-5047.html> (accessed 16th September 2019)
5. Banducci, S.A., Donovan, T. and Karp, J.A. (2004) 'Minority representation, empowerment, and participation', *The Journal of Politics*, 66(2), pp. 534–556.
6. Beckwith, K. (1986) *American women and political participation the impacts of work, generation, and feminism*. New York: Greenwood Press.
7. Beebejaun, Y. (2006) 'The participation trap: The limitations of participation for ethnic and racial groups', *International Planning Studies*, 11(1), pp. 3–18.
8. Berinsky, A.J. and Lenz, G.S. (2011) 'Education and political participation: Exploring the causal link', *Political Behavior*, 33(3), pp. 357–373.
9. Bird, K. (2003) *The political representation of women and ethnic minorities in established*. Available: https://www.researchgate.net/publication/228582322_The_Political_Representation_of_Women_and_Ethnic_Minorities_in_Established_Democracies_A_Framework_for_Comparative_Research#pf25 (accessed 28 February 2020).
10. Democracies. *Working Paper presented for the Academy of Migration Studies in Denmark (AMID)*. 2005. Academy of Migration Studies in Denmark, Denmark: Aalborg University.
11. Bird, K. (2005). The political representation of visible minorities in electoral democracies: A comparison of France, Denmark, and Canada. *Nationalism and Ethnic Politics*, 11(4), pp. 425–465.
12. Bovens, M. and Wille, A. (2010) 'The education gap in participation and its political consequences', *Acta Politica*, 45(4), pp. 393–422.
13. Bradbury, M. and Kellough, J.E. (2010) 'Representative bureaucracy: Assessing the evidence on active representation', *The American Review of Public Administration*, 41(2), pp. 157–167. DOI: 10.1177/0275074010367823
14. Bradbury, M. and Kellough, J.E. (2011) 'Representative bureaucracy: Assessing the evidence on active representation', *The American Review of Public Administration*, 41(2), pp. 157–167.
15. Bradbury, M. and Kellough, J.E. (2011) 'Representative bureaucracy: Assessing the evidence on active', *The American Review of Public Administration*, March, 41(2), pp. 157–167. DOI: 10.1177/0275074010367823
16. Brady, H., Verba, S. and Schlozman, K. (1995) 'Beyond ses: A resource model of political participation', *The American Political Science Review*, 89(2), pp. 271–194. DOI: 10.2307/2082425
17. Brenya, E., Mensah, A.E. and Nyarko, C. (2015) 'Women participation in local governance: A case study of the Kumasi Metropolitan Assembly', *International Journal of Advanced in Social Sciences and Humanities*, 3(3), pp. 15–28.
18. Bui, T.H. (2013) 'The development of civil society and dynamics of governance in Vietnam's one-party rule', *Global Change, Peace and Security*, 25(1), pp. 77–93. DOI: 10.1080/14781158.2013.758100
19. Campbell, A.L. (2002) 'Self-interest, social security, and the distinctive participation patterns of senior citizens', *The American Political Science Review*, 96(3), Sept., pp. 565–574.
20. Carreira, V. et. al. (2016) 'Legal citizen knowledge and public participation on environmental and spatial planning policies: A case study in Portugal', *International Journal of Humanities and Social Science Research*, 2(7), pp. 28–33.

21. Choi, Y.C. (2018) 'The evolution of Korean public administration and policy', in: K.-H.C. Keun Namkoong, *Public Administration and Policy in Korea: Its Evolution and Challenges*. Korea: Routledge.
22. Clark, J. and Wise, N. (2018) *Urban renewal, community and participation: Theory, policy, and practice* (1st ed., Vol. The Urban Book Series). Springer.
23. Coffé, H.B. (2010) 'Same game, different rules? Gender differences in political participation', *Sex Roles*, 62(5–6), pp. 318–333.
24. Coley, R.J. (2012) *Fault lines in our democracy civic knowledge, voting behavior, and civic engagement in the United States*. New Jersey: ETS.
25. Davidson, W.B. and Cotte, P.R. (1989) 'Sense of community and political participation', *Journal of community psychology*, 17(2), pp. 119–125. DOI:10.1002/1520-6629(198904)17:2
26. Dolan, J. and Rosenbloom, D.H. (2003) *Representative bureaucracy: Classic readings and continuing controversies*. Armonk, N.Y: M.E. Sharpe.
27. Emorine, M., La, H.A., Lamballe, Y. and Oudin, X. (2015) *Citizens' participation in Vietnam*. Hanoi: LEDa. Available at: <https://basepub.dauphine.fr/handle/123456789/18493> (accessed 17th October 2019).
28. Farazmand, A. (2004) *Sound Governance: Policy and administrative innovations*. Westport: Greenwood Publishing Group.
29. Fraune, C. (2015) 'Gender matters: Women, renewable energy, and citizen participation in Germany', *Energy Research and Social Science*, 7, pp. 55–65.
30. Frederickson, H.G. (2012) *The public administration theory primer*. Philadelphia, USA: Westview Press.
31. Fung, A. (2015) 'Putting the public back into governance: The challenges of citizen participation and its future', *Public Administration Review*, 75(4), pp. 513–522.
32. Galston, W.A. (2007) 'Civic knowledge, civic education, and civic engagement: A summary of recent research', *International Journal of Public Administration*, 30(6–7), pp. 623–642.
33. Gaxie, D. (2002) 'Appre'hensions du politique et mobilisations des expe'riences sociales', *Revue Française de Science Politique*, 52, pp. 145–178.
34. *General statistics office of Vietnam* (2005). Available at: https://www.gso.gov.vn/Default_en.aspx?tabid=515 (accessed 30th June 2019).
35. Ghai, Y. (2008) *Public participation and minority rights*. UK: MRG.
36. Gidengil, E., Tarkiainen, L., Wass, H. and Martikainen, P. (2017) 'Turnout and education: Is education proxying for pre-adult experiences within the family?', *Political Science Research and Methods*, pp. 1–17.
37. Haque, M. (2003) 'Citizen participation in governance through representation: Issue of gender in East Asia', *International Journal of Public Administration*, 26(5), pp. 569–590.
38. Hart, D. and R. Atkins (2002) 'Civic development in urban youth', *Applied Developmental Science*, 6(4), pp. 227–236.
39. Hero, R.E. and Tolbert, C.J. (2004) 'Minority voices and citizen attitudes about government responsiveness in the American States: Do social and institutional context matter?', *British Journal of Political Science*, 34(1), pp. 109–121.

40. Holdar, G.G. and Zakharchenko, O. (2002) 'Practical issues for citizen participation', in Holdar G. *Citizen participation handbook people's voice project International Centre for Policy Studies*. "iMedia" Ltd, pp. 15–18.
41. Imai, K.S., Gaiha, R. and Kang, W. (2011) 'Poverty, inequality and ethnic minorities in Vietnam', *International Review of Applied Economics*, 25(3), pp. 249–282.
42. People and participation: How to put citizens at the heart of decision-making. *Involve*, 2005, Mar 1. Available at: <https://www.involve.org.uk/sites/default/files/uploads/People-and-Participation.pdf> (accessed 28 February 2023).
43. Jairo, A.A., Nguyen, C., Tran, A. and Phung, T. (2015) 'The urban-rural gap in governance and public administration: Evidence from Vietnam', *International Public Management Review*, 16(1), pp. 165–191.
44. James, R. (2001) 'Participation disadvantage in Australian higher education: An analysis of some effects of geographical location and socioeconomic status', *Higher education*, 42(4), pp. 455–472. DOI:10.1023/A:1012264010667
45. Jones, M.P. (2020) *Voting and political representation in America: Issues and trends*. USA: ABC CLIO, Incorporated.
46. Just, A. (2017) 'Race, ethnicity, and political behavior, groups and identities', in Thompson, W.R. *The Oxford Research Encyclopedia of Politics*. Oxford University Press.
47. Kakumba, U. (2010) 'Local government citizen participation and rural development', *International Review of Administrative*, 76(1), pp. 171–186. DOI:1177/0020852309359049
48. Kaya, C. (2013) 'Ethnic minorities and political participation', *E-International Relation Students*, May 20. Available at: <https://www.e-ir.info/2013/05/20/ethnic-minorities-and-political-participation/> (accessed 28 February 2023).
49. Kerkvliet, B.J., Nguyen, Q. and Bach, T. (2008) *Forms of engagement between state agencies and civil society organizations in Vietnam*. Hanoi: VUFO-NGO Resource Centre.
50. Kingsley, D. (1944) *Representative bureaucracy: An interpretation of the British Civil Service*. Ohio: The Antioch Press.
51. Kingsley, J.D. (1944) *Representative bureaucracy: an interpretation of the British civil service*. The Antioch Press, Yellow Springs.
52. Kinyanjui, K.D. and Josephine, M. (2013) 'Socio-economic status and participatory development in Kenya', *International Journal of Humanities and Social Science*, 3(1), pp. 183–193.
53. Kochan, T., Bezrukova, K., Ely, R., Jackson, S., Joshi, A., Jehn, K., et al. (2003) 'The effects of diversity on business performance: Report of the diversity research network', *Human Resource Management*, 42, pp. 3–21.
54. Larkey, L.K. (1996) 'The development and validation of the workforce diversity questionnaire', *Management Communication Quarterly*, 9, pp. 296–337.
55. Leigh, B.T. (2018, July) 'The impact of country characteristics on civic knowledge and political participation', *POLITIKON: The IAPSS Journal of Political Science*, 37, pp. 6–18.
56. Lim, H.-H. (2006) 'Representative bureaucracy: Rethinking substantive effects and active representation', *Public Administration Review*, 66(2), pp. 193–204.

57. Lind, N.S. (2016) 'Representative bureaucracy', in Farazmand, A. *Global encyclopedia of public administration, public policy, and governance*. Springer, Cham. DOI: <https://doi.org/10.1007/978-3-319-31816-5>
58. Lirio, P., Lee, M.D., Williams, M.L., Haugen, L.K. and Kossek, E.E. (2008) 'The inclusion challenge with reduced -load professionals: The role of the manager', *Human Resource Management*, 47, pp. 443-461.
59. Luu Thi Hoa and Pham Bao Duong (2013) 'Citizen participation of ethnic minority communities in poverty reduction activities in the Northern mountainous region of Vietnam', *Journal of Science and Development*, 11(2), pp. 249-259.
60. McGrath, J.E., Berdahl, J.L. and Arrow, H. (1995) 'Traits, expectations, culture, and clout: The dynamics of diversity in work groups', in Jackson, S.E. and Ruderman, M.N. (eds.), *Diversity in work teams*. Washington, DC: American Psychological Association, pp. 17-45.
61. Marques, M.M. and Santos, R. (2004) 'Top-down and bottom-up reconsidered: The dynamics of immigrant participation in local civil society', in Penninx, K.K.R. *Citizenship in European cities: Immigrants, local politics, and integration policies*. Ashgate: Aldershot.
62. Meer, F.M, van der and R. Robough (1996) 'Civil servants and representatives in Bekke, H.A., Toonen, Th.A., Perry, J.L. (eds.) *Civil Service Systems in Comparatives Perspective*. Bloomington/Indiana: Indiana University Press, pp. 119-37.
63. Michels, A. (2011) 'Innovations in democratic governance: How does citizen participation contribute to a better democracy?', *International Review of Administrative Sciences*, 77(2), pp. 275-293.
64. Miller, F.A. (1998) 'Strategic culture change: The door to achieving high performance and inclusion', *Public Personnel Management*, 27, pp. 151-160.
65. Milliken, F. and Martins, L. (1996) 'Searching for common threads: Understanding the multiple effects of diversity in organizational groups', *Academy of Management Review*, 21, pp. 402-433.
66. MOET (2019), August 13. Available at: <https://moet.gov.vn/giaoducquocdan/giao-duc-dantoc/Pages/Default.aspx?ItemID=6182> (accessed 16th September 2019).
67. Mosher, F.C. (1968) *Democracy and the public service*. Oxford, England: Oxford University Press.
68. Nguyen, V.T., Le, C.Q, Tran, T.B. and Bryant, C.E. (2015) 'Citizen participation in city governance: Experiences from Vietnam', *Public Administration and Development*, 35(1), pp. 34-45.
69. OECD (2001a) *Citizen as partner: OECD handbook on information, consultation and public participation in policy-making*. OECD Publications.
70. Olk, S. (2003) *The relationship between economic development and democracy in Africa: A quantitative and qualitative perspective*. University of Trier. DOI: www.politik.unitrier.de/pubs/ma/olk.pdf
71. Parvin, P. (2018) 'Democracy without participation: A new politics for a disengaged era', *Res Publica*, 24(1), pp. 31-52.
72. Pateman, C. (1970) *Participation and democratic theory*. Cambridge: Cambridge University Press.

73. Persson, M. (2014) 'Testing the relationship between education and political participation using the 1970 British cohort study', *Political Behavior*, 36(4), pp. 877–897.
74. Pham, H., Le, T., and Nguyen, C. (2011) *Poverty of the Ethnic Minorities in Vietnam: Situation and Challenges from the CT 135-II Communes*. Hanoi, Vietnam: Research report for State Committee for Ethnic Minority Affairs of Vietnam and United Nations Development Program.
75. Pharr, S.J. and Putnam, R.D. (2000) *Disaffected democracies: What's troubling the trilateral countries?* New Jersey: Princeton University Press.
76. Pilkington, A. (2003) *Racial disadvantage and ethnic diversity in Britain*. New York: Palgrave.
77. Plümper, T. and Martin, C.W. (2003) 'Democracy, government spending, and economic growth: A political-economic explanation of the Barro-effect', *Public Choice*, 117(1/2), Oct., pp. 27–50.
78. Quick, K.S. and Bryson, J. (2016) 'Theories of public participation in governance', in: Torb-ing, C.A. *Handbook of Theories of Governance*. Edward Elgar.
79. Rex, J.A. (1967) *Race, Community and Conflict*. London: Oxford Univeristy Press.
80. Richardson, B. (1973) 'Urbanization and political participation: The case of Japan', *American Political Science Review*, 67(2), pp. 433–452. DOI: 10.2307/1958775
81. Roberson, Q.M. (2006) 'Disentangling the meanings of diversity and inclusion in organiza-tions', *Group and Organization Management*, 31(2), pp. 212–236.
82. Schlozman, K.L., Burns, K., Verba, S. and Donahue, J. (1995) 'Gender and citizen participa-tion: Is there a different voice?', *American Journal of Political Science*, 39(2), pp. 267–293.
83. Schur, L. (2003) 'Employment and the creation of an active citizenry', *British Journal of In-dustrial Relations*, 41, pp. 751–771.
84. Shamai, A., Abya, H. and Ebrahimi, M. (2015) 'Factors influencing citizen participation in community management', *Management Science Letters*, 5, pp. 407–412.
85. Shanks, E. et. al. (2004) *Understanding pro-poor political change: Vietnam*. London: Overseas Development Institute.
86. Sharp, E.B. and Bath, M. (1993) 'Citizenship and economic development', in: Mier, R.D., *Theories of Local Economic Development*. Newbury Park: Sage, pp. 213–231.
87. Shore, L., Randel, A., Chung, B., Dean, M., Holcombe Ehrhart, K. and Singh, G. (2011) 'Inclusion and diversity in work groups: A review and model for future research', *Journal of Management*, 37(4), pp. 262–1289.
88. Speer, J. (2012) 'Participatory governance reform: A good strategy for increasing government responsiveness and improving public services?', *World Development*, 40(12), pp. 2379–2398.
89. Stodolska, M. et. al. (2014) *Race, ethnicity, and leisure perspectives on research, theory and practice*. USA: Seridan Books.
90. Strange, J.H. (1972) 'Citizen participation in community action and model cities programs', *Public Administration Review*, 32, pp. 655–669.
91. Torney-Purta J., Barber, C.H. and Wilkenfeld, B. (2007) 'Latino adolescents' civic devel-opment in the United States: Research results from the IEA civic education study', *Journal of Youth and Adolescence*, 36(2), pp. 111–125. DOI:10.1007/s10964-006-9121-y

92. Torney-Purta, J., Lehmann, R., Oswald, H. and Schulz, W. (2001) *Citizenship and education in twenty-eight countries: Civic knowledge and engagement at age fourteen*. Amsterdam: IEA
93. Umaña-Taylor, A.J. and Updegraff, K.A. (2007) 'Latino adolescents' mental health: Exploring the interrelations among discrimination, ethnic identity, cultural orientation, self-esteem, and depressive symptoms', *Journal of Adolescence*, 30(4), pp. 549–567.
94. UNDP. (2017), June 30. Available at: <https://www.vn.undp.org/content/vietnam/vi/home/library/poverty/bao-cai-53-dan-tc.html>. (accessed 30th June 2019).
95. Van Gool, S.M. (2008) *Untouchable bureaucracy: Unrepresentative bureaucracy in a North Indian State*. Leiden: University of Leiden.
96. Verba, S., Schlozman, L., Brady, H. and Nie, N. (1993) 'Citizen Activity: Who participates? What do they say?' *American Political Science Review*, 87, pp. 303–318.
97. Wilson, W.J. (1978) *The declining significance of race: Blacks and changing American institutions*. Chicago, IL: The University of Chicago Press.
98. Wirls, D. (1986) 'Reinterpreting the gender gap', *Public Opinion Quarterly*, 50, pp. 316–330.
99. World Bank (2009) *Country social analysis: Ethnicity and development in Vietnam*. Washington: The International Bank for Reconstruction and Development/The World Bank.
100. World Bank (2013) *2012 Vietnam poverty assessment: Well begun, not yet done -Vietnam's remarkable progress on poverty reduction and the emerging challenges*. Washington, D.C: World Bank.

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CIVIL SOCIETY PARTICIPATION IN NATURAL RESOURCE MANAGEMENT IN CONSERVATION AREAS: AN EMPIRICAL STUDY OF TESSO NILO NATIONAL PARK, RIAU PROVINCE, INDONESIA

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Abstract. Civil society plays an important role in the management of national parks, but there needs to be more literature on the interactions of civil society with government. The participatory management strategy has been criticized for articulating the ideals of failed collaboration in the management of national parks. The implementation of a collaborative management strategy has provided significant opportunities and roles for civil society in the management of the national park, taking into account the social, economic, and cultural conditions and expectations of the local community. The aim of this study is to empirically examine the participation of civil society and challenges in the management of Tesso Nilo National Park in Riau Province. Using qualitative and quantitative approaches through snowball interviews and social network modeling, and conducting a case study analysis, our findings show that the community is still given a secondary role. The involvement of civil society in the collaborative management of Tesso Nilo National Park still needs to be strengthened. However, the institutional formation and the nature of their involvement in supporting and implementing activities still needs to be improved. In some cases, community empowerment has already

begun. The main challenges are related to regulations or policies, community capacity, resources and governance relationships, therefore the objectives of collaborative national park management activities have not been achieved.

Keywords: participation, civil society, collaborative, management, community, Tesso Nilo.

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JEL Classification: H1, H53, H76, H83.

Introduction

Conservation areas, including national parks, are now considered part of the economic, social, cultural, and environmental landscape of surrounding community (Brill et al., 2017). As the understanding of the importance of national parks evolves, the management model needs to be changed (Bulatovic and Tripkovic-Markovic, 2015) to achieve harmony between the functions of national park management among stakeholders such as central government, local governments, the private sector, community-based organisations (CBOs) and non-governmental organisations (NGOs). (Puhakka and Saarinen, 2013). The policy of managing national parks by providing regulations based on command and control is clearly not effective enough to solve the problems in national parks. The management process that is top-down in nature is often not careful enough to identify potential problems in the field, which ultimately makes the situation worse. For example, in Nepal, the Nationalization Act of 1957, gave the state complete control over the country's commercial timber market (Jones, 2007), which led to massive deforestation because the government to monitor forest areas, especially in remote rural areas.

Management of National Parks as mandated by the international community The World Commission on Protected Areas (WCPA) cannot be managed by only one institution, but must involve various parties and must be able to provide economic benefits to interested parties, including the people living in and around the conservation area. Cernea and Schmidt-Soltau (2006) have led conservation area management to involve local people in co-management of natural resources and to promote community-based natural resource management (Mahajan et al., 2021).

Experts argue that for successful co-management, community members must have a strong understanding of natural resource ownership and be involved in decision-making as equal partners with governmental and non-governmental actors (Measham and Lumbasi, 2013; Roka et al., 2019).

In Indonesia, cooperation in the management of national parks was widely introduced in early 2005 because it was related to the issuance of the Minister of For-

estry Regulation No. P.19/Menhut II/2004 concerning collaborative management of nature reserves and nature conservation areas including national parks. Arrangements for the implementation of collaboration are regulated in quite detail in Articles 4–8, which include the principle of partnership, the types of activities, the types and criteria of actors that can be involved, the position of actors as initiators, facilitators, and companions, the possible forms of support, and aspects of funding (WWF-Indonesia, 2006). Until 2015, the government in Indonesia had established no less than 50 conservation areas (Direktorat Jenderal KSDE, 2016), one of these is the Tesso Nilo National Park (TNNP), located in Pelalawan Regency and Indragiri Hulu Regency, Riau Province. The management of Tesso Nilo National Park is under the Tesso Nilo National Park Center (BTNTN) Pelalawan, which is structurally under the authority of the Directorate General of Forest Protection and Nature Conservation of the Ministry of Forestry. In its management, Tesso Nilo National Park is actively exploring partnerships with local governments, private companies, CBOs, and NGOs to address community interests through a collaborative approach based on experiences around the world and adapted to the ongoing social context since the early 1990s.

Therefore, community participation in TNNP may not be a new idea in conservation, but it will definitely become more institutionalised as a partner for the government. However, who belongs to civil society and how they should be involved are important questions to be answered in this research. The challenge for the authorities is to effectively involve civil society as a stakeholder in the management of TNNP and ensuring adequate representation of community interests and public involvement must go beyond consultation (Arnstein, 2019). At the national level, this is challenging. Still, at the local scale, it may be more achievable, especially in the sense of place in the relationship between a person and a place (Jorgensen and Stedman, 2006) which can be used to engage civil society through its relationship with national park management (Hausmann et al., 2016).

In discussing civil society participation in the management of TNNP, some advocate for civil society to serve as a democratic facilitator, while others see civil society as part of a post-political management system that promotes the legitimacy and inclusivity of democracy (Flannery et al., 2018). Civil society is seen as being solely committed to a conservation obligation rather than representing a broader range of community interests. As a result, civil society must be able to play a role as an advocate for community interests in the management of TNNP by empowering communities, as their presence can also help to increase the benefits and dynamism of existing groups (Cooke and Kothari, 2001).

Several research on civil society engagement in the management of national parks have been presented. The majority of the evidence focuses on the advantages and limitations of civil society rather than their interactions with the federal or state governments (He et al., 2020; Colua de Oliveira et al., 2021; Friedman et al., 2020). This research aims to fill a gap in the literature. There is a lack of research on the connection between civil society and the central government in TNNP administration. The goal of this study is to experimentally investigate civil society engagement in the management of Tesso Nilo National Park and the most significant problems. Using a collaborative approach paradigm, we began our research

by enhancing information regarding TNNP management by integrating civil society. We explored the relationships and role of each stakeholder using a social networking method to further examine the role and establish collaborative issues in supporting the ongoing growth of the management of TNNP, and the final part will present conclusions.

Methods

Case Study Area

The research site is in the Tesso Nilo National Park which is located at coordinates between 000 05' 40" and 00° 20' 47" south latitude and 101° 35' 21" and 102° 03' 21" east longitude. Administratively, TNNP is located in two regencies, namely Pelalawan Regency and Indragiri Hulu Regency, in Riau-Indonesia Province (Figure 1). The Tesso Nilo forest area has a topography ranging from lowlands to hilly areas. The TNNP area and its surroundings are water catchment areas for several rivers, including the Tesso River (in the west), the Segati River (in the north), and the Nilo River (in the east). All three are sub-watersheds of Kampar, precisely between the Tesso and Nilo watersheds in Riau Province.

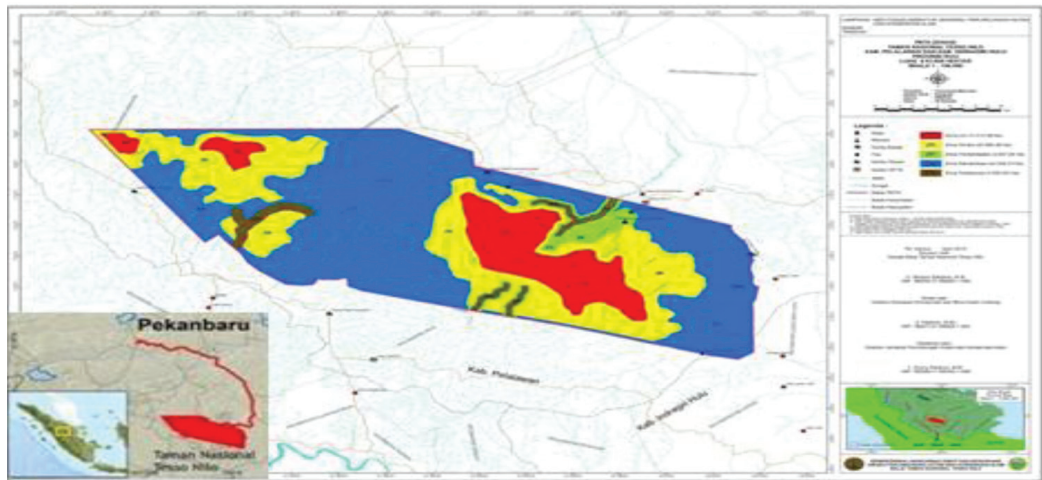


Figure 1: Location of Tesso Nilo National Park, Riau Province.

Source: Balai Taman Nasional Teso Nilo, 2021.

The Tesso Nilo forest area was formerly known as the Langgam Forest area, which was designated as a Limited Production Forest (HPT) to meet the needs of industrial raw materials and other wood products. However, along with the loss of forests, new problems also arise. In the 1980s the problem of elephants began when the Tesso Nilo forest area was cleared for transmigration settlements. Since then, elephants have repeatedly visited the village and destroyed the community's plantations. Several large-scale companies engaged in industrial forest plantations and plantations have surrounded this area, so that, prior to the designation of this area as a national park, various parties were very interested in managing it for

various purposes, such as industrial forestry plantations (*hutan tanaman industry/HTI*) and oil palm plantations (WWF-Indonesia, 2006).

Tesso Nilo National Park was established by the Decree of the Minister of Forestry of the Republic of Indonesia No.: SK.6588/Menhut VII/KUH/2014 on the Designation of the Tesso Nilo National Park Forest Area of 81,793 ha in Riau Province. The TNNP area is one of the remaining secondary forest areas of the extensive forests of Riau Province. TNNP has a diversity of flora and fauna, including various types of plants and several types of fauna that are protected and classified endangered according to IUCN criteria, such as Sambar Deer, Muncak Deer, Tapir/Cipan, Sun Bear, Sumatran Elephant and Sumatran Tiger.

The main problems in Tesso Nilo National Park are mainly related to its management, where there are many overlapping areas status, illegal logging and land occupations by the community to be converted into oil palm plantations. Livelihood pressures and limited community access to natural resources in the forest have led to increased human-wildlife conflicts around the National Park. The Campfire program in Zimbabwe is a vivid example of a conservation program to mediate human-wildlife conflict (Frost and Bond, 2008). The community views the forest as shared ownership, so that anyone can use it. This view has consequences for the neglect of natural resources. If this ownership system is left unchecked, it tends to lead to massive exploitation of natural resources. In addition, the community also assumes that the government is not on the side of people who live near the forest, they are told to protect and maintain the forest but are not given the authority to manage and obtain permits for its use, thus creating injustices that can result in the community being less concerned about the sustainability of the forest.

Approach

We employed a mixed methods technique to solve the research topic [28]. This research is related to the participation of civil society and the challenges encountered in collaborative management of TNNP. Therefore, the mixed methods approach is very suitable because it combines quantitative and qualitative approaches that make it possible to analyze civil society involvement using quantitative social network analysis (SNA) and with qualitative methods to explain how civil society is involved and what challenges are encountered in managing TNNP in the province Riau. In this study, we use the term actor for institutions that are included in formal entities with official affiliations related to the management of TNNP.

Study design and data collection

This research uses a case study design (Creswell, 2009). This design allowed us to collect in-depth information on the involvement of civil society in the management of TNNP in Riau Province. Participants were selected using purposive sampling with a non-probability technique. This technique is appropriate for this research as we only need information from actors who are directly involved and have the in-depth knowledge needed for this. Participants were selected through literature search, initial data collection, and snowballing. The researcher first conducted a literature search on the actors involved in the management of TNNP

in Riau Province. Next, the researchers visited the Tesso Nilo National Park Hall and got a list of actors involved in the management of TNNP. This list is reconciled with the list obtained from the literature search to obtain a list of participants. Finally, several new actors emerged that were not found in the initial search, making a total of 30 actors involved in this research (Table 1).

Interviews were conducted as data collection tool. Data collection was carried out between February and April 2021. Interviews were conducted with various organizational actors to obtain the required data and information. The appropriate instrument for data collection is the interview guide. This guide includes a series of open-ended questions that form the basis for discussion between researchers and informants. After the interview, the actors were asked to indicate other actors with whom they cooperate (whether they regularly exchange information or cooperate in their activities). Based on this data and criteria, a data matrix is created where 1 indicates that there is a relationship between two actors and 0 indicates that there is no relationship between two actors. The data collected from this matrix will form a network visualization using NetDraw from UCINET 6 (Borgatti et al., 2002).

Table 1

Types and names of actors in the management of Tesso Nilo National Park

Types	Actor/institution name
Central government	Balai Taman Nasional Tesso Nilo Pelalawan (BTNTN)
Local government	Dinas Lingkungan Hidup dan Kehutanan Provinsi Riau (DLHKR), Pelalawan Regency Government (PEMKAB), Dinas Pariwisata, Kebudayaan, Pemuda dan Olahraga Kabupaten Pelalawan (DPKKO)
Village government	Lubuk Kembang Bunga (LKB), Air Hitam (AH), Bagan Limau (BL), Pontian Mekar (PM)
Private companies	PT. Riau Andalan Pulp and Paper (RAPP), PT. Siak Raya Timber (SRT), PT. Jungle Peranap Indah (RPI), PT. Rimba Blue (RL), PT. Sola Lestari Forest (HSL)
Civil Society (CBOs)	Yayasan Taman Nasional Tesso Nilo (YTNTN), Indigenous Peoples (MA), TNTN Community Forum (FMTNTN), Community Empowerment Consortium (KPM), Kempas Group (KK)
Non-Governmental Organizations (NGOs)	WWF, Jikalahari, and Walhi
Military and police	Babinsa, Polsek and Forestry Police (POLHUT)
Academics	Universitas Riau (UNRI), Universitas Lancang Kuning (UNILAK), Universitas Islam Riau (UIR)
Media	Riau Pos (RP), Tribun Pos (TP), Pekanbaru Pos (PR)

Source: Processed by the author, 2021.

Social Network Analysis (SNA)

To identify the involvement and role of actors in the management of TNNP, we used Social Network Analysis (SNA). Cronin (2015) SNA is a set of techniques used to identify and represent interaction patterns among social entities. SNA an-

alyzes the nature and pattern of interactions between diverse things using graphical tools. These entities (the actors under investigation) are represented as points known as nodes or vertices, and their relationship is represented by lines known as links, edges, or arcs (Cronin, 2015).

The important or prominent nodes generally occupy strategic locations in a network (Wasserman et al., 1994). The centrality of roles in networks is one of the earliest approaches to be pursued by network analysts (Scott, 1988), and is used to derive the position features of actor nodes in the network. The relationships between entities are measured by the frequency of contacts or by criteria set by the researcher.

In this study, two main criteria are used namely magnitude and directionality. The magnitude refers to the frequency and strength of social interaction, while directionality refers to the flow or direction of social interaction, in terms of where or from whom the interaction originates and to whom it is directed (Xu et al., 2018). In this study, the magnitude is measured by the exchange of information and communication between actors regarding the management of TNNP. Direction is measured in terms of where information usually comes from and to whom it is directed in the actor network, and it is visualized with arrows in the actor network diagram.

Results and Discussion

Actors involved in the management of Tesso Nilo National Park in Riau Province

There are 30 actors identified in the management of TNNP in Riau Province, including the Central Government, Regional Governments, Village Governments, Private Sector, Civil Society/(CBOs), (NGOs), TNI/Polri, Academics, and Media. The following sections discuss the activities of the various actors in detail. From the results of interviews, literature studies and field observations related to the roles and types of actor initiatives in the management of Tesso Nilo National Park, three groups of stakeholders were identified, namely: 1) key stakeholders, 2) primary stakeholders, and 3) supporting stakeholders (Secondary stakeholders). The central government through the Tesso Nilo National Park Hall is a key stakeholder because it has the legal authority to implement TNNP management policies, as shown in Table 2.

Table 2

Types and roles of actors in the management of Tesso Nilo National Park

Type	Actors/institution name	Roles	Purpose
<i>A. Key stakeholder</i>			
Central Government	Balai Taman Nasional Tesso Nilo Pelalawan (BTNTN)	Implementor Facilitator Accelerator Environmental	Coordination in Social and Economy Dimension

Type	Actors/institution name	Roles	Purpose
B. Primary stakeholder			
Non-Governmental Organizations (NGOs)	WWF, Jikalahari, Walhi	Facilitator Accelerator	Coordination in Social and Environmental Dimension
C. Secondary stakeholder			
Local Government (Pemda)	Dinas Lingkungan Hidup dan Kehutanan Provinsi Riau (DLHKR), Pelalawan Regency Government (PEMKAB), Dinas Pariwisata, Kebudayaan, Pemuda dan Olahraga Kabupaten Pelalawan (DPKKO)	Facilitator	Social dimension
Village Government (Pemdes)	Lubuk Kembang Bunga (LKB), Air Hitam (AH), Bagan Limau (BL), Pontian Mekar (PM)	Implementor Accelerator	Social and Economy dimension
Private companies	PT. RAPP (RAPP), PT. Siak Raya Timber (SRT), PT. Rimba Peranap Indah (RPI), PT. Rimba Lazuardi (RL), PT. Hutani Sola Lestari (HSL)	Accelerator	Social and Economy dimension
Civil Society (CBOs)	Yayasan Taman Nasional Tesso Nilo (YTNTN), Indigenous Peoples (MA), Taman Nasional Tesso Nilo Community Forum (FMTNTN), Community Empowerment Consortium (KPM), Kempas Group (KK)	Implementor Accelerator	Social and Economy dimension
Military and police	Teritorial defence management (BABINSA), local police (Polsek), and Forestry Police (POLHUT)	Control	Social and Environmental dimension
Academics	Universitas Riau (UNRI), Universitas Lancang Kuning (UNILAK), Universitas Islam Riau (UIR)	Accelerator	Environmental and Science dimension
Media	Riau Pos (RP), Tribun Pos (TP), Pekanbaru Pos (PR)	Informative	Environmental

Source: Processed by the author, 2022.

Network of TNNP Management Actors in Riau Province

Figure 1 is a network of actors involved in natural resource management in the conservation area of TNNP in Riau Province. The arrows show the relationship/interaction where the one-sided arrows indicate an unrequited relationship and the two-sided arrows indicate there is a reciprocal relationship between the actors. Figure 2 measures popular or important actors in the network by eigenvector centrality where Balai Taman Nasional Tesso Nilo Pelalawan (BTNTN) emerges as an important or key actor with a value of 0.35, indicated by a larger purple box and more incoming and outgoing arrows. Finally, Figure 3 shows BTNTN as an intermediary actor or a link between all other actors in the network, with a value of 29.89 indicated by a larger purple box and the number of arrows coming or going from other boxes.

The actor network is characterized by various interactions between the Central Government, Regional Governments, Village Governments, Private Compa-

nies, CBOs, NGOs, TNI/Polri, Academics, and the Media (Figure 1). Therefore, the nature of their interaction is as an exchange of information and communication under TNNP management policies in Riau Province. Most of these contacts are two-way, with frequent interaction between the central government represented by BTNTN and NGOs represented by WWF.

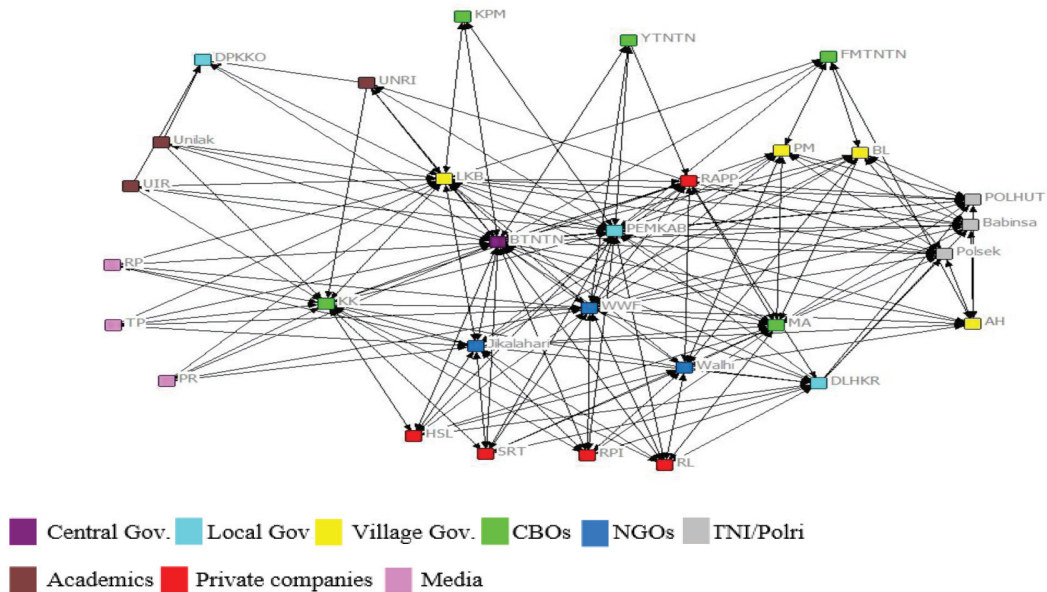


Figure 1. Network of actors in Riau Province TNNP management.

Source: Data Processing, 2022.

Figure 1 shows a series of directional relationships between actors in a system of arrows on lines indicating the direction of interaction. For example, there is a one-way interaction between (DLHKR and the Regency Government), (DLHKR and Babinsa), (DLHKR and Polsek), (DLHKR and Polhut), with the source of the interaction being Dinas Lingkungan Hidup dan Kehutanan Provinsi Riau (DLHKR). This relationship shows that the local government is only involved in the TNNP management initiative according to its function by the DLHKR. From the results of interviews with officials in the Regency government, they stated that they were only involved in facilitating the activities they carried out. Babinsa, Polsek, and Polhut stated that they were involved in monitoring and patrolling around the conservation area of Tesso Nilo National Park to prevent violations or theft of timber.

On the other hand, there are two-way interactions between institutions, such as between BTNTN and WWF, where this relationship results mainly from coordination in TNNP management planning. For example, in the planning of TNNP as a place to conserve and train Sumatran elephants. Furthermore, there is a two-way relationship between BTNTN and Lubuk Kembang Bunga (LKB) with an area of 12 ha being managed by 5 farmer groups in Lubuk Kembang Bunga Village

under this partnership. The development of the buffer zones of the national park buffer areas is done by strengthening community groups through economic and institutional trainings, providing business assistance, and developing master plans for community empowerment. Another two-way relationship between WWF and the village community of LKB is the development of ecotourism, especially river crossings and jungle walks in the Tesso TNNP utilisation zone, by maintaining the remaining natural forest. This relationship is often the result of collaborative ecotourism management in TNNP. The above findings show that the network of actors is interconnected, and some of them collaborate in the sustainable management of TNNP.

Key, Main and Supporting Actors in the Network

Measurement of network density through the intensity of the relationship between network actors is still low. A high-density network is a network where the members interact with each other. On the other hand, low-density networks are characterized by minimal interaction between members or unequal interaction between all members, dominated only by certain actors. Measurement of network density from outdated six software, as shown in Table 3 below, shows that 289 bonds occur in the network structure. The average value for density in the network structure is 0.332 or 33%, indicating the relationships that occur in the network are not too strong. The standard deviation 0.471 indicates the validity of the processed data.

Table 3

Density/Network density

Density / Average Matrix Value			
<i>Density</i>	<i>No. of Ties</i>	<i>Std. Dev</i>	<i>Avg. Degree</i>
0,332	289	0,471	9,633

Source: Processed by the Author, 2022.

The central government represented by Balai Taman Nasional Tesso Nilo Pelalawan (BTNTN) has become a key actor because it plays an important role in making and implementing Tesso Nilo National Park management policies with resources supported by organizational, informational, and technical strengths. As management of conservation area involves many related actors, cooperation is a crucial factor. Among civil society groups, NGOs are the most important actors. They have the most significant influence on environmental issues and pressure on the government and private sector to strengthen environmental regulations and mobilize and empower the community by forming a TNNP ecotourism community group. In addition, NGOs have experience in formulating and shaping natural resource management policies, actively participating in natural resource management processes, and networking centers with them.

Furthermore, local authorities, rural self-governments, the private sector, CSOs, TNI/Polri, scientists and the media are auxiliary actors, thanks to which local authorities and civil society have a significant influence on the management

policy of natural resources in protected areas, since environmental problems are often given more attention at the local or regional level, as well as at the national level. However, due to the unequal power relations between the central and provincial governments, local governments are less concerned and only support the management of conservation areas.

The degrees and scores of eigenvector centrality are used to identify the core, main, and supporting actors in the actor network. Table 4 summarises the scores of all actor centrality measures. The actor network centrality score shows that BTNTN is the key actor in the network with a score of 29 degrees. WWF belongs to the main actor category with a score of 19 degrees, while the other actors mentioned above belong to the supporting actors. This score implies that BTNTN has the highest number of connections in the actor network. However, Hansen et al. (2019) note, degree centrality is only an indicator of popularity and does not differentiate between quantity and quality. It only measures the number of actors associated with a particular actor. Therefore, the popularity of actors such as BTNTN is mainly related to the fact that most other actors in the network contact them before carrying out their activities in the TNNP in Riau Province.

Table 4

Score of actor centrality in the TNNP management network

Actor	Centrality Measures			
	Degree	Betweenness	Closeness	Eigenvector
BTNTN	29.00	29.89	29.00	0,35
DLHKR	12.00	0.84	45.00	0,20
PEMKAB	11.00	11.32	30.00	0,29
DPKKO	4.00	0.00	56.00	0,17
LKB	11.00	6.58	44.00	0,25
AH	9.00	0.74	49.00	0,14
BL	10.00	0.76	48.00	0,16
PM	10.00	0.80	48.00	0,16
RAPP	11.00	1.29	45.00	0,22
SRT	8.00	0.24	50.00	0,15
RPI	8.00	0.24	50.00	0,15
RL	8.00	0.24	50.00	0,15
HSL	8.00	0.24	50.00	0,15
YTNTN	4.00	0.00	54.00	0,16
MA	11.00	2.08	43.00	0,24
FMTNTN	6.00	0.15	52.00	0,10
KPM	4.00	0.00	55.00	0,14

Actor	Centrality Measures			
	Degree	Betweenness	Closeness	Eigenvector
KK	11.00	4.11	47.00	0,22
WWF	19.00	6.57	31.00	0,28
JKALAHARI	11.00	2.63	45.00	0,21
WALHI	11.00	1.60	45.00	0,21
BABINSA	8.00	0.31	50.00	0,17
POLSEK	8.00	0.31	50.00	0,17
POLHUT	8.00	0.31	50.00	0,17
UNRI	5.00	0.06	53.00	0,16
UNILAK	5.00	0.02	53.00	0,10
UIR	5.00	0.02	53.00	0,10
RP	5.00	0.03	53.00	0,10
TP	5.00	0.02	53.00	0,10
PR	5.00	0.02	53.00	0,10

Source: Processed by the author, 2022.

Eigenvector centrality provides a better measure for identifying popular actors in a network than degree centrality because it considers not only the degree (number of connections) an actor has but also the degree to which other actors are connected to him (Cronin, 2015). Thus, despite having a low degree of centrality, an actor can have a high centrality of eigenvectors if other actors are connected to them (more connections). From Table 3, it can be seen that although actors such as Dinas Pariwisata, Kebudayaan, Pemuda dan Olahraga Pelalawan (DPKKO), Yayasan Taman Nasional Tesso Nilo (YTNTN) and Konsorsium Pemberdayaan Masyarakat (KPM) have degree 4 centrality, the eigenvector centrality is different, DPKKO has the highest score of 0.17. This score implies that Pariwisata, Kebudayaan, Pemuda dan Olahraga Pelalawan is a more popular actor than Tesso Nilo National Park Foundation and Community Empowerment Consortium as many actors are connected to them such as Universitas Riau (UNRI). Universitas Islam Riau (UIR), Universitas Lancang Kuning (Unilak), LKB and BTNTN and have a higher degree of centrality. Riau Andalan Pulp and paper (RAPP) companies are more popular than other companies, because they actively work with local governments and the surrounding community as part of their corporate social responsibility (CSR) program. From the NGOs' perspective, WWF has become a popular institution. This is inseparable from their role as an initiator in the development of ecotourism in the TNNP. In addition, WWF is also a communication tool in TNNP for communities and companies in the TNNP to help handling human and elephant conflicts using the Flying Squad technique, which began in 2004 in Lubuk Kembang Bungo village.

