Contents lists available at GrowingScience

Uncertain Supply Chain Management

homepage: www.GrowingScience.com/uscm

Formative evaluation of policies and consistency of development planning on the smoothness of the supply chain and its implications on the level of welfare

Alizar Isna^{a*}, Basrowi^b, Sendy Noviko^a and Rahmini Hadi^c

- ^aUniversitas Jenderal Soedirman, Purwokerto, Indonesia
- ^bMaster of Management, Post-Graduate, Universitas Bina Bangsa, Indonesia
- ^cUniversitas Islam Negeri Prof. K.H. Saifuddin Zuhri, Indonesia

ABSTRACT

Article history:
Received June 6, 2024
Received in revised format July 29, 2024
Accepted September 21 2024
Available online
September 21 2024

Keywords:
Supply chain
Policy
Development planning
Community welfare
Customer Relationship
Management
MSME Sales Performance
Operational Efficiency

Formative policy evaluation is an assessment process carried out periodically during policy implementation to ensure that the policy is running according to the expected objectives. Consistency in development planning includes continuity and harmony between short-, mediumand long-term plans. A smooth supply chain refers to the effectiveness and efficiency of the flow of goods and services from producers to consumers. The level of community welfare is measured through economic, social and health indicators. This research aims to analyze the influence of formative policy evaluation and consistency of development planning on the smooth running of the supply chain and its implications for the level of community welfare in Kebumen. This research uses quantitative methods with survey techniques involving respondents from various related sectors in Kebumen. Data was collected through questionnaires and in-depth interviews, then analyzed using statistical methods to test the proposed hypotheses. The research results show that formative evaluation of policies and consistency of development planning have a positive and significant influence on the smooth running of the supply chain. Apart from that, a smooth supply chain has been proven to contribute significantly to increasing the level of welfare of the people of Kebumen. These findings underline the importance of continuous formative evaluation and consistent development planning to support supply chain efficiency and improve community welfare. The implication of this research is the need for the Kebumen regional government to strengthen policy evaluation mechanisms and maintain consistency in development planning to ensure a smooth supply chain which ultimately improves community welfare.

© 2025 by the authors; licensee Growing Science, Canada.

1. Introduction

Kebumen, a district in Central Java Province, is facing various challenges in economic and social development. Sustainable and consistent development is the main key to improving community welfare. However, often the policies implemented are not evaluated formatively so that their effectiveness and efficiency are difficult to measure and improve. Formative policy evaluation is an important process that can provide ongoing feedback during policy implementation, allowing for necessary adjustments to achieve desired outcomes (Pfotenhauer et al., 2023). Apart from that, consistency in development planning is a crucial factor that determines the successful implementation of development programs. This consistency includes harmony between short-, medium- and long-term planning which must be considered to avoid discrepancies and misalignments in policy implementation. Inconsistencies in planning often result in delays or even failure of development projects, which in turn disrupts the smooth running of the supply chain (Mane et al., 2024). The importance of consistent regional development planning is interesting to study. Karnitis and Kucinskis (2009) state the potential lack of continuity, sustainability and stability of development strategies due to government changes as one of the risk factors that will affect Latvia's growth, which may also affect the growth of other countries that develop development planning documents. Karnitis and Kucinskis' (2009) study

* Corresponding author

E-mail address <u>alizar.isna@unsoed.ac.id</u> (A. Isna)

ISSN 2291-6830 (Online) - ISSN 2291-6822 (Print) © 2025 by the authors; licensee Growing Science, Canada. doi: 10.5267/j.uscm.2024.9.012

is relevant to the system of direct election of presidents, governors and regents/mayors, which has implications for national and regional development planning (Maoela et al., 2024). As a form of implementation of regional development planning policies, until 2015 Kebumen Regency had prepared regional development planning documents as one unit in the SPPN. The documents in question are: (1) Kebumen Regency Regional Long Term Development Plan (RPJPD) for 2005–2025 (Regional Regulation or Regional Regulation of Kebumen Regency No. 1 of 2010); (2) Kebumen Regency Medium Term Development Plan (RPJM) 2006–2010 (Regent Regulation or Perbup Kebumen No. 28 of 2005); (3) Kebumen Regency Regional Medium Term Development Plan (RPJMD) 2010–2015 (Kebumen Regency Regional Regulation No. 17 of 2010); and (4) Regional Apparatus Work Plan (RKPD) as an elaboration of the 2006–2010 RPJM and 2010–2015 RPJMD. The smooth supply chain is an important indicator that reflects the efficiency of the flow of goods and services from producers to consumers. A supply chain that is not smooth can cause delays, increased costs and reduced service quality which ultimately has a negative impact on the regional economy and community welfare. In the context of Kebumen, the smooth running of the supply chain is very dependent on how development policies and plans are designed and implemented (Gong & Andersen, 2024).