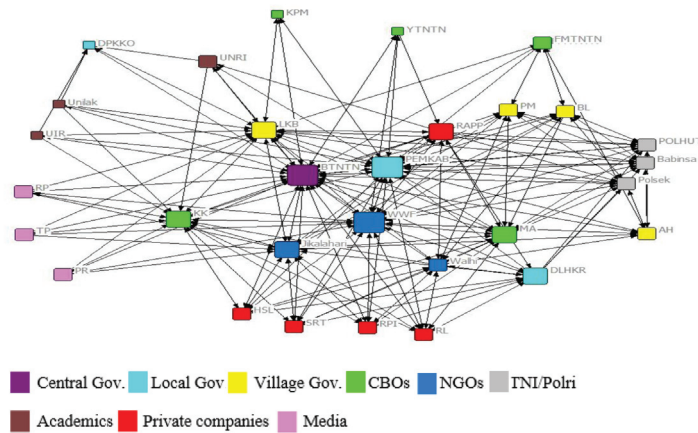


Figure 2: The eigenvector centrality of actors in the network.

Source: Data Processing, 2022.

Mediator in Actor Network

The intermediate centrality helps to identify mediators in the actor network. It shows the role of actors in sharing information from one part of the network to another. BTNTN has the highest centrality, with a score of 29.89, considering that it coordinates all planning and implementation activities of all other institutions in TNNP. BTNTN serves as a link between all the actors in the network. The district government is present as the second most important mediator in the actor network. The district government is the link between many actors, such as NGOs, CBOs, companies, and village governments. Due to its position as the head of local government with the authority to manage local government, the role of the district government is act as a facilitator with other stakeholders in providing space and roles for other actors in exploiting the potential and natural wealth of TNNP in accordance with applicable regulations.

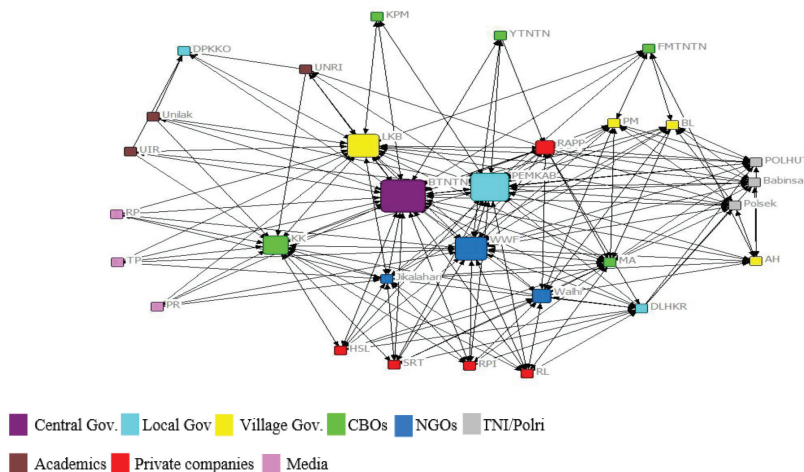


Figure 3: Centrality between actors in the network.

Source: Data Processing, 2022.

Based on the proximity centrality score, it can be concluded from Table 3, that Tesso Nilo Pelalawan National Park Office (BTNTN), Regency Government and WWF are closer to all actors in the network than other actors. According to Hansen et al. (2019), a low proximity centrality score means that an actor is directly connected to another actor or just remote from most of the other actors in the network. On the other hand, a higher proximity centrality score implies that an actor is remote from all other actors in the network.

Although BTNTN is more popular in actor networks, the initiation of TNNP management mostly comes from NGOs. For example, in the proposed expansion of TNNP as an elephant conservation area carried out by WWF and BTNTN. In 2004–2006, WWF formed an Eyes on the Forest (EoF) coalition with local NGOs that are members of two large networks, namely Jikalahari (Riau Natural Forest Rescue Work Network) and WALHI Riau. At that time, EoF asked the management of the giant pulp mills owned by the APP and APRIL groups not to accept timber from illegal logging in TNNP and its surroundings. WWF's efforts are through an advocacy approach to large companies such as Riau Andalan Pulp and paper (RAPP). WWF's advocacy efforts are a means of negotiation to reach joint decisions in the management of TNNP.

On the other hand, the involvement of local governments and civil society in the management of Tesso Nilo National Park is still quite low. Local governments and civil society are only involved in supporting and facilitating activities carried out by NGOs, where WWF helped initiate the formation of the TNNP ecotourism community group, so that by the end of December 2011, a community group in Lubuk Kembang Bunga Village (LKB) called the Tourism Community Group (Kempas) Adventure was formed as a group that offers and organizes ecotourism activities in the utilization zone of Tesso Nilo National Park.

The results of interviews with officials in local governments, revealed that the local governments lack initiative because they are bound by the rules of Law Number 23 of 2014 on Regional Government, which regulates the division of government affairs. The authority to manage the national park conservation area does not involve the regional government, so this policy creates distance and separation for the local government to be more involved in the management of TNNP in Riau Province. A similar response was also conveyed by one of the community organizations, who stated that it is difficult for them to get information about TNNP so that they were only involved in activities initiated by NGOs. From the above findings, it can be concluded that the local government plays a facilitator role rather than a direct role in the sustainable management of TNNP in Riau Province, and the community plays a role in supporting and implementing activities.

Civil Society Participation in TNNP Management

This study analyses the participation and challenges of civil society in the management of Tesso Nilo National Park, Riau Province. The centrality criterion metric was developed for this study through social network analysis. The analysis was conducted to examine the key, main, and supporting actors in the Tesso

Nilo National Park management. The degree of centrality and eigenvectors show that the government of BTNTN has a strong influence and is a key actor, NGOs (WWF) are included in the main actor category, and the community is included in the supporting actor category. Furthermore, the results of the measurement of the density of relationships between actors through the intensity of interaction show that their relationship is less strong. These results indicate that cooperation in the management of the national park is still in its early stages, and the government's strong point lies in its policies.

An important achievement of this collaborative management of national parks is the granting of permits to civil society to use land in national parks for ecotourism activities. However, the Indonesian government explicitly prohibits the activities of local communities in national parks from ensuring the integrity of forest ecosystems, resulting in communities having no incentive to participate in these activities.

This TNNP case study allows local people to use the forest and land resources, even though it is a limited tourist attraction with few visitors. This rare case may not be found in other national parks.

This activity started with a collaboration between the government and the community, where the national park granted an unwritten permission to the Kempas group to use or manage the utilization zone of the TNNP area as a location for organizing ecotourism activities supported by NGOs through the provision of funding assistance. This assistance is used to improve ecotourism facilities and increase the capacity of Kempas group members through training and study tours. In this process, communication and cooperation between the government and the community to promote environmental management strategies through practical cooperation.

Chhatre et al. (2012) said that the participation of civil society in the management of national parks would not only increase social outcomes but also improve forest management outcomes and improve forest governance. Community collaboration with NGOs and national parks in ecotourism activities has led to forest restoration and increasing community income through admission tickets, reforestation, and improved community welfare through developed village infrastructure in the form of roads, clean water, and electricity. This finding is consistent with previous research, which says that civil society involvement in environmental decision-making can provide economic benefits (Friedman et al., 2020; Sabuhoro et al., 2021). Community-based management can minimize conflict and rule violations and increase cooperation between community groups due to greater social cohesion, higher awareness, and better coordination with various institutions (Sabuhoro et al., 2021). In this process, the community should have direct access to the policy-making process, stakeholders, and information and be able to monitor the policy making process by utilizing the knowledge gained (Zhang et al., 2019). In this case, the free flow of information must be built on a foundation of transparency.

There is the interaction between various actors and levels in managing of national parks. Thus it can become a means of community empowerment by increasing its potential to realize productive ecotourism management and

encouraging reflection on the increasing role of government, local governments, NGOs, CBOs, and academics as facilitators of change. Issues related to integration of activities and disclosure of information must become an integral part of the activities carried out by all stakeholders through their respective authorities so that coordination and synergy in the management of national parks will be realized.

Natural resource management in the Tesso Nilo National Park area also emphasizes building cooperative collaboration with various actors outside the bureaucracy because bureaucracies such as the government have limited resources to control problems in the national park area. Therefore, all stakeholders involved in government should not be excluded, including local communities, as their presence will help reduce resource exploitation by outsiders who often pose a threat to conservation efforts. In addition, community involvement will also strengthen the legitimacy of collaboration between stakeholders in the management of the national park.

Challenges of civil society participation

The participation of civil society in the management of Tesso Nilo National Park currently still faces several obstacles and challenges, including the lack of government regulations or policies that regulate in detail the boundaries of responsibilities and authority between government, local government, private sector and the community in the management of national parks, so that each actor has a different perception of the national park. For example, the community considers the forest as its property, and they are free to do anything to benefit from the forest, resulting in various environmental impacts. At the same time, park managers try to protect the forest ecosystem. This difference in perception often leads to a conflict of interest between the community and the government. For this reason, more detailed rules in the form of technical regulations and implementation instructions guide all parties, and these rules must be socialized. As stated by Sheppard, S. R. (2005), community participation's limitations are mostly due to barriers to perception or information transmission. Communication and disclosure of information will create a shared perception and commitment of all parties.

The next challenge is related to the weak institutional capacity of the community, so they have yet to be involved in making decisions about national park management. The findings of this study show that community involvement in ecotourism activities comes from non-governmental organizations (WWF). WWF initiated the establishment of the Tourism Community Group (Kempas). In addition WWF also provides funding assistance and participates in planning the implementation of ecotourism activities. In this case, the government recognizes the contribution made by WWF, which in turn responds by acknowledging that it can influence. This finding supports Rydin Y. and Holman N. (2004) statement about the reinforcing social capital that exists among a limited group of actors and organizations with an interest in local sustainability issues as the NGO's goals. However, the problem is that community empowerment in conservation areas becomes difficult when many regulations limit community ac-

cess to forest resources. On the other hand, community empowerment becomes more important because the community should be able to identify conservation issues and collaborate with other stakeholders.

Furthermore, there are limited resources in the community, both financially and in terms of, expertise, technology, and time. Of course, all these resources are important, but timing is the most important for the people in the TNNP area. Collaborative work takes time, the community has to attend meetings, and it takes a lot of time to prepare and participate in collaborative projects. At the same time, they have to work in the fields and gardens to earn a living for their families, who are paid daily or weekly.

The final challenge is the relationship between stakeholders and the government. The relationship between government and society must be a communication network that positively supports each other. The government can contribute to the conservation of natural resources by creating rules and conditions to strengthen the role of the community and encourage cooperative behaviour among social components. The government must shift from an approach that controls the community and considers the community a policy obstacle to a parallel partnership approach. With a mechanism like this, the community can be empowered so that it can complement the shortcomings of the government.

Conclusion

By applying the SNA method, we identified the role of the most important key actor in the management of TNNP in Riau Province, namely BTNTN. Among the 30 nodes representing all actors involved in this study, BTNTN has the highest eigenvector centrality score of 0.35. These results indicate that the importance of BTNTN in the network of actors stems from the fact that this institution is the main point of contact and conduit for local governments, CBOs, and NGOs in carrying out TNNP management activities. Meanwhile, the role of civil society is categorised as a supporting actor. Community initiatives have not yet emerged in the management of TNNP, and community involvement is mostly initiated by NGOs. Therefore, this study has demonstrated the usefulness of the SNA method in identifying actors and their roles in the TNNP management network in Riau Province.

Overall, this research provides a simple contribution. There are two important conclusions obtained through the SNA method in studying civil society participation, namely: 1) Civil society participation in the management of TNNP is still in the early stages of collaboration; most of the ideas and initiatives are still in the formation of actors, institutions, and in some cases, community empowerment has begun. Civil society involvement is still in the stage of supporting and implementing activities. 2) The biggest challenges faced by civil society are mainly related to regulations, where the government, as the implementer of policies for managing the conservation area of TNNP, tends to prioritise the point of view of laws and regulations, the existence of public distrust of the government, the lack of public access to information, and the lack of interest in coordination among all stakeholders.

The implications of the results of this study are able to have an impact on policy makers to involve local communities as an effort to develop the community's economy and sustainable tourism. In local level, the collaboration in the management of TNNP must be oriented towards achieving coordination between all parties, so as to achieve synergies in the implementation of TNNP management programs and activities. In the partnership process, compromise is the key word that must be achieved and is included in the TNNP management plan, which is organic and dynamic. A compromise will only be reached if the management objectives of TNNP can be agreed upon and the consequences understood by the parties concerned. In this context, partnerships in national park management adhere to the principle of constituency and prioritize public services that are oriented towards mutual benefits. In international level, the results of this study are in line with the goals of the SDGs which emphasize the central government to facilitating access to finance, including through microcredit initiatives for the poor, indigenous peoples and local communities in areas with high eco-tourism potential.

REFERENCES

1. Agrawal, A. (2001) 'Common property institutions and sustainable governance of resources', *World Development*, 29(10), pp. 1649–1672.
2. Arnstein, S.R. (2019) 'A ladder of citizen participation', *Journal of the American Planning Association*, 85(1), pp. 24–34. Available at: <https://doi.org/10.1080/01944363.2018.1559388>
3. Berno, T. and Bricker, K. (2001) 'Sustainable tourism development: the long road from theory to practice', *International Journal of Economic Development*, 3(3), pp. 1–18.
4. Borgatti, S.P., Everett, M.G. and Freeman, L.C. (2002) 'Ucinet for windows: Software for social network analysis', *Harvard, MA: Analytic Technologies*, 6.
5. Brill, G., Anderson, P. and O'Farrell, P. (2017) 'Urban national parks in the global South: Linking management perceptions, policies and practices to water-related ecosystem services', *Ecosystem Services*, 28, 185–195. Available at: <https://doi.org/10.1016/j.ecoser.2017.03.023>
6. Bulatovic, I. and Tripkovic-Markovic, A. (2015) 'Strategic management of tourism in the national parks: Case: National Park Skadar Lake', *Turizam*, 19(3), 127–138. Available at: <https://doi.org/10.5937/turizam1503127b>
7. Byrd, E.T. (2007) 'Stakeholders in sustainable tourism development and their roles: Applying stakeholder theory to sustainable tourism development', *Tourism Review*, 62(2), pp. 6–13.

8. Cernea, M.M. and Schmidt-Soltan, K. (2006) Poverty risks and National Parks: Policy issues in conservation and resettlement', *World Development*, 34(10), pp. 1808–1830. Available at: <https://doi.org/10.1016/j.worlddev.2006.02.008>
9. Chhatre, A., Lakhanpal, S., Larson, A.M., Nelson, F., Ojha, H. and Rao, J. (2012) 'Social safeguards and co-benefits in REDD+: a review of the adjacent possible', *Current Opinion in Environmental Sustainability*, 4(6), pp. 654–660.
10. Colua de Oliveira, E. R., Outski, K. and Mubai, M.E. (2021) 'Tackling challenges for co-management of natural resources: the community council in Limpopo National Park, Mozambique', *Development in Practice*, 31(5), pp. 707–713. Available at: <https://doi.org/10.1080/09614524.2021.1898547>
11. Cooke and Kothari. (2001) *Participation: The New Tyranny* (1st ed.).
12. Creswell, J.W. (2009) *John W. Creswell's research design*. 3rd Ed.
13. Cronin, B. (2015). *Getting started in social network analysis with NETDRAW*.
14. Dangi, T.B. and Gribb, W.J. (2018) Sustainable ecotourism management and visitor experiences: managing conflicting perspectives in Rocky Mountain National Park, USA. *Journal of Ecotourism*, 17(3), pp. 338–358.
15. Hansen, Derek Ben Shneiderman, and Marc A. Smith, I.H. (2019) *Analyzing social media networks with NodeXL*, 2nd Edition. Morgan Kaufmann.
16. Direktorat Jenderal KSDE (2016) Statistik Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem.
17. Flannery, W., Healy, N. and Luna, M. (2018) 'Exclusion and non-participation in Marine Spatial Planning', *Marine Policy*, 88(May 2017), pp. 32–40. Available at: <https://doi.org/10.1016/j.marpol.2017.11.001>
18. Friedman, R.S., Guerrero, A.M., McAllister, R.R.J., Rhodes, J.R., Santika, T., Budiharta, S., Indrawan, T., Hutabarat, J.A., Kusworo, A., Yogaswara, H., Meijaard, E., St. John, F.A.V., Struebig, M.J. and Wilson, K.A. (2020) 'Beyond the community in participatory forest management: A governance network perspective', *Land Use Policy*, 97(February), 104738. Available at: <https://doi.org/10.1016/j.landusepol.2020.104738>
19. Frost, P.G.H. and Bond, I. (2008) 'The CAMPFIRE programme in Zimbabwe: payments for wildlife services', *Ecological Economics*, 65(4), pp. 776–787.
20. Hausmann, A., Slotow, R., Burns, J. K. and Di Minin, E. (2016) The ecosystem service of sense of place: Benefits for human well-being and biodiversity conservation. *Environmental Conservation*, 43(2), pp. 117–127. Available at: <https://doi.org/10.1017/S0376892915000314>
21. He, S., Yang, L. and Min, Q. (2020) 'Community participation in nature conservation: The Chinese experience and its implication to national park management', *Sustainability* (Switzerland), 12(11). Available at: <https://doi.org/10.3390/su12114760>
22. Hoffman, L. and Muller, M. (2001) *Community partnerships in integrated sustainable waste management, Tools for decision-makers: experiences from the Urban Waste Expertise Programme*.
23. Hollenbach, A.J. (2005) 'Promise or peril? The fate of Indonesia's protected areas in an era of decentralization', *Journal of Development and Social Transformation*, 2(1), pp. 79–87.

24. Jones, S. (2007) Tigers, trees and Tharu: An analysis of community forestry in the buffer zone of the Royal Chitwan National Park, Nepal. *Geoforum*, 38(3), pp. 558–575.
25. Jorgensen, B.S. and Stedman, R.C. (2006) 'A comparative analysis of predictors of sense of place dimensions: Attachment to, dependence on, and identification with lakeshore properties', *Journal of Environmental Management*, 79(3), pp. 316–327. Available at: <https://doi.org/10.1016/j.jenvman.2005.08.003>
26. Karanja, A.M. (2005) *Solid waste management in Nairobi: actors, institutional arrangements, and contributions to sustainable development*.
27. Kehutanan, D. (2005) *Peraturan Menteri Kehutanan Nomor P.19/Menhut II/2004 tentang Kolaborasi Pengelolaan Kawasan Suaka Alam dan Kawasan Pelestarian Alam*.
28. Mahajan, S.L., Jagadish, A., Glew, L., Ahmadi, G., Becker, H., Fidler, R.Y., Jeha, L., Mills, M., Cox, C., DeMello, N., Harborne, A.R., Masuda, Y.J., McKinnon, M.C., Painter, M., Wilkie, D. and Mascia, M.B. (2021) 'A theory-based framework for understanding the establishment, persistence, and diffusion of community-based conservation', *Conservation Science and Practice*, 3(1), 1–18. Available at: <https://doi.org/10.1111/csp2.299>
29. McCool, S.F. (2009) 'Constructing partnerships for protected area tourism planning in an era of change and messiness', *Journal of Sustainable Tourism*, 17(2), pp. 133–148.
30. Measham, T.G., and Lumbasi, J.A. (2013) 'Success factors for community-based natural resource management (CBNRM): Lessons from Kenya and Australia', *Environmental Management*, 52(3), pp. 649–659. Available at: <https://doi.org/10.1007/s00267-013-0114-9>
31. Moore, S. and Weiler, B. (2009) 'Editorial: Tourism-protected area partnerships: Stoking the fires of innovation', *Journal of Sustainable Tourism*, 17(2), pp. 129–132.
32. Pelalawan, T.T.N. (n.d.). <https://tntessonilo.com/>.
33. Phillips, A. (2003) 'Turning ideas on their head: the new paradigm for protected areas', *The George Wright Forum*, 20(2), pp. 8–32.
34. Puhakka, R. and Saarinen, J. (2013) 'New role of tourism in National Park planning in Finland', *Journal of Environment and Development*, 22(4), pp. 411–434. Available at: <https://doi.org/10.1177/1070496513502966>
35. Rydin, Y. and Holman, N. (2004) 'Re-evaluating the contribution of social capital in achieving sustainable development', *Local Environment*, 9(2), 117–133.
36. Roka, K., W. Leal Filho, A. Azul, L. Brandli, P. Özuyar and T. Wall (2019) 'Community-Based Natural Resources Management', in: *Life on Land: Encyclopaedia of the UN Sustainable Development Goals*, pp. 161–174. Cham: Springer. [Crossref], [Google Scholar].
37. Sabuhoro, E., Wright, B., Munanura, I. E., Nyakabwa, I. N. and Nibigira, C. (2021) 'The potential of ecotourism opportunities to generate support for mountain gorilla conservation among local communities neighboring Volcanoes National Park in Rwanda', *Journal of Eco-tourism*, 20(1), pp. 1–17.
38. Scott, J. (1988) 'Social network analysis', *Sociology*, 22(1), pp. 109–127.
39. Sène-Harper, A. and Séye, M. (2019) Community-based tourism Around National Parks in Senegal: The Implications of colonial legacies in current management policies. *Tourism Planning and Development*, 16(2), pp. 217–234.

40. Sheppard, S.R. (2005) 'Participatory decision support for sustainable forest management: A framework for planning with local communities at the landscape level in Canada', *Canadian Journal of Forest Research*, 35(7), pp. 1515–1526.
41. Sultana, P. and Abeyasekera, S. (2008) 'Effectiveness of participatory planning for community management of fisheries in Bangladesh', *Journal of environmental management*, 86(1), pp. 201–213.
42. Thomson, A.M. and Perry, J. (2006) 'Collaboration processes: Inside the black box', *Public Administration Review*, Special Issue.
43. Wasserman, S., Faust, K. and others. (1994) *Social network analysis: Methods and applications*.
44. WWF-Indonesia, K.P.Y. (2006) *Kemitraan dalam Pengelolaan Taman Nasional: Pelajaran Untuk Transformasi Kebijakan*.
45. Xu, J., Yang, R., Wilson, A., Reblin, M., Clayton, M.F. and Ellington, L. (2018) Using social network analysis to investigate positive EOL communication', *Journal of Pain and Symptom Management*, 56(2), pp. 273–280.
46. Zhang, L., Mol, A.P.J. and He, G. (2016) 'Transparency and information disclosure in China's environmental governance', *Current Opinion in Environmental Sustainability*, 18, pp. 17–24.
47. Zhang, D., Fan, F. and Park, S.D. (2019) 'Network analysis of actors and policy keywords for sustainable environmental governance: Focusing on Chinese environmental policy', *Sustainability*, 11(15), p. 4068.

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CAN THE POLICY ENVIRONMENT IMPROVE THE POLICY IMPLEMENTATION PRACTICE?

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Abstract. This study aims to introduce the concept of social capital based on public policy environment into the study of policy implementation modalities. Using recent empirical data, it describes the challenge of institutionalizing a new set of social capital and its relationship within the framework of governance quality to address the question of how social capital is implemented. To answer this question, the authors used qualitative methods and case studies to discuss crucial aspects of regulating the institutionalization of social capital development and the interaction of social capital within the governance framework that government will adopt. The group of independent home-based workers at the village level was selected based on national policy and program support, which provides a comprehensive empirical foundation for observing it inside the village governance framework. The findings show that social capital can improve policy implementation through 2 things: strengthening social capital through affirmative policy support and programs for special groups/forums. Development of a variety of decision-making innovations, such as women's network leadership meetings, village discussions, women's schools and an important role in formal planning at the village level. Both are correlated to the institutionalization of a new value system, relations between institutions, and the formation of new public values that are more genuine, and reinforce the diversity of previous implementation values. Social capital is the most elementary part for the successful implementation of public policies initiated by the state. The impact is that policy implementation has the ability to reduce the socio-economic costs of development, and functions to synergize the achievement of decent work and self-reliance for groups of women homeworkers.

Keywords: policy environment, social capital, governance quality, policy implementation.

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Introduction

Decent work for groups of independent home-based workers remains a marginal concept at international, national, and local levels, including in policy practices, that has not been widely adopted (Ray et al., 2019; Lawson and Chowdhury, 2022). It is also a multidimensional concept, relating to three things: aspects of the establishment of the structure of actors dominated by women, including girls; a deficit in decent work characterized by invisibility and marginalization, vulnerability and gender-based informality (Elgin and Elveren, 2021; Domanska et al., 2019; Binelli, 2016) and the ability to reduce economic and social costs in development, survive in disaster situations, contribute to family income and education by using their social capital (Biernacka et al., 2018).

This study discusses the problem of this group's decent work deficit which ends up in Indonesian countryside. The presence of this group is not acknowledged, they are not recognized as workers, and the government has not made their issues as a priority. 43% of the Indonesian population live in villages, about 49.5% are women, and approximately 30.1% are children (under the age of 18 years). In 2020, the Indonesian National Statistics Agency (BPS) reported that this sector, which is classified as informal, employed 70.49 million people, of whom 45.79 million were women. The deficit is characterized by job insecurity, low income, substandard working and housing conditions, and lack of access to public and private social services. This group lacks a voice in the decision-making process regarding public policies and services that are crucial to their productivity, including land and housing allocation policies, basic infrastructure, and transport services. However, this group is recognized as having control over their labour management and is responsible for implementing enhancements based on strong social values.

Concerning the Indonesian government's commitment to the policy of improving women's economic output and the village's sustainable development goals

(SDGs), the issue of the group's decent work deficit is crucial. This is stated firstly in the national policy on poverty reduction as stated in the Ministry of Women's Empowerment and Child Protection Regulation number 6 of 2016 on increasing women's economic productivity (PPEP) through empowering women entrepreneurs with a gender perspective and strengthening Home Industry. Secondly, the global SDGs implementation policy in Indonesia as outlined in presidential Regulation number 59 of 2017, which addresses the implementation of the Sustainable Goals. Referring to the presidential regulation, the village SDGs were compiled, with village development across Indonesia referring to 18 sustainable goals with an inclusive development model (revitalization and utilization of social capital), through one type of village institution that must be achieved, namely a village that welcomes women and cares for children. Based on the two regulations, improving the economy and women's entrepreneurship, leadership is an integral aspect of an integrated framework for local development based on the social capital of the local community.

Studies in Indonesia and other countries have examined this topic. Mapping conducted in several regions of Indonesia, including North Sumatra, West Java, Central Java, Yogyakarta, East Java, and Banten, reveals that most independent home-based workers are tough, courageous, persistent, compassionate and kind women who are willing to help others, who are resilient and self-reliant, and who have a high level of entrepreneurial skills (ILO, 2015). During the Covid 19 pandemic and large-scale restrictions, it was discovered that economic processes in the production and distribution of commodities for this population could be maintained through collaboration and social networks (Muhyidin, 2020; Ismail et al, 2021; Narula, 2020). The networks, norms and trust associated with the practice of economic policy built by this group have proven to be able to fight for various supports for community interests in different policies, including tourism policy, waste policy and other regional economic development policies (Nasir, 2022; Tresiana and Duadji, 2021a).

Several countries, including Argentina, Ireland, Finland, Belgium, the Netherlands, Bosnia and Herzegovina, Bulgaria, the Republic of Macedonia, Albania, and Tajikistan, have attempted to address this issue by ratifying ILO Convention 177/1996, which recognizes the protection of home-based workers. However, it is recognised that gender issues continue to play a significant role in their susceptibility, particularly among the lower strata of society (England, 2017; Yap and Melchor, 2015). Countries using the term, such as Zimbabwe, Tanzania, Brazil and Ecuador, demonstrate that gender deficits in decent work are still widespread at international, national and local levels (Lawrence et al., 2008).

Thus, the challenge is how to address this, as progress in this area is likely to have ramifications not only for the growth of substantial economic productivity, but also for the achievement of gender equality (Ray et al., 2019; Ismail et al., 2022). Even the World Bank acknowledges that gender inequality has resulted in the loss of 160,2 trillion dollars' worth of global human resource capital (Kennedy et al., 2018). Failure to implement the policy is one of the contributing factors. According to several studies, most policies in this group are based solely on government capacity considerations and are insensitive to environmental

factors (Lopez, 2017; Hupe et al., 2014; Duadji et al., 2022). There is inadequate support for gender equality (Razavi, 2016), social energy production (Brown and Livermore, 2019; Izmen, 2019; Tresiana et al., 2022), local lenses (Jimenez et al., 2020; Tresiana et al., 2022), and collaboration (Emerson et al., 2012; Etzkowitz, 2012; Hysing, 2022).

Based on several previous studies, this study has attracted the attention of not only scholars and managers but also of planners and policy makers. In a study conducted in Australia between 2000 and 2009 (Bletsas and Charlesworth, 2013) gender equality was associated with decent work as a keyword. As a result, the Australian Parliament discussed and implemented the concept of a transformative model of gender equality in economic development, beginning with a precise definition of decent work and proceeding to its adoption into the policy framework. However, according to research undertaken in India and other developing countries, what is occurring in Australia remains the biggest obstacle to growth particularly in developing countries (Kumarpathania, 2017; Mohapatra, 2012; Rai et al., 2019).

Three studies conducted in Pakistan, India, and Nigeria demonstrate the significance of strengthening environmental factors, such as culture, beliefs, and individual rationality to increase women's productivity and economic success and enhance the implementation of existing programs to empower this group. In Pakistan, six rural areas of Khyber in the Province of Pukhtoonkhwah that are representative of the country's southern, northern, and central plains are being studied. According to 480 female workers, socio-cultural, economic, demographic, and environmental factors can boost economic production and promote empowerment. Strict cultural reasons necessitate that women conduct their economic activity at home. Development programs by NGOs and the government play a crucial role in providing credit, training, and awareness, especially in the northern and southern regions (Jabeen et al., 2020). The study of Nupe and Yoruba in Nigeria reveals, through a comparison of productive resource ownership, that the Nube region has a stronger culture of access to and control over productive resources than the Yorube region with its biological gender division into male and female. On selected productive resources, cultural influences come from the interaction of gender, ownership, and decision-making with culture. Better access to and control over productive resources for women can result from improvements in mainstreaming and converting gender equality issues into real government activities (Ajadi et al., 2015). Meanwhile, research linking trust and social capital in women's business groups in traditional villages in India has identified caste, region, and religion as circumstances that promote the formation of organizations and groupings characterized by trust, dependability, reciprocity, and shared values, which factor is inherent as social capital for cohesion in a customary village (Nasir, 2021).

This study focuses on managing environmental elements in the form of social capital to improve the implementation process, so that future policy implementations have a greater probability of success. In implementing change, the state is only one of several parts that build a collective network with a variety of value systems and norms carried at the supra-organizational, inter-organizational,

zational, and intra-organizational levels, and are interconnected in their social system commitment. In the end, the implementation scheme will not be neutral with regard to the diverse realities that evolve within its environment (ecology). The value system may consist of formal values produced by hierarchical and rational institutions, but it can also be impacted by numerous varieties of the value system constructed spontaneously and rationally by the public (Bryson, 2014; Fisher, 2021; Igalla et al., 2021; Cho and Moon, 2019). In this context, the successful implementation of the policy to make work feasible for groups of women homeworkers is related to the environmental factors of the policy (Adegbite et al, 2021; Kim and Yoon, 2018).

Several studies examine environmental factors as non-government stakeholders; economic-social-political factors are also examined (Duadji et al., 2022; Fisher et al., 2021; Newiq, 2014). Nonetheless, this study addresses the gap by studying two major aspects: establishing the method and mechanism for developing social capital and controlling the interplay of social capital within the governance framework adopted by the government.

Thus, this study wants to answer two questions. First, how the processes and mechanisms for the development of social capital are institutionalized at the forums of the women's home industry? Second, what is the organizational and managerial role of government to link the social capital of this group in order to improve the implementation of village-level women's home industry policies. Changes in policy implementation are in a new ecology that is full of values and requires social concerts, both resources and networking. Formal values that were previously produced hierarchically and rationally by the government need to be strengthened with spontaneous and rational values as social capital whose domain is in public entities with various variants, including groups of smaller social systems. These variants of social capital are value-building elements from entity segregations created by society that contribute to reducing the socio-economic costs of development, developing public initiatives, strong public spirit and being able to respond positively to public policies. Therefore the aim of research in the context of implementation changes is to place the social capital of specific community groups, which is the most elementary part of the successful implementation of public policies initiated by the state.

This study was conducted in South Lampung Regency, Lampung Province, Indonesia, in two villages (Canti and Way Mulih). This location was selected as one of the regencies in Lampung Province with a long history of independent home-based workers. The study was conducted in a poor family with the fairly well-established group institution, developed local values and customary villages, and attention for social capital studies, governance, and policy implementation.

Literature Review

Policy implementation, policy environment and social capital

Pressman and Wildavsky's development of policy implementation studies provides an explanation for why implementation failures occur. The purpose

aim of the study of public policy implementation is to comprehend understand phenomena of implementation, such as: why Why does the implementation of a public policy fail to be implemented in an area?; Why does a policy formulated by the same government have varying levels of success when implemented by a local government?; Why is one type of policy easier to implement than another?; and Why do differences in target groups affect the success of implementation?

The ultimate goal of efforts to comprehend diverse implementation phenomena is to map the explanatory factors/variables that influence the genesis of diverse implementation phenomena (Hudson et al., 2019). To yet, implementation studies and practices have solely focused on executing policies while stressing that the delivery of interventions, emphasising desired outcomes. Less emphasis has been placed on achieving goals inside within the target group or community (Hupe et al., 2019).

According to several experts, the democratic governance approach alters the evaluation of implementation performance. Due to the widespread democratization process in various countries, the role of the state as the sole implementer has changed dramatically in Indonesia. The demand for public accountability and the tendency to give a more decisive role to the public have become the main topic of broad public articulation. Policy implementation is carried out by a public entity, with the function of the state as implementer becoming increasingly limited, necessitating a public presence in the sense that non-state actors are gaining importance. The implementation of a policy or program cannot take place in a vacuum. Rather, it takes place in a region characterized by geographical, social, economic and political conditions and involving many stakeholders (Beer, 2017; Howlett et al, 2015). Newig and Koontz (2014) point to the existence of non-governmental actors with a set of characteristics, their values, as interacting environmental factors that make the implementation process dynamic.

Parallel to the preceding, the study by Jain et al. (2020) and Chamchong (2019) reinforce the description of changes in policy implementation in a new social ecology laden with value systems such as culture, politics, information and communication. Formal values, that are replicated in a rational and hierarchical manner contribute to the development of the nature of change. But the more significant and strategic factors that affect the nature of change are spontaneous and illogical idioms and value quadrants which constitute social capital in the implementation environment and in the groups of smaller and specific social systems, such as specific community groups and community forums (Kim and Yoon, 2018).

Fukuyama (2013), describes a shift from a bureaucratic to a participatory mode of operation, from command and control to accountability for results, from internal dependence to being competitive and innovative, from closed and slow to open and fast, and from intolerance to the freedom of implementation to fail or succeed. The application of this principle is therefore determined by the deposit and configuration of environmental factors in the form of publicly accessible social capital.

Configuration of future changes in policy implementation: the role of social capital in the quality governance framework

The function of social capital in the implementation of the change process is becoming increasingly significant and substantial. In this study, social capital is derived mostly from the public domain. The fundamental premise is that social capital is a valuable asset and its domain consists of public entities with different variants. These variants of social capital may become the value-adding components of the society-created entity segregations. The state or government is a type of public entity that can reject or impose social capital on entities outside its boundaries. The strong theoretical foundation of social capital is trust; therefore, social capital is defined as a capability coming from mutual trust in a society or a segment of a society. As one of the manifestations of the existence of collective robustness to uphold social norms of cooperation, trust is one of the defining characteristics of social cohesion. This does not evolve spontaneously; some social orders are in fact primarily governed by the presence of this spirit of mutual trust, and the emergence of this trust is also strongly determined by cultural norms. Therefore, Fukuyama's claims that formal rules created with a strong hierarchical foundation will not contribute significantly to the creation of trust if they cannot be absorbed flexibly into a network of smaller social systems (Fukuyama, 2013; Shrestha, 2015).

Changes in policy implementation ushered in the anti-government age of democratization. Two experts, namely Box, Osborne and Gaebler, highlighted governance and citizen governance, leading to the idea of linking the role of social capital and the process of enhancing policy implementation in the framework of quality government. Using a structuralist perspective as argued by Fukuyama (2013), Bryson (2014) and Tresiana et al. (2022), connecting the two in the framework of quality governance can be considered at two levels: 1) the institutional level; this section focuses on how social capital is institutionalized, starting with the value system, formal or informal regulations with a solid level of institutionalization, how the hierarchy is organized, and what the procedures are; 2) at the organisational and managerial level; how do hierarchical bureaucracies, departments, commissions and government agencies and organizations work with government responsible for social capital and governance?

Moreover, social capital can enhance the quality of governance in three ways: by widening the scope of accountability, by facilitating agreements, and by enhancing the capacity for innovation in the decision-making process (Zhang et al, 2019; Ko and Kim, 2021). Mamokhere et al. (2021), explain that the quality of government is ultimately determined by a several factors, including: 1) the performance of government reflects the contours of the value system that takes place in its niche, therefore the intelligence of government actors, including bureaucrats and other officials, in adopting these values in the form of a commitment and then incorporating them into the government process is an important investment so that government is not alienated from the public; 2) how the centralization of the civic value system in government can affect the overall effectiveness of government.

In addition, Fukuyama's (2013) study identifies four essential elements as The Principles of Community Governance: the principle of scale, the principle of democracy, the concept of accountability and the principle of accountability. Consequently, the public plays an important role in a social system. Only authorities that are able to facilitate the expansion of public preferences in a responsible manner can gain the trust of the public. According to Prudence et al. (2021) and Radhika (2012), it is crucial to present a variety of ethical alternatives for public administrators to improve their ethics at the professional level. The first is deontological, where official ethics are based on institutional oaths; the second is consequential or teleological, where utilitarian and cost-benefit analysis are examples of this group's practice; and the third is spiritual wisdom ethics, where internal ethics are reproduced from a constant dialogue between thought and intuitive awareness. There has been a significant realignment in the development of ethics. Originally an external realm, ethical issues have now returned to a more personal realm.

In this context, the deformation of his character and ethics into what is known as spiritual wisdom ethics becomes crucial. The configuration of the effectiveness of changes in policy implementation is defined by the degree to which the public, as its constituents, provides assurances and permits that the agendas and concerns that are prioritized including popular preferences. Political support, public loyalty and integrity to public values, and public appreciation of government are largely determined by the extent to which government agencies build, strengthen, and place environmental values (social capital) into the public process (Mamokhere et al., 2021; Igalla et al., 2021).

Research methodology

The research employed qualitative and case-based study. This method was selected to facilitate why and how inquiries, particularly when interactions and governance phenomena are studied (Yin, 2014). The design of this study allows for an in-depth exploration of the challenges of incorporating social capital into policy adaptation for groups of independent home-based workers. The analytical unit consists of both government and community institutions. The focal points of the research are governance of institutionalization of processes and mechanisms of social capital development within the framework of the women's home industry forum, the regulation of inter-institutional connections, and the findings produced in relation to strengthening public values. In-depth interviews were conducted as the study promotes two-way oral communication between the researcher and the subjects.

We also collect secondary data from official and non-governmental sources, such as reports and news. The interviews were recorded and encrypted to ensure accuracy and diversity of data. Methods of interactive analysis are used to reduce, present and validate the data. Interview transcripts were re-checked and field notes were used to ensure the integrity of the data. Multiple data sources were triangulated by the researchers to ensure data quality (Miles and Huberman, 1994). In order to confirm the accuracy of the data, the

researcher used triangulation. According to the data sources, the data in this study comes from a variety of formats (interviews, questions and news articles) and sources (local communities and various government agencies) (Creswell, 2013), where information or data is compared in various ways. Interviews and observations were used to confirm the accuracy and completeness of the presented information.

Results and discussions

Profile of independent home-based workers in south lampung regency

Independent home based workers in Canti and Way Muli Villages, South Lampung Regency, are home-based business actors at the micro and super micro levels (capital below 5 million) that have existed and grown for generations, managed by one family with female business drivers (mother, grandmother, daughter, other sister).

In 2016, the Ministry of Women's Empowerment and National Child Protection (KPPPA RI), in partnership with many key Ministries/institutions, designated this area as the pilot project for a cottage industry development program with 20 additional regions in Indonesia. The program objectives are: 1) increasing family income through productive activities carried out at home by women entrepreneurs with the growing support of their husbands and other family members; 2) creating alternative business opportunities; and 3) developing creative industries through women empowerment activities to strengthen the Home Industry network. The next phase of home business stakeholders is called the Home Industry Business Group.

The results of observations and documentation characterize the two villages as fishing villages with a significant number of female migrant workers abroad in legal and illegal status (58 percent of adult women and children), and susceptibility to human trafficking crimes (average 10 cases per year), disadvantaged areas have concerns with stunting (5 cases). In the meantime, the results of the survey on the profiles of business actors reveal the following characteristics: 1) there are 201 female business actors and the participation of all family members except fathers; 2) the main business is fish food processing and cuisine based on marine products, such as fish head restaurants, fish balls, fish bone crackers and seafood handicrafts; 3) the production of goods and services is conducted in privately owned residences; 4) The actors of independent home-based workers have: primary and junior high school education and is of productive age (19–45), meaning he or she can support a family; 5) possess a business capital of less than \$5 million and a non-loan source of personal capital; 6) uses manual technology; 7) makes direct sales and orders, intra- and inter-village marketing, and cash-based payment systems; 8) minimum government training; 9) superior commercial waste treatment.

The interviews and observations were carried out from January to May 2021 with several informants, including: home industry forum members and administrators, village workers, village officials, universities, NGOs, strategic groups, were found:

“First: the main problem faced by 2 villages and villages comparable to them is the accumulation of garbage from organic waste in the form of fish scales, fish excrement, and fish bones generated by village economic operations. This produces an odor that is harmful to health and contaminates the groundwater. Through village-university partnerships, fish bones and scales can be processed into handicrafts, and innovations in transforming fish bones and fish heads into processed foods with a high nutritional value for toddlers have been used to combat stunting and have the potential to reduce the impact of emissions resulting from bone and fish skin waste, particularly CH₄ and CO₂ emissions. Second: this business group was successful in initiating and establishing: 1) a forum for cottage industries at the village level, and 2) forums to interact with similar cross-village groups and collaborate on the construction of business centers in small units of tourism buffer areas and tourist areas. The centers become a vehicle for production process activities and special areas for product commodities, marketing, and the gathering of similar business actors across villages; 3) the centers that have been established have begun operations (started up); the next step is for the government to provide assistance and institutional strengthening, but activities and technology are still basic, despite the fact that connectivity with the market, capital intervention, and interaction between centers has begun”.

The Role of the Policy Environment (Social Capital) in Policy Implementation Changes

This section discusses the relationship between social capital and policy implementation. This is demonstrated in two aspects: a) strategic aspects of establishing social capital and institutionalization carried out by the government in the framework of a home industry forum; b) aspects pertaining to how social capital influences and improves the organizational structure and management of the government. This can be seen in the government’s innovative efforts to increase decision-making capacity.

In general, we discover that there are numerous obstacles at the institutional, organizational, and management levels. Detailed explanation is provided below.

1. Building social capital through the home industry forum

This section describes the processes and mechanisms of building social capital at the institutional level in women’s home industry forums. We found that there are four strategic aspects that contribute to this: the driver aspect in the form of driving social capital (rules, policies and hierarchical procedures), the trigger aspect in the form of triggering social capital (trust, mutual cooperation, individual rationality), the mechanism aspect in the form of activities used to generate and strengthen social capital, and the perceived impact aspect (social, economic and political).

We discovered several formal and informal regulations with a moderate degree of institutionalization, hierarchical arrangement and procedures that describe the collective values established by the government. Table 1 below illustrates the explanation.

Table 1

The Process and Mechanism of Building Social Capital in the Village Women's Home Industry Forum

No	Strategic Aspects	Institutional Form	Social Capital Variant
1	Driver	<ul style="list-style-type: none"> – International policy in the form of ILO Home-workers Convention No. 177 of 1996, provides recognition of homeworkers, including self-employed; – The Indonesian Central Statistics Agency (BPS) has included questions regarding workplaces and payment systems in the National Labor Force Survey questionnaire since 2016; – Policy for Increasing Women's Economic Productivity (PPEP) in 2004; – Regulation of the Minister of Women's Empowerment and Child Protection of the Republic of Indonesia Number 2 of 2016 concerning General Guidelines for the Development of Home Industry to Improve Family Welfare through Empowerment of Women; – Declaration of women and child friendly villages, prima villages and disaster response villages and the locality-based one village one product (OVO) program from across ministries 	<ul style="list-style-type: none"> – National statistical survey recognition intervention since 2016; – Policy interventions and derivative programs at the level of state and village ministries
2	Trigger	<ul style="list-style-type: none"> – It is a disaster-prone area (earthquake and tsunami), the problem of marine waste, beaches and environmental damage, including the COVID-19 pandemic; – Homeworkers' forums have been formed for a long time, becoming a gathering space based on local processes, local skills, local knowledge, resources and local solidarity; – Trust, mutual cooperation, security, the presence of developing innovation leaders are support for strengthening social capital 	<ul style="list-style-type: none"> – Regional issues/problems; – Long-standing groups/institutions; – Variants of social capital include trust, mutual collaboration, and security; – The presence of an innovation champion facilitates the establishment of trust
3	Mechanism used	<ul style="list-style-type: none"> – Weekly and monthly meetings, arisan activities (savings and loans), and the development of self-cooperative activities among members; – Assistance from the leadership of female innovation champions in developing businesses in the form of centers and home industry startups; – Assistance from universities and local financial institutions; – Mass production, sales, and labor exchange 	<ul style="list-style-type: none"> – Regular meetings and productive economic activities; – Cooperatives, centers, and home-based business startups
4	The resulting impact	<ul style="list-style-type: none"> – Expanding forum membership, both within and between villages; – Easy access to technology and credit information, a larger market, and labor exchange; – Increasing the income of home industry players (the number of advanced IR players is growing); – Negotiating access to government services and facilities, and marketing products on a larger scale; – Participating in local level development planning deliberations 	<ul style="list-style-type: none"> – Social and economic empowerment; – Government intervention of widely accessible information facilities; – Decentralized decision making; – Integration and relations within and outside government institutions

Source: Compiled by the authors based on interviews and documentation, 2020.

Some institutional level observations are obtained as follows: a) although there is no recognition of ILO agreements, the national government encourages the implementation of two national and local policies and programs. These are the foundation and recognition of this group's decent work at all levels of government and across institutions; b) various crucial issues/problems in the region, the existence of local institutions of home industry forums that have been ongoing for a long time, security, and the presence of innovation champions all contribute to paving the way for the development of trust as the basis for social capital; c) as a tool for developing social capital, the frequent gatherings evolved from a means of saving money into economically productive activities in the form of pre-cooperatives, centers, and home industry start-ups. Initially, the mechanism for the home industry forum took the shape form of an arisan, which was merely a gathering, before transforming into a cooperative educational medium. Education on waste management, use value processing, product processing, capital savings and loans are included in the strategic content. Forums and institutions were transformed into business and pre-cooperative forums. Forum members participate in a variety of community/social activities that have economic implications as a result of impact due to intensive social relations and productive activity; d) as a result, the forum becomes dynamic and productive, and social and economic empowerment emerges, capable of addressing waste issues, capital demands, and the production of village goods. When a business has difficulties, social networks become a survival strategy. A shared responsibility method based on mutual help is the quickest way to solve problems for members. This fact makes access to economic resources more accessible and requires solid economic and business interactions for survival. Employment development can be achieved through a series of productive efforts incorporated in the forum, such as encouraging the village economy, capital mobilization and local social dialogue, government intervention in the form of access to facilities and infrastructure, decision-making power and good relations.

The home industry forum for women's groups has become a platform for the production, interaction and transaction of social capital, which has been working for a long time and continues to grow. Local processes, local skills, local knowledge and forum-owned resources serve as the foundation for the development of social capital, such as mutual cooperation, trust and social solidarity. Developing ties and networks with inter -regional/village forums/groups into a hierarchy and process that leads to the development of social capital stocks and bridges access to government resources and other service providers for mutual interests and advantages is a dynamic process. Government support in the form of relevant policies and programs has become a strategic driver for the dynamics of economic and social activities, including forum decision-making. This institutionalization provides economic, social and political benefits, albeit within a constrained political scope.

2. Innovation in institutional decision-making at the Legal Village Forum: linking the role of social capital and changes in policy implementation within the framework of governance quality

This section describes the organizational and managerial levels of government involved in accelerating the business interests of women's home indus-

try actors and other institutions within an inter-institutional network. One way in which social capital improves the quality of governance is through the regulation of capacity innovation in the government decision-making process based on the social capital. We see that the government has the ability to accelerate the interests of this group in a network between institutions. Joint decision-making can be done with the government or networking groups. Based on this, it will be described how the government develops decision-making innovations that can strengthen relations with new public values as social capital. This has an impact on increasing trust, control and the large role of this group in the successful implementation of specific policies and programs. We conducted interviews with key people and collected observations to determine what transpired. Details are provided in Table 2 below.

Table 2

Types of Innovations to Develop Decision-making

No	Type of Innovation to Develop Decision-Making	Inter-institutional Network	Strengthening Civic Minded Values
1	Meeting of Women's Network Leaders	– Groups/forums of innovation champions with the government build a collective network.	– Value of strengthening local institutions
2	Village Discussion	– Groups/forums of innovation champions, and the government develop communication and share information.	– Value strengthening trust and cooperation
3	Construction of a school for women's Home based workers	– Groups and forums improve their skill competency, leadership ability, networking capacity, and policy advocacy.	– The value of building and strengthening competencies and public initiatives
4	Village/sub-district Development Planning Deliberations, policy affirmations in the form of regent regulations and village regulations, and integrated regional development.	– Groups/forums and the government produce policies/regulatory frameworks and strategic plans.	– Establish public control via planning and decision making – Building assurance that priority agendas and issues can be included in public preferences.

Source: Research results, 2022

Table 2 illustrates how social capital enhances the quality of government. Efforts are made to promote decision-making and innovation. We observe several functions of government and regulation of diverse policies and programs, establishing productive partnerships between institutions to promote public values (participation, trust and control). This section describes the following:

1. The government arranges a gathering of women network leaders of home-based workers to boost their networks. This is the initial role adopted by the

- government with two objectives: a) sharing organizational experiences so that the results can be used to analyze the problems encountered, and b) understanding and awareness of the struggle for common rights and goals by strengthening organizations/forums; thereby growing and building critical awareness between organizations (network);
2. The government strengthens the intensity of relations through village discussions. The role aims to: a) build dialogue leading to two-way relationships between the government, stakeholders and cottage industry forums, as well as raise government awareness of this group and address their problems and needs; b) start a forum for sharing and strengthening each other, the results of which are included in this group's program in advising on development planning and the construction of women's schools at the village and sub-district levels guided by NGOs and universities;
 3. The government plays a role in improving the capacity building of independent schools for women home-based workers in villages and across villages. This role provides: a) essential skills, information and resources for leadership, decision-making and choice-making; b) the capacity and ability to advocate for policies to strengthen the guarantee of protection of decent working and living conditions.
 4. Integrate program and group needs through decision making in village planning and development deliberations (musrenbangdes) and support for regulations and policies. Both are measures to build trust, maintain public scrutiny and ensure the agenda and priority concerns of the group.

Expanding the decision-making power of groups provides a venue for interaction between government and community groups. Government roles include endorsing specific policies and programs, the promotion of dialogue, networking collaboration, and education, all of which serve to enhance the shared values of government and society. Positive interactions can be observed as a result of the government adoption of a commitment and integrity attitude to continue using local institutions, the utilization and institutionalization of local/informal value systems, the strengthening of local networks, and the strengthening and assisting of innovation champions to increase capacity and support for a range of programs at the local level. Innovation and decision-making space in the form of participation in village policy-making through formal village consultative forums have been successful in fostering high levels of trust and strong control as a result of feeling that they play a significant role in the implementation of village-specific policies and programs.

Discussions

The increasing interest of policy makers on the importance of social capital to improve policy implementation practices has stimulated various concerns, research and analysis related to how to develop the implementation of independent home-based workers. Various government strategies in South Lampung Regency have been launched to support this, one of which is through the development of village-based women's home industries.

Several researchers have studied and evaluated the implementation of the policy in the development of independent home based workers, but their studies were primarily focused on the description of homeworkers (Elgib and Elveren, 2021; Powel and Craig, 2015; Ismail et al, 2022; Narula, 2020), or the description of the policy environment, and the implementation of the policy with the government as the sole authority in policy implementation (Lopez, 2017; Hupe et al., 2014; Tresiana and Duadji, 2021).

There are now two basic routes of decent job development for independent home based workers in Indonesia. First, increasing business scale and economic productivity by extending markets so that businesses can compete not just locally, but also nationally and internationally. Access to capital, policy, marketing and information, and work skills are resolved through government intervention. Second, inclusive and integrated regional development that utilizes revitalization, social capital, decentralization of governance structures and collaboration through priority village schemes, policy support and decent work promotion programs are important foundations for enhancing decision-making capacity.

The absence of a home-based workers' convention, particularly in the form of national and local policies, presents the greatest obstacle to the development of this business group. Government makes a significant contribution by selecting policies and prioritising important and urgent policies (Bryson and Bloomberg, 2014; Fisher et al., 2021; Hudson et al., 2019; Adegbite et al., 2021). Under pressure and amidst the challenges of socio-economic transformation, building social capital values among independent home-based workers can promote sustainable rural development and livelihoods (Shrestha, 2015; Bletsas and Charlesworth, 2013; Tresiana and Duadji, 2021; Nasir, 2021).

The importance of social capital given that it is a capability arising from mutual trust within a society or a subset of a society. Trust is one of the manifestations of the existence of collective resilience necessary to maintain social norms' cohesion. Therefore, trust will not arise spontaneously, but rather as a result of the group's long-lasting cohesion (homeworkers forum). Hierarchical norms are vital, but insufficient to create trust in a community group. Indeed, social order will be mainly governed by the presence of this mutual trust, and the creation of this trust will be substantially dictated by cultural character (Tresiana and Duadji, 2022; Brown and Livermore, 2019; Izmen, 2018).

Therefore, according to Fukuyama (2013), the value of formal norms that are built with a strong hierarchical structure will not contribute to the establishment of building trust unless they can be absorbed flexibly incorporated into a network of smaller social systems, either in the form of groups or regions. Several case studies in Japan show that the Japanese population has a high level of mutual trust exhibited by the Japanese people, which serves as the primary foundation for the expanding information revolution. Those with a low level of trust will never be able to produce efficient information technology (Lim et al., 2016; Fukuyama, 2013). According to our findings, different variants of social capital ranging from trust, mutual cooperation, security, local institutions, presenting local leaders and innovation champions, combined with different drivers of policy interventions and specific programs, have been identi-

fied as priority value systems for government to improve the design of social capital implementation.

The next section discusses the relationship between the policy environment in the form of social capital and enhancing policy implementation. Democratic governance as a novel approach to policy implementation is deeply connected to value systems in the form of culture, politics, information and communication. The spontaneous and irrational idioms and quadrants of values that constitute the social capital of a society are an important feature alongside formal values. Social energy built autonomously, collaboratively and sincerely by the community determines the success of implementation (Kim and Yoon, 2017; Jain et al., 2020).

An important issue to analyze is how social capital can work to improve policy implementation in order to comprehend the debate's interactions in terms of how social capital enhances the quality of government. One method to accomplish this is through enhancing the capacity for innovation in the decision-making process while confronting new issues (Ko and Kim, 2021; Tresiana and Duadji, 2022). In this context, accelerating *public interests* in a *network* between institutions becomes strategic (Newigand Koontz, 2014; Beer, 2017; Cho and Moon, 2019; Duadji et al., 2022). Some forms of innovation carried out by the government to develop decision-making capacity include: 1) developing networks through meetings of women leaders across villages; 2) improving the quality of dialogue; 3) education and capacity building in the form of girls' schools; 4) become an important part of the village legal planning forum; 5) affirmation and integration of specific policies and programs for the development of integrated local areas (such as child- and women-friendly villages; superior villages; disaster-responsive villages, etc).

The quality of a government is achieved when its activities and performance reflect the contours of the value system that exists within the niche of its entity. The government will not alienate the public if it invests in the intelligence of government actors, including the collection and incorporation of social capital into the process (Fukuyama, 2013; Shrestha, 2015; Mamokhere et al., 2021; Prudence et al., 2021; Lim et al., 2016). The existence of broad public trust is evidenced by the group's contribution to the integrated development framework at the local level, the strengthening of self-cooperative institutions, the construction of business centers, and the establishment of home-based industries (start-ups). The government's integrity and strong dedication to the need for civic engagement through leadership meetings, dialogues, schools and iterative decision-making could have an impact on its overall performance.

Several studies conducted by Porcher (2019) and Fukuyama (2013) on a community entity with a high level of interaction with public officials indicate that public initiatives tend to evolve more effectively, particularly in response to public issues. A government that integrates its public qualities more intensively will be viewed by the public as an entity capable of providing public goods that benefit the public and engage the public. Studies of states that are the subject of research also show that the greater the citizenship in an entity, the stronger is the public spirit of community among its members, so that new policies are always positively received and polarization caused by the dominance of a few elites can be avoided.

There is a sense of civic duty that positions the community as the most fundamental component for the successful implementation of state-initiated public policies. Studies conducted in several countries, especially in Latin America, reveal that a lack of trust between people is the main cause of widespread corruption among most politicians and bureaucrats. This shows that there is a mutual relationship between the values of society and the development of society and government (Huencho and Orellana, 2020).

The study conducted by Lim (2016), Jain et al. (2020), and Zhang et al. (2019) of a sample of 30 countries in the world corroborates this with the conclusion that people with a high level of trust have a significant improvement in government performance. Furthermore, these findings support the notion of a mutual relationship framework between social capital and changes in policy implementation. This finding confirms that the relationship between trust and high interaction between the public and the government affects the efficiency of the bureaucracy, and changes in the capacity of government institutions in the provision of public goods that provide benefits and affordability. Social capital also contributes to the prospect of more easily resolving the complexities of society-government problems, poverty, reducing unemployment and crime, and enhancing the welfare of the population (Porcher, 2019; Radhika, 2012; Tresiana and Duadji, 2022). Our findings demonstrate that a high level of interaction between the government and community groups encourages the growth of initiatives and public spirit in response to new concerns and policies. On the other side, high levels of interaction can alter the capacity of government institutions to provide public goods with benefits and outreach.

Conclusions

1. This study aims to situate the concept of social capital and the success of policy implementation within the configuration of modifications designed to accommodate the work of independent home-based workers. There is a mainstream and conceptual continuum of public awareness, that the process of accelerating the public interest of this group has been structurally distorted is the main reason why adjustments in policy implementation cannot be avoided. The trend of the new reality, which demands a number of variants of social capital as a new value system and a social concert consisting of resources and networking for the successful implementation of policies
2. Specifically, this study focuses on the relationship between social capital and implementation enhancement within the framework of quality governance. Generally, we discovered two challenges, namely the challenge of institutionalizing social capital processes and mechanisms, which were determined by four important factors, namely the driver factor (in the form of national and local/village government policies), trigger factors (disaster issues, environment; a set of values in the form of trust, mutual cooperation, individual rationality, and the presence of innovation leadership), social capital development mechanism factors (activity dynamics and cooperation/partnership relationships), impact factors (changes in social, economic and political empowerment). Next is the

challenge of connecting the role of social capital within the framework of quality governance, one of which is through innovation in increasing decision-making capacity in relations and collaboration between institutions in a variety of forms including networks of similar groups, schools and dialogue, active participation in decision-making, and special policy support.

3. The findings of the study indicate that various driving factors in the form of specific government intervention policies and programs, triggers in the form of variants of social capital, mechanisms in the form of local institutional support, and the presence of important and influential personalities are strategies for institutionalizing value systems that can be adopted for building social capital as an essential instrument for successful policy implementation. On the one hand, interaction inside the framework of government can stimulate initiative and public spirit. On the other hand, it can change the behaviour of the government in providing public goods that offer benefits and have a wide public reach. The reciprocal relationship between social capital and policy implementation can be derived from a more authentic type of governance based on public values and character synergy.
4. At the strategic level, the fundamental values build a mutually beneficial relationships between the two parties and recognise the space for shared decision-making authority. The duty of government is to foster an attitude of integrity and a strong commitment to the significance of being civic-minded, which can iteratively affect government performance and enable the government to increase economic recession from low value to high productivity and success. Thus, the focus is not on the preferences of government, but on the public/community groups. This will contribute to gaining public trust.
5. In order to optimize and successfully implement policies, it is necessary to encourage changes in the government's way of doing things: a) deforming character and ethics towards spiritual wisdom ethics; b) carrying out an "inward looking ethical" contemplation process; c) define some ethical issues into a more personal area; and d) developing intuitive understanding in order to reinvent the roles of the basic elements and position genuine energy from the community as a capital for successful policy implementation).

REFERENCES

1. Adegbite, K.J., Bakare, L.A., Raji, A.A. and Raheem, T.A. (2021) 'Bureaucracy and policy implementation in democratic governance: A focus on Nigeria's Fourth Republic', *International Journal of Public Administration*, 45(15), pp. 1070–1080. <https://doi.org/10.1080/01900692.2021.1947318>
2. Ajadi, A.A., Oladele, O.I., Ikegami, K. and Tsuruta, T. (2015) 'Rural women's farmers access to productive resources: the moderating effect of culture among nupe and yoruba in nigeria', *Agriculture and Food Security*, 4(26). <https://doi.org/10.1186/s40066-015-0048-y>

3. Beer, A. (2017) 'Multilevel governance', *The International Encyclopedia of Geography*, pp. 1–9. <https://doi.org/10.1002/9781118786352.wbieg0898>
4. Biernacka, A., Queder, S.A.R. and Kressel, G.M. (2018) 'The connective strategies of bedouin women entrepreneurs in the negev', *Journal of Arid Environments*, 149, pp. 62–72. <https://doi.org/10.1016/j.jaridenv.2017.10.004>
5. Binelli, C. (2016) 'Wage inequality and informality: evidence from mexico', *IZA Journal of Labor and Development*, 5(5), pp. 1–18. <https://doi.org/10.1186/s40175-016-0050-1>
6. Bletsas, A. and Charlesworth, S. (2013) 'Gender equality and decent work in australia', *Australian Journal of Political Science*, 48(1), pp. 44–56. <https://doi.org/10.1080/10361146.2012.760524>
7. Brown, M.E. and Livermore, M. (2019) 'Identifying individual social capital profiles in low-resource communities: Using cluster analysis to enhance community engagement', *Journal of the Society for Social Work and Research*, 10(4), pp. 477–500. <https://doi.org/10.1086/706193>
8. Bryson, J.M, Crosby, B.C. and Bloomberg, L. (2014) 'Public value governance: moving beyond traditional public administration and the new public management', *Public Administration Review*, 74 (4), pp. 445–456. <https://doi.org/10.1111/puar.12238>
9. Central Bureau of Statistics (2020) 'State of Workers in Indonesia in 2020'. Available at: <https://www.bps.go.id/publication/2020/11/30/351ae49ac1ea9d5f2e42c0da/keadaan-pekerja-di-indonesia-agustus-2020.html>
10. Chamchong, P. (2019) 'How cultural and organizational conditions impact on policy entrepreneurship: evidence from Thailand', *Journal of Asian Public Policy*, 13(1), pp. 79–93. <https://doi.org/10.1080/17516234.2019.1630886>
11. Cho, B. and Moon, M.J. (2019) 'The determinants of citizens preference of policy instruments for environmental policy: Do social trust, government capacity, and state-society relations matter?', *International Review of Public Administration*, 24 (3), pp. 205–224. <https://doi.org/10.1080/12294659.2019.1643101>
12. Creswell, J.W. (2013) *Research design: Qualitative, quantitative, and mixed methods approaches*. London: Sage Publishing. <https://doi.org/10.1007/s13398-014-0173-7.2>
13. Domanska, A., Zukowska, B. and Zajkowski, R. (2019) 'Sustainable development versus gender gap-do women matter?', *Problemy Ekorozwoju*, 14(2), pp. 129–142. <https://doi.org/10.35784/pe>
14. Duadji, N., Tresiana, N. , Putri, A.M.L.S. and Riniarti, M. (2022) 'Can the implementation of conservation village increase the environmental support in forest management in Bukit Barisan Selatan National Park, Lampung, Indonesia?', *International Journal of Sustainable Development and Planning*, 17(3), pp. 751–763. <https://doi.org/10.18280/ijstdp.170306>
15. Elgin, C. and Elveren, A. Y. (2021) 'Informality, inequality, and feminization of labor', *Women's Studies International Forum*, 88 (102505), pp. 1–9. <https://doi.org/10.1016/j.wsif.2021.102505>
16. Emerson, K., Nabatchi, T. and Balogh, S. (2012) 'An integrative framework for collaborative governance', *Journal of Public Administration Research and Theory*, 22(1), pp. 1–29. <https://doi.org/10.1093/jopart/mur011>
17. England, K. (2017) 'Home, domestic work and the state: the spatial politics of domestic workers' activism', *Critical Social Policy*, 37(3), pp. 367–385. <https://doi.org/10.1177/0261018317695688>

18. Etzkowitz, H. (2012) 'The triple helix', *Leadership in Science and Technology: A Reference Handbook*, pp. 434–442. <https://doi.org/10.4135/9781412994231.n49>.
19. Fisher, M., Mackean, T., George, E., Friel, S. and Baum, F. (2021) 'Stakeholder perceptions of policy implementation for indigenous health and cultural safety: a study of australia's closing the gap policies', *Australian Journal of Public Administration*, 80(2), pp. 1–22. <https://doi.org/10.1111/1467-8500.12482>
20. Fukuyama, F. (2013) 'What is governance?', *Governance*, 26(3), pp. 347–368. <https://doi.org/10.1111/gove.12035>
21. Howlett, M., Ramesh and WuView, X. (2015) 'Understanding the persistence of policy failures: the role of politics, governance and uncertainty', *Public Policy and Administration*, 30 (3–4), pp. 209–220. <https://doi.org/10.1177/0952076715593139>
22. Hudson, B., Hunter, D. and Peckham, S. (2019) 'Policy failure and the policy-implementation gap: can policy support programs help?', *Policy Design and Practice*, 2(1), pp. 1–14. <https://doi.org/10.1080/25741292.2018.1540378>
23. Hupe, P., Hill, M. and Nangia, M. (2014) 'Studying implementation beyond deficit analysis: the top-down view reconsidered', *Public Policy and Administration*, 29 (2), pp. 145–163. <https://doi.org/10.1177/0952076713517520>
24. Hysing, E. (2022) 'Designing collaborative governance that is fit for purpose: theorising policy support and voluntary action for road safety in Sweden', *Journal of Public Policy*, 42(2), pp. 1–23. <https://doi.org/10.1017/S0143814X2000029X>
25. Igalla, M., Edelenbos, J. and Meerkerk, I. V. (2021) 'Institutionalization or interaction: Which organizational factors help community-based initiatives acquire government support?', *Public Administration*, 99, pp. 803–831, <https://doi.org/10.1111/padm.12728>
26. *International Labor Organization* (2015) 'Homeworkers in indonesia results of mapping research on homeworkers in North Sumatra, West Java, Central Java, Yogyakarta, East Java and Banten'.
27. Ismail, G., Valdivia, M. and Reed, S.R. (2022) 'COVID-19 impact and recovery for women informal workers – a view from 2021', *Gender and Development*, 30(1–2), pp. 115–143. <https://doi.org/10.1080/13552074.2022.2066809>
28. Izmen, U. (2018) 'Exploring linking social capital in economic development', *Journal Optimum Journal of Economics and Management Sciences*, 6(1), pp. 133–152, <https://doi.org/10.17541/optimum.486865>
29. Jabeen, S., Haq, S., Jameel, A., Hussain, A., Asif, M., Hwang, J. and Jabeen, A. (2020) 'Impacts of rural women's traditional economic activities on household economy: Changing economic contributions through empowered women in rural Pakistan', *Sustainability*, 12(7), pp. 27–31. <https://doi.org/10.3390/su12072731>.
30. Jain, P.K., Hazenberg, R., Seddon, F. and Denny, S. (2020) 'Social value as a mechanism for linking public administrators with society: Identifying the meaning, forms and process of social value creation', *International Journal of Public Administration*, 43(10), pp 876–889. <https://doi.org/10.1080/01900692.2019.1660992>
31. Jimenez, A.A., Peterson, G.D., Norstrom, A.V., Wong, G.Y. and Downing, A.S. (2020) 'Local lens for SDG implementation: Lessons from bottom-up approaches in Africa', *Sustainability Science*, 15(3), pp. 729–743. <https://doi.org/10.1007/s11625-019-00746-0>

32. Kennedy, B.A., Pickard, W.H., Rogers, L.E., Vaughan, B.E. and Liebetrau, S.F. (2018) 'Unrealized potential', *Journal of Biogeography*, 16 (5), pp. 498. <https://doi.org/10.2307/2845116>
33. Kim, D.R. and Yoon, J.H. (2018) 'Decentralization, government capacity, and environmental policy performance: A cross-national analysis', *International Journal of Public Administration*, 41(13), pp 1061–1071. <https://doi.org/10.1080/01900692.2017.1318917>
34. Kumarpathanian, S. (2017) 'Sustainable development goal: Gender equality for women's empowerment and human rights', *International Journal of Research-Granthaalayah*, 5(4), pp. 72–82, <https://doi.org/10.29121/granthaalayah.v5.i4.2017.1797>
35. Ko, K. and Kim, R. (2021) 'The role of policy analysis and its impact on decision-making in local governments: The case of the seoul metropolitan government', *International Review of Public Administration*, 26(3). <https://doi.org/10.1080/12294659.2021.1971886>
36. Lawson, L. and Chowdhury, A.R. (2022) 'Women in thailand's gem and jewellery industry and the sustainable development goals (SDGs): Empowerment or continued inequity?', *Environmental Science and Policy*, 135, pp. 675–684. <https://doi.org/10.1016/j.envsci.2022.07.018>
37. Lawrence, R.J., Paredes, G.M., Fluckiger, Y., Lambert, C. and Werna, E. (2008) 'Promoting decent work in the construction sector: The role of local authorities', *Habitat International*, 32(2), pp. 160–171. <https://doi.org/10.1016/j.habitatint.2007.08.012>
38. Lim, D.H., Min Oh, J. and Heon Kwon, G. (2016) 'Mediating effects of public trust in government on national competitiveness: Evidence from Asian countries', *International Review of Public Administration*, 21(2), pp.125–146. <https://doi.org/10.1080/12294659.2016.1189196>
39. Lopez, L.M. (2017) 'Puerto Rico mental health policy accountability: A policy design evaluation', *Journal of Leadership, Accountability and Ethics*, 14(4), pp. 104–116. <https://doi.org/10.33423/jlae.v14i4.1492>
40. Mamokhere, J., Musitha, M.E. and Netshidzivhani, V.M., (2021), 'The implementation of the basic values and principles governing public administration and service delivery in South Africa', *Journal of Public Affairs*, e2627. <https://doi.org/10.1002/pa.2627>
41. Miles, M. B. and Huberman, A.M. (1994) *Qualitative data analysis : An expanded sourcebook*. SAGE.
42. Mohapatra, K.K.(2012) 'Women workers in informal sector in india: understanding the occupational vulnerability', *International Journal of Humanities and Social Science*, 2(21), pp. 197–207.
43. Muhyidin (2020) 'Covid-19: new normal and development planning in Indonesia', *Journal of Development Planning: The Indonesian Journal of Development Planning*, 4(2), pp. 240–252. <https://doi.org/10.36574/jpp.v4i2.118>
44. Narula, R. (2020) 'Policy opportunities and challenges from the COVID-19 pandemic for economies with large informal sectors', *Journal of International Business Policy*, 3(3), pp. 302–310. <https://doi.org/10.1057/s42214-020-00059-5>
45. Nasir, R. (2021) 'Trust and social capital in the old city of hyderabad: a study of self-help groups of women india', *The Oriental Anthropologist*, 21(1), pp. 1–23. <https://doi.org/10.1177/0972558X211004752>
46. Newig, J. and Koontz, T.M. (2014) 'Multi-level governance, policy implementation and participation: The EU's mandated participatory planning approach to implementing environmental policy', *Journal of European Public Policy*, 21(2), pp. 248–267. <https://doi.org/10.1080/13501763.2013.834070>

47. Porcher, S. (2019) 'Culture and the quality of government', *Public Administration Review*, pp. 1–11. <https://doi.org/10.1111/puar.13106>
48. Prudence, R., Brown, P.R., Cherney, L. and Warner, S. (2021) 'Understanding public value – why does it matter?', *International Journal of Public Administration*, 44(10), pp. 803–807. <https://doi.org/10.1080/01900692.2021.1929558>
49. Rai, S. M., Brown, B.D. and Ruwanpura K.N. (2019) 'SDG 8: decent work and economic growth – a gendered analysis', *World Development*, 113, pp. 368–380. <https://doi.org/10.1016/j.worlddev.2018.09.006>
50. Radhika, D. (2012) 'Ethics in public administration', *Journal of Public Administration and Policy Research*, 4 (2), pp. 23–31. <https://doi.org/10.5897/JPAAPR11.049>
51. Razavi, S. (2016) 'The 2030 agenda: Challenges of implementation to attain gender equality and women's rights', *Gender and Development*, 24(1), pp. 25–41. <https://doi.org/10.1080/13552074.2016.1142229>
52. Shrestha, R.K. (2015) 'Building social capital within the framework of agricultural cooperatives development in rural Nepal', *International Journal of Asian Business and Information Management*, 6(3), pp. 26–38. <https://doi.org/10.4018/IJABIM.2015070103>
53. Tresiana, N. and Duadji, N. (2021) 'Policy cluster: Affirmative empowerment and strengthening of coastal community women home industries', *Proceedings Series Advances in Engineering Research*, 202, pp. 11–20. <https://doi.org/10.2991/aer.k.210603.003>
54. Tresiana, N. and Duadji, N. (2022) 'Developing forest coffe cultural tourism and historical heritage megalitic sites in social innovation governance: How does it work in a sustainable way?', *Journal of Environmental Management and Tourism*, 13.4(60), pp. 1036–1046. [https://doi.org/10.14505/jemt.v13.4\(60\).10](https://doi.org/10.14505/jemt.v13.4(60).10)
55. Tresiana, N., Duadji, N., Febryano, I.G. and Zenitha, S.A. (2022) 'Saving mangrove forest extinction in urban areas: Will government interventions help?', *International Journal of Sustainable Development and Planning*, 17(2), pp. 375–384, <https://doi.org/10.18280/ijstdp.170203>
56. Huencho, V.F and Orellana, J.P.A. (2020) 'Representative Bureaucracy: Exploring the Factors that Inhibit Active Representation in Indigenous Managers from a Latin American Case', *International Journal of Public Administration*, 44(16), pp. 1404–1414, <https://doi.org/10.1080/01900692.2020.1773496>
57. Yin, R.K. (2014) *Cast study research: Design and methods*. London: Sage. <https://doi.org/10.1017/CBO9780511803123.001>
58. Yap, D.B. and Melchor, M.M. (2015) 'Beyond parity in education: gender disparities in labour and employment outcomes in the Philippines', *Journal of Asian Public Policy*, 8(3), pp. 276–296. <https://doi.org/10.1080/17516234.2015.1050752>
59. Zhang, Y., Liu, X. and Vedlitz, A. (2019) 'How social capital shapes citizen willingness to co-invest in public service: the case of flood control', *Public Administration*, 98(3), pp. 696–712, <https://doi.org/10.1111/padm.12646>

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THE MODEL OF FACTORS AFFECTING WORKERS' QUALITY OF WORKING LIFE: A COMPARATIVE STUDY BETWEEN THAI AND MIGRANT WORKERS

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Abstract. The aim of this research was to study the factors that affected the quality of working life of Thai and migrant workers and how labour public management affected the quality of working life. This study employed a mixed-methods research design which consisted of qualitative and quantitative methodology. The first phase was qualitative research, in-depth interviews and the focus group interviews were conducted with Thai and Burmese workers. The data obtained in the first phase was analyzed using content analysis. The second phase was quantitative research in which questionnaires were collected from 400 participants. The data obtained in this phase were analyzed using exploratory factor analysis to describe the factors that affected the quality of working life of Thai and Burmese migrant workers. The results showed that the factors affecting the quality of life of both Thai and migrant workers are the following: 1) government policies such as public health, economic aspects, and education can improve the well-being of the workers; 2) the quality of working life can be improved through the support of the government labour administration; it can provide labour protections and welfares following the international labour law and diversity within the workplace according to the human rights principles; 3) government officials' attitudes toward migrant workers discriminate against them. These findings can be used as the guidelines to develop Thai and migrant workers' management. The results can be practical knowledge to support the performance of government agencies in the future.

Keywords: Thai workers, migrant workers, labour public management and quality of working life.

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JEL Classification: I31; J68; J78; J88.

1. Introduction

Because of the influx of migrant workers to Thailand, the public sector has played an important role in labor management, policies, and measures to address the problems of migrant workers. However, for the working mechanisms of the public sector, there are usually three steps: 1) registration to allow illegal migrant workers to stay temporarily in Thailand, 2) adjustment of the status of registered migrant workers as legal migrants, 3) import of legal migrant workers from the source country. It could be said that these measures are precautionary without the integration of the public sector’s labor management mission and long-term planning. The recent solutions have all been short-term policy planning, regardless of integration between the public, private, and labor sectors, especially the revision of labor import controls. This affected the protection of labor rights and welfare. Such failed labor management also led to human rights violations, human trafficking, crime, and many other social problems. It can be seen that the number of migrant workers working in Thailand from 2013 to 2019 demonstrated a steadily increasing trend shown in Figure 1.

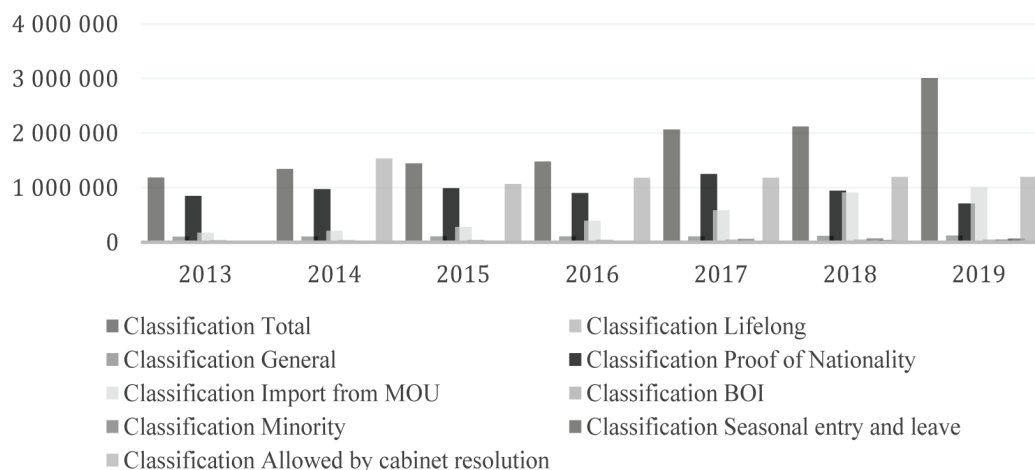


Figure 1: Number of Migrant Workers in 2013-2019.

Source: Office of Foreign Workers Administration, 2021

Figure 1 depicts the importation of migrant workers through various channels, with a continuously increasing trend. The annual influx of migrant workers has been necessary for the Thai economy as the labor groups that drive the Thai

economy are not only formal and informal workers but also migrant workers who have a positive effect on the overall economy by contributing to the increase in the gross domestic product (GDP) of Thailand. This can be seen from the number of migrant workers classified by type of business in 2018 shown in Figure 2.

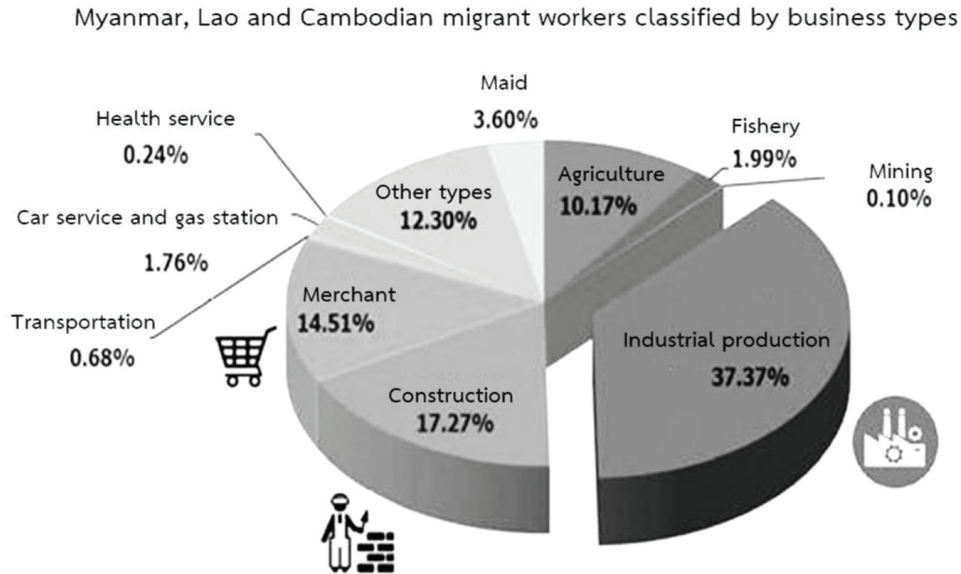


Figure 2: Number of Migrant Workers by Type of Businesses in 2018.

Source: Office of Foreign Workers Administration, 2019.

Figure 2 shows that migrant workers from the three countries work in different sectors. The share of migrant workers in industry is 37.3%, followed by the construction sector with 17.2% and the trade sector with 14.5%. However, the problem of migrant workers affected not only economic figures, but also social and cultural problems. Therefore, policy challenges were important for Thailand both in terms of wages and the geographical factor, which is the presence of underdeveloped countries with weak economies such as Myanmar, Laos and Cambodia. This gave Thailand access to cheap labour and facilitated the transition to a manufacturing advantage.

A comparative study between Thai workers and migrant workers who come to work in Thailand from Myanmar, for example, shows that welfare and labour protection provide a framework that helps to promote a good quality of working life for workers. Moreover, there are other issues affecting the quality of working life of migrant workers, such as living in society, using government services and acceptance by people in Thai society. These are still the main problems arising from stereotypes, attitudes and different values. Discrimination or poor services from government officials inevitably affect migrant workers' feelings when it comes to improving their working conditions. Those who are involved in performing work or directly interact with migrant workers are also in a position to see the problems in policy implementation.

2. Theory and literature review

2.1 Public Policy Implementation

The study of the implementation of public policy is of great importance. It can be said that implementing the policy is an administrative process that helps a group of people with responsibility for a policy to achieve its objectives. Therefore, the policies that will be implemented must be clear to build understanding between policymakers and those implementing the policy. Also, policymakers need to know about the agency's readiness to implement the policy (Pressman and Widavsky, 1976) Public policy implementation theory can be divided into three categories: 1) Top-down theories of implementation; 2) Bottom-up theories of implementation; and 3) Mixed theories of implementation. This study aims to introduce the Bottom-up theories of implementation.

Bottom-up theories of implementation place an emphasis on the spatial practitioner as a service provider and see implementation as a negotiation process that occurs within a network of policy makers. Regarding his major study on "Street-Level Bureaucrats", Lipsky (2007) stated that, in terms of the efficiency of a service, sometimes the policies and project design meet the needs of practitioners, including government officials or people who have been involved in them. To understand the reality and behaviour, this must be developed from the ground up through the learning process. As a result, lower-level sectors and basic government officials are also critical to achieve effective or successful practices.

The theory can be used as a guideline to analyze the labor-management problems of the government in Thailand since most policy implementations are executed as the top-down approach based on the needs of the leader group. This does not reflect the needs of the people. Therefore, the analysis of the bottom-up theory will lead to the understanding of the problems \ from the people's perspective or those involved directly in the problems. This can solve the problems and promote the development.

2.2 Public Service Improvement

The study on the concept of public service improvement can provide a more concrete understanding through the implementation. According to the article on "Street-Level Bureaucracy: The Critical Role of Street-Level Bureaucrats", Lipsky (2007) demonstrated the government's efforts to improve public service in the context of American society and describes a group of people who have jobs or are employees in the public sector.

These groups of people are all contributing to the creation or production of the state's policies. The state should have a direction in which to create a benefit or a legitimate penalty. Because most citizens are unable to contact or make direct complaints to the state, they frequently do so through a letter or a complaint to Parliament. Another important thing that can be reflected in the policy is the different groups of representatives directly affecting the policy, such as teachers, policemen, lawyers, public health officials, etc., also known as Street Bureaucrats. These people are close to service customers who can reach and interact with citizens in normal life. So, they are aware of the problem directly.

The perception of life makes these groups representatives of influential people who affect implementation.

As for Thailand, a study of concepts for the development of government services pointed out that public policies attempted to improve the management of migrant workers, such as the one-stop service to offer an easily-accessed registration system and services. This includes leniency measures and rights and welfare for migrant workers.

However, guidelines in the government's labour management are still complicated for multi-sector organizations, the private and civil society sectors. Also, operators, brokers, labour officers, police officers, and foundations of civil society networks participate in promoting or opposing the implementation of the government policies, such as the consideration of workers' human rights by NGOs, trying to claim the rights of workers' descendants working in Thai society while the government still has to care of Thai citizens. Thus, the government's labour administration becomes a great challenge due to variables in the many sectors involved. The government's services must respond to the demand for Thai and migrant workers, play an important role in economic development and live in society with high standard of living.

2.3 Quality of Working Life

The study on the quality of Thai workers and migrant workers was based on Richard E. Walton's Criteria for Quality of Working Life. Walton (1975) conducted a study of the quality of working life by taking into account the characteristics of individuals in terms of quality of life, with a focus on a humanistic approach to studying the personal environment and society that contribute to work success. To meet the needs at work, the following factors affecting the quality of working life must be considered:



Figure 3: Richard E. Walton's concept on workers' quality of working life.

1. Fair and adequate compensation: Workers receive fair wages, salaries, compensation and other benefits that are sufficient to live on according to generally accepted standards.
2. Working conditions: Both physical and psychological working conditions must not be too risky and must contribute to workers' well-being and health.
3. Use and development of skills: Workers should have the opportunity to develop their knowledge and skills to perform tasks that make them feel valued and challenged at work. This includes the opportunity to do work that is considered important and contributes to performance.

4. Opportunity for growth and security: Work should promote the growth and security of workers and help them to increase their knowledge and skills. Work should provide opportunities to advance professionally and gain security, and to be accepted by their colleagues and their family members.
5. Social integration in the organisation: Work should contribute to the social integration of workers. Workers should feel valued and accepted and work together with their colleagues. This promotes a good working environment without discrimination, bias and mutual destruction, including equal opportunities for career progress based on a moral system.
6. Constitutionalism: The way of life and the culture of the organisation promote respect for the rights of the individual and fairness in rewarding, as well as the opportunity to express one's opinion freely and equality under the law.
7. Work and the whole living space: Workers should have the opportunity to balance their work and personal lives. In other words, workers should not be subjected to undue stress in return for reasonable working hours and adequate personal time. There must be a reasonable balance between personal life and work.
8. Social relevance: Work or activities that benefit society by adding value and meaning to their job and increasing pride in their organization. This includes, for example, the fact that the organization is responsible for society in various areas such as productivity, waste management, environmental protection, employment and participation in social campaigns.

In conclusion, the study on the quality of working life, especially the promotion of Thai and migrant workers' quality of working life under the labour management context, focuses on the quality of life that consists of basic needs, such as wages, benefits, working conditions, safety, and labour protection. These are important factors for improving workers' quality of working life in the country. As a result, promoting work quality in the workplace is necessary and important. Work satisfaction affects performance, and it is also an incentive to work. This increases the company's or organization's efficiency and productivity. It can be the achievement of both members of the organization and the organization itself.

2.4. International Labour Standards in Thailand, Trade Unions and Labour Laws: towards a decent work

The International Labour Organization (ILO) is mainly responsible for promoting labour standards that lead to decent work, based on four strategic goals: employment creation, rights to work, social protection, and negotiation. Additionally, there are also goals in line with the United Nations, which are sustainable development and decent work through the Conventions.

According to the study on labour standards and decent work by Suttawet and Bamber (2018), despite the fact that Thailand has already joined the ILO and ratified six of its eight conventions, including those governing labor, the country's political and economic conditions remain unstable. As a result, the law's development and implementation were not successful. Political conflicts affect the management of labour relations or trade unions and support for the implementation of international labour law, which has not yet ratified in 2 conventions (No. 87 and 98).

Due to the fear that the trade unions would have more bargaining power, especially the current military government. The constitution limited the conditions of rights so that they did not interfere with the security, regulations, or political restrictions of the state. The unions had little opportunity for discussion or clarification. Military dictatorship and non-democratic government, therefore, have no tendency towards decent work because it must comprise “rights and social negotiations,” but more important are the consequences of the effective creation and development of products.

Therefore, if the public sector can manage labor by promoting valuable work according to the ILO’s labor standards, it will boost the competitiveness of the establishment and the country’s economic productivity. This also helps to promote and improve the quality of life of workers. These will provide decent work in all sectors of labour. If Thai labour law were addressed under the ILO standard, it could bypass the power of the elite and lead to legal integration under the same standard.

2.5 Human Relations

Human relations concept by Elton Mayo (2003) prioritizes the relationship among workers to enhance productivity in the organization, to encourage open communication between supervisors and subordinates, give people a chance to participate in democratic decision-making, focus on operators at all levels, and take care of them as friends. These would result in increased productivity. Mayo believed that if the human relations concept is employed correctly, the environment in the organization allows all of them to work together in harmony. The two concepts were true as the following details:

- 1) Workers’ behavioural response to the environment consists of two ways, namely the physical environment, including the work environment, the psychological story, and society at work. These environments involve informal groups, acceptance of individuals, and participation in decision-making.
- 2) People’s acts are influenced by selfish reasons. People behave that way due to their emotions, thought, self-satisfaction, and other personal preferences, such as comfort and enjoyment of work regardless of logical reasons.

This indicates that human relations are important at work. Enhancing good human relations through motivation without boundaries to encourage workers is incorrect and does not result in high productivity. Sometimes, employing the suitable control method and discipline to influence people who may be changed in various ways to be in the desired direction, along with motivation, are also necessary. As a result, scholars in the next era attempted to call this approach a behavioural approach to management, which is the study of organizational management in a new method. Therefore, it is called by another name, “New Classical Theory.” Behavioural studies suggested that human emotional and physical needs constitute the basis of the organization, which may be caused by the aggregation of humans who have common interests or objectives. This includes considering the behaviours of individuals and groups in the organization. Therefore, this was the beginning of the study of organizations based on behavioural science (Vaishita, 2021).