This research focuses on analyzing how formative evaluation of policies and consistency of development planning can influence the smooth running of the supply chain in Kebumen. By understanding this relationship, it is hoped that effective strategies can be found to improve the evaluation and planning process so as to increase supply chain efficiency. In the end, the main aim of this research is to see the implications of a smooth supply chain on the level of community welfare in Kebumen (Malki et al., 2024). In an effort to achieve the objectives of this research, a comprehensive and systematic approach is needed. The use of quantitative methods through surveys and in-depth interviews will provide a clear picture of the perceptions and experiences of various related parties. It is hoped that the results of this research can provide a significant contribution to policy making at the regional level and become a reference for further research that focuses on policy evaluation, development planning and supply chain management (Yao et al., 2024). From previous reset findings, there is a research gap regarding independent variables and intervening variables that influence students' English learning achievements, seen in Table 1 below:

Table 1Research Gap

researen Gap		
Author	Result	Gap
(Sharma et al., 2021)	Significant	From the research results, there are differences in research results related
(Cerdan et al., 2024)	Significant	to the evaluation of government policies on community welfare.
(Božić et al., 2022)	Not significant	

Source: (Aki et al., 2024), (Amalia et al., 2022) and (Ashiquin et al., 2020)

Based on Table 1, it is explained that there are inconsistencies between research related to evaluating government policies on community welfare. Research from (Sharma et al., 2021) and (Cerdan et al., 2024) explain that there is a significant influence of government policy evaluation on community welfare. However, this is different from the results of research (Božić et al., 2022) which explains that there is no significant influence of government policy evaluation on community welfare. Based on the phenomena and research gaps that have been explained, the problem can be formulated as follows: 1) what is the significance of the influence of formative evaluation of government policy on community welfare, 2) how significant is the consistency of development planning on community welfare, 3) what is the significance of formative evaluation of government policy on supply chains, 4) what is the significance of the consistency of development planning on the supply chain, 5) what is the significance of the supply chain on community welfare, 6) what is the significance of the indirect influence of the indirect influence of the consistency of development planning on community welfare through the supply chain, 7) what is the significance of the indirect influence of the indirect influence of the consistency of development planning on community welfare through the supply chain.

2. Theory

2.1 Formative evaluation of government policies towards community welfare

Formative policy evaluation is an important tool in ensuring public policies run according to the expected goals. Through formative evaluation, the government can identify problems and obstacles that arise during policy implementation and make necessary adjustments. This evaluation allows for continuous feedback, which helps in improving policy effectiveness. In the context of community welfare, formative evaluation can ensure that programs designed to improve the quality of life of citizens actually provide the expected benefits (Elessa Etuman et al., 2024). One of the significant effects of formative policy evaluation is increasing efficiency in the use of resources. With ongoing evaluation, the government can find out whether the allocated resources have been used optimally or whether adjustments need to be made. For example, if a social assistance program is not achieving its desired goals, formative evaluation can identify the causes and provide recommendations for improvement. This is important to ensure that the assistance provided actually reaches those who need it, thereby improving the welfare of society as a whole (Fessler et al., 2024). Apart from that, formative policy evaluation also plays a role in increasing government accountability. With a transparent and open evaluation mechanism, the public can find out how policies are implemented and what results have been achieved. This accountability is important to build public trust in the government. When citizens feel that the government is responsible and committed to correcting ineffective policies, they tend to have higher levels of satisfaction with public services, which in turn increases social welfare (Yusuf et al., 2024). Formative evaluation can also identify best practices that can be replicated in other areas. For example, if a health policy is successful in improving access and quality of health services in an area, the results of the formative evaluation can be used as a model for other areas facing similar challenges. The dissemination of these best practices can accelerate improvements in community welfare in various regions, especially in areas that have limited resources and need solutions that are proven to be effective (Bø et al., 2023). Ultimately, the influence of formative policy evaluation on community welfare lies in its ability to create a continuous cycle of improvement. Formative evaluation ensures that public policies are not stagnant and are always improved in accordance with changing needs and conditions of society. With this approach, the government can be more responsive to the challenges and opportunities that arise, so that it can continue to improve the quality of life of the community. Continuity between evaluation, policy adjustments and effective implementation is the key to achieving sustainable development goals and improving the welfare of society as a whole (Ding et al., 2024).