2.6 Related Research

Most articles involve migrant workers who migrate to seek jobs in other countries. The focus of the studies is on rights and protection in terms of work, risk and safety in the workplace, access to health services, and abuses from employers based on the contexts of western countries and Asian countries. They can be used as a framework for analyzing and understanding the context of migrant workers through the factors and conditions described in the articles based on the literature review. The data can be compared and studied for further development and application in this study. The content of the articles is shown as follows:

Table1

The Summary of Research Related to Migrant Labor Management, Problems, and Impacts on Workers' Quality of Life

No.	Authors	Issue	Method	Factors in Labor Management
1	Galanis (2013)	Access to health services among immigrants in Greece	A cross-sectional study	<ul style="list-style-type: none"> – Access to knowledge and public health services – Medical and cultural skills and capabilities – Employers' legal compliance – Legislation to protect vulnerable groups
2	Tam et al. (2017)	Access to health care or the provision of public health services for Chinese immigrants in Singapore	Qualitative study with interviews from Chinese migrant and staff from Health Serve	
3	Gorodzeisky (2017)	The study on differences among immigrants regarding employment discrimination and opportunities for success	Data from Eurostat and questionnaires used in four case studies and the European Union Labour Forces Survey	<ul style="list-style-type: none"> – Social skills and literacy – Language and communication – Ethnic, religious and cultural values – Welfare state (Tax, free thinking) – Labor skill values – Righteous Rights
4	Helbling and Kriesi (2014)	The study on differences in high- and low-skilled immigrants which found high skilled immigrants were likely to get hired	Exploratory research by questioning attitudes towards migrant workers' skills	
5	Kulkolkarn and Potipiti (2017)	A study of the impact of migrant workers on wages and unemployment in Thailand including the impact on policy makers	An empirical analysis method with a review of wages and employment	<ul style="list-style-type: none"> – Wages / compensation – Labor intensity – Risk of chemical hazards – Discrimination – Insufficient management of labor database – Stress from social discrimination – Improvement of working patterns to promote the quality of life, such as working hours and holidays
6	Sterud et al. (2018)	A systematic review of working conditions and occupational health among immigrants in Europe and Canada	Systematic selection of information in various databases	
7	Anjara (2017)	Stress, health and quality of life of female migrant domestic workers in Singapore	A cross-sectional method with 182 female migrant workers in Singapore	

No.	Authors	Issue	Method	Factors in Labor Management
8	Panikkar (2015)	Survey of organization and occupational health and workers' safety	A qualitative study with an in-depth interview with workers	<ul style="list-style-type: none"> - Labor Protection / labor standards - Employment legislation - Social and economic rights - Human rights - Rules and regulations from the policy - Legal employment conditions - Labor protection network
9	Cortest (2017)	Laws and social regulations for the development of human rights with opportunities for migrants to have access to social rights	A case study in Argentina with the study on migrants from neighboring countries such as Bolivia, Paraguay and Peru	
10	Kraivat (2014)	Migrant workers' protection and solutions in Thailand	A mixed method of quantitative and qualitative research	
11	Nothdurft and Hermans (2018)	Literature review on street-level bureaucracy and the study on the policy implementation	Research published during 2005–2015 using Web of Science Citation Indexing and Lipsky's concepts	<ul style="list-style-type: none"> - Staff performance - Interaction towards service for workers - Implementation of the policy - Attitudes towards workers - Labor control management
12	Schweitzer (2017)	Impacts and limitations on the management of migrant workers	A qualitative study with a semi-structured interview	

Sources: Compiled by the authors based on their own calculations (-hereinafter, unless otherwise noted)

From the literature review on concepts, theories, and related research from domestic and foreign contexts, the understanding can be achieved through problems, approaches, measures, and factors that are important to the administration of migrant workers based on economic, social, cultural, and political aspects. This also concerns values, attitudes, religious beliefs, and cultural diversity that affect discrimination and limitations of workers' access to services in public health, education, protection, welfare, employment opportunities, and career progress.

3. Research Methodology

This study employed mixed method approach in data collection and analysis that include both qualitative and quantitative methodologies through books, academic articles, research articles, media analysis, and information on both domestic and international websites.

3.1 Qualitative Methodology

The research instrument in this study was “the interview.” The questions were obtained from the problems of preliminary analysis and synthesis through research papers with the following steps:

In-depth interview: For inclusion criteria, the main participants involved in policymaking from the government sector, and a representative who is related to policy's implementation from each public and private sector included five people in total as follows: 1) a participant from the human resources department; 2) a supervisor; 3) a welfare department officer; 4) a staff of the Department of Em-

ployment; and 5) a hospital staff. **Purposive sampling** was used according to the research objective, which requires people with expertise and direct experience. The researcher chose policymakers and policy implementers from the central policy level who were related to policy implementation at the provincial level. Participants from the public sector included academics and labour inspectors, who represent the Ministry of Labor under the Department of Employment and the Welfare Department and implement the policy and directly interact with workers, hospital staff, the head of quality control, and HR staff in Samutsakhon Province.

Focus group interviews: Thai and Myanmar workers were chosen since they have the greatest number of migrant workers and have the greatest impact on the socioeconomic situation. The interview is divided into 4 groups: 2 groups of Thai workers and 2 groups of Myanmar workers. Each group consisted of nine people as the key informants, along with an “interpreter,” or one person who could communicate with them during the interview.

Qualitative analysis included data analysis and synthesis to summarize the research results obtained from the focus group interview’s papers and observations through in-depth interviews. This includes the study of the government’s labour policies in the past and a comparison of Thai and Myanmar workers’ quality of working life that define an objective data analysis, a conceptual framework, and the analysis of descriptive data. The data were analyzed into problems. The main points based on the conceptual framework were summarized.

3.2 Quantitative Methodology

Quantitative methodology was employed through exploratory factor analysis. The data were collected from factors and related variables through interviews from Thai and Myanmar workers to determine factors affecting the quality of working life and services.

The exploratory factor analysis was conducted to compare differences between Thai and Myanmar workers in terms of factors affecting the quality of working life since it was not confirmed whether factors were relevant to this problem, and those two groups of workers are considered to be a large population in Samutsakhon. Therefore, those two groups were included to find the sample group used in a factor comparison analysis, totaling 970,936 workers.

The number of Thai and migrant workers was calculated to find the sample group by Taro Yamane’s formula (Yamane, 1973). The calculation of the sample size is shown as follows:

Formula	$n = \frac{N}{1 + N\epsilon^2}$
When	$N = \text{Number of the population used for the study}$ $n = \text{Number of the sample group}$ $e = \text{Acceptable errors} = 0.05$
Substitute	$n = \frac{970,936}{1 + (970,936)(0.05)^2}$ $n = 399.83 \approx 400$

The sampling would be effective by using probability sampling to determine the likelihood that each sample unit was chosen. Since the sampling method was done by dividing the population by area and sampling was done based on the required areas, this gives the probability that each unit in the population will be selected by the cluster sampling method. All units of the population in that area were also studied (Kanjawasee, Srisuko, and Pitayanon, 1992). According to 400 people from the sample, the population is distributed in the following proportions based on each area:

- 1) After 400 samples were obtained, the data were divided into 2 clusters: 200 Thai workers and 200 Myanmar workers for comparison. According to the factor analysis theory, 200 people are acceptable (MacCallu et al., 1999), and there is research using cluster sampling with an equal number of samples without weighting (Kane et al., 2018).
- 2) The questionnaires were distributed with a reference method according to the proportion of the population in each district. Then, the number of questionnaires was calculated.
- 3) The number of workers used for reference in the 2017 database was calculated from the database of civil registration (Thai workers) and migrant worker data in each community of the three districts. In the study, the questionnaire was used as a research instrument for data collection. Questions and problems were obtained through conceptual frameworks, theories, and related research papers. The questionnaires are divided into two parts:
 - 1) Participants' general information includes gender, nationality, age, status, and type of business.
 - 2) Questionnaire on factors affecting Thai and Myanmar workers' quality of working life.

Moreover, "the questionnaire" was translated into Myanmar. Therefore, Myanmar workers could complete the questionnaire and write to clarify the problems. After that, the answers were translated into Thai for the analysis.

The questionnaire is divided into 2 parts as follows:

- 1) Part 1: Participants' general information is conducted as a check list, consisting of 5 questions regarding demographic factors as follows: gender, nationality, age, status, and type of business. It includes agriculture and livestock, fisheries and aquaculture, plastics production, services, construction materials, and others.
- 2) Part 2: Factors affecting Thai and Myanmar workers' quality of working life the questions are conducted as a rating scale. A 5-scale assessment was used based on the criteria for the interpretation of Best and Kahn's method (Kahn, 1989).

As for quantitative analysis of factors affecting Thai and Myanmar workers' quality of working life, the data were analyzed to find factors related to workers' quality of working life by Statistical Package for the Social Sciences (SPSS) to find the relationship of factors with exploratory factor analysis.

4. Results and Discussion

4.1 Qualitative Methodology Results

Participants included people who are directly involved with Thai and migrant workers in Thailand. The results are summarized as follows:

1) Laws and Public Policies

Strategic planning and operations are based on national security policy formulation. Therefore, policymakers strictly formulated policies, laws, and regulations related to migrant workers. Additionally, the concept of national security includes other dimensions, such as the economy, public health, etc. Such a problem is raised by Thailand's membership in the ILO and its ratification of only six out of eight conventions, which have not yet been ratified due to national security and a fear that the trade unions may have more bargaining power. According to Thai politics under the military government, opportunities for social expression or negotiation are extremely limited due to significant limitations, such as "rights and social negotiations," which are promising components of decent work. This can create value for workers through support and promotion in cooperative management which leads to the improvement of the quality of working life.

However, the standards for measuring a good quality of working life include opportunities for potential development to achieve progress and stability in a working life, social acceptance, equality, and rights. These indicate a good standard of a working life and serve as a driving force for work potential. For Thai society, due to the administration of the public sector under national security, opportunities or a forum for negotiation became a limitation. So, it is necessary to promote and support collaborative management that facilitates workers to negotiate to enhance the development of a good quality of life and lead to the development of various products.

2) Perspectives and Attitudes towards Migrant Workers

According to national security, most Thai people thought that migrant workers stole jobs from them. In the past, migrant workers came to work to replace Thai workers in some jobs that Thai people did not prefer to do. However, when some migrant workers had the potential, they turned themselves into business in the community. Therefore, Thais expressed negative attitudes towards migrant workers. Social problems, including illegal drugs, fights, and crimes, were seen to affect national security and insecurity in the lives and property of Thai people. There are also problems in values and behaviour since Myanmar people would like to chew and split betel palms (Chalamwong et al., 2018).

On the other hand, some Thai people in society expressed positive attitudes towards migrant workers as they worked or participated in activities together with migrant workers. Thai people experienced the way of life of migrant workers closely, especially their religious beliefs. Working together requires communication and interaction. This results in empathy. They share advice for both work and social life. These things influenced the attitude and behaviour of Thai people in a good way. If the government tries to solve the migrant worker problem through the management of migrant workers to allow them to work legally, it will lead to improved relationship between migrant workers and Thais.

Acceptance from a coworker, a supervisor, or members of society is a factor that reinforces migrant workers' quality of life in social integration (Walton, 1975). As human beings with feelings who are not working as machines, the absence of discrimination and bias reinforces migrant workers' quality of life based on morality.

3) Public Administration

- 3.1. Service provisions by officers to migrant workers require precise communication to create accurate perception and understanding, including facial expressions, gestures, and speech that affect the feelings and perceptions of migrant workers. Controlling the emotions of officers and good behaviour in service are part of the code of ethics in the service. In addition, officers' operations should be based on the legitimacy of human rights to truly implement and protect vulnerable groups.
- 3.2. Budget allocation is one of the government's labor administrations. It was found that the public sector did not have enough interpreters for both spoken and written languages. Some documents are required to be translated for migrant workers or services, especially in public health. Adequate personnel is also necessary to provide prompt and timely treatment.
- 3.3. Regarding the import of migrant workers, although, in the past, the import system has been continuously modified according to public policies, various complexity was found in terms of documents with high expenses and long processing times, adjusting systems, or mechanisms for importing migrant workers by various means in both strict and flexible ways. Ultimately, the workload of the document or process still depends on personnel. If more modern information systems are adopted, it will possibly reduce the document process with convenience and speed.

4.2 Quantitative Methodology Results

The analysis results from the questionnaire obtained from a group of 400 workers working in Samut Sakhon consisted of general information about Thai and Myanmar workers, mean (\bar{x}), and factors influencing Thai and Myanmar workers' quality of life.

Part 1: Participants' General Information Summarized by Percentage and Mean

1) Gender	123 Female Thai workers	68.5%
	125 Male Myanmar workers	62.5%
2) Age	80 Thai workers aged 41–50 years old	40%
	124 Myanmar workers aged 20–30 years old	62%
3) Status	102 Unmarried Thai workers	51%
	120 Married Myanmar workers	60%
4) Children	116 Thai workers having no children	58%
	136 Myanmar workers having no children	68%
5) Business	118 Thai workers working in fisheries	59%
	83 Myanmar workers working in fisheries	41.5%
6) Residence	146 Thai workers living in Mahachai	73%
	146 Myanmar workers living in Mahachai	73%

Overall, most Thai workers were females, aged 41–50 years old, while most Myanmar workers were males, aged 20–30 years old. Most of them worked in fisheries and processed aquatic animals since there is a variety of fresh seafood and processed seafood. Therefore, there are many establishments that run this type of business, including those that process frozen products for export, which require unskilled workers. Therefore, Myanmar and migrant workers are a good choice for many establishments, according to a basic information survey, which discovered that Mahachai has a large number of migrant workers (Myanmar workers) who come to work in Samut Sakhon.

According to the mean (\bar{x}) obtained in each item, the questions about factors affecting Thai and Myanmar workers' quality of life found that Thai workers' opinions were mostly at a “moderate” and “high” level, while the overall mean of Myanmar workers' opinions was at a “moderate” and “low” level. It indicates that the experiences received by Myanmar workers as a factor supporting quality of life were less than Thai workers, especially the mean in “*public services*” about the service behaviour of the officers, equal treatment in services, coordination in documents, and clear and easy communication. A “low” mean on the problem reflects that the performance of the officers affected the workers' quality of working life.

If the language communication in the document or service was unclear, it would lead to errors in work or exploitation. Operational behaviour of officers, such as hospital staff, police officers, and government officials, may indicate inequality in service and coordination with the public sector since such behaviour still differs between Thai and Myanmar workers. Another factor that was found to be on a “low” level was “*work*” in progress as the work of migrant workers did not require a high level of skills. So, the chance of being promoted or adjusted to a higher position requires a long period of employment and learning experience (Appendix A).

Part 2: Exploratory Factor Analysis (EFA) (Appendix B)

Figure 4:

EFA:

Model of Thai Workers' Factors

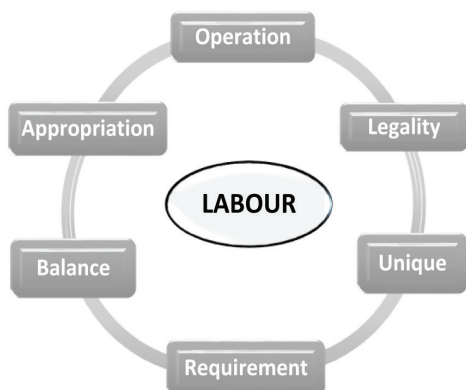
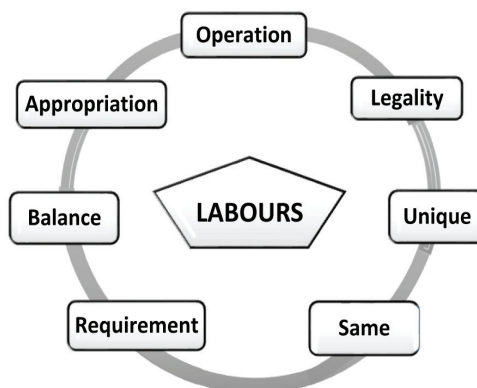


Figure 5:

EFA:

Model of Myanmar Workers' Factors



The exploratory factor analysis (EFA) was utilized to analyze the relationships between Thai and migrant workers. The KMO value obtained from the analysis was greater than 0.50. Thai workers are equal to 0.90, while Myanmar workers are equal to 0.83.

After that, factors that can be used for Thai workers include 6 factors, while those for Myanmar workers include 7 factors. Based on the results from the EFA, since the names in each group were determined and ordered by a priority obtained from the analysis, the details can be summarized as follows:

The Meaning of Each Group:

Group 1: Operation refers to operations and services provided to both public and private sector workers. Operations would reflect the behaviour of the officers towards workers, including communication that will facilitate workers to understand or have satisfaction with the service provided by the officers.

Group 2: Legality refers to legal rights, including legal protection as a guarantee of workers' quality of life in the workplace to ensure stability and equality.

Group 3: Appropriation refers to the appropriateness of distribution to achieve a standard of working life for workers that must be safe, stable, progressive, and, happy. This includes individuals and the working environment to improve workers' quality of life.

Group 4: Unique refers to the ability to get along with others regardless of nationality, culture, or lifestyle. When working together, they can adapt to and learn about working and social lives together, as well as exchange of experiences, sorrows, happiness, and advice with supervisors and colleagues.

Group 5: Balance refers to the salary received from work that is enough to sustain life and support a family, as well as a balance between work and family time.

Group 6: Requirement refers to workers' needs or demands for opportunities in welfare rights, a need for children to have access to education, and assistance from relevant agencies when they have problems.

Group 7: Same refers to equal or fair treatment for both Thai and Myanmar workers. Services or enforcement should be under the framework of legal regulations to ensure equality.

5. Discussion of Research Results

The results of the study revealed that the key conditions and limitations of the government's labor administration affecting migrant workers' quality of life are described as follows:

1) Laws and Public Policies: According to Thai politics under the military government, opportunities for social expression or negotiation are extremely limited due to significant limitations, such as "rights and social negotiations," which are promising components of decent work. This can create value for workers with support and promotion in cooperative management which leads to the improvement of the quality of working life. For Thai society, due to the administration of the public sector under national security, opportunities or a forum for negotiation became a limitation. So, it is necessary to promote and support collaborative management that facilitates workers to negotiate to enhance the development

of a good quality of life and lead to the development of various products (Suttawet and Bamber, 2018).

2) Perspectives and Attitudes Towards Migrant Workers: According to the concept of national security, most Thai people thought that migrant workers stole job opportunities from Thai workers. On the other hand, some Thais expressed positive attitudes toward migrant workers since they worked or participated in activities with migrant workers. Therefore, Thai people could see the way of life of migrant workers closely, especially their religious beliefs. Acceptance from a coworker, a supervisor, or members of society is a factor that reinforces migrant workers' quality of life during social integration (Walton, 1975).

3) Public Administration: Service provisions by officers to migrant workers require precise communication to create accurate perception and understanding, including facial expressions, gestures, and speech that affect the feelings and perceptions of migrant workers. Controlling the emotions of officers and good behaviour in service are part of the code of ethics in the service. Moreover, budget allocation is one of the government's labor administrations. It was found that the public sector did not have enough interpreters in both spoken and written languages. Some documents are required to be translated for migrant workers or services. In terms of quantitative methodology, the exploratory factor analysis was conducted by collecting questionnaires from Thai and Myanmar workers. Questions are factors extracted from the research, a literature review, information from in-depth interviews, and focus group discussions to study factors affecting Thai and Myanmar workers' quality of working life. The results are discussed as follows:

A quantitative methodology was conducted by using the questionnaire on factors affecting Thai and Myanmar workers' quality of life. When comparing Thai and Myanmar workers' opinions based on their experiences, the mean was different in two areas: "public services" and "work." Public services are related to communication, speech, and service provisions with appropriate gestures without disgust. The research results with a mean at a "low" level reflected problems in public services. This is consistent with a study on public health service knowledge and utilization among immigrants in Greece: a cross-sectional study (Galanis, 2013) on the education and use of public health services by immigrant workers in Greece. Problems with communication and the treatment process led to policies or measures to solve the problems so that immigrants could successfully access health care. According to the aforementioned problems, if the government can solve language and communication problems, migrant workers will be able to access information and services understandably, which can reduce the risk that will lead to problems of being exploited or deceived. Moreover, a study on health is my capital: a qualitative study of access to healthcare by Chinese migrants in Singapore revealed that those migrant workers had access to healthcare providers of their choice without pressure from their employers. The important message from the recommendations in this article suggested that legislation is needed to protect vulnerable groups from accessing health care services (Tam, 2017). There is also an article on "Human Rights of Migrants and Their Families in Argentina as Evidence for Development of Human Rights In-

dicators: A Case Study,” demonstrating the importance of accesses to social and economic rights, social security, health services, and educational opportunities by changing rules to be more flexible and appropriate. Moreover, policy formulation depends on the international cooperation among all stakeholders in both the public and private sectors to successfully drive access to various rights (Cortes, 2017).

Regarding “work,” the factors affecting Myanmar workers’ quality of life included getting promoted or working in a higher position. Due to context and values in Thai society, these reserve certain types of jobs for Thais only, and highly skilled workers were not necessary. Therefore, migrant workers’ opportunity for growth or progress at work seems difficult. The problem is consistent with the findings of a study on “Why Citizens Prefer Highly Skilled over Low-Skilled Immigrants, Labor Market Competition, Welfare State, and Deservingness” (Helbling and Kriesi, 2014).

This study determined why the labor market preferred to hire more highly skilled workers rather than low skilled workers. Even if it seems reasonable, in the context of western society as a welfare state, low-skilled migrant workers were granted rights from the government. This is unbalanced with their contributions to tax income, which is contrary to the needs of highly skilled migrant workers. From the point of view of such research, it reflects the distinction between high-skilled and low-skilled workers, including equality in promotion. Besides, the cultural context of each establishment may vary in terms of the period of employment, quality of work, competence, or economic value created by that establishment. As a result, low-skilled workers may have fewer opportunities for advancement than high-skilled workers. Thus, the mean of factors affecting promotion at work was at a “low” level.

6. Recommendations

1) The government’s guidelines for the implementation of labour management should focus on enforcing relevant laws and imposing clear penalties for those who violate the law. This must be applied to workers, employers, establishments, and government officials to achieve justice in all sectors and narrow the gap in law enforcement to improve the management of migrant workers as well as compliance with international labour standards because of the vow to join the International Labor Organization. This indicates the intent to protect the rights of migrant workers, especially the ratification of the Convention on Promotion and Support for Cooperation in Management so that workers can hold bargaining power regarding their work. This can create decent work according to labour standards, increase competitiveness, build credibility on the global stage, and enhance migrant workers’ quality of life based on international principles under a democratic system.

2) The study on the involvement of partners related to migrant workers in working and social life from the public and private sectors was to create a learning experience on a way of life and the coexistence among Thai people, Thai workers, and migrant workers who must work together. This builds positive atti-

tudes and understandings toward migrant workers. The experimental activity can be studied in the organization or through observation of officers' behaviour toward migrant workers. Thus, policymakers can appropriately design policies that affect various factors and dimensions.

3) The model of benefits and health services should be studied to be suitable for both legal and illegal migrant workers in terms of how each group can access health services and whether access and use of health services should be different from the plan for calculating costs and compensation for health care facilities. Consequently, the government can allocate budget and cost effectiveness to the workers' benefit.

7. Conclusion

The results of the study on "The Model of Factors Affecting Workers' Quality of Working Life: A Comparative Study between Thai and Migrant Workers" discovered that public policies in various areas, such as public health, the economy, national security, and education, inevitably affected the lives of workers in terms of promotion and improvement. Secondly, regarding the quality of working life in terms of opportunities and progress in work, communication and interaction with supervisors and colleagues, and learning and adapting to Thai society, workers who come to work in Thailand legally received rights and welfare based on labour protection and could live and adapt to colleagues. There were religious activities and traditions to foster goodwill, yet opportunities and progress in some areas are still limited in terms of nationality since they are only available to Thai citizens. Lastly, regarding public services, a major problem in service provision was the views and attitudes of Thai people towards migrant workers, which are linked to various problems in terms of benefits or health services, budget and expenses that the government has to manage, cultural differences and dirty appearance, chewing betel palms, and disease transmission among migrant workers, and stealing job opportunities from Thai workers. These problems affected the behaviour and expression of those involved in public services that require direct communication or interaction with migrant workers, such as the preparation of registration and renewal documents that must be clear as well as an understanding of the operation process. Regarding health care services, some officers expressed inappropriate verbal and unfriendly behaviour towards migrant workers, as well as the problem of harassment and violation of rights caused by police officers.

The problem of migrant workers should be managed at its root, which is the legal import system of workers. Problems in the past, such as corruption by government officials in smuggling illegal workers, had not been solved, resulting in long-term illegal labour problems that cannot be managed or controlled. The proposal of the government's labour management guidelines reflected an integrated approach to problem solving in various dimensions, including the economy, society, and security of the country. Therefore, it requires cooperation from all sectors and the decisiveness of the government to implement laws and policies to manage the problem.

REFERENCES

1. Anjara, S.G. (2017) 'Stress, Health and Quality of Life of Female Migrant Domestic Workers in Singapore: A Cross-Sectional Study', *BMC Women's Health*. <https://doi.org/10.1186/s12905-017-0442-7>.
2. Boyne, G., Entwistle, T. and Ashworth, R. (2010) *Public Service Improvement*. Oxford: Oxford University Press.
3. Chalamwong, Y. et al. (2018) *A Research Synthesis on: Attitude of native population (and concerned government agencies) towards migrant workers in Thailand in the context of Public Health, Economic Impact and National Security*. Bangkok: Thailand Development Research Institute.
4. Cortes, R. (2017) 'Human Rights of Migrants and Their Families in Argentina as Evidence for Development of Human Rights Indicators: A Case Study', *KNOMAD*. Available at: <https://www.knomad.org/publication/human-rights-migrants-and-their-families-argentina-evidence-development-human-rights> (accessed: 12 august 2022).
5. Denhardt, R.B. and Denhardt, J. Vinzant. (2002) 'The new public service: Serving, not steering', *Wiley online library*, 60(6), pp. 549–559.
6. Dunlop, N. (2011) *Stateless: Life stories of migrant workers in Thailand*. Bangkok: Raks Thai Foundation.
7. Galanis, P. (2013) 'Public health services knowledge and utilization among immigrants in Greece: A cross-sectional study', *BMC Health Services Research*, 13(350). <https://doi.org/10.1186/1472-6963-13-350>.
8. Gorodzeisky, A. (2017) *Labor force participation, unemployment and occupational attainment among immigrants in West European countries*. <https://doi.org/10.1371/journal.pone.0176856>
9. Helbling, M. and Kriesi, H. (2014) 'Why citizens prefer high- over low-skilled immigrants. Labor market competition, welfare state, and deservingness', *European Sociological Review*, 30(5), pp. 595–614. <https://doi.org/10.1093/esr/jcu061>
10. Hood, C. (1991) 'A public management for all seasons', *Wiley Online Library*, 69(1), pp. 3–19.
11. Kahn, J.V. (1989) *Research in Education*. Michigan: Prentice Hall.
12. Kane, J.C., Luitel, N.P., Jordans, M.J.D., Kohrt, B.A., Weissbecker, I. and Tol, W.A. (2018) 'Mental health and psychosocial problems in the aftermath of the Nepal earthquakes: Findings from a representative cluster sample survey', *Epidemiology and Psychiatric Sciences*, 27, pp. 301–310. <https://doi.org/10.1017/S2045796016001104>
13. Kanjanawasee, S., Srisuko, D. and Pitayanon, T. (1992). *Choosing the Right Statistics for Social Science Research*. Bangkok: Chulalongkorn University.
14. Krivat, K. (2014) 'The problem situation of the foreign labor protection in Thailand and the solution', *Political Science and Public Administration Journal*, 5(1), pp. 40–53. Available at: <https://so05.tci-thaijo.org/index.php/polscicmujournal/article/view/77002> (accessed 12 August 2022).
15. Kulkolkarn, K. and Potipiti, T. (2007) 'Migration, wages and unemployment in Thailand', *Chulalongkorn Journal of Economics*, 19(1), pp. 1–22.
16. Lipsky, M. (2007) 'Street-level bureaucracy: The critical role of street-level bureaucrats', *Classic of Public Administration*, pp. 404–411.

17. MacCallu, R.C., Widaman, K.F., Zang, S, et al. (1999) 'Sample size in factor analysis', *Psychological Methods*, 4(1), pp. 84–99.
18. Mayo, Elton. (2003). *The Human Problems of an Industrial Civilization*. London: Routledge.
19. Nothdurfter, U. and Hermans, K. (2018) 'Literature review meeting (or not) at the street level? A literature review on street-level research in public management, social policy and social work', *International Journal of Social Welfare*, pp. 294–304.
20. Office of Foreign Workers Administration. (2019) *Number of migrant workers allowed to work in Thailand with classification on February, 2562*. Bangkok: Office of Foreign Workers Administration.
21. Paitoonpong, S. (2011) *Managing Labour Migration in Thailand*. Bangkok: Thailand Development Research Institute.
22. Panikkar, B. (2015) "'They see us as machines.'" The Experience of recent immigrant women in the low wage informal labor sector', *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0142686>
23. Pavot, W. and Diener, E. (2003) 'Well-being (Including life satisfaction)', *Encyclopedia of psychological assessment*, 2, pp. 1097–1101. Thousand Oaks, CA: Sage.
24. Pressman, J.L. and Widavsky, A. (1976) *Implementation*. Berkeley : University of California Press.
25. Schweitzer, R. (2017) *The micro-management of migrant irregularity and its control: A qualitative study of the intersection of public service provision with immigration enforcement in London and Barcelona*. Brighton: University of Sussex. <http://sro.sussex.ac.uk/id/eprint/75606>
26. Srisom, A. (2015) *Thailand transnational migrant labour management policy*. Retrieved on October 12, 2018 From: http://www.asean thai.net/ewt_news.php?nid=1019&filename=index_.
27. Sterud, T. (2018) 'A systematic review of working conditions and occupational health among immigrants in Europe and Canada', *BMC Public Health*. <https://doi.org/10.1186/s12889-018-5703-3>
28. Suttawet, C. and Bamber J. G. (2018) 'International labour standards and decent work: a critical analysis of Thailand's experiences, with suggestions for theory, policy, practice and research', *Asia Pacific Journal of Human Resources*, 56(3). <https://doi.org/10.1111/1744-7941.12190>
29. Tam, Wai J., Goh, Wei L., Chua, J. and Legido-Quigley, H. (2017) 'Health is my capital: A qualitative study of access to healthcare by Chinese migrants in Singapore', *International Journal for Equity in Health*, 16(102). <https://doi.org/10.1186/s12939-017-0567-1>
30. Vaishita, C. (2021) *Human relations*. Accessed: from [http:// www.prosofthcm.com/Article/Detail/15560](http://www.prosofthcm.com/Article/Detail/15560) (October 25 2021).
31. Walton, R.E. (1975) 'Criteria for quality of work life', *Quality of working life: problems, projects and the state of the art*, 1, 91–104.
32. Yamane, T. (1973) *Statistics: An Introductory Analysis*. New York: Harper and Row Publication.

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ANALYZING THE SUCCESS FACTORS OF AN ISRAEL EMPLOYMENT SERVICE PLACEMENT PROGRAM – ‘EMPLOYMENT CIRCUITS’

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Abstract. Unemployment is one of the world’s most challenging tasks to solve, with 6.3–6.5% of the world’s population unemployed in 2021 (4.6% unemployment in Israel). Job placement programs for the unemployed can reduce the duration of unemployment and government unemployment expenditures. This paper explores one of the Israel Employment Service programs for 2016–2019, based on 56,000 job seekers and 82 job seeker profiles. The main findings of the study are: (1) there is no difference between good placement of job seekers from the Arab sector (49%) compared to job seekers from the other population groups (51%); (2) the longer a job seeker remains in the program, the lower is the probability of their returning to the labor market. Moreover, the increased number of activities the job seekers are engaged in can negatively affect their chances of finding a job; (3) socioeconomic factors such as education, disability, religion, and number of children affect job placement.

Keywords: unemployment; job placement program; unemployed; employment service.

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Introduction

The Israel Central Bureau of Statistics (CBS) began collecting and analyzing data on the Israel's labor market in 1948, when the population was only 867 000. At the end of 2021, there were approximately 9.4 million people, living in the State of Israel, with a labor force participation rate of 62% (The World Bank, 2022), which is higher than the average rate in OECD countries (Caesar, 2017). Until the beginning of the 2000s, the employment rate in Israel was relatively low, mainly due to the comparatively low employment rate of men. This changed, however, with the male employment rate in Israel consistently increasing since 2003. At the same time, the male employment rate in Western countries can be described by a decreasing curve, slightly compensated by a modest acceleration in female employment growth. Thus, in the years before the coronavirus pandemic, the employment rate in Israel and the OECD countries was about the same.

In general, unemployment has a strong negative effect economically, psychologically, and physically on individuals and families who face the many consequences of this global problem. The European Commission recognized this as one of the most significant barriers to national prosperity and growth the global society is facing today (Levin and Sefati, 2018; Kabáta et al., 2014). Therefore, one can confidently acknowledge the immense importance of employment and its many positive implications on individuals and society.

In 2021, 4.6% of all Israelis of working age were unemployed, a much lower rate than in other Western countries. There are several possible reasons for Israel's relatively low unemployment rate compared to EU countries. First, the ubiquitous digital transformation, which streamlined and shortened the job search time and the recruiting processes for both employees and employers. The OECD report (2022) highlighted the need to increase digitalization of PES (Public Employment Services) programs in the EU in order to improve services for job seekers and employers. Second, increased involvement of placement companies in recruiting processes resulted in a growth of contract employment. The third one is expanded transportation infrastructures in the geographical periphery. The fourth is social policies and incentives, including: employment rigidity; the power and size of worker unions; replacement rate of unemployment benefits by wages; employee and employer payroll taxes; minimum wage levels; and public spending on labor market programs (Bank of Israel, 2019).

The Public Employment Services (PES) is a form of government organization providing programs and platforms intended to match the unemployed individuals with potential job offers from employers. PES registers individuals who are either unemployed or underemployed, in order to integrate them into the labor force and offer counseling to these registered individuals to help them get hired (Bimrose

et al., 2014). A monograph by the OECD (2016) provides detailed information regarding PES policies, programs and services. This approach to the PES highlights the importance of the PES programs and their vital role in building a strong economy and a better social foundation.

The Israeli Employment Service (IES) is a local form of PES. The Service is a statutory organization established under the 1959 Employment Service Law, following the signing by the State of Israel of an international treaty requiring the signatory countries to establish a state employment agency to provide free placement services to employees and employers alike. To date, the IES is a statutory corporation overseen by the Minister of Economy and Industry, and the Employment Service Council which is the organization's highest authority. The service assists about 400,000 job seekers annually through 71 employment bureaus throughout the country. The main roles of the IES are: (1) assisting job seekers in finding employment; (2) conducting a recruitment test; (3) referring job seekers to professional training centers; (4) assisting employers in finding employees; (5) conducting research on the Israeli labor market, collecting relevant data and publishing regular reports.

The IES also initiates and operates various programs (e.g., 'Employment Circuits') that provide job-seekers with tools to enter the labor market. The goals of these programs are: (a) promote the integration of income guarantee claimants in the job market; (b) cut dependence of income guarantee claimants on allowances; (c) prevent income support claimants from sinking into long-term unemployment. The program also offers participants individual and group support as well as tools and assistance to enable them to rapidly integrate into the labor market.

The current research aims to examine the job placement success factors of the Employment Circuit IES job placement program for 2016–2019, based on 56,000 job seekers and 82 job seeker profiles.

Literature Review

Employment provides a source of identity and social status. It also enables people to participate in society, earn money and use resources. Therefore, employment has a substantial impact on the well-being of individuals. Extensive research has been conducted to further validate this point and examine the importance of employment for one's well-being. Unemployment is related to negative effects on individuals in the long- and short-term (Ponomarenko, 2016). Sol (2016) notes that in EU countries, a quarter of unemployed individuals suffering from economic problems also suffer from health problems, alcohol addiction, and/or discrimination. The longer individuals are unemployed, the more likely they are to lose their skills and become unemployable. Such a tendency negatively affects the economy as well. The problems associated with unemployment may result in the unemployed being less healthy, which leads to health-related costs. Winkelman (2014) found that higher local unemployment weakens the work ethic, so regions with higher crime/job dissatisfaction have a more significant impact on unemployment compared to other places. Artazcoz (2004) describes a strong relationship between unemployment and human and mental health.

Areas of high unemployment and social deprivation may also experience higher crime levels, suicide rates and psychological problems. These include, inter alia, loss of economic output, loss of tax revenue, reduced government revenues to spend on public services and increased government expenditure. Zwinkels (2015) notes that the likelihood of the unemployed people returning to work decreases significantly once their allowance is curtailed. For the unemployed, the opportunity of returning to work decreases by 35%. Zwinkels concludes that the unemployed people with problematic debts find it more challenging to return to work compared to other unemployed people. Research conducted in Amsterdam by Konig (2014) on social assistance showed that debt relief paths in the context of employment services lead to more job placements, and that job placements without the relief paths can be relatively limited. A research project among employment service providers in Europe indicated that as soon as unemployed people's debt is reduced, the likelihood of having a job tends to increase. Pohlan (2019) found that job loss has detrimental effects on subjective perceptions of social integration, life satisfaction, access to economic resources and mental health.

Unemployment has always been, and continues to be, one of the major problems facing our world, and its many disadvantages are the subject of considerable research. These disadvantages include the stigmatization and social exclusion that unemployment causes to individuals and the break in the career, as unemployment can lead to an inferior job position or income immobility (Ponomarenko, 2016). Furthermore, unemployment in early adulthood has also been associated with an increased likelihood of unemployment in the future (Ponomarenko, 2016).

In addition to financial and career pattern disadvantages, research has shown that unemployment negatively affects health, increases mortality rates, and can even cause psychological problems such as depression and feeling unworthy. These harmful effects can persist even after individuals return to work, further confirming the long-term consequences and repercussions of unemployment on an individual's well-being. Other studies have shown that long-term unemployment is associated with an increased risk of alcoholism, smoking and increased anxiety (Ponomarenko, 2016).

The connection between unemployment and crime is proven. It is even suggested that because the unemployed or people with lower wages have less to lose from committing a crime, they are more likely to commit criminal offenses. Moreover, it is suggested that reducing the unemployment of previously imprisoned criminals by three months can reduce crime by 5% (Van den berg and Van Vuuren, 2010).

Unemployment during the pandemic. The coronavirus pandemic significantly deepened the unemployment problem. The pandemic outbreak led to an enormous economic crisis with many negative ramifications affecting multiple groups in the population, including women. While the female labor force participation rate increased significantly over the past few decades, there are still gender gaps in employment and labor market participation. There is an obvious gender bias in public sector employment across age groups, religious affiliations, and educational levels. It is estimated that the chances of a woman transitioning from employed to inactivity are higher than for men. However, research shows that women prefer specific jobs, especially in the public sector. Therefore, public employment services and programs may be more successful in placing women in such jobs (Gomes, 2019).

Faced with the pandemic in 2020, economists around the world predicted that unemployment rates would increase significantly due to the closure of borders, schools, shops and restaurants, all measures aimed at limiting the spread of the virus. Indeed, unemployment rates were exceptionally high during this time. Statistics in Europe show that the unemployment rate was 10.7% in Norway and 3.67% in the UK, while in the U.S. it was 14.7% in April 2020. It was almost four times higher than at the beginning of 2020. This was one of the worst economic crises the world had experienced in recent years, with many devastating repercussions on countries and their economies, on small businesses and on the labor market as a whole (Rosen and Stenbeck, 2020).

Similar to the trends found in many OECD countries, the pandemic created unprecedented upheaval in the labor market in Israel: nationwide lockdowns, over a million workers taking unpaid leave, businesses forced to limit the number of customers served, several morbidity waves and more. The size and pace of the upheaval created significant uncertainty, not only about the future of the national labor market, but also about what was happening in real-time. The most brutal pandemic blow was observed in early 2020, when more than a million of Israelis stopped working (Debowy et al., 2021).

From the very beginning of the pandemic, the unemployment rate in Israel rose critically from 3.8% in December 2019 to a peak of 35% in April 2020. However, due to various government policies, the unemployment rate decreased to 15.9% by the end of 2020, and to 6.7% by the end of 2021 (The World Bank, 2022). The relatively fast recovery of the Israeli labor market from the pandemic period may have been possible due to a combination of several factors.

As part of its pandemic response program, the Israeli government adopted the furlough model, which permits placing employees on unpaid leave. This model, which differs from most models implemented in OECD countries (e.g., various combinations of reduced hours and wage subsidies), transferred 45% of the work-hour reduction cost burden to the workers, compared to OECD countries with an average burden rate of 28% (Debowy et al., 2021). This high burden rate created a positive dynamic for the fast return of employees to the labor market. Moreover, despite the considerably disproportionate impact of the pandemic on the labor market in Israel (Zontag et al., 2020), the back-to-work period did not deepen the gap in the labor market between strong-professional and weak-unprofessional workers. The return to the workplace was mainly based on the company needs, not on the employee's position or strength in the organization. Finally, the pandemic did not force workers to take early retirement (i.e., employers did not take advantage of the crisis to rejuvenate the workforce and did not lay off older workers) or to reconsider wages (i.e., employers did not use the crisis to get rid of the most "expensive" workers) (Margalit and Yakir, 2022).

Public employment service. The roots of Public Employment Services (PES), date back to the 1800s, when it was founded at the local level by municipalities, labor markets and friendly societies. National and centrally organized PES first emerged in 1927 and continued during World War II as a means for governments to coordinate their workforce (Sultana and Watts, 2006). PES vary from country to country, with some being very similar and others very different. Some of the countries men-

tioned in this paper have successful employment placement programs. We discuss what makes them successful and compare them to Israel, which has a lower unemployment rate compared to other Western countries, as discussed above.

The PES in Ireland is currently undergoing reform. This includes more robust and thorough monitoring of services, an increasingly competitive atmosphere, and the use of outcomes as a payment model. Two of the most significant reforms implemented in Ireland are: (1) the “Payment by Results” employment program for the long-term unemployed individuals; and (2) the “Job Path” program, which aims to motivate PES workers to achieve better results (Murphy and McGann, 2022).

In Australia, there has been a shift towards digital self-services over the past 20 years. The focus is on the increasing service success in integrating people into the labor market and preventing long-term unemployment. This shift towards digital services aims to achieve higher integrity in decision-making and ensure adherence to policies through IT systems (Casey, 2022). In this context, it is also worth mentioning that these digital changes have shaped so much of our world and can also affect all labor markets. They may even cause further unemployment. To quote the McKinsey Global Institute, “By the year 2030, globally, almost 375 million people will have to learn skills as their jobs may evolve or perish with the rise of automation and capable robots and machinery” (Manyika et al., 2017). These changes may lead to increased unemployment, requiring people to master new skills to be integrated into the labor market (Bercovici and Bercovici, 2019). According to a study conducted in Italy, the probability of success of an employment service follows a non-linear growth trend for young adults, and decreases with age (Pastore, 2020).

In Israel, the labor market and employment and unemployment rates are characterized by several aspects. On the one hand, data indicate a low unemployment rate and an impressive high-tech sector, demonstrating Israel’s high employment rate in this sector (similar to Australia). On the other hand, additional evidence indicates significant gaps between different population groups. There are several discriminated population groups that are not adequately represented in the labor market, including the ultra-Orthodox, disabled individuals, Ethiopian Jews and the Arab population. Many in the ultra-Orthodox sector, particularly ultra-Orthodox men, work in the independent or black-market economy, which is based partly on barter, and are not accurately counted in official statistics. A certain proportion of those already employed will find it quite challenging to advance to a better position or find a better-paying job. The proportion of the discriminated population is predicted to increase to 50% of the total population by 2059 (Bercovici and Bercovici, 2019). Other factors, including religion, age, marital status, gender and education, can also affect the employment rates and the likely success of Public Employment Services (PES) and their placement programs.

Single parents have become a huge target population for incentive policies that aim to integrate them into the labor market and to offer them adequate education and training. In the late 1990s, several countries moved from offering support to trying to integrate those dependent on welfare into the labor market.

This shift was partly due to concerns that this dependency mentality would also affect the children of these single parents. Single parents are still viewed as a vulnerable group with a high-risk profile, when profiling tools are used by public placement programs. These single parents are sometimes categorized as welfare dependent and as individuals with multiple limitations who may be incapable of working. Thus, PES programs may be less successful with this group. However, others argue that the learned skills that stay-at-home single parents acquire can be translated into paid jobs if these individuals would simply change their mindset and the way they perceive themselves. Public placement programs could have a high success rate with these individuals (Brady, 2018).

In Israel, there is extensive data showing the relationship between education and employment rates. According to numerous studies education is considered a financial investment, and overall profit from this investment is the individual's income level. Moreover, neglecting studies about the relationship between education and employment will most likely impair economic growth. Therefore, it is safe to say that the success rate of public placement programs will be higher for individuals with education, as education at all levels is considered a critical factor for business and economic growth.

Some of the success factors of PES programs include profiling tools because they help ensure that the more costly and intensive services are provided to those with a higher likelihood of becoming unemployed in the long term. Profiling tools can help differentiate these job seekers from those who are likely to find jobs more quickly. Countries using this strategy include Germany, Poland, Greece, Luxembourg, Switzerland and others (Desiere et al., 2019; Desiere, 2018). In addition, psychological assessments for job seekers and training programs that meet local labor market needs are also very effective (Martin, 2015).

Strategies and guidelines for PES vary from country to country. For example, assistance, personalized action plans and other services such as job counseling and guidance are provided in European countries. Evidence of the similarities between Israel and European countries in "employment promoting practices" can be found in the literature. These similarities include improving employability skills, connecting the unemployed with service providers, and promoting social policies that allows for more effective and enhanced employment opportunities for individuals (Levin and Sefati, 2018).

There have been numerous attempts to evaluate the effectiveness of various PES programs. For example, Card et al. (2017) conducted a comprehensive meta-analysis of 207 recent labor market programs. The authors divided these programs by time horizon and participant heterogeneity criteria. Regarding the first domain, they demonstrated that there was a significant difference between "work first" style programs (i.e., those that provide job search assistance or incentives to get to work quickly), "human capital" programs (i.e., training style programs), and public sector employment policies. Thus "work first" style programs were found to have a stable impact, while the impact of "human capital" programs was relatively small (or negative) in the short-term, with increasing effect in the medium and long-term. On the other hand, public sector employment policies showed insignificant or even negative impacts regardless of the time horizon. Regarding

the second domain (i.e., participant heterogeneity), a significant effect of program implementation was found mainly among the female participants and among individuals from the pool of long-term unemployed. At the same time, little positive impact of the PES programs was found among young and older employees.

The current research differs from previous studies as it is focused on the Israeli labor market, specifically on the IES Employment Circuits employment program. To the best of our knowledge, such an analysis has not been performed before.

Research methodology

The database contains 82 columns and 55,989 rows (each row presenting a job seeker who joined the IES program and each column presenting the job seeker's characteristics, for example family status, religion, age, number of children and education). The data were collected for the period 2016–2019. Data reclamation findings comprised 14% of empty cells and 86% of complete data.

To arrange the data for analysis, it was necessary to categorize the columns and summarize the data (Table 1). 1860 unique activities were divided into 30 unique categories. The 'Age' column was divided into the following age groups: 18–29, 30–39, 40–49, 50–54, and 55+. Education was divided into the following educational stages: Primary Education, High School, College Degree, Professional Certificate, and No Education. The 'Disability Percentage' column was divided into the categories: None, 1–19, 20–39, 40–59, 60–100. In the 'Language' column there are many options and combinations between languages. Each language has several level types; therefore, all extensions can be subtracted and left with only the name of the language. The 'Licenses' column was converted from a subdivision of categories into general categories. In some cases, certain marital status options may be sensitive (for example, single, polygamous, in a relationship), and were therefore converted into several main family status options: single, married, divorced, widow(er), unknown. The number of children under 18 was divided into 1–3, 4–6, and 7+.

The column 'Depth of Unemployment in Months', with values from 0 to 100, was divided by 10, rounding the result to obtain a categorical column. The column 'Religion' is also divided by major religions: Jewish, Christian, Druze and Muslim. Edge cases do not affect the data and are grouped as 'Other.'

The job placement goal was defined for investigation and analysis purposes. The concept of "success" was defined differently for each category. For research purposes, the success index was divided into four categories, labeled as follows:

- 1) *High Level Success*: no revolving door cases (job seeker returns to the program within 3 months after job placement), job placement after entering the program = 1, and no resumption date.
- 2) *Moderate Success*: no revolving door cases, job placement after entering the program > 1, no activity renewal date, and no registration renewal date.
- 3) *Low Level Success*: all job seekers who are not in categories 1, 2 or 4.
- 4) *Failure*: no resumption date, no job placement since joining the program, no revolving door cases higher than 0.

Table 1

Socioeconomic characteristics of job seekers*

Characteristic		Weight (%)	Characteristic		Weight (%)
Gender	Male	41	Disability percentage	None	91
	Female	59		1–19 %	1
Age	18–29	16		20–39 %	4
	30–39	27		40–59 %	2
	40–49	34		60–100 %	2
	50–54	15	Marital status	Single	31
	55+	7		Married	45
Religion	Jewish	43		Divorced	21
	Muslim	46		Widow	3
	Druze	3		Unknown	1
	Christian	2	Number of children under 18	None	40
	Other	6		1–3 years	42
	No Religion	0		4–6 years	15
Single parent	Yes	11		7+ years	3
	No	89	Military service	None	82
Education	Primary School	20		National Service	2
	Partial secondary school	19		Military Service	17
	Secondary school	45	Unemployment duration	<1 year	8
	Matriculation certificate	4		2–3 years	9
	Bachelor's Degree	3		3+ years	82
	Master's Degree	1		None	0
	PhD	0			
	Certificate Studies	2			
	License studies	0			
	No Education	4			

Note: *based on 55,989 job seekers.

Sources: Compiled by the authors based on their own calculations (-hereinafter, unless otherwise noted).

Research questions

(Q1) Is there a difference in the number of good job placements (categories 1 and 2) between the Arab sector and the other population groups?

(Q2) How long are job seekers in the program before job placement?

(Q3) Does the length of time in the program affect job seekers' job placement success?

(Q4) Does the number of program activities in which the job seeker participates affect their job placement success?

(Q5) Do a job seeker's socioeconomic characteristics affect their job placement success?

To test our research model and the proposed hypotheses, and to better understand the relationships between the selected constructs, we used the following statistical tools:

A Kolmogorov-Smirnov (K-S) test is a non-parametric test used to determine how well the distribution of sample data conforms to some theoretical distribution (Janssen, 2007). In this article a K-S test was performed for Q1 to test whether the difference between the rate of successful job placements was normally distributed. The test was also used for Q3 to test whether each category is normally distributed. For Q4, both Tukey post-hoc and ANOVA tests were used.

A *t*-test is a statistic test which checks if two means are reliably different from each other. This is a parametric test of difference, with three types of *t*-tests: (a) one-sample *t*-test is used if there is one group being compared against a standard value; (b) two-sample *t*-test (also called independent *t*-test) is used if the groups are from two different populations; (c) paired *t*-test is used if the groups are from a single population (Bevans, 2022).

An ANOVA (Analysis of Variance) test determines if the results of the survey or experiment are significant (Glen, 2022). The researcher tests the groups to see if there is a difference between them. Researchers use the ANOVA test to determine the influence of the independent variable on the dependent variable in a regression study.

The Tukey Test (or Tukey procedure), also called Tukey's Honest Significant Difference test, is a post-hoc test based on the studentized range distribution (Glen, 2022). After running the ANOVA and finding significant results, Tukey's HSD can be run to determine which mean values of each group (compared to each other) are different.

McFadden's R^2 is the log-likelihood of the null model, which includes only an intercept as a predictor (so that the same probability of 'success' is predicted for each individual). The McFadden's formula subtracts the estimated log distribution from 1.

$$R^2_{McFadden} = 1 - \frac{\log \log (L_c)}{\log \log (L_{null})} \quad (1)$$

In multinomial multivariate regression, it is difficult to reach a result close to 1, because solid explanatory parameters are needed to increase the value of the McFadden's estimate. According to McFadden, the estimate for a good fit model is between 0.2 and 0.4 (McFadden, 2021; Vijverberg, 2011).

In Q5, to answer the research question, it was necessary to compare job placement with the different characteristics of a job seeker. Therefore, the McFadden's method was used.

Results

(Q1) Is there a difference in the number of good job placements (categories 1 and 2) between the Arab sector and the other population groups?

The hypothesis that there is no difference in good job placement between Arab program participants and participants from other population groups in IES Programs was examined with $\alpha = 0.05$.

$$diff = [(is_{arab} = 0).POGP - (is_{arab} = 1).POGP] \quad (2)$$

* $POGP = \text{proportion of good placements}$

There was a need to examine whether the data were distributed in normal groupings. Therefore, we needed at least 30 unique IES bureaus where the number of Arab job seekers provides a statistical basis for the hypothesis (at least 14 Arab job seekers in each bureau were required to reach 30 unique bureaus). A comparison was conducted between program participants from the Arab sector and participants from the non-Arab sector with good job placement from the same IES bureau. The 'diff' column was calculated, representing the differences in the proportion of good placements, in order to estimate the differences in job placement in the same bureau. It was necessary to test if the differences were normally distributed. A histogram shows the number of samples relative to the difference and by a density function. The density function implies that the data represent a normal distribution. The result of the Kolmogorov-Smirnov test shows that the column data are normally distributed, even with equalization between the cumulative distribution function and the Kolmogorov-Smirnov result. Since we had 30 samples, and we saw that the data are normally distributed, we used a *t-test* to examine the difference between dependent pairs (30 of 71 bureaus). It was assumed that populations from the same IES bureau would have more similar characteristics than those from bureaus in other sectors. The critical value was higher than alpha; therefore, the conclusion was not to reject the null hypothesis and to conclude that there is no significant difference between the job placement success of Arabs and non-Arabs.

(Q2) How long are job seekers in the program before job placement?

The calculation in the 'day diff' column shows how long the job seekers were in the program.

$$df_{entry_dates}.loc[:, 'days_diff'] = df[LPD] - df_{entry_dates}[FJTPD] \quad (3)$$

* $LPD = \text{last placement date}$

* $FJTPD = \text{initial program joining date}$

Almost half (49.99) of the Employment Circuit program participants in Table 2 do not have a “job placement date”, and for more than 25 “the date of first program entry” is greater than the “last placement date.” The data were summarized after clearing the records of the negative ‘days diff’ column results. The confidence interval for job seekers in the program is: (Left: [0], Mean: 341.42, Right: [1081.56]) [days], $\alpha = 0.05$, $\sigma = 377.624$ (days).

Table 2

Distribution of job seekers according to length of time in the program

Category (days)	Number of job seekers	Percent of job seekers
0	205	0.366
1–10	1604	2.865
11–30	2842	5.067
31–60	3115	5.564
61–100	2561	4.574
101–150	2285	4.081
151–200	1721	3.074
201–365	4038	7.212
+365	9625	17.191
None/No placement date	27993	49.997

(Q3) Does the length of participation in the program affect their job seeker’s placement success?

Does longer participation in the Employment Circuits program provide job seekers with more tools to find employment? If so, does longer participation result in more successful/better job placement? The hypothesis question of whether there is a difference between the length of participation in the program and more successful/better job placement was examined with $\alpha = 0.05$.

The division into different success categories and the job seeker’s length of time in the program (Fig. 1) suggests that higher success in the Success Index is associated with a shorter period of time in the program (contrary to the assumption that a longer period of time in the program would result in more successful placement in the Success Index). To test if each success category was normally distributed, the Kolmogorov-Smirnov test was performed for each category. The results show that the data in each category were normally distributed. The ANOVA test was performed to examine the difference in the days between the four different categories. The results within the categories show a difference between the categories. To determine which category differs from other categories, a *Tukey-Post-Hoc* test was performed to test program participation time differences between each pair of categories separately.

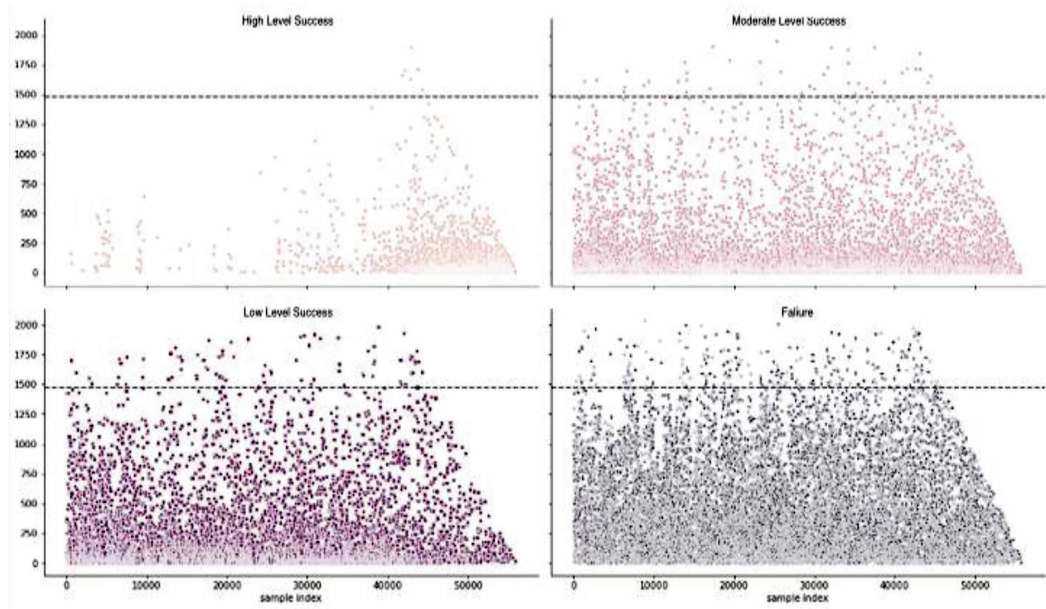


Figure 1. Time of job seeker in the program by category.

According to the *Tukey Post Hoc* test results (Table 3), it was found that there are differences between all pairs of means. This is based on the two test results hypothesized.

Table 3

Tukey Post Hoc Test Results

A	B	Mean(A)	Mean(B)	diff	se	tail	T	ρ	hedges
1	2	126.509	229.087	-102.577	8.574	two-tail	-11.964	~ 0	-0.286
1	3	126.509	298.207	-171.698	8.705	two-tail	-19.723	~ 0	-0.479
1	4	126.509	465.836	-339.326	8.087	two-tail	-41.959	~ 0	-0.947
2	3	229.087	298.207	-69.121	6.249	two-tail	-11.061	~ 0	-0.193
2	4	229.087	465.836	-236.749	5.354	two-tail	-44.216	~ 0	-0.661
3	4	298.207	465.836	-167.628	5.563	two-tail	-30.133	~ 0	-0.468

(Q4) Does the number of program activities in which the job seeker participates affect their job placement success?

Only 30 unique activities are defined in the data frame. It was necessary to change the “Activities in the Program” column into a categorical variable and to present “Activity” in a new column to provide a binary classification (if the job seeker participated in the activity = 1 and if not = 0), in order to test the hypothesis that a job seeker’s participation in more activities results in less successful placement according to the success categories. Figure 2 shows the percentage of programs per success category.

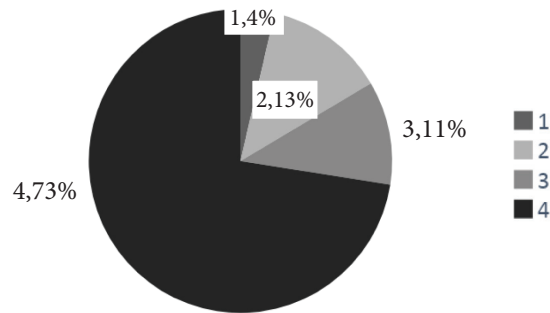


Figure 2. Number of activities per category.

Figure 2 shows that job seekers in category 1 generally participated in fewer Employment Circuits program activities than job seekers in the other success index categories. It was necessary to examine if there was a significant difference in variance between activities in the program, by using the ANOVA test. First, we tested if the data were normally distributed. The *Kolmogorov-Smirnov* test showed significant results for any number of activities per category; therefore, the ANOVA test was performed, with the ANOVA p value of ~ 0 . This indicates a significant difference in job placement success depending on the job seeker participation in the various program activities. This required further testing of the difference between program activities using the Tukey Post Hoc test.

Table 4

The Percentage of job seekers in each category and activity

Category	Change Course	Process Course	Occupational Hebrew Course	Computer Application Course	Individual Training	...	Number of programs
Category 1 Fraction	4	4	5	0	4		4
Category 2 Fraction	14	12	14	7	13		13
Category 3 Fraction	11	9	8	0	12		11
Category 4 Fraction	71	75	73	93	72		73

Table 5 shows that there is a difference in the number of activities in which the job seeker participates and their job placement success category, except for categories 2 and 3. A decision tree model was created after examining all the different activities separately. The model takes a sample of job seekers and matches their socioeconomic characteristics and program activities to the data frame from which they were sampled, creating a graphical representation for better understanding. The decision tree models job seekers and presents their most probable job placement route, according to job seekers whom they resemble in terms of both their activities in the program and socioeconomic characteristics. The aim of the decision tree is to show the most recommended route (order of activities). There are many other models for this kind of decision, but after considering alternatives it was decided that this model is best for the given situation. The model shows the

most probable trajectory, such that the decision tree should be viewed as depicting the order of best practice for the sampled job seekers. Nonetheless, the route shown in the decision tree does not ensure that following the proposed route will definitely increase job seeker placement success.

Table 5

Tukey Post Hoc test of differences between pairs of categories

A	B	Mean(A)	Mean(B)	diff	se	tail	T	ρ	hedges
1	2	0.967	1.14	-0.174	0.033	two-tail	-5.251	0.001	-0.12
1	3	0.967	1.068	-0.119	0.034	two-tail	-3.548	0.002	-0.082
1	4	0.967	1.253	-0.287	0.03	two-tail	-9.696	0.001	-0.198
2	3	1.14	1.068	-0.055	0.024	two-tail	2.277	0.103	0.038
2	4	1.14	1.253	-0.113	0.018	two-tail	-6.224	0.001	-0.078
3	4	1.068	1.253	-0.168	0.019	two-tail	-8.862	0.001	-0.116

(Q5): Do a job seeker's socioeconomic characteristics affect their job placement success?

This question examined whether a specific socioeconomic characteristic influences a job seeker's job placement success category more than other characteristics. In this study socioeconomic characteristics of job seekers included religion, age, single parent, gender, education level, city, language, country of birth, marital status, children under 18, participation in an activity, disability percentage, medical disability, licenses, military service, released prisoner, and month of job placement ("last job placement date"). A new data frame consisting of these columns was built and the data were inserted. Any country of birth with a frequency less than 1 was removed from the data because these are end-cases that do not affect the results below. In the case of our data the McFadden estimate is 0.239, so it is statistically significant, with a correlation between the socioeconomic variables and job placement success. The variables presented by the model are more likely to influence the job seeker placement success category. All model results are compared with Category 4 (failure), and each model result is significant ($\rho < 0.05$).

Discussion and Conclusion

The current research examines the success factors of the IES program. In this section, we will discuss the findings described in the previous section, draw several conclusions, and propose recommendations for the IES.

Regarding the first research question, the employment rate in the Arab sector was 54.6 in 2015 compared to 81.7 in the Jewish sector (Ministry of Labor, Social Affairs and Social Services, 2015), and 42.5 in the Arab sector in 2016 (Central Bureau of Statistics, 2017). The number of unemployed individuals in the Arab sector is high and requires action. The Israeli government has taken efforts in this

sector and providing funds to increase employment opportunities, education (scholarships, reduced taxes, etc.) and other programs. There are many reasons for affirmative action, including cultural differences, traditions, geographic environment, and social status. The IES uses government funds for the “Tapuah” program (NIS 1.466 million), which is dedicated exclusively to the Arab sector (Israeli Employment Service, 2017). Tapuah operates a variety of technical training programs to integrate job seekers into the workforce. The courses cover a broad spectrum of content, from introductory courses for operating in a computerized environment to advanced courses for training programmers. Particular emphasis is given to imparting a set of tools for successful integration into the workforce, in order to improve participants’ financial independence, both immediate and over the long-term. However, the current research findings reveal that there are no differences between the job placement of Arabs and non-Arabs. In other words, the study findings do not justify opening special programs for the Arab sector at the expense of other IES Programs. Therefore, the recommendation is that IES should consider whether it is necessary to initiate a separate program for the Arab sector.

The second, third, and fourth research questions aimed to determine the effectiveness of the IES Employment Circuits program. According to the research methodology, the indicators chosen to measure this variable referred to how long job seekers were in the program before job placement, the average time attending the program before job placement, and the influence of length of participation in the program and job placement success level. The results were surprising and showed that only 50 of potential employees were placed through the program. In addition, it took an average of 341 days for a participant in the IES Employment Circuits program to find a job. The study also showed that the quality of job placement (category) decreases the longer the job seeker is in the program (e.g., Sol, 2016; Winkelman, 2014). Therefore, the findings presented could potentially call into question the effectiveness of all IES programs. In light of these results, it is suggested that IES re-evaluate its program activities. Furthermore, we recommend further study to examine other possible factors which may affect poor job placement.

Finally, the multinomial regression model was established to assess the relationship between unemployment, socioeconomic characteristics of job seekers and job placement. Several results of the model appear to be consistent with common sense thinking, yet others are surprising. First, the model showed that there are more job seekers in categories 1 and 2 (i.e., “high level” and “moderate” success) from cities in the Arab sector compared to job seekers in these categories from cities in the non-Arab sector; there are also significantly more Jewish and Muslim job seeker program participants in category 1. These findings support the results and conclusions regarding the first research question, namely that no significant differences in good job placement were found between the Arab and Jewish sectors. Second, country of origin was found to affect program success with respect to several countries. Thus, significantly more program participants from the countries of origin France and the Soviet Union were found in category 3 than in category 1 (based on the p-value). Furthermore, there were significantly more program participants of Ethiopian origin in category 2. Third, education has a strong effect on the job placement success category. Significantly more program

participants with an academic degree or high school matriculation were in category 1 (i.e., “high level success”), and significantly more program participants with no education were in category 3 (i.e., “low level success”). In other words, educational attainment plays a significant role in successful job placement in the IES Employment Circuit program framework. Lastly, disability affects human life, including the IES program job placement success. Therefore, it is not unexpected that significantly more job seekers with disabilities (disability percentage 20–59) were found in category 2, and with disability percentages 60–100 in category 3. In addition, as expected, no significant presence of program participants with disabilities was found in categories 1 and 2. These findings suggest that people with disabilities are less likely to find employment through the IES Employment Circuit program. In summary, it is suggested that IES should re-evaluate its approach and methods of operation to improve the outcomes of its job placement programs.

REFERENCES

1. Artazcoz, L., Benach, J., Borrell, C. and Cortes, I. (2004) ‘Unemployment and mental health: understanding the interactions among gender, family roles, and social class’, *American Journal of public health*, 94(1), pp. 82–88. Available at: <https://dx.doi.org/10.2105 2Fajph.94.1.82>
2. Bercovici, E.G. and Bercovici, A. (2019) ‘Israeli labor market and the Fourth Industrial Revolution’, *Amfiteatru economic*, 21(13), pp. 884–895.
3. Bevans, R. (n/y) *An introduction to tests | Definitions, formula, and examples*. Available at: <https://www.scribbr.com/statistics/t-test/> (accessed 9 December 2022).
4. Bimrose, J., Brown, A., Holocher-Ertl, T., Kieslinger, B., Kunzmann, C., Prilla, M., ... and Wolf, C. (2014) ‘The role of facilitation in technology-enhanced learning for public employment services’, *International Journal of Advanced Corporate Learning*, 7(3). Available at: <https://doi.org/10.3991/ijac.v7i3.4050>
5. Brady, M. (2018) ‘Targeting single mothers? Dynamics of contracting Australian employment services and activation policies at the street level’, *Journal of Social Policy*, 47(4), 827–845. DOI:10.1017/S0047279418000223
6. Caesar, N. (2017) *Employment trends in the diverse populations in Israel*. The Israeli Forum for Employment Diversity. Bank of Israel.
7. Card, D., Kluve, J. and Weber, A. (2018) ‘What works? A meta analysis of recent active labor market program evaluations’, *Journal of the European Economic Association*, 16(3), pp. 894–931.
8. Casey, S.J. (2022) ‘Towards digital dole parole: A review of digital self-service initiatives in Australian employment services’, *Australian Journal of Social Issues*, 57(1), pp. 111–124.
9. Debowy, M., Epstein, G. and Weiss, A. (2021) ‘The Israeli labor market in the wake of Covid-19: An overview’, in: A. Weiss (Ed.) *State of the nation report: Society, economy and policy in Israel 2021*, pp. 57–88. Taub Center for Social Policy Studies in Israel.
10. Desiere, S., Langenbucher, K. and Struyven, L. (2019) *Statistical profiling in public employment services: An international comparison*. Available at: <https://doi.org/10.1787/1815199X> (accessed 9 December 2022).

11. Desiere, S. and Langenbucher, K. (2018) 'Profiling tools for early identification of jobseekers who need extra support', *OECD Policy Brief on Activation Policies*, (dec), pp. 1–4.
12. Glen, S. ANOVA (n/y) Test: definition, types, examples, SPSS. Available at: <https://www.statisticshowto.com/probability-and-statistics/hypothesis-testing/anova/> (accessed 9 December 2022).
13. Glen, S. 'Tukey Test/Tukey Procedure/Honest Significant Difference', *StatisticsHowTo*. Available at: <https://www.statisticshowto.com/probability-and-statistics/statistics-definitions/post-hoc/tukey-test-honest-significant-difference/> (accessed 9 December 2022).
14. Gomes, P. and Kuehn, Z. (2019) *You're the one that I want! Public employment and women's labor market outcomes*. IZA Discussion Paper No. 12702. Available at: SSRN: <http://dx.doi.org/10.2139/ssrn.3475808> (accessed 9 December 2022).
15. Janssen, A. (2000) 'Global power functions of goodness of fit tests', *The Annals of Statistics*, 28(1), pp. 239–253.
16. Kabáta, L., Hampelb, D., Issever Grochová, L., Janová, J. and Střelec, L. (2014) 'Alternative approaches for assessing the European countries economic and social results', *17th International Conference Enterprise and Competitive Environment 2014*, 12, pp. 1–804. Available at: [https://doi.org/10.1016/S2212-5671\(14\)00345-1](https://doi.org/10.1016/S2212-5671(14)00345-1)
17. Koning, P. (2014) 'Door schuldhulpverlening uit de bijstand [Through debt assistance from social assistance]', *Economisch Statistische Berichten*, 99(4677), pp. 38–41.
18. Levin, L. and Sefati, N. (2018) 'Social workers and unemployment: Factors associated with using employment-promoting practices in Israeli Municipal Departments of Social Services', *Health and Social Care in the Community*, 26(5), pp. 685–694. DOI:10.1111/hsc.12581
19. Manyika, J., Chui, M., Miremadi, M., Bughin, J., George, K., Willmott, P. and Dewhurst, M. (2017) 'A future that works: AI, automation, employment, and productivity', *McKinsey Global Institute Research, Tech. Rep.*, 60, pp. 1–135.
20. Margalit, Y. and Yakir, I. (2022) 'The Israeli labor market in the Coronavirus crisis: what really happened?', *The Israel Democracy Institute (In Hebrew)*. Available at: https://www.idi.org.il/media/17626/idi_covid_sixstories.pdf (accessed 9 December 2022).
21. Martin, J.P. (2015) 'Activation and active labour market policies in OECD countries: stylised facts and evidence on their effectiveness', *IZA Journal of Labor Policy*, 4(1), pp. 1–29. DOI: 10.1186/s40173-015-0032-y
22. McFadden, D. (2021) 'Quantitative methods for analysing travel behaviour of individuals: some recent developments', in: *Behavioural travel modelling*, pp. 279–318. Routledge.
23. Murphy, M.P. and McGann, M. (2022) 'A period of contention? The politics of post-crisis activation reform and the creeping marketisation of public employment services', *Irish Political Studies*, pp. 1–25. DOI: 10.1080/07907184.2022.2044313
24. Pastore, F. (2020) 'The quasi-market of employment services in Italy', *Journal of Policy Modeling*, 42(6), pp. 1248–1269. DOI: 10.1016/j.jpolmod.2019.06.008
25. Pohlan, L. (2019) 'Unemployment and social exclusion', *Journal of Economic Behavior and Organization*, 164, pp. 273–299. Available at: <https://doi.org/10.1016/j.jebo.2019.06.006>
26. Ponomarenko, V. (2016) 'Cumulative disadvantages of non-employment and non-standard work for career patterns and subjective well-being in retirement', *Advances in Life Course Research*, 30, pp. 133–148. DOI: 10.1016/j.alcr.
27. Rosén, M. and Stenbeck, M. (2021) 'Interventions to suppress the coronavirus pandemic will increase unemployment and lead to many premature deaths', *Scandinavian Journal of Public Health*, 49(1), pp. 64–68. DOI:10.1177/1403494820947974.

28. Sultana, R.G. and Watts, A.G. (2006) 'Career guidance in public employment services across Europe', *International Journal for Educational and Vocational Guidance*, 6(1), pp. 29–46. DOI: 10.1007/s10775-006-0001-5
29. Van den Berg, G.J., and Van Vuuren, A. (2010) 'The effect of search frictions on wages', *Labour Economics*, 17(6), pp. 875–885. DOI: 10.1016/j.labeco.2010.08.001
30. Vijverberg, W.P. (2011) *Testing for IIA with the Hausman-McFadden test*. Available at: SSRN 1882845.
31. Winkelmann, R. (2014) 'Unemployment and happiness', *IZA World of Labor*. Available at: <http://dx.doi.org/10.15185/izawol.94>
32. Zontag, N., Epstein, G. and Weiss, A. (2020) 'The Israeli labor market under the coronavirus: An overview', *State of the nation report: Society, economy and policy in Israel*.
33. Zwinkels, W. (2015) *Wie heeft schuld? Een kwantitatieve analyse van schulden bij uitkeringsgerechtigden* [Who is to blame? A quantitative analysis of debts among benefit recipients]. Amsterdam: UWV.

OFFICIAL DOCUMENTS

1. The World Bank. (2022), Labor force participation rate, total (of total population ages 15+) (modeled ILO estimate) – Israel. International Labour Organization, ILOSTATdatabase. Available at: <https://data.worldbank.org/indicator/SL.TLF.CACT.ZS?locations=IL>
2. OECD (2016). The World of Public Employment Services. Challenges, capacity and outlook for public employment services in the new world of work. IDB, WOPES, 2016
3. OECD (2022). Harnessing digitalisation in Public Employment Services to connect people with jobs. OECD Activation Policies, Paris.
4. Ministry of Labor, Social Affairs and Social Services, The Arabs in Israel, mapping population, employment features, living, income and outcome (2015). Available at: <https://employment.molsa.gov.il/Research/Documents/X13478.pdf>
5. Israeli Employment Service, Announcement of intention to undertake joint venture to assist in the technological training for the unemployed to return to the labor market and promote their welfare. (2017). Available at: <https://www.taasuka.gov.il/he/about/jointventures/pages/tapuach.aspx>
6. Central Bureau of Statistics (2017). Statistical year 2017, Chapter 9. Available at: https://meyda.education.gov.il/files/Mazkirut_Pedagogit/MadaeySviva/2017-2018/shnaton_stat_2017.pdf
7. Bank of Israel (2019). The Decline in Unemployment in Israel by International Comparison. Annual Report, Ch5, 117–134. Available at: [https://www.boi.org.il/en/NewsAndPublications/RegularPublications/Research 20Department 20Publications/BankIsraelAnnualReport/Annual 20Report 202019/chap-5e.pdf](https://www.boi.org.il/en/NewsAndPublications/RegularPublications/Research%20Department%20Publications/BankIsraelAnnualReport/Annual%20Report%202019/chap-5e.pdf)

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CITIES' SUSTAINABLE DEVELOPMENT: REVEALING INTERPROJECT SYNERGIES AND TRADE-OFFS AND MAKING THEM MANAGEABLE

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Abstract. The city's strategy should take into account not only the priorities of increasing investment competitiveness and the improvement of citizens' well-being, but also the issues of sustainable development. Sustainable development of cities has been the subject of active discussion in recent years. This article proposes four modernized directions for sustainable urban development, which correspond not only to the UN Sustainable Development Goals (SDGs) (particularly SDG 11), but also to the original directives of local authorities.

These directions include affordable housing, accessible and sustainable transportation systems, sustainable urbanization, and the environmental impact of cities. We developed a methodology for estimating synergies and trade-offs between and within these directions using correlation network analysis with the causality of the indicators and the lags of years. We tested this methodology by estimating the synergies and trade-offs in the sustainable development of the thirteen largest cities between 2015 and 2019. The results of the correlation network analysis are offered as a weighted directed network correlation graph. Our findings could be implemented by local authorities in the form of a Gantt chart for the optimal order of sustainable urban development that could be based on the network correlation graph.

Keywords: sustainable development, synergy and trade-off, affordable housing, sustainable transport, sustainable urbanization, correlation network analysis.

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Introduction

City management authorities perform a variety of functions ranging from economic development of the city and increasing its investment attractiveness to overcoming poverty and demolishing slums. Local authorities should pay attention to the city's slums, the frequency of traffic congestion, the level of environmental pollution, etc. It is important to monitor these spheres retaining them at an acceptable level.

The deterioration of urban problems will inevitably lead to degradation and economic downturn of the city. In this regard, the focus of our research is to determine the indicators of these spheres that characterize the directions of the cities' sustainable development (CSD).

The variety of the CSD programs could have positive and negative effects on each other. These are phenomena of “synergy” and “trade-off”.

For example, various measures that improve the sustainability of urbanization and the transportation system involve comprehensive land use in urban planning. On the contrary, the expansion of housing and road construction leads to a reduction of green areas and a deterioration of the ecological situation in the city.

Corresponding situations in various areas of sustainable development often have been observed by the researchers and policy-planners. Synergy and trade-offs are currently the most relevant issues of recent research in the implementation of sustainable development goals.

This research examines the synergies and trade-offs for the national programs of the SDGs. There are only a few examples of exploration of the SDGs synergies and trade-offs at the city level.

This study fills a gap in the literature by investigating the synergies and trade-offs as systemic interconnections between different directions of the CSD. Our research will allow local authorities to correct or adjust urban policies by choosing measures that enhance the synergistic effect or mitigate the negative externalities.

We begin by elaborating the directions and indicators of the CSD. After collecting a database of indicators of the largest Russian cities development in the period between 2015 and 2019, we identified potential synergies and trade-offs between them using a network correlation graph. Finally, we filled in the Gantt chart of the optimal order of the CSD projects.

Literature Review

Indicators of Sustainable Development at the City Level

The CSD can be investigated from three different perspectives. A case-study of the CSD could be conducted as a longitude research of a single city development (Hu, Geertman, 2018; Yue et al., 2014). The second focus of the CSD analysis could be a group of cities in a particular region of a country (Tran, 2016; Xu, Mingxue, 2020; Yang et al., 2020). However, the majority of authors analyze different directions of sustainable development in the largest cities of a country to suggest some regulations and control policies for sustainable urban development and to investigate the driving forces for urban sustainability change (Fan and Qi, 2010; Strzelecka, 2008; Tai, Xiao, 2020; Yang et al., 2017; Rama, 2021).

In our research we follow the approach of investigating the largest cities in the country. The largest cities are comparable in size, population, and economic welfare. The compatibility of the cities allows us to focus on the evaluation of sustainable development.

Previous research has shown that the three dimensions, i.e. economy, ecology and social sphere (Elliott, 2006; Marcuse, 1998; Portney, 2013; Satterthwaite, 1997) are too broad to constitute effective indicators of sustainable development at the city level. Thus, there is a need to identify city-specific indicators to measure sustainable development in cities. To be more precise, recent research exploits “GDP per capita” as the most appropriate indicator of economic development and the standard of living in a city. The “air quality standard” and the “urban greening coverage” are environmental indicators, while the “rate of urbanization” and “education expenditure as proportion of GDP” are social equity indicators (Fan and Qi, 2010; Moroke, 2019; Tai, Xiao, 2020; Xu, Mingxue, 2020; You, Shi, Feng, 2020; Yang et al., 2020; Rama, 2021).

Major drawbacks of exploiting the concept “Economy, Ecology and Social development” for the CSD is that it envisages an administration of institutional and financial opportunities that are beyond the “influence zone” of local authorities. For example, local authorities have limited indirect influence on economic growth in the city or unemployment rates, because they do not produce goods and services themselves. They only develop an institutional environment, propose measures of public support, and ensure the protection of the rights of manufacturers and entrepreneurs.

Discussing the “power” of local authorities, it is important to consider the basic directions of Urban Economics: Land Use, Transportation, Public Finance, Housing and Environment (O’Sullivan, 2019; Duranton et al., 2014, 2015). The CSD could be managed by focusing on these spheres that are in an immediate “influence zone” of municipal authorities.

These circumstances have been instrumental in shifting urban research attention to sustainable transportation systems, housing, urban environmental impacts, accessible and green public spaces, etc. For instance, You et al. (2020) underline that human development, urbanization, and transportation accessibility are the most concentrated directions of the CSD. Many attempts have been made to focus on ecological indicators that reflect the quality of life in the city (Tran,

2016), waste reduction (de Guimarães et al., 2017), sustainable housing (Winston et al., 2008), sustainable living infrastructure (Fischer & Amekudzi, 2011), sustainable well-being (Costanza et al., 2016), and social innovation initiatives (Angelidou, 2017). Some studies offer a classification of indicators used for the CSD assessment (Huovila et al., 2019; Ameen, 2019).

According to the Urban Economics Concept, a direct transition of the UN Sustainable Development Goals to the city level seems to be based on unsupported assumptions. For example, in most countries, SDG 1 “No Poverty”, SDG 2 “Zero Hunger”, SDG 3 “Good Health and Well-being”, SDG 4 “Quality Education” and SDG 5 “Gender Equality” are implemented at the national level within the relevant directions supporting social policies. Subsequent SDG 8 “Decent Work and Economic Growth”, SDG 9 “Industry, Innovation and Infrastructure”, SDG 10 “Reduced Inequalities” and SDG 12 “Responsible Consumption and Production” require significant financial support at the national or regional level and, accordingly, could not be set as the objectives for local authorities. Other goals relate to environmental protection and the development of alternative energy sources that also require the accumulated efforts of the neighboring regions and even countries.

This discrepancy between the indicators of the CSD, on the one hand, and the competencies of the local authorities, on the other hand, determines the need to focus only on narrower areas of the CSD, than those listed in the UN Sustainability Goal no.11.

The indicators that reflect a modified approach to sustainable development allow us to identify seven directions of sustainable development of cities and societies (Sustainable Development Goal 11 “Sustainable Cities and Communities”):

- Ensure access for all to adequate, safe, affordable housing and basic services and upgrade slums;
- Provide access to safe, affordable, accessible and sustainable transportation systems for all, and improve road safety;
- Enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management;
- Increase efforts to protect and safeguard the world’s cultural and natural heritage;
- Significantly reduce the number of deaths and people affected and substantially decrease the direct economic losses caused by disasters as a proportion of global gross domestic product;
- Reduce the adverse per capita environmental impact of cities;
- Provide universal access to safe, inclusive and accessible, green and public spaces.

However, among these areas from the point of view of Urban Economics Concept (and the immediate “influence zone” of municipal authorities) the City Administration can only have a mediation influence. So, the target “Strengthen efforts to protect and safeguard the world’s cultural and natural heritage” suggests a nationwide policy and the target “Significantly reduce the number of deaths and the number of people affected by disasters” involves joint efforts in health and emergency prevention at the national and regional levels.

Thus, we suggest the following directions of the CSD according to the UN Sustainability Goal no.11:

- Level of access for all to adequate, safe, and affordable housing and basic services;
- Level of access to safe, affordable, accessible, and sustainable transportation systems for all citizens;
- Level of inclusive and sustainable urbanization and human settlements planning and management;
- Level of overcoming the negative environmental impacts of cities.

Nevertheless, the choice of indicators of the CSD is not the ultimate goal of our research. The most important thing is to determine how to assess synergies and trade-offs between these directions of the CSD.

Synergies and Trade-offs of Sustainable Urban Development Goals

The terms “synergy” and “trade-off” are used in different disciplines and imply different research methodologies. In our research, we use the following definitions. “Synergy” is a situation in which actions aimed at improving one sector of the CSD have a positive spillover on the development of another sector of the urban economy. “Trade-off” is a situation in which actions aimed at improving one aspect of the CSD significantly reduce the effectiveness of measures in another sector of the urban economy. The concept of trade-off suggests a strategic balance between these local policies to reduce the overall diminishing effect.

Many authors provide qualitative approaches to the study of synergy and trade-offs. Some research identify only a potential synergies and trade-offs between SDGs by visualizing them using schemes of phenomena interdependence (Felappi et al., 2020; Nerini et al., 2018; Singh, 2020), pie charts (Maes, 2019; Nerini, 2018), or colored bar charts (Philippidis et al., 2020), and even scenario analysis (van Vuuren et al., 2014). Researchers have also applied a point scoring to investigate the mutual influence of different directions of sustainable development (Nilsson et al., 2016; Fader et al., 2018; McCollum et al., 2018; Sachs et al., 2019; Weitz et al., 2018). However, qualitative methods reflect only expert opinion, and are not supported by objective data.

The second, quantitative approach to assessing SDGs synergy and trade-offs aims to overcome this problem and is based on quantitative assessment methods. Initial research on this approach focused on Luukkanen (2012). Most recent research also investigate synergy and trade-offs based on pairwise correlations (Mainali, 2018; Maes et al., 2012; Pradhan et al., 2017; Hegre et al., 2020; Zhong et al., 2020; De Neve and Sachs, 2020; Bennich et al., 2021; Alemu et al., 2021). Correlation can be supplemented by scenario modeling (Shi et al., 2021). One of the modernized forms is the network correlation analysis method that includes eigenvector centrality and betweenness centrality, and automatic community detection algorithms (Swain and Ranganathan, 2020).

When implementing national and local policies, it is important to develop data-driven decisions. The consequences of the realization of previous public policies can be estimated using advanced statistical methods. This will prevent mistakes in subsequent planning.

In this regard, our study, focuses on quantitative methods and develops for local authorities to plan the CSD. Our research of synergies and trade-offs is based on a correlation network analysis with causal relationships that occur with certain time lags.

Methods

The directions of monitoring sustainable development of cities

To estimate a progress of the CSD in the four directions (listed above) it is important to use more than one indicator listed in the official UNDP List of Proposed SDG Indicators (for SDG 11 "Sustainable Cities and Communities") (Final list of proposed Sustainable Development Goal indicators, 2016). We use the following three indicators for each direction:

1. Access for all to adequate, safe, and affordable housing and basic services:
 - 1.1. Average total area of residential premises per inhabitant, sq.m (the indicator is calculated as the ratio between the total housing stock at the end of the year and the resident population at the sametime);
 - 1.2. The share of households that do not consider that they experience significant constraint in their housing conditions, % (this indicator is the inverse of the original indicator calculated by comparing the area of living space in an apartment and the number of residents (also an assessment is made in comparison to the minimum social norms of living space per person);
 - 1.3. The share of the population that received housing and improved housing conditions in the reporting year out of the total population registered as needed housing, % (the indicator is calculated based on the number of residents (registered as in need) who received housing and improved living conditions);
2. An access to safe, affordable, accessible and sustainable transportation systems for all citizens:
 - 2.1. The reduction in the number of people killed in road accidents compared to the previous year, per 1000 people, (the indicator is calculated as the difference between the baseline and the number of traffic fatalities per 1000 people in the previous year;
 - 2.2. The share of roads that meet regulatory requirements, % (the percentage of local roads where the surface quality meets the technical requirements of Russian legislation);
 - 2.3. The density of local public roads, km per hectare (the indicator is calculated as the length of local roads divided by the total area of the city).
3. The level of inclusive and sustainable urbanization and human settlement planning and management:
 - 3.1. The ratio between the rate of the commissioning of housing and the rate of population change (the indicator is calculated as the annual increase in the area of new residential buildings in the city divided by the annual population growth);
 - 3.2. The area of land allocated for construction, per 10,000 inhabitants hectares (the indicator is calculated on the basis of the records of official local authorities about the decisions on the provision of land plots);

- 3.3. The share of the area of land plots that are subjects to land taxation in the total city area, % (the indicator is calculated on the basis of local authorities records on property tax).
4. The level of overcoming the negative environmental impacts of cities:
 - 4.1. The volume of solid communal waste removed per year, m³ per person (the indicator is calculated based on the volume and mass of the removed municipal solid waste);
 - 4.2. The share of collected and neutralized pollutants as a percentage of the total amount of pollutants emitted from stationary sources, % (the amount of captured (neutralized) air pollutants includes all types of pollutants captured (neutralized) in dust- collection facilities (gas-cleaning) installations from the total amount of pollutants emitted from stationary sources);
 - 4.3. The share of green areas in the total area of the city, % (the indicator counts the gardens of residential areas, microdistricts, boulevards, squares, green yards, areas of schools, kindergartens, plantings on streets and squares, etc.).

Some of these indicators were borrowed directly from the UNDP Official List of Proposed SDG Indicators (for SDG 11 “Sustainable Cities and Communities”) or were subjected to minor adjustments – 3.1., 4.1., 4.2., 4.3. For the first direction “Level of access for all to adequate, safe, and affordable housing and basic services” we had to adapt and expand the indicator that is used in UNDP Official List. Indicators 1.2. and 2.1. were adapted from Eurostat analogs. To investigate access to affordable housing (indicators 1.1. and 1.3.), sustainable transportation systems (indicators 2.2. and 2.3.), and sustainable urbanization (indicators 3.2. and 3.3.), we used three additional indicators that better reflect the situation in Russian cities.

To compare the values of the indicators in various cities, the absolute values per 1,000 inhabitants or per unit area of the city were recalculated.

According to the Urban Economics Concept, these directions of the CSD are interrelated:

- Land Use: the city area is limited (to a certain extent) and can be used for housing and industrial construction, transport infrastructure, and green spaces – an increase in housing construction (indicator 3.2) leads to the reduction of road density (indicator 3.3.) and green spaces (indicator 4.3);
- Transportation: road safety (indicator 2.1.) largely depends on the quality of the road surfaces (indicator 2.2.); road density (indicator 3.3.) and the number of vehicles in the city leads to a deterioration of air quality in the city (indicator 4.2.);
- Housing: intensive housing construction (indicator 3.1.) leads to improvement of living conditions (indicators 1.1.-1.3.);
- Public Finance: intensive housing construction (indicators 3.1 and 3.2) also leads to an increase in local budget revenues from land tax (indicator 3.3.);
- Environment: increased urbanization revealed in the improvement of living conditions, the number of vehicles and the density of built-up areas, leads to an increase in municipal solid communal waste (indicator 4.1.), a deterioration of air quality (indicator 4.2.) and a reduction in green areas (indicator 4.3.).

Having decided on the list of indicators of the CSD, we proceed to the explanation of the methodology of synergy and trade-offs evaluation.

The methodology of synergies and trade-offs evaluation between and within the directions of cities' sustainable development

The design of the synergy and trade-offs evaluation for the CSD indicators is based on Correlation network analysis.

Network analysis was developed by adding the Granger causality analysis (Granger, 2001). It allows us to determine which indicator is the cause of the other. In accordance with the Granger test, two linear regressions are constructed for each pair of indicators. The obtained statistical significance of the estimates of the indicators of one regression from the pair allows us to determine causality. In addition to the standard Granger test, we chose the number of years of lag that exists between the change in the influencing variable and the dependent variable. Thus, we constructed six regressions for one-year, two-year, and three-year lags using the collected dynamic panel data of the indicators and evaluated the lowest p-value (Fraser, 2017) for the influencing variable. Since the cities vary in size and the data have a panel structure, the covariance matrix estimation proposed by Newey and West was used to adjust the standard errors to the conditions of heteroscedasticity and autocorrelation (Newey and West, 1987). It matters because in the other case the problem of heteroscedasticity and autocorrelation would not allow us to determine the statistical significance of the study. Using the described methods we were able to determine which indicator has an impact, which is dependent, and also to find out the most significant influence lag.

$$y_t = a_0 + a_1 y_{t-L} + a_2 x_{t-L} \quad (1)$$

$$x_t = b_0 + b_1 x_{t-L} + b_2 y_{t-L} \quad (2)$$

where y_t and x_t are potential dependent indicators, y_{t-L} and x_{t-L} are the same indicators with the lag of L , a_2 and b_2 are the regression coefficients which pass the statistical test.