H1: There is a significant influence of formative evaluation of government policies on community welfare.

2.2 Consistency of development planning towards community welfare

Consistency in development planning is one of the key factors in creating stability and sustainability in efforts to improve community welfare. Consistent development planning ensures that all programs and projects implemented by the government are aligned with the long-term vision and are not disrupted by sudden changes in policy or priorities. With consistent planning, the government can ensure that the resources allocated for development are used effectively and efficiently, thereby achieving the desired results (Li et al., 2024). One of the positive impacts of consistent development planning is increasing public trust in the government. When people see that the government has clear and consistent plans for the long term, they are more likely to support and participate in development programs. This trust is important for building strong partnerships between government and society, which ultimately accelerates the implementation and achievement of development goals. A high level of trust can also reduce social and political conflicts which often hamper the development process (Chatterjee et al., 2024). Consistency in development planning also allows for more effective monitoring and evaluation. With consistent planning, the government can set clear and measurable performance indicators, making it easier to monitor progress and evaluate the results that have been achieved. Effective evaluation allows governments to identify successes and failures, and take necessary corrective action. Thus, consistent planning not only increases efficiency, but also ensures that every step taken is always oriented towards improving community welfare (Wei et al., 2024). Furthermore, consistent development planning can create a conducive environment for investment and economic growth. Investors, both domestic and foreign, tend to seek certainty and stability in the investment environment. When the government has consistent and reliable development planning, this can attract more investment which will open new jobs and increase people's income. Stable and sustainable economic growth is very important to improve people's quality of life and reduce poverty (Sharma et al., 2024). Ultimately, the influence of consistent development planning on community welfare lies in its ability to create synergy between various sectors and development programs. This consistency ensures that each development initiative supports and strengthens each other, creating a greater impact than if the programs operated separately. With integrated and consistent planning, the government can optimize the use of resources, minimize waste, and achieve maximum results, so that people's welfare can increase significantly and sustainably (Latifi et al., 2021).

H2: There is a significant influence of the consistency of development planning on community welfare.

2.3 Formative evaluation of government policies towards supply chains

Formative evaluation of government policies plays a crucial role in ensuring the smooth running of the supply chain. The formative evaluation process allows the government to periodically assess and adjust ongoing policies, so that they can respond to changing market conditions, consumer needs and logistical challenges. By making timely adjustments based on evaluation results, the government can reduce bottlenecks in the supply chain, such as delivery delays, administrative errors, and distribution constraints, ultimately increasing supply chain efficiency and effectiveness (Chen et al., 2024). Additionally, formative policy evaluation provides an opportunity to identify and address problems early before they develop into larger problems. For example, if there are policies that cause bottlenecks at certain points in the supply chain, formative evaluation can detect these problems early and allow the government to take corrective action. Thus, formative evaluation not only improves supply chain performance in the short term but also helps create a system that is more durable and adaptive to change (Joshi & Mukhopadhyay, 2022). Sustainability and stability of the supply chain is highly dependent on consistent and reliable policies. Formative evaluation ensures that policies remain relevant and effective over time, despite changes in the business environment or economic conditions. When policies are evaluated formatively, the government can ensure that regulations and procedures continue to support the smooth flow of goods and services. This helps prevent unexpected disruptions in the supply chain, such as sudden changes in regulations that can cause delays or increased costs (Calloway et al., 2023). Formative evaluation also helps in increasing transparency and accountability in supply chain management. With an open and participatory evaluation mechanism, various stakeholders, including business people, consumers and the general public, can provide valuable input. This transparency builds trust and cooperation between the public and private sectors, which is essential for creating an efficient and responsive supply chain. The participation of various parties in the evaluation also ensures that the policies adopted are more comprehensive and acceptable to all parties involved (Gao & Xu, 2024). Ultimately, the influence of formative evaluation of government policies on the supply chain can be seen from improving the overall performance of the supply chain. With continuous and responsive evaluation, the government can ensure that the supply chain operates efficiently, is able to adapt quickly to changes, and is always ready to face new challenges. This not only increases the competitiveness of the national economy but also provides direct benefits to consumers through reduced costs, increased product quality and on-time delivery. Thus, formative policy evaluation becomes an important instrument in effective and sustainable supply chain management (Maoela et al., 2024).

H₃: There is a significant influence of formative evaluation of government policies on the supply chain.

2.4 Consistency of development planning for the supply chain

Consistency in development planning has a significant influence on the smoothness and efficiency of the supply chain. Consistent planning ensures that every stage of development, from transportation infrastructure to logistics regulations, runs according to established plans. When development planning is carried out consistently, this creates a stable environment for supply chain actors to operate. This stability is essential to avoid disruptions in the flow of goods and services, ultimately increasing operational efficiency and reducing logistics costs (Gong & Andersen, 2024). One important aspect of consistent development planning is regulatory certainty. Consistent policies and regulations provide clarity for supply chain actors regarding the rules that must be followed. This certainty allows companies to better plan their operations, reducing the risk of uncertainty that can cause delays and increased costs. For example, if customs and tax regulations are consistent and do not change frequently, companies can manage their import and export processes more efficiently, which contributes to a smooth supply chain (Mane et al., 2024). Apart from that, consistent development planning also includes sustainable infrastructure development. Adequate infrastructure, such as roads, ports and logistics facilities, is essential to ensure the smooth flow of goods. With consistent planning, the government can ensure that infrastructure projects are completed on time and according to the required specifications. Good infrastructure not only reduces travel time and transportation costs but also increases supply chain reliability and security (Pfotenhauer et al., 2023). Consistency in development planning also helps in creating synergy between the various sectors involved in the supply chain. For example, good coordination between the transportation, industry and trade sectors can produce a more efficient and integrated supply chain system. With consistent planning, each sector can work in harmony and support each other, reducing friction and obstacles that may occur at supply chain meeting points. This creates a smoother flow of goods and services from producers to consumers (Cerdan et al., 2024). Ultimately, consistent development planning contributes to increasing a country's economic competitiveness. An efficient and reliable supply chain is one of the key factors in attracting investment and increasing exports. When investors see that a country has consistent development planning and adequate infrastructure, they are more inclined to invest. This not only drives economic growth but also creates jobs and improves the overall welfare of society. Thus, consistent development planning is an important foundation for the smooth and successful supply chain (N. K. Sharma et al., 2021).

H4: There is a significant influence of the consistency of development planning on the supply chain.

2.5 Supply chain towards community welfare

An efficient and effective supply chain has a significant impact on society's welfare. A good supply chain ensures that goods and services can reach consumers quickly, on time, and at minimal cost. This not only increases consumer satisfaction but also reduces the cost of living, because the prices of goods and services are more affordable. When basic needs such as food, clothing and shelter can be met more efficiently, people's welfare will increase significantly (Yao et al., 2024). Apart from that, an efficient supply chain can also create more and more diverse jobs. Various activities in the supply chain, from production, processing, storage, transportation, to distribution, require quite a lot of labor. Increased activity in these sectors could reduce unemployment rates and provide stable incomes for many people. By providing decent work and adequate income, community welfare can be improved, as well as encouraging local economic growth (Malki et al., 2024). A strong supply chain can also increase the competitiveness of a country or region in the global market. When goods and services can be produced and distributed efficiently, they will be more competitive in international markets. Increasing exports not only increases state income but also strengthens economic stability. Good economic stability allows the government to focus more on social development, such as education, health and infrastructure, which ultimately improves people's welfare (Shan et al., 2024). On the other hand, a strong supply chain also plays an important role in overcoming crises and disasters. In emergency situations, such as natural disasters or pandemics, a strong supply chain ensures that aid and basic needs can be distributed quickly and evenly. This is critical to ensuring that affected communities can quickly get the help they need, reduce suffering and speed recovery. Supply chain readiness and resilience are vital elements in maintaining community welfare in emergency conditions (Ghobadian et al., 2024). Lastly, a sustainable and environmentally friendly supply chain also contributes to the long-term welfare of society. By adopting environmentally friendly practices throughout the supply chain, such as reducing carbon emissions, managing waste well, and using resources efficiently, negative impacts on the environment can be minimized. A healthy and clean environment is an important factor in people's welfare, because people's health is directly influenced by the quality of the environment in which they live. Thus, good supply chain management not only provides economic benefits but also a better environment for future generations (Saad et al., 2024).

H₅: There is a significant influence of the supply chain on the well-being of the community.

H₆: There is a significant indirect effect of formative evaluation of government policies on community welfare through the supply chain.

H₇: There is a significant indirect effect of the consistency of development planning on community welfare through the supply chain.

3. Methodology

This research was conducted at Surakarta High School. The object and focus of the research were all high school students in Surakarta, namely 43.371. The sample in this study was 200.