For each pair of indicators with the lowest p-value determining the direction of influence, less than the p-value threshold of 0.05, their correlation was calculated. The graph is drawn using the Kamada-Kawai algorithm (Kamada and Kawai, 1989). The application of the algorithm is necessary for a visual representation of the graph. Thus, we define “the synergy effect” as a positive correlation between two indicators and “the trade-off effect” as a negative correlation.

Data collection

To assess the level of sustainable development of the largest Russian cities, data were collected reflecting the development of 13 largest cities in Russia (with a population of more than 1 million people): Novosibirsk, Yekaterinburg, Nizhniy Novgorod, Kazan, Chelyabinsk, Omsk, Samara, Rostov-na-Donu, Ufa, Krasnoyarsk, Perm, Voronezh, and Volgograd. The two largest cities in Russia, Moscow and St. Petersburg, were excluded from the sample due to their special status as federal cities and the related significant differences in municipal statistics.

To collect the necessary indicators of the CSD we used the database “Regions of Russia. Indicators of Russian cities” (Rosstat), a database of indicators of municipalities (Rosstat), data available on the official websites of cities and regions, and data from the traffic police website. The period under review is from 2015 to 2019. Thus, the collected data were converted into dynamic panel data.

Results

We estimate the synergies and trade-offs in the sustainable development of the thirteen largest Russian cities (Figure 1) during the period from 2015 to 2019 using the correlation of these panel data.



Figure 1. The Russian cities with a population of more than 1 million.

The Figure 1 presents the 13 largest cities in the Russian Federation with a population of more than one million (excluding the two largest cities of federal significance Moscow and St. Petersburg). As illustrated, three of them are located in Siberia, four – in the Urals, three – in the Volga region, two – in the south of the country and one – in the central part of the country.

The results of the correlation network analysis can be presented as a weighted, directed graph that can reflect synergy and trade-off effects as shown in Figure 2.

The analysis of the correlation network shows the synergies between the CSD indicators. For example, the growth in the provision of housing (indicator 1.1.) in 3 years is accompanied by an increase in the share of the land plots that are subjects to land taxation (indicator 3.3.). This contributes to the growth of municipal budget revenues and expansion of opportunities for financing new projects and programs for the development of the city.

We also detected two trade-off cases. For example, the growth in the provision of housing (indicator 1.1.) in 2 years reduces the need for new housing construction and the allocation of land plots (indicator 3.2.). This limits the growth of urban area and the scale of the destruction of the environment.

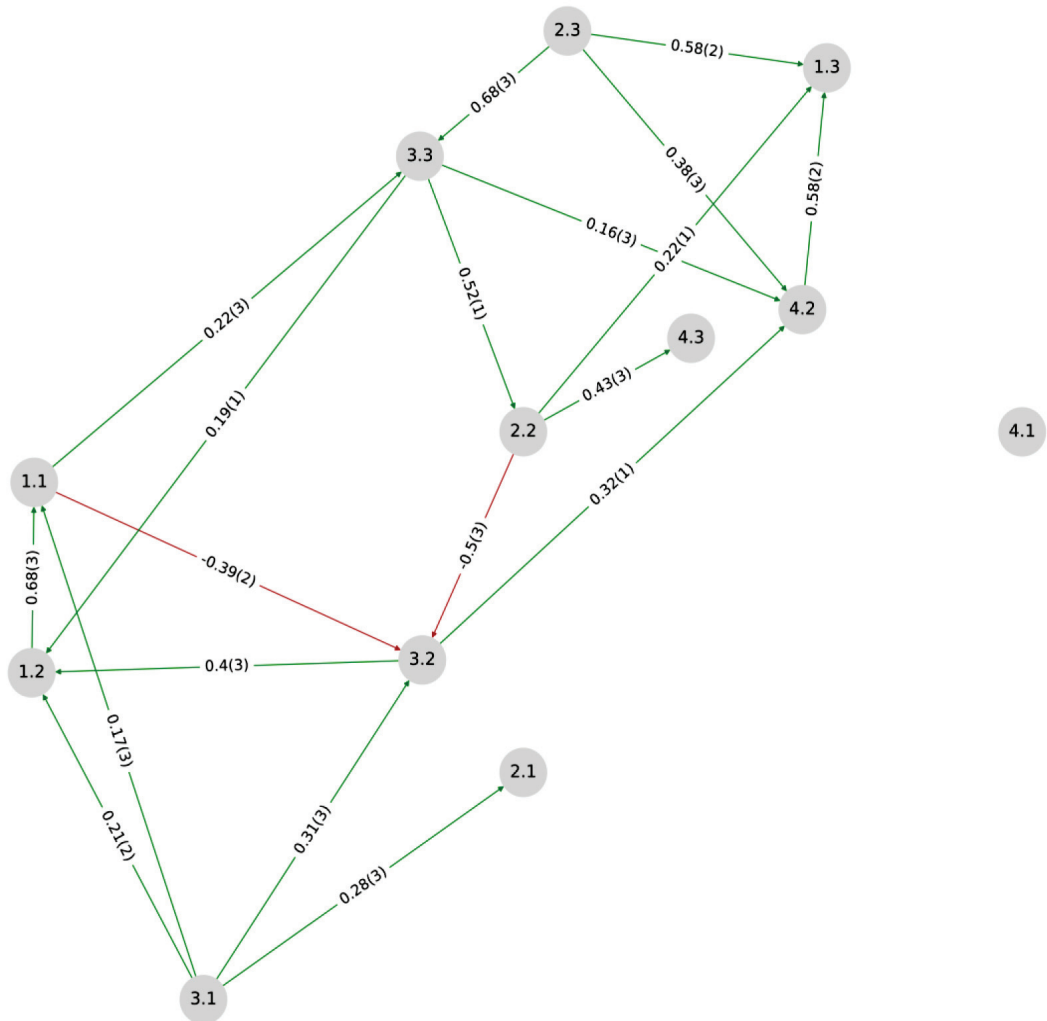


Figure 2. Network correlation diagram of sustainable development indicators.

The nodes of the graph are the indicators. The directed edges of the graph correspond to the relationships between the indicators, where the direction determines the impact of one indicator on the other ones. The color of the edge shows positive and negative correlation. The positive effect is shown in green, the negative – in red. Also, a numerical correlation value is indicated at each edge.

In general, the results of the correlation network analysis can be interpreted as “points of synergy concentration” and can also be used to develop the optimal order of the CSD programs. As presented in the network correlation diagram,

projects of increasing indicators 1.2. (3.1., 3.2. and 3.3.), indicator 1.3. (2.2., 2.3. and 4.2.) and indicator 4.2. (3.2., 3.3. and 2.3.) could accumulate maximum synergy effect and could be “points of synergy concentration”. For example, to increase the availability of adequate housing, it is important to ensure the preparation of land plots and the issuance of building permits (indicator 3.2.). In about 3 years, it will be possible to increase the share of citizens who do not in their housing conditions (indicator 1.2.).

If a year after beginning the project of land preparation, the intensity of housing construction in the city maintains the optimal pace (in comparison with the rate of population growth) (indicator 3.1.), the synergy effect will help to increase the share of citizens who do not feel constrained in their housing conditions (indicator 1.2.).

The second interpretation of the network correlation diagram is the development of the optimal order of projects for the sustainable growth of cities. This sequence is substantiated by the experience of the Russian cities investigated.

It is important to plan the relevant activities in a specific sequence to take advantage of the potential synergies. Moreover, local authorities have to take into account the identified time delay (1, 2 or 3 years) to achieve maximum synergy. On the other hand, since the measures of increasing indicator 2.2. diminish the efficiency of improvement an indicator 3.2., the CSD program must first implement measures to improve indicator 3.2., and then implement measures to improve indicator 2.2. The same applies to indicators 1.1. and 3.2.

The optimal sequence of actions to improve each indicator can be presented in the form of a Gantt chart (Table 1). This sequence was developed “to maximize synergy for indicator 1.2.” To achieve this goal, the projects to improve the indicators 3.2., 3.1 and 3.3 started sequentially in series with the interval of 1 year (in the 1st, 2nd and 3rd years, respectively).

The following sequence of the projects was developed according to the network correlation diagram. We assume that the city budget uses a three-year project schedule.

The optimal sequence includes ten years of projects on the CSD (in the spheres that we defined). The projects of the indicators of each group are presented in the same color palette.

The description of this chart requires also the clarification of some aspects:

- Strengthening the influence (coefficient of correlation) of indicator 1.2. on 1.1. more than strengthening the influence of 3.1. on 1.1., it means that a project to improve indicator 1.1. needs to be realized not in the 5th, but in the 7th year;
- A project to improve indicator 2.2. should be implemented after the project to improve indicator 3.2., and, therefore, should be planned only in the 4th year;
- A project to improve indicator 3.2. should be renewed in the 5th year, when a supporting effect of a project to improve indicator 3.1. appears;
- A project to improve indicator 3.3. should be extended in the 6th year, when a supporting effect of a project to improve indicator 2.3. appears; after that this project should be renewed in the 10th year, when a supporting effect of a project to improve indicator 1.1. appears;

Table 1

Optimal order of the projects of city's sustainable development

Projects/Years	1	2	3	4	5	6	7	8	9	10
3.2. Increasing an area of land allocated for construction					...					
3.1. Increasing the ratio between the rate of commissioning of housing and the rate of population change										
3.3. Increasing the share of the area of land plots that are objects of land taxation in the total city area					
2.3. Increasing the density of local public roads										
2.2. Increasing the share of roads that meet regulatory requirements										
1.2. Increasing the share of households that do not consider that they experience significant constraint in their housing conditions										
1.1. Increasing the average total area of residential premises per inhabitant										
1.3. Increasing the share of the population that received housing and improved housing conditions in the reporting year out of the total population registered as needed housing									...	
4.2. Increasing the share of collected and neutralized pollutants as a percentage of the total amount of pollutants emitted from stationary sources										
4.3. Increasing the share of green areas in the total area of the city										
2.1. The reduction in the number of people killed in road accidents compared to the previous year										
4.1. Increasing the volume of solid communal waste removed per year										

- A project to improve indicator 1.3. should be extended in the 9th year, when a supporting effect of a project to improve indicator 4.2. appears; etc.

These synergies and trade-offs allow us to select the necessary tools that simultaneously have a positive effect in multiple directions of the CSD that reduces costs and allows more effective use of the city budget. The implementation of the correlational network analysis showed its consistency in identifying synergies and trade-offs in key areas of the CSD. The application of the Optimal order of the CSD programs could be a demanded tool for local government decision making.

Conclusion

We have outlined four directions of the CSD that are not only based on the UN Sustainable Development Goals, but also correspond to the Urban Economics concept. These directions are more consistent with the initial “influence zone” of municipal authorities. We have expanded the list of indicators for these directions of the CSD compared to the list established for UN SDG Goal 11.

The concept of synergy and trade-offs used in our study was also redefined. We used pairwise correlation (Pradhan et al., 2017; Hegre et al., n.d.; Zhong et al., 2020; De Neve and Sachs, 2020), but we used its modernized form – network correlation analysis, which was also used earlier by Swain and Ranganathan (2020). In addition to their methodology, we implement one-year, two-year and three-year lags for correlation pairs in our panel data.

In our research, the previously described methods of network analysis were developed by adding the Granger causality analysis (Granger, 2001) and modernized following Fraser (2017).

The results of the correlation network analysis are presented as a weighted directed network correlation graph that reflects synergies and trade-offs between and within the four directions of the CSD. The network correlation graph allowed the Optimal order of the CSD projects (in the form of a Gantt chart) to be created. This optimal order of the projects can be used for direct planning of the CSD.

The authors see a further improvement of this methodology in the application of correlation network analysis to determine not only the optimal sequence, but also the optimal duration of projects in each areas. Nevertheless, to conduct such an analysis, data on the duration of projects (that have already been implemented) will also be required.

It is also possible to apply the correlation network analysis to the analysis of sustainable development of medium and small cities in Russia. But the list of sustainable development indicators must be adapted for medium-sized cities, as the problem areas have a different focus.

REFERENCES:

1. Alemu, B.J.I., Richards, R.D., Yan-Feng Gaw, L., Masoudi, M., Nathan, Y. and Friess, D.A. (2021) 'NC-ND license Identifying spatial patterns and interactions among multiple ecosystem services in an urban mangrove landscape', *Ecological Indicators*, 121, pp. 1470–160. DOI: 10.1016/j.ecolind.2020.107042.
2. Ameen, R. and Mourshed, M. (2019) 'Urban sustainability assessment framework development: The ranking and weighting of sustainability indicators using analytic hierarchy process', *Sustainable Cities and Society*, 44, pp. 356–366. DOI: 10.1016/j.scs.2018.10.020.
3. Angelidou, M. and Psaltoglou, A. (2017) 'An empirical investigation of social innovation initiatives for sustainable urban development', *Sustainable Cities and Society*, 33, pp. 113–125. DOI: 10.1016/j.scs.2017.05.016.
4. Bennich, T., Belyazid, S., Stjernquist, I., Diemer, A., Seifollahi-Aghmiuni, S. and Kalantari, Z. (2021) 'The bio-based economy, 2030 Agenda, and strong sustainability – A regional-scale assessment of sustainability goal interactions', *Journal of Cleaner Production*, 283. DOI 10.1016/j.jclepro.2020.125174
5. Costanza, R. et al. (2016) 'Modelling and measuring sustainable wellbeing in connection with the UN Sustainable Development Goals', *Ecological Economics*, 130, pp. 350–355. DOI 10.1016/j.ecolecon.2016.07.009.
6. De Neve, J.E. and Sachs, J.D. (2020) 'The SDGs and human well-being: a global analysis of synergies, trade-offs, and regional differences', *Scientific Reports*, 10(1), pp. 1–12. DOI 10.1038/s41598-020-71916-9.
7. de Guimarães, J.C.F., Severo, E.A. and Vieira, P.S. (2017) 'Cleaner production, project management and Strategic Drivers: An empirical study', *Journal of Cleaner Production*, 141, pp. 881–890. DOI: 10.1016/j.jclepro.2016.09.166.
8. Duranton, G. and Puga, D. (2014) 'The Growth of Cities', *Handbook of Economic Growth*, 4, pp. 781–853.
9. Duranton, G., Henderson, J.V. and Strange W. (2015) *Handbook of Regional and Urban Economics*, 5, pp. 1–1653
10. Elliott, J.A. (2006) 'An introduction to sustainable development: third edition', in: *An introduction to sustainable development: the developing world*. New York: Routledge. DOI 10.1016/s0743-0167(96)90049-2
11. Fan, P., and Qi, J. (2010) 'Assessing the sustainability of major cities in China', *Sustainability Science*, 5(1), pp. 51–68. DOI: 10.1007/s11625-009-0096-y.
12. Fader, M., Cranmer, C., Lawford, R. and Engel-Cox, J. (2018) 'Toward an understanding of synergies and trade-offs between water, energy, and food SDG targets', *Frontiers in Environmental Science*, 6, pp. 112. DOI 10.3389/fenvs.2018.00112.
13. Felappi, J.F., Sommer, J.H., Falkenberg, T., Terlau, W. and Kötter, T. (2020) 'Green infrastructure through the lens of "One Health": A systematic review and integrative framework uncovering synergies and trade-offs between mental health and wildlife support in cities', in: *Science of the Total Environment*, Elsevier B.V., p. 748. DOI 10.1016/j.scitotenv.2020.141589.

14. *Final list of proposed Sustainable Development Goal indicators*, 2016. Available at: <https://sustainabledevelopment.un.org/content/documents/11803Official-List-of-Proposed-SDG-Indicators.pdf> (accessed 02 February 2023).
15. Fischer, J.M., and Amekudzi, A. (2011) 'Quality of life, sustainable civil infrastructure, and sustainable development: Strategically expanding choice', *Journal of Urban Planning and Development*, 137(1), pp. 39–48. DOI: 10.1061/(ASCE)UP.1943-5444.0000039.
16. Fraser, D.A.S. (2017) 'p-Values: The insight to modern statistical inference', *Annual Review of Statistics and its Application*, 4(1), pp. 1–14. DOI: 10.1146/annurev-statistics-060116-054139.
17. Granger, C.W. J. (2001) *Essays in econometrics: The collected papers of Clive W.J. Granger*. Cambridge: Cambridge University Press. DOI: 10.1017/CBO9780511753961.
18. Hegre, H., Petrova, K. and Von Uexkull, N. (2020) 'Synergies and trade-offs in reaching the Sustainable Development Goals', *Sustainability*, 12, p. 8729. DOI 10.3390/su12208729.
19. Hu, H. and Geertman, S.P.H. (2018) 'Market-conscious planning: A planning support methodology for estimating the added value of sustainable development in fast urbanizing China', *Applied Spatial Analysis*, 11, pp. 397–413. DOI 10.1007/s12061-016-9217-z.
20. Huovila, A., Bosch, P. and Airaksinen, M. (2019) 'Comparative analysis of standardized indicators for Smart sustainable cities: What indicators and standards to use and when?', *Cities*, 89, pp. 141–153. DOI 10.1016/j.cities.2016.09.009.
21. Kamada, T. and Kawai, S. (1989) An algorithm for drawing general undirected graphs. *Information Processing Letters, Elsevier*, 31 (1), pp. 7–15. DOI 10.1016/0020-0190(89)90102-6.
22. Luukkanen, J., Vehmas, J., Panula-Ontto, J., Allievi, F., Kaivo-oja, J., Pasanen, T. and Auffermann, B. (2012) 'Synergies or trade-offs? A new method to quantify synergy between different dimensions of sustainability', *Environmental Policy and Governance*, 22(5), pp. 337–349. DOI 10.1002/eet.1598.
23. Maes, J., Paracchini, M.L., Zulian, G., Dunbar, M.B., and Alkemade, R. (2012) 'Synergies and trade-offs between ecosystem service supply, biodiversity, and habitat conservation status in Europe', *Biological Conservation*, 155, pp. 1–12. DOI 10.1016/j.biocon.2012.06.016.
24. Maes, M.J.A., Jones, K.E., Toledano, M. B. and Milligan, B. (2019) 'Mapping synergies and trade-offs between urban ecosystems and the sustainable development goals', *Environmental Science and Policy*, 93, pp. 181–188. DOI 10.1016/j.envsci.2018.12.010.
25. Mainali, B., Luukkanen, Silveira, S. and Kaivo-oja, J. (2018) 'Evaluating synergies and trade-offs among sustainable development goals (SDGs): Explorative analyses of development paths in South Asia and Sub-Saharan Africa', *Sustainability*, 10, pp. 815 DOI:10.3390/su10030815.
26. Marcuse, P. (1998) 'Sustainability is not enough', *Environment and Urbanization*, 10(2), pp. 10.
27. McCollum, D.L., Echeverri, L.G., Busch, S., Pachauri, S., Parkinson, S., Rogelj, J., Krey, V., Minx, J.C., Nilsson, M., Stevance, A.S. and Riahi, K. (2018) 'Connecting the sustainable development goals by their energy inter-linkages', in: *Environmental Research Letters*, 13(3). Institute of Physics Publishing. DOI 10.1088/1748-9326/aaafe3.
28. Moroke, T., Schoeman, C. and Schoeman, I. (2019) 'Developing a neighbourhood sustainability assessment model: An approach to sustainable urban development', *Sustainable Cities and Society*, 48 (101433). DOI: 10.1016/j.scs.2019.101433.

29. Nerini, F., Tomei, L. et al. (2018) 'Mapping synergies and trade-offs between energy and the Sustainable Development Goals', *Nature Energy*, 3 (1), pp. 10–15.
30. Newey, W. and West D.K. (1987) 'A simple, positive semi-definite, heteroskedasticity and autocorrelation consistent covariance matrix', *Econometrica*, 3, pp. 703–708.
31. Nilsson, M., Griggs, D. and Visbeck, M. (2016) 'Policy: Map the interactions between Sustainable Development Goals', in: *Nature*. Nature Publishing Group, 534(7607), pp. 320–322. DOI 10.1038/534320a.
32. O'Sullivan (2019) *Urban Economics*. 8th edition. New York: McGraw-Hill.
33. Philippidis, G., Shutes, L., M'Barek, R., Ronzon, T., Tabeau, A. and van Meijl, H. (2020) 'Snakes and ladders: World development pathways' synergies and trade-offs through the lens of the Sustainable Development Goals', *Journal of Cleaner Production*, 267(122147). DOI 10.1016/j.jclepro.2020.122147.
34. Portney, K. E. (2013) *Taking sustainable cities seriously: Economic development, the environment, and quality of life in American cities*. MIT Press.
35. Pradhan, P., Costa, L., Rybski, D., Lucht, W. and Kropp, J. P. (2017) 'A systematic study of Sustainable Development Goal (SDG) interactions', *Earth's Future* 5(11), pp. 1169–1179. DOI 10.1002/2017EF000632.
36. Rama, M., Andrade, E., Moreira, M.T., Feijoo, G. and Gonzalez-García, S. (2021) 'Defining a procedure to identify key sustainability indicators in Spanish urban systems: Development and application', *Sustainable Cities and Society*, 70 (102919). DOI: 10.1016/j.scs.2021.102919.
37. Sachs, J.D., Schmidt-Traub, G., Mazzucato, M., Messner, D., Nakicenovic, N. and Rockström, J. (2019) 'Six Transformations to achieve the Sustainable Development Goals', *Nature Sustainability*, 2(9), pp. 805–814. DOI 10.1038/s41893-019-0352-9.
38. Satterthwaite, D. (1997) 'Sustainable cities or cities that contribute to sustainable development?', *Urban Studies*, 34(10), pp. 1667–1691. DOI 10.1080/0042098975394.
39. Shi, M., Wu, H., Fan, X., Jia, H., Dong, T., He, P., Baqa, M. F. and Jiang, P. (2021) 'Trade-offs and synergies of multiple ecosystem services for different land use scenarios in the Yili River Valley, China', *Sustainability*, 13(3), p. 1577. DOI 10.3390/su13031577
40. Singh, G.G. (2020) 'Determining a path to a destination: Pairing strategic frameworks with the Sustainable Development Goals to promote research and policy', *Evolutionary and Institutional Economics Review*, 17(2), pp. 521–539. DOI 10.1007/s40844-020-00162-5.
41. Strzelecka, E. (2008) 'Urban development versus sustainable development in Poland', *Management of Environmental Quality*, 19 (2), pp. 243–252. DOI 10.1108/14777830810856627.
42. Swain, R.B. and Ranganathan, S. (2020) 'Modeling interlinkages between sustainable development goals using network analysis', *World Development*, 138, p 105136. DOI 10.1016/j.worlddev.2020.105136.
43. Tai, Xiaoli and Xiao, Wu Y.T. (2020) 'A quantitative assessment of vulnerability using social-economic-natural compound ecosystem framework in coal mining cities', *Journal of Cleaner Production*, 258, p. 120969. DOI: 10.1016/j.jclepro.2020.120969
44. Tran, L. (2016) 'An interactive method to select a set of sustainable urban development indicators', *Ecological Indicators*, 61, pp. 418–427. DOI 10.1016/j.ecolind.2015.09.043.

45. van Vuuren, D.P., Kriegler, E., O'Neill, B.C., Ebi, K.L., Riahi, K., Carter, T.R., Edmonds, J., Hallegatte, S., Kram, T., Mathur, R. and Winkler, H. (2014) 'A new scenario framework for Climate Change Research: Scenario matrix architecture', *Climatic Change*, 122(3), pp. 373–386. DOI 10.1007/s10584-013-0906-1.
46. Weitz, N., Carlsen, H., Nilsson, M. and Skånberg, K. (2018) 'Towards systemic and contextual priority setting for implementing the 2030 agenda', *Sustainability Science*, 13(2), pp. 531–548. DOI 10.1007/s11625-017-0470-0.
47. Winston, N., Montserrat, A. and Eastaway, P. (2008) 'Sustainable housing in the urban context: International Sustainable Development Indicator sets and housing', *Social Indicators Research*, 87, pp. 211–221.
48. Xu, Mingxue, W.-Q.H. (2020) 'A research on coordination between economy, society and environment in China: A case study of Jiangsu', *Journal of Cleaner Production*, 258, p. 120641. DOI: 10.1016/j.jclepro.2020.120641.
49. You, Z., Shi, H. and Feng, Z. (2020) 'Creation and validation of a socioeconomic development index: A case study on the countries in the Belt and Road Initiative', *Journal of Cleaner Production*, 258, p. 120634. DOI 10.1016/j.jclepro.2020.120634.
50. Yang, B., Xu, T. and Shi, L. (2017) 'Analysis on sustainable urban development levels and trends in China's cities', *Journal of Cleaner Production*, 141, pp. 868–880. DOI: 10.1016/j.jclepro.2016.09.121.
51. Yang, Zh., Yang, H. and Wang, H. (2020) 'Evaluating urban sustainability under different development pathways: A case study of the Beijing-Tianjin-Hebei region', *Sustainable Cities and Society*, 61. DOI: 10.1016/j.scs.2020.102226,
52. Yue, W., Peilei, F. and Wei, Y.D. (2014) 'Economic development, urban expansion, and sustainable development in Shanghai', *Stochastic Environmental Research and Risk Assessment*, 28, pp. 783–799. DOI: 10.1007/s00477-012-0623-8.
53. Zhong, L., Wang, J., Zhang, X. and Ying, L. (2020) 'Effects of agricultural land consolidation on ecosystem services: Trade-offs and synergies', *Journal of Cleaner Production*, 264(121412). DOI: 10.1016/j.jclepro.2020.121412.

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ASSESSMENT OF THE IMPACT OF CORRUPTION AND CIRCULAR DEBT ON ENERGY CRISIS IN PAKISTAN

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Abstract. The main purpose of this study was to explore the impact of corruption and circular debt on energy crises in the case of Pakistan. For this purpose, the study used annual time series data and employed an ARDL F-bounds test approach to achieve the determined objectives. The findings of the ARDL model reported that corruption, circular debt, and population have a positive impact, while industrial GDP and distribution and transmission contribute negatively to short- and long-term energy crises. Consequently, this study helps policy makers to focus on the issue of corruption and circular debt in the energy sector of Pakistan.

Keywords: corruption, circular debt, energy crisis, ARDL bounds testing.

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Introduction

The economy is the backbone of a country's progress. The economy can remain healthy if industrial, agricultural, and domestic energy demand is sufficiently met by the government. It cannot be overemphasized that energy is one of the most important factors which fulfilled human needs. The world in the 21st century faces so many oppositions when it comes to energy, such as the availability of sufficient, affordable, and environmentally friendly energy. To overcome the problem of poverty, improve human well-being and raise the standard of living, there are achievable and sufficient energy needs. The South Asia region is rich in natural resources. The energy production of this region depends on the natural resources of coal, oil, natural gas and hydroelectric energy (Iqbal et al., 2019; Nawaz et al., 2013). Natural resources are drained with every tick of the clock, so the chance of turning natural resources into electrical energy becomes low. The energy sector is underdeveloped in Pakistan due to poor planning, supervision and management (Faheem, 2016). Electricity is one of the important sources for providing social services such as education, health, water purification and sanitation and medicine refrigeration. Electricity plays a vital role in generating income opportunities. Electricity is a service of monopolistic quality and social importance due to the problem of governance in the electricity sector. In many countries, only one company is responsible for providing electricity, so customers cannot switch to another company. Some countries have made their energy market competitive to overcome the governance problem in the electricity sector (Halpern et al., 2008). The crisis is not only the gap between demand and supply, but also these emerging crises due to poor governance, outdated technologies, and administrative problems, as well as circular debt damaged the supply chain (Heli et al., 2017). The energy sector that holds monopoly power is subject to corruption. Strong relationship exists between energy efficiency and corruption; greater corruptibility will reduce energy efficiency (Sekarfi and Sghaier, 2018; Qazi et al., 2020). The electricity sector in developing countries is mainly under public control. Public authorities use electricity as an instrument to achieve social, economic and political goals. The public sector holds in concessionaires, which leads to corruption and inefficiency in generation and distribution (Jamil and Ahmad, 2013). Corruption is pervading the electricity sector and imposes significant costs. Rehman and Deyuan (2018) examined the relationship between economic growth, population growth, energy use and access to electricity in Pakistan using the ARDL bounds testing approach.

Pakistan has been struggling with the problem of power shortage for several years. Electricity crisis occurs in the country, and then country initiative to find long-term effective solutions for power supply is strong as compared to now. The main purpose of this study is to gain knowledge about the outcomes of circular debt on Pakistan's electricity crisis. The study will help the policy makers to overcome the corruption problem in the electricity sector of Pakistan and help the manufacturers to mitigate the crisis by controlling population growth and line losses. This study is different from the previous study, because no previous study has examined the effect of circular debt, population growth and industrial growth

on electricity crisis in case of Pakistan. In addition, this study also focuses on distribution and transmission losses in the electricity sector. Therefore, this study helps the policy makers to address the issue of corruption and circular debt in the energy sector of Pakistan.

Literature review

Many studies have been done to explore the electricity crisis and its causes. Abbas (2015) discussed that the socio-economic growth of a country is affected by the performance of the energy sector. The energy sector has generated growth and development in the agricultural, industrial, and the defense sectors, as well as in the domestic sector. Sekrafi and Sghaier (2016) investigated how political stability, environmental quality, energy consumption, and corruption affected the economic growth of 13 MENA regions. They used a static and dynamic panel data approach over the period from 1984 to 2012. Their empirical results showed that an increase in corruption, directly affects environmental quality, economic growth and energy consumption, while economic growth is indirectly affected by corruption through environmental quality and energy consumption. Therefore, carbon emissions and energy consumption also affect economic growth. Furthermore, Imam et al. (2018) found no evidence regarding performance in technical, economic and welfare terms, and these reforms do not reduce or increase corruption. They conducted a study to estimate the impact of corruption on two aspects of electricity reform, having three indicators such as, revenue, access to electricity, and technical efficiency using a new panel dataset from 47 sub-Saharan African countries, for the period from 2002–2013. The study concluded that corruption mitigated technical efficiency and created a barrier to access to energy use and national income. They suggested that well-planned reforms not only influence the economic development, but also indirectly reduce negative institutional deficiencies in the form of corruption, both at the micro and macro levels.

In recent years, Pakistan is facing a drastic energy shortage. One of the reasons for this remarkable power outage, is the tackling in the use of resources. The situations caused not only an energy mix for electricity generation, but also circular debt has contributed to the crisis. The government of Pakistan has paid over one trillion rupees as Differential Tariff Subsidy (TDS) to protect people from the rising cost of generating electricity. The TDS not only overcomes the financial burden, but also the consequence of the loss of well-being. Ali and Badar (2010) examined the problem of circular debt in the energy sector of Pakistan. They presented an overview of the energy sector in the case of Pakistan. According to the study, they explained why circular debt arises in the energy sector. Their study identified the main reasons for the circular debt problem. Firstly, the consumer tariff was unsatisfactory to recover the increasing cost of electricity production and government did not compensate for the losses. The second reason highlighted by the researcher that PEPCO failed to recover dues from consumers. To solve the circular debt problem, the government should accept the cost of power subsidies in the budget and adjust power tariffs. Similarly, Qasim and Kotani (2014) addressed the shortage of electricity in the case of Pakistan. They studied the energy

shortage by using both an index comparing the demand for electricity, oil and gas and the public supply of electricity. They used a time series approach over the period 1971–2010. Their result suggested that price adjustment is not an effective policy to deal with power shortage, rather the government should improve the utilization rate and redirect the use of oil and gas for electricity generation. Awan et al. (2019) developed a different structure to estimate the impact of direct transfer mechanism of the Tariff Differential Subsidy (TDS) on social welfare from Pakistan perspective. The basic structure was to compare the welfare of poor households that paid the TDS directly, with the impact on the fiscal deficit after targeting the subsidies and evaluate the impact on circular debt. The study investigated these impacts by using the 2010–2011 Social Accounting Matrix (SAM) and the Computed General Equilibrium (CGE) model developed by IFPRI. Their results will not only help the policymakers to formulate a long term sustainable result of power outage but help to reduce negative social and economic impacts.

The remainder of the article includes “Data sources and Methodology” where data, data sources and empirical techniques are used to discover the impact of corruption and circular debt on the electricity crisis. The finding is presented in the “Results and discussion” section and the conclusions of the study are given in the “Conclusion” section of the article.

Methodology

Pakistan is a developing country where electricity gap is very high due to the obstruction in electricity supply and the increase in electricity demand. In this study, electricity gap was used as electricity crisis. Some of the problems like corruption and circular debt increase the demand for electricity. Therefore, it is necessary to analyze the impact of corruption and circular debt on Pakistan electricity crisis. In this study time series data over the selected time period from 1990 to 2018 was used. The data were taken from the Pakistan Energy Year Books database of HDI (Pakistan Hydrocarbon Development Institute), the World Bank (2020) and Pakistan Economic Research. The Descriptions of the variables are given in Table 1.

Table 1

Description of the data series

Variables	Definitions	Measurement units	Data sources
EC	Electricity crisis	Billion KW/h	World Bank (2020)
CPI	Corruption perception index	Index	The Global Economy (2020)
CD	Circular debt	Billion PKRs	Energy Year Books (2020)
POP	Population	Number of persons	World Bank (2020)
IGDP	Industrial gross domestic product	PKRs	World Bank (2020)
DT	Distribution and transmission losses	% of electric power output	World Bank (2020)

Sources: Compiled by the authors.

This study employed augmented Dickey and Fuller (1981) and Phillips and Peron (1988) test to examine the data series for stationarity. Using ADF test for checking the autocorrelation in the error term by taking the lagged difference terms of the dependent variable. While Phillips and Peron (1988) used nonparametric statistical methods to deal with the autocorrelation in the error term without taking lags of difference terms. The ADF and PP tests are unit root tests for checking stationarity of the variables. The ADF test could be used with autocorrelation. The ADF test is used for more complex models, while the Dickey Fuller test is used for simple models and this test is also more powerful. In the ADF and PP tests, we can have no constants, or we can have constants, or we can have these constants and a tendency to agree with the different possibilities. The ADF hypothesis for the unit root test is as follows:

$$\begin{aligned} H_0 &= y = 1 && \text{(There is unit root)} \\ H_1 &= y < 1 && \text{(Series is stationary)} \end{aligned}$$

The ADF and PP tests used three basic regression models

$$\Delta Y_t = \gamma Y_{t-1} + \sum_{i=1}^p \phi_i \Delta Y_{t-i} + \mu_t \quad (1)$$

$$\Delta Y_t = \alpha_0 + \gamma Y_{t-1} + \sum_{i=1}^p \phi_i \Delta Y_{t-i} + \mu_t \quad (2)$$

$$\Delta Y_t = \alpha_0 + \gamma Y_{t-1} + \beta_0 T + \sum_{i=1}^p \phi_i \Delta Y_{t-i} + \mu_t \quad (3)$$

The above equations γ denotes the slope coefficient of the lag value of the taken variables and ϕ_i denotes the slope coefficients of the descriptive variables, α_0 indicates the intercept term, β_0 indicates the slope coefficient of the trend; μ_t indicates the error terms at time t , and summation i indicates the length of the lags starting from 1 up to p . Phillips and Peron (1988) developed a number of unit root tests that have become widely used in the analysis of financial time series. The PP test for unit roots differs from the ADF tests mostly in the way it handles autocorrelation and heteroscedasticity in the error terms. The PP tests ignore autocorrelation in the test regression. The test regression for the PP tests is as follows:

$$\Delta Y_t = \gamma Y_{t-1} + \mu_t \quad (4)$$

$$\Delta Y_t = \beta_0 + \gamma Y_{t-1} + \mu_t \quad (5)$$

$$\Delta Y_t = \beta_0 + \gamma Y_{t-1} + \beta_1 T + \mu_t \quad (6)$$

Where β_0 represents the constant terms, while γ denotes the slope coefficients, β_1 indicates that the coefficient of the trend variable, and e_t represents the error term at time t . The PP test has the advantage over the ADF test that it is robust to the general form of heteroskedasticity in the error term μ_t . The second advantage of PP is that researchers do not need to specify a lag length for the test regression.

To achieve the proposed objectives, this study used time series data for analysis and estimations of the results; E-views version 10 was used. In this study the ARDL model was used to determine the long-run cointegration between dependent and independent variables, across different levels of integration (Pesaran et al., 2001, Pesaran and Shin, 1999). The reparametrized result provides the short-run dynamics and long-run cointegration of the considered variables. The Pesaran et al. (1996) and Pesaran and Shin (1995) suggested Autoregressive Distributed Lag (ARDL) model for co-integration for a long run co-integration, ignoring whether the taken variables are stationary at level, stationary at 1st difference, or a combination of both. All variables are transformed into logarithmic form, we used log-log model which will reduce the sharpness of the time series data:

$$\begin{aligned} \Delta \log EC_t = & \gamma_o + \sum_{i=1}^p \gamma_{1i} \Delta \log EC_{t-i} + \sum_{j=0}^q \gamma_{2j} \Delta \log CPI_{t-j} + \sum_{k=0}^r \gamma_{3k} \Delta \log CD_{t-k} \\ & + \sum_{l=0}^s \gamma_{4l} \Delta \log POP_{t-l} + \sum_{m=0}^t \gamma_{5m} \Delta \log IGDP_{t-m} + \sum_{n=0}^u \gamma_{6n} \Delta \log DT_{t-n} \\ & + \pi_1 \log CPI_{t-1} + \pi_2 \log CD_{t-1} + \pi_3 \log POP_{t-1} + \pi_4 \log IGDP_{t-1} + \pi_5 \log DT_{t-1} \\ & + \delta_1 ECT_{t-1} + e_t \end{aligned} \quad (7)$$

Where Δ is for differentiation. If there is at least one non-zero coefficient, the alternative is accepted, and rejected the null hypothesis; and it is concluded that the relationship is long-term. We used the F-bound co-integration test. If the calculated Wald statistics which follows the F statistic and the value of the F statistics is less than the lower bound, we concluded that there is no co-integration. If Wald's F statistic is greater than the upper bound of Narayan (2004) or Pesaran et al. (2001) at 5%, we conclude that there is a long run relationship. Finally, if the value of the F statistic is between the lower and upper limits, the result is inconclusive.

The study also employed other diagnostic tests to check the predictability, reliability, and constancy of the parameters used in the F-bound test approach. The tests used in this study include the White test to identify the heteroscedasticity problem (White, 1980), the Jarque-Bera (JB) test for the normal distribution of the data (Jarque and Bera, 1987), and the Breusch-Pagan-Godfrey LM test to detect the serial correlation problem (Breusch, 1978; Godfrey, 1978). The research checks the stability of the short-run and long-run coefficients of the ARDL model; we used CUMSUM (Cumulative Sum) of the residuals (Brown et al., 1975).

Results and discussion

The study focused on the impact of corruption and circular debt on Pakistan electricity crisis. For this purpose, the study used time series data and selected time was from 1990 to 2018. The section begins with the descriptive statistics of the variables. Table 2 shows the descriptive statistics of variables used in the study. It also provides the basic characteristics of the variables. Table 2 shows basic data information

including data standard deviation, maximum, minimum, mean, and median of the data. The mean data value shows the mean of the data. The median shows the mid value of the data. The standard deviation shows the value spread from its mean value.

Table 2

Descriptive statistics of the data series

	EC	CPI	CD	POP	IGDP	DT
Mean	5.50	0.88	14.0	4.43	3.22	3.3
Median	5.8	0.9	17.1	4.44	3.2	3.13
Maximum	6.17	1.2	20.7	4.9	3.9	5.33
Minimum	2.9	0.7	6.5	4.05	2.6	2.8
Std. Dev.	1.0	0.14	6.0	0.23	0.4	0.7

Sources: Compiled by the authors based on their own calculations (-hereinafter, unless otherwise noted).

Figure 1 represents the trends of the data series. Trends show the impact of time on the data. Trends can be positive or negative. In the figure, most variables show an increasing trend. The values of each data series increase over time. Therefore, the energy crisis shows a fluctuating trend with values increasing in some phases and decreasing in others. Overall, we can conclude that most economic variables increase over time.

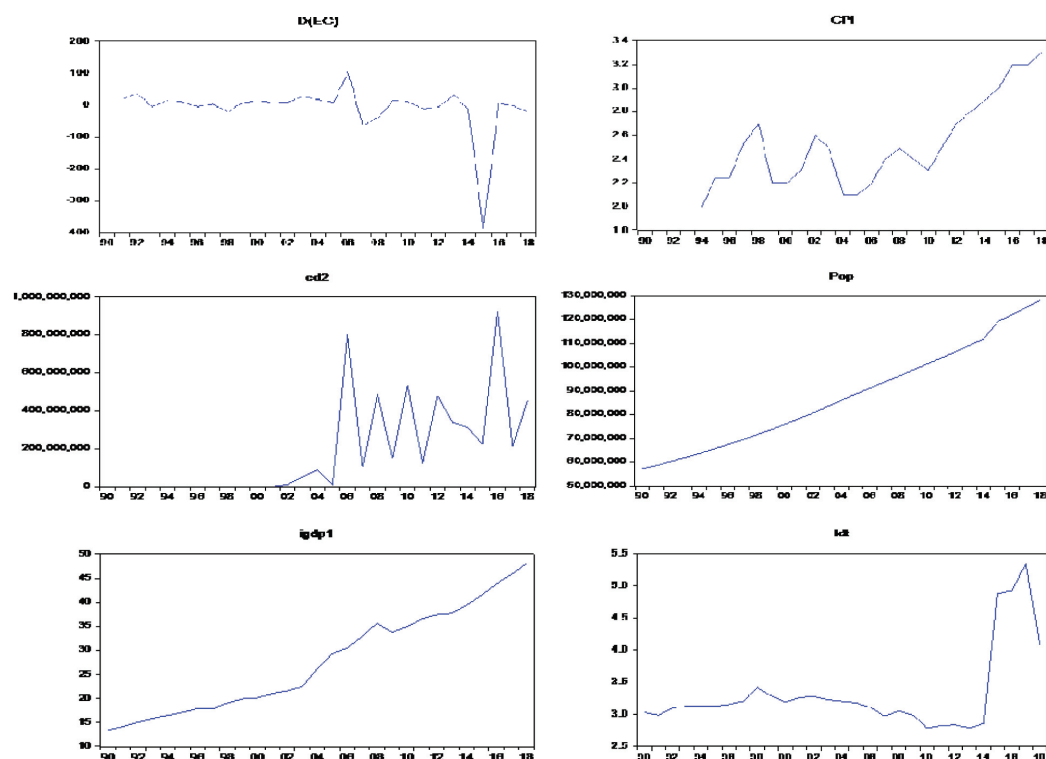


Figure 1: Trends of variables used in the model.

The unit root is the problem in time series data where the variance, mean, and covariance of the data are not constant. Before applying the co-integration technique, we make our data stationary. To eliminate the stationarity problem, we use two tests, which are the Augmented Dickey Fuller (ADF) (Dickey and Fuller, 1984) and Phillips and Peron (1988). For these tests, we can use three types of equations (i) taking without intercept and trend (ii) with intercept and without trend (iii) with intercept and trend. Table 3 displays the results of the unit root tests. According to the results, all variables in the ADF and PP tests are stationary at the first difference.

Table 3

Unit root tests results

Variables		ADF			PP		
		Without	Constant	Constant and Trend	Without constant and Trend	Constant	Constant and Trend
EC	Level	-0.832	-0.770	-1.20	-0.848	-0.857	-1.096
CPI		-1.115	-0.808	-2.654	-1.627	-0.333	-2.356
CD		-0.602	-1.176	-1.971	-0.805	-0.333	-2.083
POP		-0.924	-0.207	-3.803	-2.25	-0.506	-2.77
IGDP		-2.232	-0.506	-3.155	-1.954	-2.02	-1.97
DT		-0.085	-1.815	-3.155	-0.167	-1.096	-2.22
EC	1 st Difference	-5.489*	-5.514*	-5.945*	-5.490*	-5.525*	-6.137*
CPI		-4.483*	-4.414*	-4.95*	-4.431*	-4.718*	-5.175*
CD		-6.004*	-6.138*	-6.004*	-5.942*	-5.731*	-6.02*
POP		-21.17*	-3.160*	-5.349*	-13.60*	-4.206*	-5.36*
IGDP		-6.47*	-4.97*	-4.166*	-5.90*	-4.644*	-4.10*
DT		-4.670*	-5.25*	-4.166*	-4.716*	-6.15*	-4.45*

Note: * T-stat. shows significance.

The ARDL model requirements are selected on the basis of model selection criteria which include five indicators, namely, the Schwarz-Bayes information criterion (SBC / BIC), log-likelihood, Hannan-Quinn criterion (HQ), adjusted R-squared, and Akaike information criterion (AIC). The model selection criteria define the most appropriate model for the study. The most appropriate model is selected on the basis of length of the lags. In the case of the adjusted R-squared, the model with the highest value is preferred. In the case of other selection criteria, e.g., AIC, log likelihood, SBC / BIC, and HQ criteria, the model with the lowest value is preferred. In this study, the best model is selected on the basis of AIC (Khan and Ullah, 2019), that contains a value of -1.51. The best model is used in the research has the specification (1, 0, 0, 0, 0, 0). We chose the top 20 models in Table 4.

Table 4

Model selection criteria

Model	LogL	AIC*	BIC	HQ	Adj. R-sq	Specification
91	28.19	-1.51	-1.02	-1.38	0.94	ARDL(1, 0, 0, 0, 0, 0)
59	28.94	-1.49	-0.95	-1.35	0.95	ARDL(3, 0, 0, 1, 0, 1)
27	29.933	-1.49	-0.90	-1.34	0.94	ARDL(4, 0, 0, 1, 0, 1)
83	28.71	-1.47	-0.93	-1.33	0.95	ARDL(2, 0, 1, 1, 0, 1)
19	30.69	-1.47	-0.83	-1.31	0.95	ARDL(4, 0, 1, 1, 0, 1)
89	28.57	-1.46	-0.92	-1.32	0.94	ARDL(2, 0, 0, 1, 1, 1)
17	31.50	-1.46	-0.77	-1.27	0.95	ARDL(4, 0, 1, 1, 1, 1)
75	28.49	-1.46	-0.91	-1.32	0.94	ARDL(2, 1, 0, 1, 0, 1)
123	26.38	-1.44	-1.01	-1.33	0.94	ARDL(1, 0, 0, 1, 0, 1)
51	29.33	-1.44	-0.85	-1.30	0.95	ARDL(3, 0, 1, 1, 0, 1)
81	29.29	-1.44	-0.85	-1.28	0.95	ARDL(2, 0, 1, 1, 1, 1)
43	29.09	-1.42	-0.83	-1.27	0.94	ARDL(3, 1, 0, 1, 0, 1)
73	29.05	-1.42	-0.83	-1.26	0.94	ARDL(2, 1, 0, 1, 1, 1)
25	30.05	-1.42	-0.78	-1.25	0.95	ARDL(4, 0, 0, 1, 1, 1)
11	29.99	-1.41	-0.77	-1.25	0.95	ARDL(4, 1, 0, 1, 0, 1)
121	26.94	-1.41	-0.92	-1.28	0.95	ARDL(1, 0, 0, 1, 1, 1)
57	28.94	-1.41	-0.82	-1.25	0.95	ARDL(3, 0, 0, 1, 1, 1)
115	26.92	-1.40	-0.92	-1.28	0.95	ARDL(1, 0, 1, 1, 0, 1)
67	28.85	-1.40	-0.82	-1.25	0.95	ARDL(2, 1, 1, 1, 0, 1)

To achieve the proposed objectives, time series data were used for the analysis and estimation of the results; Version 10 of E-views was used. In this research the ARDL bounds testing method, and the ARDL F-bounds co-integration method were used to determine the long-term correlation between series with different orders of integration (Pesaran et al., 2001; Pesaran and Shin, 1999). The reparameterization result provides the short-term dynamics and the long-term correlation of the variables considered. Pesaran and Shin (1995) and Pesaran et al. (1996) offered the ARDL model for cointegration or the F-bound technique for a long-run cointegration, ignoring whether the variables are integrated at all levels, intergraded at 1st difference, or a combination of both. It has previously said that the integration process (making data stationary by the unit root method) does not allow a simple Ordinary Least Squares (OLS)) approach to give long-term relationship. Therefore, it is also compulsory to make the data stationary, because the data with unit root problems give results that we cannot

rely on and this regression is called spurious regression. The spurious regression results are unreliable and predictable, and an efficient and effective decision cannot be made (Granger and Newbold, 1974). This approach includes two parts, the first part is called the F-bound test, which generally specifies the co-integration in the model and the other part is known as the ARDL model, which allows individual short- and long-term results to be obtained. Table 5 presents the results of the ARDL bounds test. The value of the F statistic is $5.68 >$ then the upper critical limit (4.25) at 5% and $K = 5$. We accept the alternative hypothesis against null hypothesis and conclude that there is long-term cointegration between Electricity Crisis (EC) with corruption, circular debt, population, industrial gross domestic product and transmission and distribution losses.

Table 5

Results of Bound test for co-integration

Test statistics	Value	K
F-statistics	5.68*	5
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.75	3.79
5%	3.12	4.25
2.5%	3.49	4.67
1%	3.93	5.23

Note: * 5% shows significance.

Table 6 shows the results of the ARDL model, the variables with Δ sign show the short-term impacts, while the variables without Δ provide the long-term results. As the double log model was used the coefficients of the variables represent the short- and long-term elasticities, respectively. The selection of lags is based on the Akaike Information Criteria. AIC was used to determine the most appropriate length of lags in the model (Khan and Ullah, 2019). We compare the p-value to decide when the $p\text{-value} < 0.05$ (5%) or $P < 0.01$ (1%). We accept the alternative hypotheses and conclude that there is a short-term relationship. We also consider the t statistics $>$ critical value t , so we accept that there is a short-term relationship for individual coefficients. Here we use the F values to combine the result, because we selected the model based on the AIC, if the F-statistic $>$ F-tab statistics we accept the alternative hypothesis and conclude that there are short-term impacts.

The coefficient of Corruption Perception Index (CPI) is 1.36; the probability value of CPI is 0.001, which is significant at 5%. Therefore, a 1% increase in CPI causes a 1.3% increase in the electricity crisis in the short term, keeping other factors constant. The value of CPI coefficient $1.3\% > 1\%$ is elastic in the short term reveals that when a 1% corruption increases it will bring a 1.3% increase

in the electricity crisis. The CPI coefficient is highly influential in the long term. The long-term CPI coefficient is 0.973, which is significant at 1%. The long-term elasticity is also less than 1, which shows that CPI is also long-term inelastic. A 1% increase in CPI will bring a 0.973% increase in the electricity crisis in Pakistan. The circular debt (CD) coefficient is 0.02, containing 0.02 probability values, which is significant at 5%. CD is inelastic in the short term, i.e., $0.02 < 1$. The results showed that a 1% increase in CD will bring a 0.02% increase in the electricity crisis in the short term, keeping other factors constant. The CD result is different in the long run. The long-term coefficient is 0.014, which is significant as it contains the p-value 0.01. Long-term elasticity is inelastic, which is less than 1%, i.e., $0.014 < 1\%$. A 1% increase in circular debt in Pakistan leads to a 0.014% increase in electricity crisis in energy sector. The population (POP) coefficient is 0.995 with a probability value of 0.001, which is significant at 5%. Population is inelastic in the short term i.e., $0.995 < 1\%$ reveals that population growth is less affected by electricity consumption. Statistics have shown that a 1% increase in population leads to a 0.995% increase in the electricity crisis, keeping other factors constant. Pakistan's population growth has the greatest long-term impact.

The increase in population is directly and significantly related to electricity consumption as stated by Jones (1991), Shiu (2004), Shehbaz (2012), and Imran and Naseem (2015) in the case of Pakistan. The long-term coefficient is 27.23, containing a probability of 0.0004, which is significant at 5%. The population is inelastic in the long term, that is, $27.23 > 1\%$ showed that population growth has a great influence on the electricity crisis. A 1% increase in population leads to a 27.2% increase in Pakistan's electricity crisis (Heli et al., 2017). The industrial gross domestic product is one of the important factors causing the electricity crisis. The transport coefficient of the result -0.44 with a p value of 0.5, which is not significant at 5% and at 1%. The short-term elasticity of the IGDP is inelastic less than 1, that is, $-0.44 < 1$. The results revealed that a 1% increase in industrial growth leads to a 0.44% reduction in the electricity crisis, keeping other factors constant. The result of industrial growth is different in the long run. The IGDP coefficient is -0.32 with a significance of 5% having a probability value of 0.03. The long-term IGDP is inelastic at a 1%, i.e., $-0.32 > 1$. A 1% increase in industrial growth will ease the -0.32% electricity crisis while keeping other factors constant. The consistent study was employed by Imoro Brainmah (2012) in Ghana, Nwankwo (2013) in Nigeria, and Kiran (2016) in Pakistan (Juneju and Khoso, 2018). Distribution and transmission losses in the energy sector have less impact compared to the long term. The distribution and transmission losses coefficient (DT) () is 2.07 and significant because the p-value is 0.001. A 1% increase in DT leads to a 2.07% change in the electricity crisis. In the short term, distribution and line losses at each point cut off electricity (Bhatti et al., 2015). In the long run, DT causes a crisis. The coefficient is 1.5, which is significant as it contains the p-value of 0.001. DT is elastic in the long run. The small change in DT means Pakistan's line losses because of technical or non-technical causes of load shedding in the country. In the long run, a 1% increase in DT leads to a 1.5% increase in the electricity crisis, keeping other

factors constant (Bhatti et al., 2015). The error correction term (ECT) discovers the dynamic stability of a model in the study. Dynamic stability means that the short-term imbalance in a model automatically leads to long-term equilibrium. The ECT also shows by period (e.g., by year, by month, etc. that depends on the period of the data collected) the model's fit effect and specifies the time period in which the model will enter an equilibrium position. For dynamic stability, the ECT coefficient must be negative and significant. In our results, the value of the ECT coefficient is -1.40, which satisfies the condition of a negative values of the coefficient. The probability value of 0.001 of the ECT coefficient is highly significant at 1%, showing that our model is dynamically stable. The value of the ECT coefficient shows that there is a 140% adjustment effect in the model indicating that the short-term equilibrium is adjusted by 0.71% in one year.

Table 6

Results of ARDL model

Variables	Short run Elasticities		
	Coefficient	t-statistics	p-value
Δ LCPI	1.365*	2.33	0.001
Δ LCD	0.02	1.16	0.20
Δ LPOP	0.995*	3.866	0.0012
Δ LIGDP	- 0.44	- 0.7	0.540
Δ LDT	2.07*	11.3	0.001
ECT _{t-1}	-1.4*	- 14.9	0.001
Long run Elasticities			
LCPI	0.973*	2.431	0.026
LCD	0.014*	1.190	0.0128
LPOP	27.231*	4.380	0.0004
LIGDP	-0.320*	-0.625	0.0365
LDT	1.5*	17.34	0.001
Constant	-99.440*	-3.991	0.0009
Log likelihood		28.195	
AIC		-1.5163	
BIC		-1.025	
HQ		-1.38608	
Adj. R ²		0.94	
ARDL (1,0,0,0,0,0)			

Note: * shows significance.

In this study, different diagnostic tests were used to check the stability, reliability, and predictability of the series. Table 7 shows the results of the diagnostic tests. The White test (White, 1980) was employed to check the heteroscedasticity problem. The heteroscedasticity problem indicates that the variance of the error terms is not constant. It follows the chi-square (χ^2) distribution. The rule for making decision is, if the probability value of the χ^2 statistic is less than 0.05, we accept the alternative hypothesis H_1 , which states that there is a heteroskedasticity problem in the model. If the probability value of the χ^2 statistic is greater than 0.05, we accept the null hypothesis H_0 showing that there is homoscedasticity (no heteroscedasticity problem) in the data. In the results of this study, the probability value of the χ^2 statistic is 0.98, which is greater than 0.05. This means that we accept the null hypothesis H_0 , which states that homoscedasticity exists, i.e., there is no heteroscedasticity problem in the model. The Breusch-Pagan-Godfrey LM test (Breusch, 1978; Godfrey, 1978) is employed to check the serial correlation problem. The serial correlation also shows the existence of a relationship between the residuals. In this case, the correlation must exist between the error terms of two consecutive periods. The chi-square distribution (χ^2) follows. Table 7 shows the results of the Breusch-Pagan-Godfrey LM test. The decision rule is that, if the probability value of χ^2 -statistic is less than 0.05, we accept the alternative hypothesis H_1 , which shows the existence of the problem of serial correlation whereas, if the probability value of χ^2 -statistic is greater than 0.05, we accept the null hypothesis H_0 , which indicates that there is no serial correlation problem in the data. The result of our study indicates that, the probability value of χ^2 -statistic is 0.45 which is greater than critical value at 5% (i.e., $0.45 > 0.05$). It expresses that we will accept the null hypothesis H_0 , which designates that the model does not have the problem of serial correlation. The study also used the Jarque-Bera test (Jarque and Bera, 1987) for testing normal distribution of the data. The normal distribution exposes that the data are equally distributed on both sides of their mean value. The Jarque-Bera test follows the F-distribution. The decision rule is that, if the probability value of the F-statistic is less than critical value at 5% (< 0.05), then we accept the alternative hypothesis H_1 showing that the data are not normally distributed and if the probability value of the F-statistic is greater than critical value at 5% (> 0.05), then we accept the null hypothesis H_0 showing that the data are normally distributed. The outcomes of this study, the probability value of F-statistic is which is greater than critical value at 5% (i.e., $0.46 > 0.05$). This shows that we will accept the null hypothesis H_0 , which states that our data are normally distributed.

Table 7

Results of Diagnostic Test

Test Type	Statistics	Value	DF	Probability
White Test	χ^2 -statistic	0.57	23,1	0.98
Breusch-Pagan-Godfrey LM test	χ^2 -tatistic	0.82	23,1	0.45
Jarque-Bera test	F-statistic	1.54	–	0.46

Figure 2 explains the results of the CUSUM test, which is used to test the stability of the model (Brown et al., 1975). If the results of both used techniques are significant at 5%, we accept the alternative hypothesis H_1 , which states that the parameters are stable if the results of both tests are insignificant at 5%, this specifies that the acceptance of the null hypothesis H_0 showing that the parameters are unstable. Figure 2 shows that the results of the CUSUM test are significant at 5%. Therefore, we reject the null hypothesis and accept the alternative hypothesis H_1 , which proves that the parameters are stable.

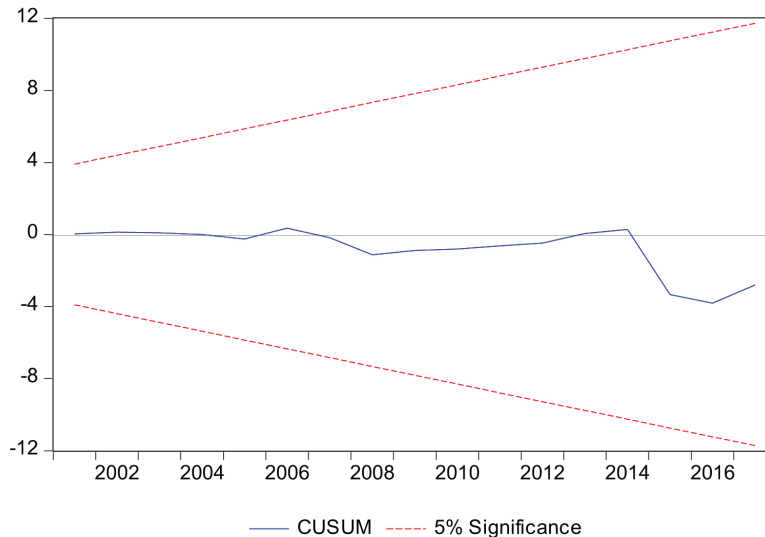


Figure 2: Result of CUSUM test

Conclusions and recommendations

The aim of this research was to examine the impact of corruption on the electricity crisis in Pakistan. This study used annual time series data from 1990 to 2018. The study used electricity crisis as the dependent variable, the electricity crisis is measured by the difference of electric power consumption and electric power production in KWh, the five independent variables namely corruption, circular debt, population and distribution and transmission losses. At first, the ADF test and PP test were used to examine the problem of unit root and made series stationary. Both tests were applied to three types of equations such as (i) without intercept and trend, (ii) with intercept and without trend (iii) with intercept and trend. Based on the ADF test, decided that all variables are stationary at 1st difference i.e., $I(1)$ or at level. The results of the ADF without intercept and trend were stationary at the first difference having different lags, as well as the results of the ADF with intercept were also stationary at the first difference while the variable POP (Population) was stationary at level having intercept and trend factor. To eliminate the problem of unit root, the study checks short run and long run impact of variables using the ARDL F- bound test. The outcome of ARDL reveals that corruption and circular debt have positive and significant

impact on electricity crisis. corruption has high influence on the electricity sector in Pakistan. The amount of circular debt in the power sector rises per year due to non-payment to IPPs the electricity shortage arises in each sector in Pakistan. The corruption in the power sector and bribery causes less amount of electricity crisis in the short run. In addition, the circular debt also affects the electricity crisis. Corruption in the power sectors highly influenced all areas of the power sector. Many reasons cause the electricity crisis. This study used population growth as the cause of the crisis, when the result had a positive and significant impact on the power sector in both the short and long term. With industrial growth more machinery was used for operation, so the electricity demand increased. Industrial growth has a negative and significant impacts on the electricity crisis which means that when the industry expanded the supply of electricity decreases, leading to a reduction in the production. The industrial gross domestic product carries negative and significant impacts electricity crisis, both in the long and short term. Distribution and transmission losses in Pakistan were also one of the important determinants that caused the electricity crisis. In the short run, the distribution and transmission losses of power lines have a strong impact on the supply of electricity to the population. While in the long run the distribution and transmission losses have less impact as compared to short run. The distribution and transmission losses are of technical and non-technical nature, the result of this study showed that both types of losses cause electricity crisis. The result of the ARDL F-bound test also shows that all the variables used in the model are co-integrated. The proper lags length in the ARDL model was determined based on AIC. After testing co-integration in the model, to investigate the reliability, stability and predictability of parameters, some of the diagnostic tests were used. The findings of the White test showed that the selected ARDL model is free from the problem of heteroscedasticity. The Breusch–Pagan–Godfrey LM test confirmed that the model is free from problem of autocorrelation/serial correlation. The results of the Jarque–Bera test confirmed that the data employed in this study are normally distributed. The study also used CUSUM test to check the stability of model's parameters. The CUSUM test confirmed that parameters are stable.

The results of the study proved that corruption is one of the reasons for load shedding and electricity outage in Pakistan. This study concluded that circular debt is one of the main drivers of Pakistan's electricity crisis, which could be traced back to the area where payment disruption arises and to reduce the debt burden of the electricity sector. Some recommendations based on the findings of this study can be suggested:

1. Strict government policies against corruption can be a vital in the energy sector. Bribery is also a part of corruption. It also needs considerable steps to eradicate corruption.
2. Circular debt is an extra burden on the economy. Each institution in the electricity sector should make sure to clear its dues.
3. The introduction of electrically efficient equipment will reduce the energy crisis. Rapid population growth will not be a major cause of the energy crisis. It will also allow the commercial sector to use energy more efficiently.

4. The efficient use of electricity through the introduction of advanced devices will encourage the industrial sector to contribute more to Pakistan's GDP.
5. New electricity production projects are needed to overcome the energy crisis. CPEC project will be one of the government's major initiatives to overcome the problem of Pakistan's electricity crisis. It is important to note that green projects will be more beneficial for both people and economy.

REFERENCES

1. Abbas, M.N. (2015) *Energy crisis in Pakistan*. Naval Postgraduate School Monterey United States.
2. Ali, S.S. and Badar, S. (2010) 'Dynamics of circular debt in Pakistan and its resolution', *Lahore Journal of Economics*, 15.
3. Awan, H.S., Samad, G. and Faraz, N. (2019) *Electricity subsidies and welfare analysis: The perspective of Pakistan*. Pakistan Institute of Development Economics.
4. Bhatti, S.S., Lodhi, M.U.U., Haq, S., Gardezi, E.S.N.M., Javaid, E.M.A., Raza, M.Z. and Lodhi, M.I.U. (2015) 'Electric power transmission and distribution losses overview and minimization in Pakistan', *International Journal of Scientific and Engineering Research*, 6(4), pp. 1108–1112.
5. Brown, R.L., Durbin, J. and Evans, J.M. (1975) 'Techniques for testing the constancy of regression relationships over time', *Journal of the Royal Statistical Society: Series B (Methodological)*, 37(2), pp. 149–163.
6. Dickey, D. and Fuller, W. (1981). Likelihood ratio statistics for autoregressive time series with a unit root. *Journal of Econometric analysis*, 49(4), pp. 1057–1072.
7. Faheem, J.B. and Mir, A.T. (2016) 'Energy crisis in Pakistan', *IRA-International Journal of Technology and Engineering*, 3(1), pp. 2015–16.
8. Godfrey, L. (1978) 'Testing for higher order serial correlation in regression equations when the regressors include lagged dependent variables', *Econometrica*, 46(6), pp. 1303–10.
9. Granger, C.W.J. and Newbold, P. (1974) 'Spurious regressions in econometrics', *Journal of Economics*, 1(2), pp.111–120.
10. Hali, S.M., Yong, S.I.D.W. and Kamran, S.M. (2017) 'Impact of energy sources and the electricity crisis on the economic growth: Policy implications for Pakistan', *Journal of Energy Tech. and Policy*, 7(2).
11. Halpern, J., Kenny, C. and Dickson, E. (2008) *Deterring corruption and improving governance in the electricity sector: a sourcebook*. No. 46708, The World Bank, pp. 1–245.
12. Sumera Iqbal, Jianxun Chu and Shafei Moiz Hali (2019) 'Projecting impact of CPEC on Pakistan's electric power crisis', *Chinese Journal of Population Resources and Environment*, DOI: 10.1080/10042857.2019.1681879

13. Imoro Braimah, O.A. (2012) 'Causes and effects of frequent and unannounced electricity blackouts on the operations of micro and small-scale industries in Kumasi', *Journal of Sustainable Development*, 5(2), pp. 17–36. DOI:10.5539/jsd.v5n2p17.
14. Imran Nasee and Jawad Khan (2015) 'Impact of energy crisis on economic growth of Pakistan', *International Journal of African and Asian Studies*, 7, pp. 33–42. Available at: <https://core.ac.uk/download/pdf/234689844.pdf> (accessed 02 February 2023).
15. Iqbal, S., Chu, J. and Hali, S.M. (2019) 'Projecting impact of CPEC on Pakistan's electric power crisis', *Chinese Journal of Population Resources and Environment*, 17(4), pp. 310–321.
16. Jamil, F. and Ahmed, E. (2013) *An economic investigation of corruption and electricity theft*. No. 2013. Pakistan Institute of Development Economics.
17. Jarque, C.M. and Bera, A.K. (1987) 'Regression Residuals', *International Statistical Review/Revue Internationale de Statistique*, 55(2), pp. 163–172.
18. Jones, D. (1991) 'How urbanization affects energy-use in developing countries', *Energy Policy*, 19(7), pp. 621–630.
19. Junejo, I. and Khoso, J.R. (2018) 'Impact of electricity crisis on industrial growth in Pakistan: A multiple regression analysis approach', *International Journal of Academic Research in Business and Social Sciences*, 8(9).
20. Khan, D. and Ullah, A. (2019) 'Testing the relationship between globalization and carbon dioxide emissions in Pakistan: Does environmental Kuznets curve exist?', *Environmental Science and Pollution Research*, 26(15), pp. 15194–15208.
21. Kiran, A. and Kiran, F. (2016) 'Impact of electricity crisis on Pakistan textile Industry', *International Journal of Economic and Business Review*, 4(1), pp. 15–23. Available at: <https://eprajournals.com/IJES/article/8793/abstract> (accessed 02 February 2023).
22. MRS NWANKWO, O.C. (2013) 'The effect of electricity supply on industrial production within the Nigerian economy (1970–2010)', *Journal of Energy Technologies and Policy*, 3(4), pp. 34–42.
23. Shahbaz, M. and Feridun, M. (2012) 'Electricity consumption and economic growth empirical evidence from Pakistan', *Quality and Quantity*, 46 (5), p. 1583–1599.
24. Nawaz, S., Iqbal, N. and Anwar, S. (2013) 'Electricity demand in Pakistan: A nonlinear estimation', *The Pakistan Development Review*, 52(4), pp. 479–491.
25. Pesaran, M.H., Shin, Y. and Smith, R.J. (2001) 'Bounds testing approaches to the analysis of level relationships', *Journal of applied econometrics*, 16(3), 289–326.
26. Phillips, P.C.B. and Perron, P. (1988) 'Testing for a unit root in time series regression', *Biometrika*, 75(2), pp. 335–346.
27. Rehman, A. and Deyuan, Z. (2018) 'Investigating the linkage between economic growth, electricity access, energy use, and population growth in Pakistan', *Applied sciences*, 8(12), 2442.
28. Qasim, M. and Kotani, K. (2014) 'An empirical analysis of energy shortage in Pakistan', *Asia-Pacific Development Journal*, 21(1), pp. 137–166.
29. Qazi, U., Iqbal, S., Zaheer, H. and Ur, R.T. (2020) 'Prepaid metering: A way forward for sustainable power sector in Pakistan', *Energy Strategy Reviews*, 31, 100546.

30. Sekrafi, H. and Sghaier, A. (2018) 'Examining the relationship between corruption, economic growth, environmental degradation, and energy consumption: A panel analysis in MENA region', *Journal of the Knowledge Economy*, 9(3), pp. 963–979.
31. Sekrafi, H. and Sghaier, A. (2018) 'The effect of corruption on carbon dioxide emissions and energy consumption in Tunisia', *PSU Research Review*, 2(1), pp. 81–95.
32. Shiu, A. (2004) 'Energy consumption and economic growth in China', *Energy Policy*, 32(1), pp. 47–54.
33. White, H. (1980) 'A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity', *Econometrica*, 48(4), pp. 817–838.
34. World Bank, (2009) *Reducing technical and non-technical losses in the power sector. Energy sector strategy background paper*. Washington, DC: World Bank.
35. World Bank, (2017) *World Development Indicators*. Available at: <https://databank.worldbank.org/> (accessed 02 February 2023).

OFFICIAL DOCUMENTS

1. HDIP. Energy Yearbook. Government Annual Report, Karachi: Hydrocarbon Development Institute of Pakistan, 1997–98.
2. HDIP. Energy Yearbook. Government Annual Report, Karachi: Hydrocarbon Development Institute of Pakistan, 1999–200.
3. HDIP. Energy Yearbook. Government Annual Report, Karachi: Hydrocarbon Development Institute of Pakistan, 2003–04.

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EVALUATION OF PUBLIC SECTOR INNOVATION: SYSTEMATIC REVIEW

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Abstract. This study aimed to understand what the literature has been approaching regarding public sector innovation and which measurement practices have been used, in addition to seeking research opportunities. The process was guided by the ProKnow-C instrument, a process of selection and critical analysis of the literature which allowed the selection of 33 articles. In general, it was found that: (i) the meaning of what innovation is has changed over the years; (ii) although there are attempts to evaluate these innovations, they are still incipient, especially in defining what is being considered as an innovation, which qualitative scale best represents what innovation is, how to transform this qualitative (ordinal) scale into a mathematical scale (cardinal); (iii) the evaluation has been promoted by the adoption of methods from the private sector, which are considered inappropriate for the public sector, since they make use of successes interpreted in organizations with divergent contexts. The results of the study make it possible to form, on the basis of institutional situational perception and needs, an instrument that meets the properties of measurement and determine the direction of managerial activity.

Keywords: public sector; innovation; evaluation.

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1. Introduction

Innovation can be defined as an idea or practice perceived as new by an individual or an adoption unit (Choi and Chang, 2009). In this context, studies show that innovation is an important driver of potential competitiveness for countries and organizations for which the creation of competitive differentials becomes fundamental for economic development (Agolla and Van Lill, 2017; Moonen, 2017).

The design of the concept of innovation is not only given through invention, but also through differentiated combinations and the exploration of certain practices and attitudes. The globalized scenario is fertile for the implementation of novelties that generate both benefits and decision support in this increasingly complex environment (Arbix, 2010). An organization's ability to innovate is the result of a combination of external and internal factors that need to be managed to achieve the desired goals. The measurement of innovation and its management are critical issues for practitioners and researchers in this field and are fundamental to creating competitive differentials (Adams et al., 2006).

Due to globalization and increasing competition, different organizations, both private and public, strive to stimulate innovation to remain relevant in the market (Agolla and Van Lill, 2017; Moore and Hartley, 2010) by finding answers to various common demands. They also follow market trends and adhering to new technologies, which usually come from industry but are also applied in the organizational context, such as the Internet of Things (IoT) and Artificial Intelligence (AI) (de Sousa et al., 2018; Velsberg et al., 2020).

For the public sector, innovation has been increasingly cited as a driver of solutions in times of austerity and rationalization – common situations in recent years – in which, in addition to the competitive potential, innovation brings improvements in the performance of provided services while adding value and reducing costs (Agolla and Van Lill, 2017; Bello et al., 2018; Kinder, 2012).

Innovation in the public sector is seen as a creative response to the recession and also as a way to promote efficiency and effectiveness in the provision of public services and the promotion of accountability (Moore and Hartley, 2010; Schillemans et al., 2013). Consequently, there is a direct demand from managers for innovation, mainly regarding positive risk management, so that risk acts as a helper to successful innovation rather than a barrier (Brown and Osborne, 2013). In addition, innovation is directly related to issues of human resources, organizational culture and leadership (Bernier and Hafsi, 2007; Carter et al., 2011; Grote, 2000; Kim and Yoon, 2015; Leontjeva and Trufanova, 2018; Luke et al., 2010).

According to Kattel et al. (2018), the growth of incentives and innovative practices in the public sector has also been accompanied by attempts to measure them in order to determine the results generated by the new actions (Vigoda-Gadot et al., 2008). Although it is possible to find studies that show the relationship between innovation and organizational performance (Fernandez and Wise, 2010; Salge and Vera, 2012; Shoham et al., 2012; Walker et al., 2010), there are few that attempt to comprehensively assess innovation in the public sector (Kattel et al., 2018). Due to the difficulty of measuring innovation and research gaps, the literature still shows flaws in its evaluation, using inappropriate indicators or even using the literature of the private sector as a basis for model replication for the public sector (Perrin, 2002; Potnis, 2010; Salge and Vera, 2009; Walker et al., 2002).

As innovation grows, the importance of innovation in the public sector also grows as do attempts to measure these innovations and their possible effects. These innovations are directly linked to the organization's performance, and their measurement still faces difficulties of a conceptual and technical nature. The measurement of innovation is considered to be in its infancy, but it can be inspired by the area of performance measurement (Kattel et al., 2018).

Therefore, this research aims to understand the approach in the literature to public sector innovation and the measurement practices that have been used, in addition to seeking research opportunities. To this end, the theme Evaluation of Innovation in the Public Sector is presented: (i) in a systematic way through the representation of its temporal evolution and literature mapping; (ii) by critical analysis of the metrics found in the selected scientific articles; and (iii) by the systemic analysis according to the adopted theoretical affiliation.

Therefore, it is necessary to select a representative fragment of the literature related to the theme, composing a Bibliographic Portfolio (BP), and, on this set of selected studies, make the proposed analyses. To enable the development of the work, researchers must use an intervention instrument supported by the Constructivist paradigm. Thus, the Knowledge Development Process-Constructivist (ProKnow-C) instrument was selected. This instrument is already in use in qualitative studies like this as it is a structured and systematized process of selection, reflection, and critical analysis of the literature which allows the research to be guided toward achieving the defined objectives (Dutra et al., 2015; Ensslin et al., 2015; Staedele et al., 2019; Thiel et al., 2017; Valmorbida and Ensslin, 2017; Welter and Ensslin, 2022). With the development of the constituent stages of ProKnow-C, it will be possible to show the frontier of knowledge related to the theme and identify opportunities for future research.

2. Research

2.1 Process for selecting articles related to the Evaluation of Innovation in the Public Sector

The ProKnow-C was used to select articles related to the theme, which, according to Tasca et al. (2010) and Thiel et al. (2017), aims at generating researchers' knowledge on the subject under investigation due to its Constructivist bias.

This knowledge enables greater understanding of the topic which leads to a critical analysis of the literature and identification of possible research gaps.

ProKnow-C enables the researcher to carry out a structured and systematic review of the literature and select relevant scientific articles that represent the fragment of scientific publications on the desired theme (Matos et al., 2019; Staedele et al., 2019; Valmorbida and Ensslin, 2017). The instrument is operationalized through the following stages: (i) Selection of a Bibliographic Portfolio (BP) on the theme; (ii) Bibliometric Analysis of the selected BP; (iii) Literature Map development; (iv) Systemic Analysis of the BP articles; and (v) Research question and proven opportunities based on the knowledge built during the process (Welter and Ensslin, 2022). Figure 1 shows the stages of the ProKnow-C process.

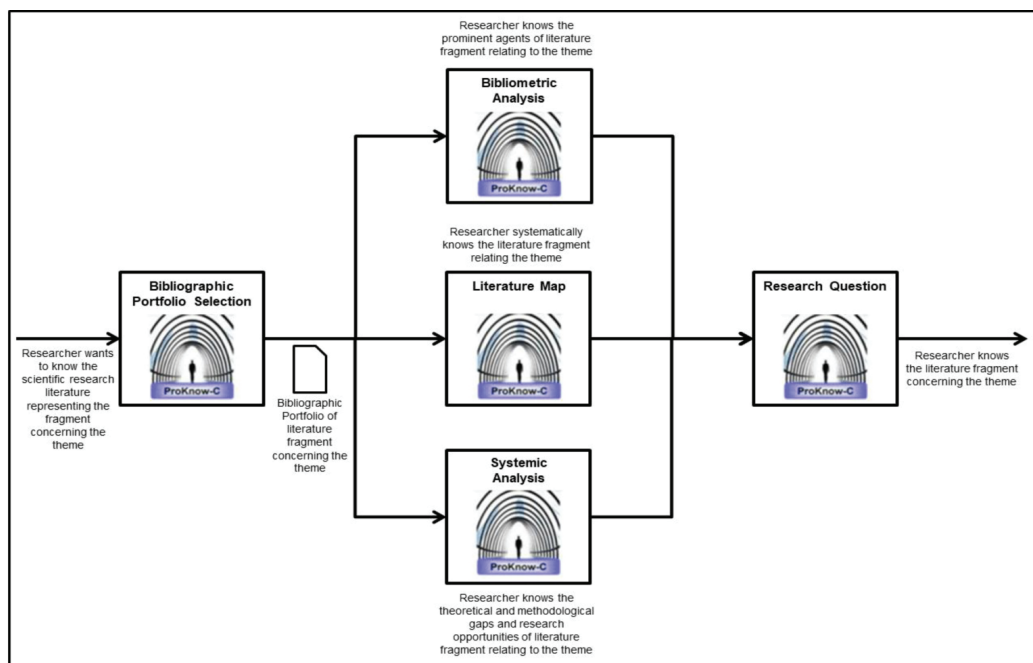


Figure 1: ProKnow-C process stages

Source: Adapted from Welter and Ensslin (2022).

Generally, the first step, which is the selection of BP – starts with the identification of a set of articles that satisfy the boundaries established by the researchers. The articles then go through filtering procedures for duplicity and alignment with the subject. Finally, a cross-reference analysis is conducted, resulting in a Bibliographic Portfolio of relevant scientific articles representative of the studied literature fragment (Ensslin et al., 2015).

To start the process, researchers need to establish some delimitations and definitions for inputs to this process. These inputs concern the research axes. In this analysis, three axes were considered necessary: Performance Evaluation, Innovation and Public Sector. These terms and other keywords representing them in the academic literature formed the “search command”. The delimitations refer to the

databases in which the search and the time slice were made. In this study, we decided not to make a time cut-off because the objective of this study was to find a representative fragment of the literature on the evaluation of innovations in the public sector. The searches in the Scopus and Web of Science databases were carried out on April 12, 2019 and refreshed on August 10, 2022. The selection of these databases was justified because they are broad and cover most areas of knowledge and they allow searching the title, abstract, and keywords simultaneously with Boolean commands.

The initial search of the databases resulted in a raw article database with 9,054 references. Filtering was then carried out, excluding repeated articles and publications in books and conferences. This left 6,195 articles which titles were read. It was found that studies on innovation in the public sector were mainly conducted from three perspectives: (i) evaluation of innovation in companies or institutions financed by the government; (ii) evaluation of innovation facilitators/drivers in the public sector; and (iii) evaluation of innovative practices and processes in the public sector. The selection of studies in this article followed the third perspective (876 articles), which is another delimitation established by the researchers. It is also important to highlight that for this research stage, a critical perspective on the part of the researchers was necessary regarding the identification of innovation, that is, to analyse the practices as innovations within the proposed context of public sector.

The scientific recognition of the 876 articles was searched on Google Scholar by checking the number of citations of each article. The articles were ranked in decreasing order by number of citations and it was found that 168 articles accounted for 80% of the total citations. These 168 articles with 49 or more citations thus formed the repository of non-repeated articles with a matching title and scholarly credit. The remaining 708 articles are non-repeated articles with a matching title, but their scientific recognition has not yet been confirmed. After this stage, the abstracts of 168 articles were read, of which 54 matched the research topic. Of the 54 works, three were not found in full in the databases. 51 were found and read in full to check compliance with the established delimitation, leaving 25 articles from which the Bibliographic Portfolio (BP) was compiled.

After that, in the second half of 2022, the BP was updated including 8 recent articles from 2019 to 2022. The complete process of selection, considering the updated actions in 2022, is summarized in Figure 2.

Through ProKnow-C and the Constructivist perspective used to conduct the work, it was possible to select 33 articles to compose the final BP of articles. This is the data for analysis in this study. It should also be noted that the articles from the selected BP are the basis for the theoretical foundation of the research, providing specific knowledge and concepts related to the theme. In the References section, these articles are listed in alphabetical order, numbered from 1 to 33 in square brackets “[]”. Among these, the 28 articles included in the BP that were the subject of the systemic analysis are marked with the letter “A” after the numbering, and 5 articles that were not part of the systemic analysis are marked with the letter “B”.

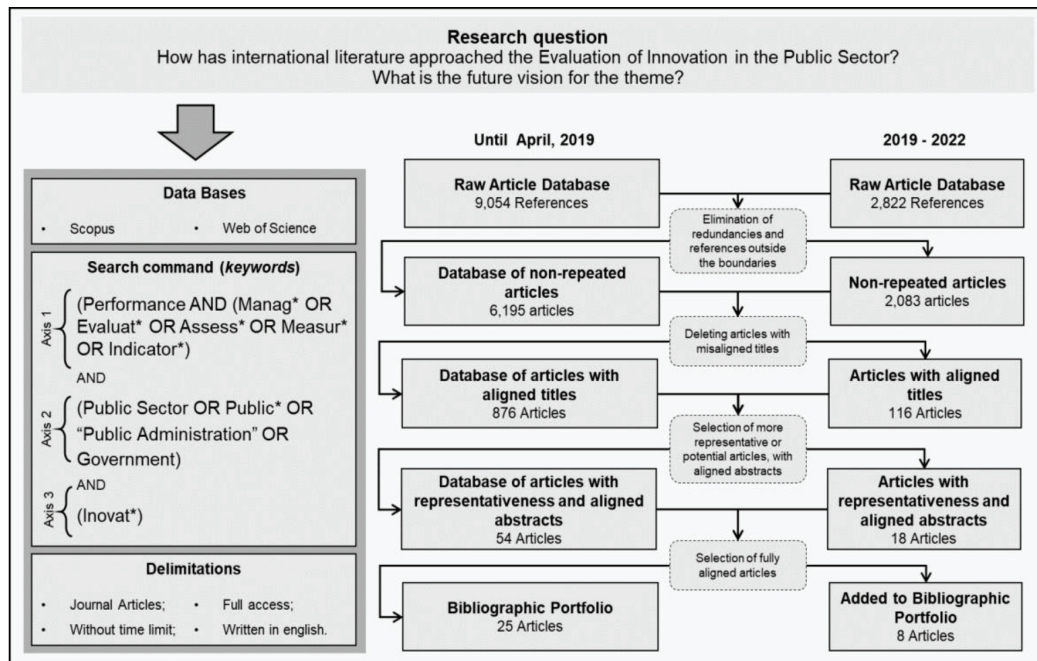


Figure 2: BP selection process on evaluation of innovation in the public sector.

Source: Designed by the authors.

2.2 Data analysis and treatment procedure

Based on the selected BP, the Bibliometric and Systemic analysis stages were performed, in addition to the description of the temporal evolution of the theme and the development of a Literature Map. The purpose of this data treatment is to present the most relevant aspects for the scientific community interested in the topic.

Initially, the papers were categorized in electronic spreadsheets (Excel) to identify the possible basic and advanced variables (Thiel et al., 2017) to be addressed and discussed in the study in the Bibliometric Analysis stage. As basic variables for this research, we chose to investigate the countries where the studies were carried out, as well as the authors and networks of authors in the identified BP. The critical reading of the articles made it possible to identify key aspects that showed an evolution in the studies over the years. These aspects allowed the representation of the evolution of the studies over time, which is one of the advanced variables of this research.

To build the Literature Map, the innovations presented in the articles of the BP were grouped into three dimensions: (i) Management; (ii) Processes; and (iii) People. Thus, the type of innovation identified was used as a foundation for building the Literature Map in these three dimensions.

After performing the Bibliometric Analysis and building the Literature Map, the fourth phase of ProKnow-C, Systemic Analysis, was undertaken. Systemic Analysis was defined as the scientific process used, with a theoretical affiliation adopted by the researchers, to analyse a Bibliographic Portfolio of representative

articles on a particular research topic, seeking to evidence, according to the established worldview, the highlights and opportunities (shortages) of the identified knowledge (Ensslin et al., 2015).

For this work, the adopted theoretical affiliation, or established worldview, is closely linked to the Constructivist paradigm related to the theme of Performance Evaluation (PE) and based on studies such as those of Ensslin et al. (2010) and Ensslin et al. (2015). In these studies, PE is understood as a process that builds knowledge in the manager/decision-maker about the specific context it proposes to evaluate based on the manager's/decision-maker's own perception, through activities that ordinally and cardinally identify, organize, and measure to integrate and visualise the impact of actions and their management. Based on the adopted theoretical affiliation, six lenses are derived and will guide the Systemic Analysis of each of the BP articles, guiding the subsequent formulation of research opportunities (Ensslin et al., 2015; Ensslin et al., 2022). The six lenses and their concepts are presented in Table 1.

Table 1

Theoretical affiliation lenses of performance evaluation

Nº	LENS	WHAT IS SOUGHT
1	Approach	Harmonizes the model built (approach and data) with its application?
2	Singularity	Recognizes the problem is unique? (Authors, context)
3	Identification process	Uses the process to identify the objectives according to the perception of the decider?
4	Measurement	The scales (descriptive nominal) used meet the Theory of Mensuration and its properties (measurability, operationality, homogeneity, ineligibility, and allows distinction of best and worst performances?)
5	Integration	As for the determination of the constants of integration, how are the questions presented to the decider?
6	Management	The knowledge generated allows the recognition of the current profile, its monitoring, and improvement?

Source: Ensslin et al. (2015, p.1000).

For each of the analysed lenses, it is possible to determine highlights regarding adherence to the adopted worldview and gaps not filled by the studies identified in the BP.

For the analysis of the measurement lens, we chose to perform an integrated analysis of two advanced variables (which are part of the bibliometric analysis). According to theoretical contributions from the Performance Evaluation area, the BP articles were examined according to the characteristics of their measurement instruments. In relation to the article by Melnyk et al. (2014), this study appropriated the concept of metric and its constituent elements and evaluated the existing metrics in BP studies. In relation to Van Camp and Braet's (2016) article, flaws in the metric level that the authors mention as the most recurrent were investigated.

Table 2 presents the concepts adopted based on the two studies to carry out the advanced bibliometric analysis of the “metric” variable.

Table 2

Advanced bibliometric analysis “Metrics” (measurement lens)

VARIABLES	THEORETICAL AFFILIATION	HOW WAS THE ANALYSIS PERFORMED?
Metrics	Melnyk et al. (2014)	Presents performance measures (yes; no)
		Presents ordinal scale (yes; no; does not apply)
		Presents cardinal scale (yes; no; does not apply)
		Presents pattern of reference (yes; no; does not apply)
		Presents numeric score and/or final evaluation (yes; no; does not apply)
Failures at the metric level	Van Camp and Braet (2016)	Lacks clear, unique, and transparent definition (yes; no)
		Import of the metrics from a company (or norm) to another (yes; some; no)
		Selected due to accessibility/availability of data collection (yes; some; no)
		Unbalanced quantity between dimensions (yes; no; does not apply)
		Dominant focus on financial metrics (yes; no; does not apply)
		Unbalanced relationship between qualitative and quantitative metrics (yes; no; does not apply)
		Difficulty to measure intangibles (yes; no; does not apply)
		Incomplete set of the metrics (yes; no)
		Risk of the metrics becoming targets (yes; no)
		Lack of robust metrics (possibility of manipulation) (yes; no)
		Lack of objective metrics (in which authors consider the primary sources as subjective data and secondary sources as objective.) (yes; no)
		Uncertainty in the beginning of a project (yes; no; does not apply)
		Use of deterministic metrics (yes; no; does not apply)

Source: Prepared by the authors.

It should be noted that the process of analysing the articles followed the member review protocol defined by Creswell (2014), where two of the authors are responsible for identifying the aspects raised and other authors are responsible for evaluating and validating the findings.

3. Discussion

3.1 Bibliometric analysis: Basic variables

Initially, as a BP basic variable, it was found that most studies had been done in Europe, especially in the United Kingdom. Among the 33 works that made up the BP, 15 had been done, partially or completely, in the United Kingdom.

In some of them, data was collected for researching questionnaires, while others ended up accessing some database of the sector itself [20A]. This shows that European countries, especially the UK, are increasingly concerned with innovation in the public sector and the evaluation of this process. There is a focus on new practices, especially those that bring potential savings of resources. Figure 3 illustrates in which countries the surveys were conducted and indicates, by size, where the highest concentrations were found.

None of the BP studies had been done specifically in Latin American countries, but one of the studies had been done in one of the UN member states, regarding process innovations, which the localization is not specified [18A]. No other article in the BP mentioned Brazil or other Latin American countries. This suggests that there may be a delay in studies and scientific publications on the topic of innovation in the public sector in these countries and that the topic needs to be researched in this context.

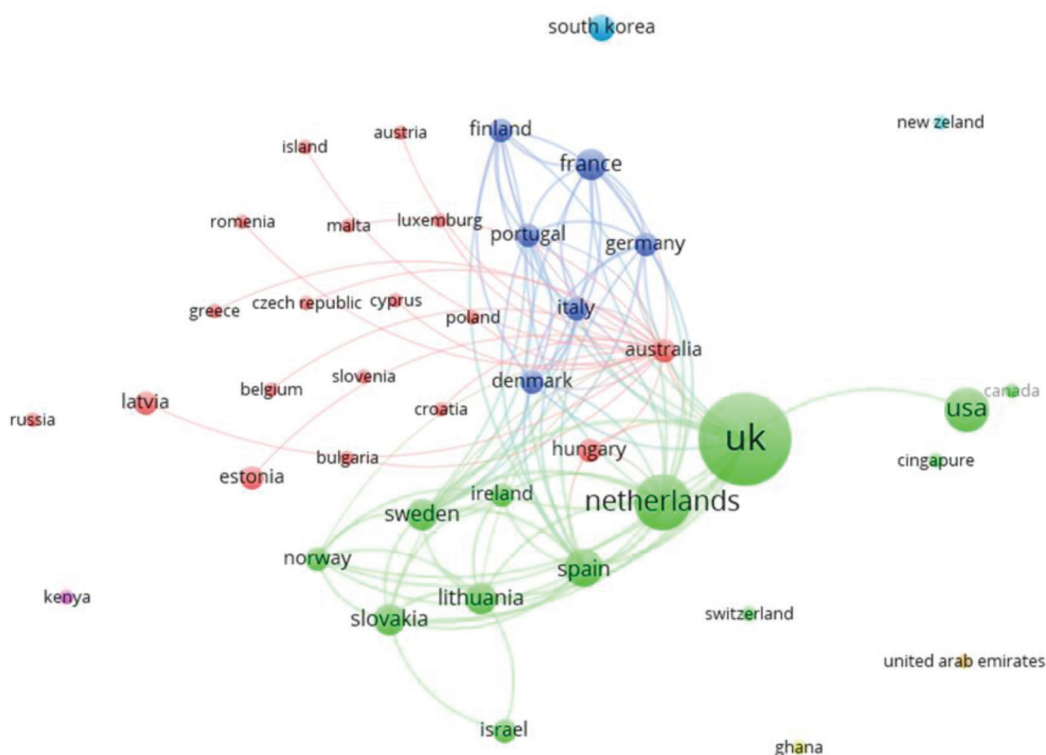


Figure 3: Countries where the studies were conducted.

Source: Developed by the authors based on Bibliographic Portfolio.

Also, the second basic variable was analysed related to the author's productivity in BP. Figure 4 follows the same pattern as the previous one, indicating through the sizes which authors appeared more often and also the collaboration networks, demonstrating in clusters the research groups responsible for BP studies.

As a result of the authors' analyses, it was evidenced that the literature on the theme does not have authors that stand out in several articles in the BP nor are

there networks of authors; rather, there is an authorship dispersion. As for highlights, Richard M. Walker was the author of two works [24A, 25A] with different co-authors, with eight years between publications. He is a professor of Public Management at the Department of Public Policy, University of Hong Kong, and has published several papers on the public sector and the relationship between innovation and organizational performance.

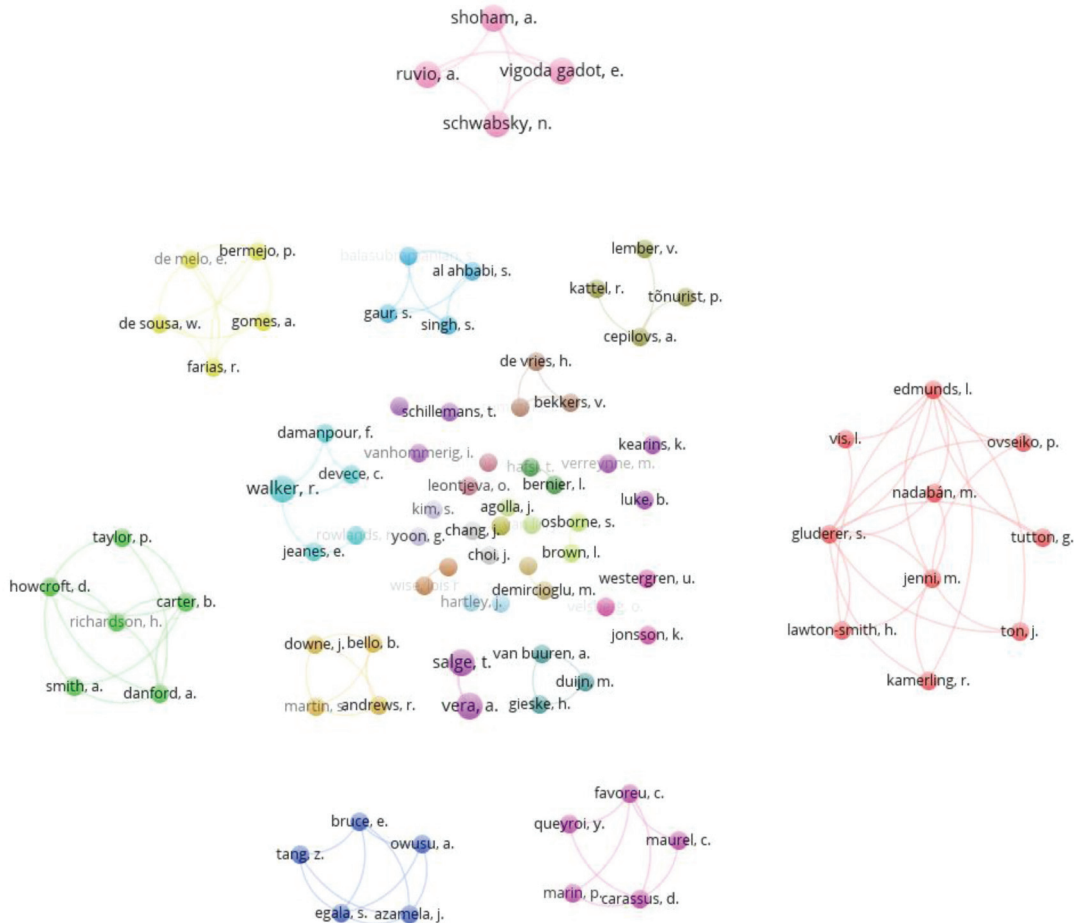


Figure 4: BP Authors.

Source: Developed by the authors based on Bibliographic Portfolio.

Torsten Oliver Salge and Antonio Vera have two mutual research studies in PB [19A, 20A]: one in 2009 and another one in 2012, both in the health sector. Salge is a professor and co-director of the Institute of Technology and Innovation Management and his most cited publications are related to the benefits of innovation in the public sector and also to hospital innovation. Antonio Vera is a professor of Organizational Management and Human Resources, and some of his most recognized work is on innovation in the public sector and the efficiency of hospital innovation. The two professors belong to different universities in Germany and they are partners in their main publications. They also have several works in the

field, which means that they are successful authors in the field of innovation in the management of public hospital organizations.

Finally, the network composed of Nitza Schwabsky, Aviv Shoham, Eran Vigoda-Gadot and Ayalla Ruvio [7A, 17A] is a collaboration between the University of Haifa located in Israel and the State University of Michigan in the United States. The studies were published in 2008 and 2012. Among the authors, Eran Vigoda-Gadot, who is a professor of Administration and Public Management in Israel, is the author with the greatest interest in the public sector.

The analysis and research on the academic trajectory of the mentioned authors demonstrates that the researchers are active in this field, which justifies a larger number of studies in BP and can contribute significantly to the topic studied.

3.2 Bibliometric analysis: Advanced variable – Temporal Evolution

The representative literature fragment, selected by the operationalization of ProKnow-C, began in 2000 and ended in 2022. Figure 5 shows the temporal evolution of the theme based on 33 selected articles. It is important to highlight this because this is a qualitative research; thus, this evolution was built according to the authors' perceptions and interpretations of this study about the theme.

At the beginning of the time horizon, it was observed that the focus of the research work was on how to measure innovation based on the way it was evaluated in the private sector. The authors of the current study point out that the indicators used in the studies can be considered inappropriate to evaluate innovation in the public sector due to: (i) the differences between the private and public sectors; and (ii) the purpose of measuring intangible aspects now that will still occur [9B, 17A, 25A].

Beginning in 2002, it was found that the innovation treatment was related to new attitudes in governance and changes in decision making, besides to problematize the scarcity of studies on this type of innovation [16B]. Also, the studies took a new look at entrepreneurship in the public sector, such as the entrepreneurial stance linked to creativity, flexibility, and willingness to adopt new ideas, which allows innovation to be evaluated through the employees' entrepreneurship [3A, 23A].

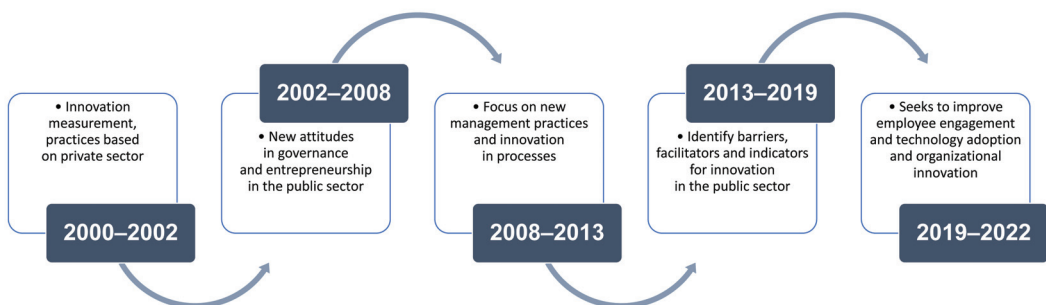


Figure 5. Temporal evolution.

Source: Developed by the authors based on Bibliographic Portfolio.

For the period from 2008 to 2013, the articles demonstrated that focus is on management beyond the implementation of innovations in the public sector. Examples include the implementation of e-governance [6A, 18A], activities that generate innovation and the implementation of new management practices [24A, 20A], the introduction of Lean practices [5A], and the discussion on risk management, which is a new view on the impact of risk on public innovation [4A].

Already from 2013 to 2019, there was still a focus on new management practices and process innovation; however, more attention was paid to identifying barriers, facilitators, and indicators to evaluate innovation in literature aimed at the public sector, reducing the use of practices based on the private sector as was evident in the early 2000s [1A, 7A, 10A, 11A]. Currently, the literature is not only focused on measuring innovation, but also seeks to identify other factors relevant to management and to conduct the evaluation in a way that it can serve as an instrument to support the management processes of organizations.

Finally, between 2019 and 2022, the focus of the papers was on improving employee engagement and the organization's ability to innovate, using new technologies and practices as a tool. Examples include the implementation of teleworking to engage employees more in their activities, which was a widespread practice from 2020 onwards due to the COVID-19 pandemic [26A]. Still, there is the adoption of Artificial Intelligence [27] and IoT [30A], where intelligence is created by the combination of knowledge management [28A] and people, technology and the innovative capacity of the organization [29A, 31, 32A, 33A].

3.3 Literature map

Aiming to present the topic to the scientific community synthetically and visually, the Literature Map, shown in Figure 6, was built based on the reading, analysis, and categorization of 33 articles contained in the BP in the dimensions of Management, Processes, and People. Among these dimensions, 4 papers fit in Management innovations, 8 in Process innovations, and 6 in People-related innovations. Also, 15 papers fit in the intersection between the three dimensions and are directly related to the measurement/assessment of innovation.

Thus, for the building of the Literature map, the dimensions, the aspects (in bold) were identified by the article code and the year of publication – and ramifications were found within these aspects. The ramifications were found in two themes : (i) measurement or evaluation of innovation; and (ii) electronic government.

In addition to the type of innovation, the map was developed according to what was evaluated within each dimension, even if it was not exactly the innovation. For example, in the People dimension, one of the aspects was Performance Evaluation [9B] since, in this study, the evaluation of people's performance as an innovation to evaluate the organization's performance was considered.

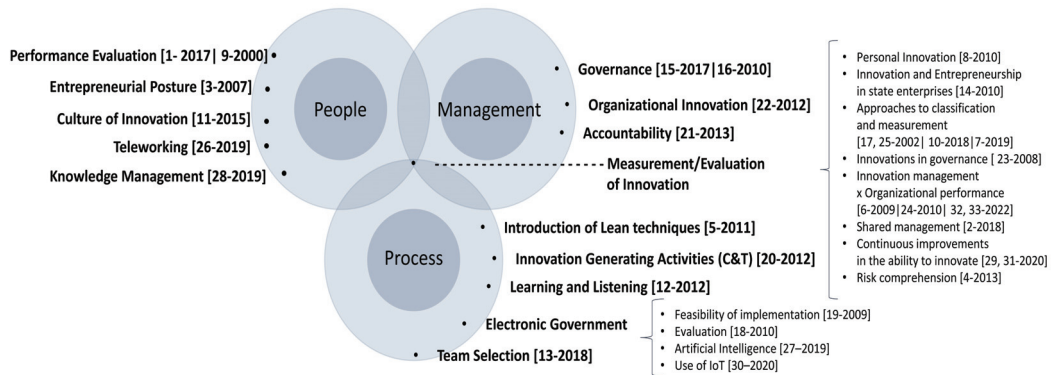


Figure 6: Literature map of studies on evaluation of innovation in the public sector.

Source: Prepared by the authors.

It is noteworthy that in this research as well as in the analysed articles, innovation was considered according to the context in which it was inserted. Therefore, Lean techniques were introduced as innovation in 2011 [5A], even though it was no longer a novelty in the manufacturing sector. Today, the techniques of lean production can also be found in health, civil construction, agriculture, and other sectors. The same can be mentioned about Artificial Interconnection applications [27] and the use of IoT [30A] that is widespread in the industrial segment, but is still perceived as a novelty in the public sector.

Even though innovation measurement and evaluation practices are directly linked to management innovations, they represent the intersection between the three dimensions under consideration and the central objective of this study, which is the reason they are located at the heart of the Figure 6. Some of these articles show how to perform innovation measurement and how to define indicators and metrics, while others not only make a proposition but also conduct the evaluation. Regarding approaches to classification and measurement, three articles [10A, 17A, 25A] reaffirmed the discussions on the measurement of innovations, previously signalled with temporal evolution.

The works of the first Portfolio phase [17A, 25A] discuss how this measurement occurred, proposing metrics to evaluate and seek a differentiated analysis and showing that averages or scores could end up disguising what is happening in an organization. For this reason, the use of performance-based indicators was not considered to be the most appropriate, as innovation is reactive and criticism of low scores could cause a disincentive to try new practices. However, in the last phase of the Portfolio [10A], the discussion on how to develop adequate indicators for the public sector remained. In this case, it was represented by a mapping of indicators used in the public sector in different countries.

The analysed BP comprises 22 years of literature on innovation evaluation in the public sector. However, during this period, it was found that there are still technical and conceptual questions to be answered: “What should be measured?” and “How should be measured?”.

3.4 Systemic analysis

In this section, the analyses made in the BP articles are presented according to the six lenses shown in Table 1 and according to the theoretical affiliation adopted of the Performance Evaluation. It is important to emphasize that, for the analysis, only 28 articles from BP were used, as 5 works had no practical application, but rather had theoretical value. Except for the Measurement lens, which included advanced bibliometric analysis related to metrics, the 33 BP articles from were used, as they all discussed this element of measurement.

3.4.1 Lens 1 – Approach

The first lens to be analysed concerns the approaches used for the development of BP studies. For this, Roy (1993) and Dias and Tsoukiàs (2004) were used as references. They divided the approaches into Normativists, Descriptivists (both treated as realistic by Roy), Prescriptivists, and Constructivists. The harmony between the development/selection of the evaluation instrument used in the study was analysed with the proposition for which it is intended; that is, if it was developed for an organization's specific purposes or if it was generically performed for generalized applications.

Most of the studies, 22 of them, used a realistic approach (Roy, 1993) and used the literature in the private sector to replicate methods for the public sector. Only 6 of the studies used the Prescriptive approach, in which researchers set the evaluation criteria based on other studies. In terms of harmony, it was found that 19 of them, had an approach compatible with the purposes for which they were intended, particularly generic ones. However, methods with approaches that were incompatible with the purposes for which they were designed; that is, there was no harmony between the approach and the application.

3.4.2 Lens 2 – Singularity

The analysis with the Singularity lens showed a worrying aspect of the content and the approach of the studies to the development of indicators to measure innovation in the public sector. Although the studies considered that the context in which they were applied referred to the public sector, none of them recognized the managers and the institution in an ad hoc manner. In other words, the indicators, models, and tools used to evaluate a given public institution did not originate from institutional strategies and thus did not recognize the specificity of this public context, nor the demands of the manager(s), server(s), and society. Such an absence makes subsequent effective management impossible.

It was then noted that the instruments developed in these studies were not concerned with identifying information to administer the context, but only to develop the means to describe situations of innovation in the public sector. This proves the existing research gap related to the consideration of the uniqueness of the context and the actors involved in management of innovation for the public sector.

3.4.3 Lens 3 – Process for identifying objectives

For the analysis of the third lens, two questions were defined that guided the identification of the aspects and objectives that gave rise to the indicators (and

metrics) of the instruments that were used to evaluate innovation in the public sector, based on the managers' manifestation: i) How do the manager's values and preferences interfere with the identification of the aspects and objectives that form the metrics and indicators of the evaluation instrument? How were these aspects/objectives identified? and ii) How does the process of identifying aspects and objectives deal with the manager's limits of knowledge, and its possible extension, for the development of metrics and indicators?

As a result, it is evident that the analysed studies are not concerned with expanding managers' knowledge during the process of identifying objectives and preferences in the addressed context.

The analysis of this third lens highlights the need to consider that the manager is a fundamental actor in the process of identifying the metrics and indicators used for evaluation, and it must be recognized that managers' knowledge expands and consolidates with their values and preferences. Among the BP articles, only the studies by Agolla and Van Lill (2017) were concerned with considering the manager's understanding to identify the factors required for innovation evaluation in the public sector. However, this was done in a limited way, without considering the limitations and possible expansion of knowledge during the process of building metrics and indicators.

The result of this lens analysis points to the opportunity for research that builds indicators that represent the institutional strategy from the perspective of public managers who use this instrument, configuring it as legitimate.

3.4.4 Lens 4 – Measurement

The analysis of the Measurement lens seeks to verify compliance with metrics, indicators, and the properties of Measurement Theory. Thus, a metric must necessarily satisfy three basic properties, : (i) to be “measurable”, (ii) to be “operational”; and (iii) to be “understandable”, according to Keeney (1992, p. 112) and Ensslin et al. (2001, p. 160–161). The properties are described in Table 3.

Table 3

Measurement theory properties for metrics

PROPERTY	DESCRIPTION
Measurable	The metric is measurable when it is formed by a number “x” of impact levels that detail the possibilities of occurrence in such a way as to eliminate any doubt as to what is being analysed at each of the “x” levels and as to the definition of the aspect/objective that is being analysed/evaluated using this scale.
Operational	The metric is operational when it is composed of impact levels in which there is one and only one level of impact that represents/describes a possibility of the action/alternative occurring. That is, for the action/alternative analysed there is only one level that represents the real consequence of this action/alternative.
Understandable	The metric is understandable/intelligible when for the various institution managers, the consequence of an action/alternative is understood by all in the same way, thus reaching the same measurement.

Source: Based on notions of Keeney (1992) and Ensslin et al. (2001).

The findings point to deficiencies related to the disregard of measurement properties in most of the analysed articles. Only 15% of the BP studies built scales that met the described properties, demonstrating the lack of commitment to the properties of measurement mainly concerns the lack of clarity in the description of the scales. This lack difficult to meet the properties of measurability and intelligibility, as well as in the use of qualitative scales for the quantification and measurement of objectives. Mathematical operations are found inappropriate to the situation, such as the mean and standard deviation in criteria evaluated according to Likert Scales.

It is emphasized that it is necessary to consider the attention to measurement properties when developing scales for innovation evaluation in the public sector.

Melnyk et al. (2014) defined metrics and the essential elements of their composition. When categorising the articles, it was observed that, in the case of evaluation of innovation in the public sector, all works had metrics. However, the selected studies dealt with metrics of different shapes and characteristics. Therefore, based on Melnyk et al.'s definition (2014), the metrics of the studies were analysed to identify the presence of the proposed elements.

The diagnosis of metrics could be performed in 31 articles of the BP, 2 papers do not use performance metrics, considering that some of them, despite being theoretical, had metrics in their content. Among them, only 1 study had an ordinal scale, a cardinal scale, and a reference standard, but did not have a final evaluation [3A]. A very critical point in this diagnosis was that the vast majority (67%) of the works did not have a cardinal scale, that is, the mathematical scales (representative of transformation of the qualitative ordinal scale into a mathematical scale). The diagnosis also demonstrates the scarcity of works that have a reference standard, that is, the scale level that is considered good (goal) and the scale level that is considered bad (Ensslin et al., 2001; Ensslin et al., 2010), referred to as the performance standard by Melnyk et al. (2014) and Van Camp and Braet (2016).

The diagnosis shows that there is no standardization in how metrics are defined and developed to evaluate and measure innovation. There is discussion about the difficulty of defining a scale for innovation [23A], which is one of the reasons why, to facilitate quantification, metrics related to scientific production and intellectual property were used [1A, 7A, 15A, 19A, 20A]. There is also a trend towards the use of descriptive metrics (qualitative/ordinal), at least in part, such as description of the innovation, type, origin, and stakeholders, among others [3A, 4A, 6A, 12A, 13A, 18A, 25A].

One of the ways to justify the use of this type of metric is the difficulty of measuring innovation because it is intangible. This difficulty is one of the 13 failures pointed out by Van Camp and Braet (2016). Figure 7 shows how the analysis of failures at the metric level of BP works, in which only 1 article did not have any of the failures described by Van Camp and Braet (2016) and met all the elements proposed by Melnyk et al. (2014) [3A]. The difficulty in measuring intangibles is the most frequent failure in BP, with 23 cases. This difficulty in measuring innovation is expected to occur due to its very nature; thus, the measure

that will represent this metric must be based on criteria that currently demonstrate or enable the development of these intangibles, rather than criteria that are believed to occur in the future [17A].

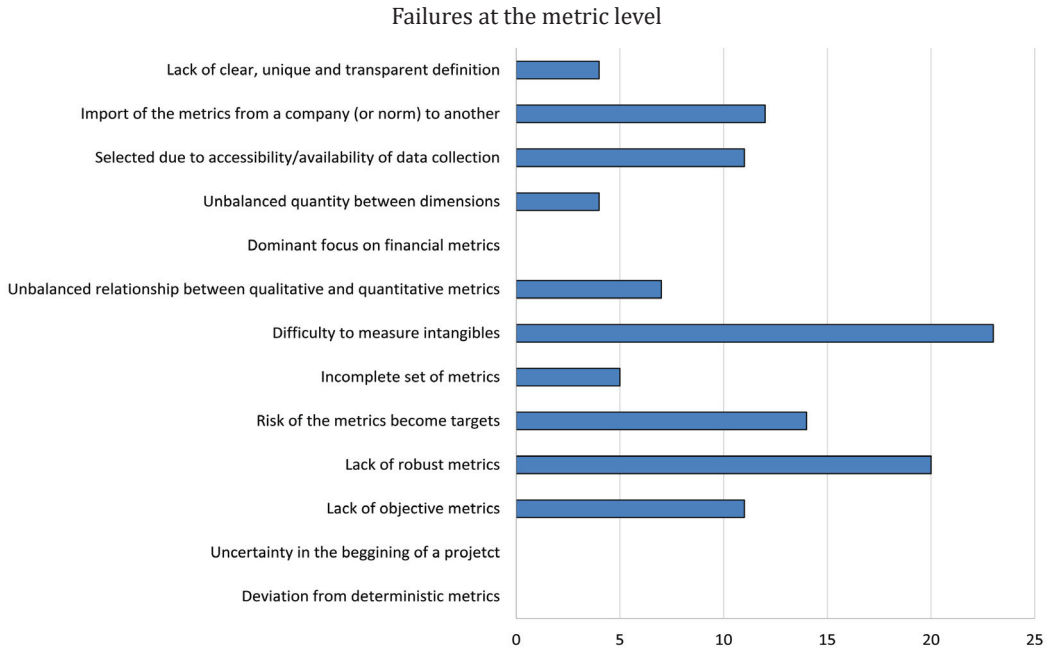


Figure 7 Metric failures.

Source: Prepared by the authors.

The lack of objective metrics (Van Camp and Braet, 2016) and nomenclature should also be considered in this analysis, which occurred in some situations due to the inappropriate use of the Likert scale, as there was no definition and accurate explanation of what each point meant. Such a deficiency is also evidence of non-compliance with the operational and comprehensible properties. There is also a lack of explanation for the attribution/calculation of the attractiveness difference between the points, that is, the absence of a cardinal scale that later prevents aggregation of punctual evaluations. This situation occurred in the studies [9B, 11A, 13A, 20A, 26A, 28A, 32A, 33A]. It can be seen that in the relationship between the two discussed failures, one is a consequence of the other. The difficulty of measuring intangibles leads to failure in defining objective metrics and in using appropriate scales.

3.4.5 Lens 5 – Integration

According to the adopted theoretical affiliation, evaluation indicators and scales (metrics) must be integrated to allow a holistic and systemic view of the aspects considered necessary within a model.

In this regard, it was verified for the BP articles how the aspects are integrated in the works and if they allow a complete view of an evaluation system or if they are just isolated variables.

As a result, only 4 of the BP articles manifest the connection between the evaluation variables, allowing the visualization of a global and systemic result on the managed context. The low return referring to the Integration lens characterizes an opportunity to contribute to the research field, as the holistic view of a management process is fundamental to support decisions and understand a variable reflection in a global context.

3.4.6 Lens 6 – Management

Finally, the Management lens aims to verify whether the instruments presented in the BP studies allow the identification of the current diagnosis (status quo) of the analysed situation relating to the established indicators and whether there are contributions with actions that aim at developing improvements in the management processes.

Despite presenting a diagnosis of the situation, studies often use scales that do not allow for real knowledge of the context and the meaning of the results obtained. When the studies present the results numerically, they do not present reference levels that allow identifying better possibilities. They limit themselves to pointing numerical results without a clear scale. For this reason, it is also not possible to generate improvement actions to achieve better results and promote management support.

As for the development of improvement actions for the management of innovation in the public sector, Edmunds et al. (2019) recommend good practices according to previous findings in the literature. More recent studies [26A, 28A, 29A, 32A, 33A] conclude the discussions with aspects that should be improved, but do not indicate the sequence of processes to be applied. We can also mention the study by Potnis (2010) that recommends actions to improve the measurement methods, but does not address measures to support business management and thus was not considered as improvement actions for management.

The results show that there is a gap between instruments and practices used to present relevant information to management in the provision of subsidies that support and promote the knowledge of managers.

4. Conclusions

This study aimed to understand the approach of the literature regarding public sector innovation and the measurement practices used, to seeking new research opportunities. The use of the ProKnow-C intervention instrument enabled the selection of a Bibliographic Portfolio of 33 articles from the Scopus and Web of Science databases. However, five of these studies were excluded from the sample as they did not meet the criteria for the systemic analysis. Thus, the systemic analysis was conducted on a BP of 28 articles.

In general, it was found that the meaning of innovation has changed over the years. Although there have been attempts to evaluate these innovations, these attempts are incipient, especially in defining what is considered as an innovation, which qualitative scale best represents the innovation in question, and how to transform this qualitative (ordinal) scale into a mathematical scale (car-

dinal) so that a final numerical evaluation can be made. This research extends our knowledge of efforts made by many authors to assess innovation in the public sector. However, in terms of generating information for management and alignment to theoretical contributions from the Performance Evaluation area, they are still incipient.

The Systemic Analysis through the six lenses derived from the theoretical affiliation of the authors of the present study enabled the identification of gaps that allowed the identification of future directions to fill them.

Table 4 presents the Performance Evaluation lenses and their respective gaps, as well as research opportunities.

Table 4

Summary of gaps and research opportunities

LENS	GAPS AND FUTURE DIRECTIONS
Approach	The development of custom templates is a differential for this area of knowledge
Singularity	The recognition of specific problems is identified as a great opportunity for developments in the research area. In none of the studies was there a consideration of specific actors and contexts, which need to be taken into account to define a singular evaluation system
Process of identifying objectives	Due to the non-consideration of environments and singular actors for innovation management in the identified works, the process of identifying measures is done by the authors of the analysed articles. The objectives of previous work are replicated, which may not be compatible with specific situations. It becomes essential to identify objectives closely connected to the interests and particularities of a manager responsible for innovation in a public sector organization
Measurement	Most of the papers disregard the properties expected for the development of quantitative indicators that allow the identification of inferior and superior performances and that allow the identification of opportunities to improve performance. Part of the work uses qualitative measurement scales and mistakenly operates mathematical operations to identify the mean and standard deviation to build comparative metrics between different organizations
Integration	Rarely are studies pointed to the consideration of integrated indicators within a system. According to the adopted theoretical affiliation, it is expected that an evaluation model will take into account different points of view that represent the organizational vision for innovation management, integrating them to promote a holistic view and present the set to support information to managers of the organization and other stakeholders
Management	Although most studies present a diagnosis of their metrics, the information presented is of little use to discover deficiencies, potentialities, and to recognize actions to improve the performance of indicators. The achievement degrees of indicators are presented, but reference levels are not developed to identify performance below, within, or above what is expected for the organization. According to the literature on Performance Evaluation, it is still expected that the information promoted by an evaluation system or model will allow the achievement of continuous improvement in the evaluated management context. In this sense, the promotion of improvement actions is an opportunity related to the literature on innovation in the public sector

Source: Prepared by the authors.

Based on the ProKnow-C instrument, it can be concluded that the literature on the evaluation of innovations in the public sector has been driven by the adoption of methods adapted from the private sector. However, these practices are often shown to be inappropriate, as they draw on successes interpreted in other organizations with divergent contexts which may not deliver the expected results. In this sense, we suggest the development of an instrument that is based on the unique perceptions and needs of public managers and their specific institutions, meets the measurement properties, integrates the evaluation result of each indicator holistically, and promotes management support.

REFERENCES

1. Adams, R., Bessant, J. and Phelps, R. (2006) 'Innovation management measurement: A review', *International Journal of Management Reviews*, 8(1), pp. 21–47. Available at: <https://doi.org/10.1111/j.1468-2370.2006.00119.x> (accessed 6 October 2021).
2. Agolla, J.E. and Van Lill, J.B. (2017) 'Insights into Kenya's public sector innovation: The case of managers', *International Journal of Innovation Science*, 9(3), pp. 225–243. Available at: <https://doi.org/10.1108/IJIS-11-2016-0049> (accessed 6 October 2021). [1A].
3. Al Ahbabi, S.A., Singh, S.K., Balasubramanian, S. and Gaur, S.S. (2019) 'Employee perception of impact of knowledge management processes on public sector performance', *Journal of knowledge management*, 23(2), pp. 351–373. Available at: <https://doi.org/10.1108/JKM-08-2017-0348> (accessed 25 August 2022) [28A].
4. Arbix, G. (2010) 'Estratégias de inovação para o desenvolvimento', *Tempo Social*, 22(2), pp. 167–185. Available at: <https://doi.org/10.1590/S0103-20702010000200009> (accessed 6 October 2021).
5. Azamela, J.C., Tang, Z., Owusu, A., Egala, S.B. and Bruce, E. (2022) 'The impact of institutional creativity and innovation capability on innovation performance of public sector organizations in Ghana', *Sustainability*, 14(3), p. 1378. Available at: <https://doi.org/10.3390/su14031378> (accessed 25 August 2022). [33A].
6. Bello, B., Downe, J., Andrews, R. and Martin, S. (2018) 'Does austerity drive public service innovation? Evidence from shared senior management teams in local government', *Public Money and Management*, 38(2), pp. 131–138. Available at: <https://doi.org/10.1080/09540962.2018.1407161> (accessed 6 October 2021). [2B].
7. Bernier, L. and Hafsi, T. (2007) 'The changing nature of public entrepreneurship', *Public Administration Review*, 67(3), pp. 488–503. Available at: <https://doi.org/10.1111/j.1540-6210.2007.00731.x> (accessed 6 October 2021). [3A]

8. Brown, L. and Osborne, S.P. (2013) 'Risk and innovation: Towards a framework for risk governance in public services', *Public Management Review*, 15(2), pp. 186–208. Available at: <https://doi.org/10.1080/14719037.2012.707681> (accessed 6 October 2021). [4A].
9. Carter, B., Danford, A., Howcroft, D., Richardson, H., Smith, A. and Taylor, P. (2011) "All they lack is a chain": Lean and the new performance management in the British civil service', *New Technology, Work and Employment*, 26(2), pp. 83–97. Available at: <https://doi.org/10.1111/j.1468-005X.2011.00261.x> (accessed 6 October 2021). [5A].
10. Choi, J.N. and Chang, J.Y. (2009) 'Innovation implementation in the public sector: An integration of institutional and collective dynamics', *Journal of Applied Psychology*, 94(1), p. 245. Available at: <https://doi.org/10.1037/a0012994> (accessed 6 October 2021). [6A].
11. Creswell, J.W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications, Inc.
12. De Sousa, W.G., De Melo, E. R.P., Bermejo, P.H.D.S., Farias, R.A.S. and Gomes, A.O. (2019) 'How and where is artificial intelligence in the public sector going? A literature review and research agenda', *Government Information Quarterly*, 36(4), 101392. Available at: <https://doi.org/10.1016/j.giq.2019.07.004> (accessed 25 August 2022). [27B].
13. De Vries, H., Tummars, L. and Bekkers, V. (2019) 'The benefits of teleworking in the public sector: Reality or rhetoric?', *Review of Public Personnel Administration*, 39(4), pp. 570–593. Available at: <https://doi.org/10.1177/0734371X18760124> (accessed 25 August 2022). [26A].
14. Dias, L. C., and Tsoukiàs, A. (2004) 'On the constructive and other approaches in decision aiding', in: C.H. Antunes, J. Figueira and J. Clímaco (Eds.) *Aide multicritère à la décision: Multiple criteria decision aiding*. CCDRC/INESCC/FEUC, pp. 13–28.
15. Dutra, A., Ripoll-Feliu, V.M., Fillol, A.G., Ensslin, S.R. and Ensslin, L. (2015) 'The construction of knowledge from the scientific literature about the theme seaport performance evaluation', *International Journal of Productivity and Performance Management*, 64(2), pp. 243–269. Available at: <https://doi.org/10.1108/IJPPM-01-2014-0015> (accessed 6 October 2021)
16. Edmunds, L.D., Gluderer, S., Ovseiko, P.V., Kamerling, R., Ton, J., Vis, L., ... Rab, M. (2019) 'New indicators and indexes for benchmarking university–industry–government innovation in medical and life science clusters. Results from the European FP7 Regions of Knowledge HealthTIES project', *Health Research Policy and Systems*, 17(1), p. 10. Available at: <https://doi.org/10.1186/s12961-019-0414-5> (accessed 6 October 2021). [7A].
17. Ensslin, L., Gonçalves, A., Ensslin, S.R. and Dutra, A. (2022) 'Bibliometric and systemic review of the state of the art of occupational risk management in the construction industry', *International Journal of Occupational Safety and Ergonomics*. Available at: <https://doi.org/10.1080/10803548.2022.2111893> (accessed 14 September 2022).
18. Ensslin, L., Giffhorn, E., Ensslin, S.R., Petri, S.M. and Vianna, W.B. (2010) 'Avaliação do Desempenho de empresas terceirizadas com o uso da metodologia Multicritério de Apoio à Decisão-Construtivista', *Pesquisa Operacional*, 30(1), pp. 125–152. Available at: <https://doi.org/10.1590/S0101-74382010000100007> (accessed 6 October 2021).
19. Ensslin, L., Montibeller Neto, G. and Noronha, S.M. (2001) *Apoio à Decisão: Metodologia para Estruturação de Problemas e Avaliação Multicritério de Alternativas*. Editora Insular.
20. Ensslin, S.R., Ensslin, L., Matos, L.D.S., Dutra, A. and Ripoll-Feliu, V.M. (2015) 'Research opportunities in performance measurement in public utilities regulation', *International Journal of Productivity and Performance Management*, 64(7), pp. 994–1017. Available at: <https://doi.org/10.1108/IJPPM-05-2014-0067> (accessed 6 October 2021).

21. Fernandez, S. and Wise, L.R. (2010) 'An exploration of why public organizations 'Ingest' innovations', *Public Administration*, 88(4), pp. 979–998. Available at: <https://doi.org/10.1111/j.1467-9299.2010.01857.x> (accessed 6 October 2021). [8A].
22. Gieske, H., Duijn, M. and Van Buuren, A. (2020) 'Ambidextrous practices in public service organizations: Innovation and optimization tensions in Dutch water authorities', *Public Management Review*, 22(3), pp. 341–363. Available at: <https://doi.org/10.1080/14719037.2019.1588354> (accessed 25 August 2022). [29A].
23. Grote, D. (2000) 'Public sector organizations: Today's innovative leaders in performance management', *Public Personnel Management*, 29(1), pp. 1–20. Available at: <https://doi.org/10.1177/009102600002900101> (Accessed 6 October 2021). [9B].
24. Kattel, R., Cepilovs, A., Lember, V. and Tõnurist, P. (2018) 'Indicators for public sector innovations: Theoretical frameworks and practical applications', *Halduskultuur (Administrative Culture)*, 19(1), pp. 77–104. Available at: <http://dx.doi.org/10.32994/ac.v19i1.208> (accessed 6 October 2021). [10A].
25. Keeney, R.L. (1992) *Value-Focused Thinking: A Path to Creative Decision making*. Harvard University Press.
26. Kim, S. and Yoon, G. (2015) 'An innovation-driven culture in local government: do senior manager's transformational leadership and the climate for creativity matter?', *Public Personnel Management*, 44(2), pp. 147–168. Available at: <https://doi.org/10.1177/0091026014568896> (accessed 6 October 2021). [11A].
27. Kinder, T. (2012) 'Learning, innovating and performance in post-new public management of locally delivered public services', *Public Management Review*, 14(3), pp. 403–428. Available at: <https://doi.org/10.1080/14719037.2011.637408> (accessed 6 October 2021). [12A].
28. Leontjeva, O. and Trufanova, V. (2018) 'Lean Team Members Selection for Public Administration Organizations', *Public Administration Issues*, (6), pp. 45–64. Available at: [10.17323/1999-5431-2018-0-6-45-64](https://doi.org/10.17323/1999-5431-2018-0-6-45-64) (accessed 6 October 2021). [13A].
29. Luke, B., Verreyne, M.L. and Kearins, K. (2010) 'Innovative and entrepreneurial activity in the public sector: The changing face of public sector institutions', *Innovation*, 12(2), pp. 138–153. Available at: <https://doi.org/10.5172/impp.12.2.138> (accessed 6 October 2021). [14A].
30. Matos, L.D.S., Ensslin, S.R. and Ensslin, L. (2019) 'A Review on the Performance Measurement Systems Life Cycle', *Lex Localis – Journal of Local Self-Government*, 17(4), pp. 939–959. Available at: [https://doi.org/10.4335/17.4.939-959\(2019\)](https://doi.org/10.4335/17.4.939-959(2019)) (accessed 6 October 2021).
31. Melnyk, S.A., Bititci, U., Platts, K., Tobias, J. and Andersen, B. (2014) 'Is performance measurement and management fit for the future?', *Management Accounting Research*, 25(2), pp. 173–186. Available at: <https://doi.org/10.1016/j.mar.2013.07.007> (accessed 6 October 2021).
32. Moonen, P. (2017) 'The governance of innovation from a European perspective, social articulation and transmission of knowledge', *Journal of Organizational Change Management*, 30(2), pp. 243–262. Available at: <https://doi.org/10.1108/JOCM-01-2017-0012> (accessed 6 October 2021). [15A].
33. Moore, M. and Hartley, J. (2010) 'Innovations in governance in The New Public Governance', in: S.P. Osborne (Ed.) *Emerging perspectives on the theory and practice of public government*. NY: Routledge. [16B].

34. Perrin, B. (2002) 'How to – and how not to – evaluate innovation', *Evaluation*, 8(1), pp. 13–28. Available at: <https://doi.org/10.1177/1358902002008001514> (accessed 6 October 2021). [17A].
35. Potnis, D.D. (2010) 'Measuring e-Governance as an innovation in the public sector', *Government Information Quarterly*, 27(1), pp. 41–48. Available at: <https://doi.org/10.1016/j.giq.2009.08.002> (accessed 6 October 2021). [18A].
36. Queyroi, Y., Carassus, D., Maurel, C., Favoreu, C. and Marin, P. (2022) 'Local public innovation: an analysis of its perceived impacts on public performance', *International Review of Administrative Sciences*, 88(2), pp. 493–510. Available at: <https://doi.org/10.1177/0020852320963214> (accessed 25 August 2022). [32A].
37. Roy, B. (1993) 'Decision science or decision-aid science?', *European Journal of Operational Research*, 66(2), pp. 184–203. Available at: [https://doi.org/10.1016/0377-2217\(93\)90312-B](https://doi.org/10.1016/0377-2217(93)90312-B) (accessed 6 October 2021).
38. Salge, T.O., and Vera, A. (2009) 'Hospital innovativeness and organizational performance: Evidence from English public acute care', *Health Care Management Review*, 34(1), 54–67. Available at: <https://doi.org/10.1097/01.HMR.0000342978.84307.80> (accessed 6 October 2021). [19A].
39. Salge, T.O. and Vera, A. (2012) 'Benefiting from public sector innovation: The moderating role of customer and learning orientation', *Public Administration Review*, 72(4), pp. 550–559. Available at: <https://doi.org/10.1111/j.1540-6210.2012.02529.x> (accessed 6 October 2021). [20A].
40. Schillemans, T., Van Twist, M. and Vanhommerig, I. (2013) 'Innovations in accountability: Learning through interactive, dynamic, and citizen-initiated forms of accountability', *Public Performance and Management Review*, 36(3), pp. 407–435. Available at: <https://doi.org/10.2753/PMR1530-9576360302> (accessed 6 October 2021). [21A].
41. Shoham, A., Vigoda-Gadot, E., Ruvio, A. and Schwabsky, N. (2012) 'Testing an organizational innovativeness integrative model across cultures', *Journal of Engineering and Technology Management*, 29(2), pp. 226–240. Available at: <https://doi.org/10.1016/j.jengtecman.2012.01.002> (accessed 6 October 2021). [22A].
42. Staedele, A.E., Ensslin, S.R. and Forcellini, F.A. (2019) 'Knowledge building about performance evaluation in lean production', *Journal of Manufacturing Technology Management*, 30(5), pp. 798–820. Available at: <https://doi.org/10.1108/JMTM-12-2017-0277> (accessed 6 October 2021).
43. Tasca, J.E., Ensslin, L., Ensslin, S.R., and Alves, M.B.M. (2010) 'An approach for selecting a theoretical framework for the evaluation of training programs', *Journal of European Industrial Training*, 34(7), pp. 631–655. Available at: <https://doi.org/10.1108/03090591011070761> (accessed 6 October 2021).
44. Thiel, G.G., Ensslin, S.R. and Ensslin, L. (2017) 'Street lighting management and performance evaluation: Opportunities and challenges', *Lex Localis – Journal of Local Self-Government*, 15(2), pp. 303–328. Available at: [https://doi.org/10.4335/15.2.303-328\(2017\)](https://doi.org/10.4335/15.2.303-328(2017)) (accessed 6 October 2021).
45. Valmorbida, S.M.I. and Ensslin, S.R. (2017) 'Performance evaluation of university rankings: Literature review and guidelines for future research' *International Journal of Business Innovation Research*, 14(4), pp. 479–501. Available at: <https://doi.org/10.1504/IJBIR.2017.087844> (accessed 6 October 2021).

46. Van Camp, J., and Braet, J. (2016) 'Taxonomizing performance measurement systems' failures', *International Journal of Productivity and Performance Management*, 65(5), pp. 672–693. Available at: <https://doi.org/10.1108/IJPPM-03-2015-0054> (accessed 6 October 2021).
47. Van Der Wal, Z. and Demircioglu, M.A. (2020) 'Public sector innovation in the Asia-pacific trends, challenges, and opportunities', *Australian Journal of Public Administration*, 79(3), pp. 271–278. Available at: <https://doi.org/10.1111/1467-8500.12435> (accessed 25 August 2022). [31B].
48. Velsberg, O., Westergren, U.H. and Jonsson, K. (2020) 'Exploring smartness in public sector innovation-creating smart public services with the Internet of Things', *European Journal of Information Systems*, 29(4), pp. 350–368. Available at: <https://doi.org/10.1080/0960085X.2020.1761272> (accessed 25 August 2022). [30A].
49. Vigoda-Gadot, E.R.A.N., Shoham, A., Schwabsky, N. and Ruvio, A. (2008) 'Public sector innovation for Europe: A multinational eight-country exploration of citizens' perspectives', *Public Administration*, 86(2), pp. 307–329. Available at: <https://doi.org/10.1111/j.1467-9299.2008.00731.x> (accessed 6 October 2021). [23A].
50. Walker, R.M., Damanpour, F. and Devece, C.A. (2010) 'Management innovation and organizational performance: The mediating effect of performance management', *Journal of Public Administration Research and Theory*, 21(2), pp. 367–386. Available at: <https://doi.org/10.1093/jopart/muq043> (accessed 6 October 2021). [24A].
51. Walker, R.M., Jeanes, E. and Rowlands, R. (2002) 'Measuring innovation—applying the literature-based innovation output indicator to public services', *Public Administration*, 80(1), pp. 201–214. Available at: <https://doi.org/10.1111/1467-9299.00300> (Accessed 6 October 2021) (accessed 12 August 2022). [25A].
52. Welter, L.M. and Ensslin, S.R. (2022) 'How do the unintended consequences of performance evaluation systems manifest themselves?', *Journal of Accounting and Organizational Change*, 18(4), pp. 509–528. Available at: <https://doi.org/10.1108/JAOC-07-2020-0087> (accessed 14 August 2022).

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