Tabel 2Population

No Subdistrict Population 7.035 3.948 1 2 3 4 5 6 7 Ayah Bonorowo 5.457 7.529 Buayan Buluspesantren 8.647 Gombong 6.233 Karanganyar 4.522 Karanggayam Total 43.371

sources: Data Central Bureau of Statistics (2024)

Table 1 Validity of instrument

-	Consistency of Development Planning	Formative Evaluation of Policies	Level of Welfare	Supply Chain
KKS1	0.944			
KKS10	0.801			
KKS2	0.954			
KKS3	0.919			
KKS4	0.916			
KKS5	0.907			
KKS6	0.908			
KKS7	0.863			
KKS8	0.861			
KKS9	0.929			
KP1				0.757
KP10				0.866
KP11				0.821
KP12				0.745
KP13				0.844
KP14				0.892
KP15				0.779
KP2				0.772
KP3				0.708
KP4				0.697
KP5				0.807
KP6				0.676
KP7				0.815
KP8				0.706
KP9				0.837
PK1		0.878		
PK10		0.717		
PK2		0.830		
PK3		0.780		
PK4		0.854		
PK8		0.742		
PK9		0.767		
PKA1			0.936	
PKA10			0.940	
PKA2			0.938	
PKA3			0.866	
PKA4			0.938	
PKA5			0.938	
PKA6			0.947	
PKA7			0.875	
PKA8			0.920	
PKA9			0.922	

Source: SEM PLS 2024

Table 2
Cronbach's alpha

	Cronbach's Alpha
Consistency of Development Planning	0.974
Formative Evaluation of Policies	0.904
Level of Welfare	0.980
Supply Chain	0.955

Source: SEM PLS 2024

Based on the instrument test results showing a loading factor value of more than 0.70, this can be explained that each instrument has high validity.

Table 3 Reliability

	Composite Reliability
Consistency of Development Planning	0.977
Formative Evaluation of Policies	0.924
Level of Welfare	0.983
Supply Chain	0.960

Based on the reliability test results, the results show greater than 0.70, so the research instrument is declared to have high reliability and can be used as a measuring tool in this research.

4. Result

Based on the results of the path coefficient analysis of the direct influence hypothesis, it shows that of the five hypotheses tested there are four hypotheses that have a significant influence, this is indicated by a t-statistic value greater than 1.96 and a p value smaller than 0.05 while one hypothesis does not significant, namely formative evaluation of policies on level of welfare, namely t-statistic of 1,103 < 1.96 and p value 0.271 > 0.05.

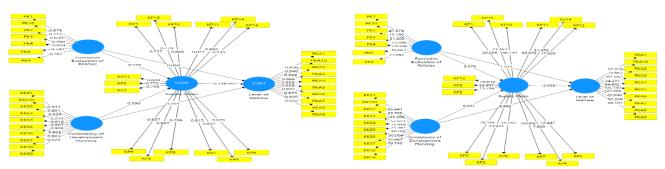


Fig. 1. Result of outer model

Source: SEM PLS 2024

Fig. 2. Result of inner model

Table 3Test Result of Path Coefficient

	T Statistics (O/STDEV)	P Values
Consistency of Development Planning → Level of Welfare	8.442	0.000
Consistency of Development Planning → Supply Chain	6.697	0.000
Formative Evaluation of Policies → Level of Welfare	1.103	0.271
Formative Evaluation of Policies → Supply Chain	9.378	0.000
Supply Chain \rightarrow Level of Welfare	2.038	0.042

Sources: SEM PLS 2024

Tabel 4Test result of path coefficient

	T Statistics (O/STDEV)	P Values
Formative Evaluation of Policies → Supply Chain → Level of Welfare	2.638	0.009
Consistency of Development Planning \rightarrow Supply Chain \rightarrow Level of Welfare	1.816	0.070

Sources: SEM PLS 2024

Based on the results of the indirect effect hypothesis test, it was found that the results of formative evaluation of policies on level of Welfare through supply chain as an intervening variable a significant t-statistic effect of 2.638>1.96 and p value of 0.009<0.05. Meanwhile, consistency of development planning on level of Welfare through supply chain as an intervening variable the t-statistic value of 1.816<1.96 and p value 0.070>0.05.

5. Discussion

5.1 The effect of formative evaluation of government policies on community welfare

Based on the results of the formative evaluation analysis, government policy on community welfare does not have a significant effect as seen from the t-statistic value < 1.96 and p-value > 0.05 and the hypothesis is rejected. This can be explained by the

fact that formative evaluations of government policies often do not have a significant effect on people's welfare for several basic reasons. First, formative evaluation is usually carried out during the policy implementation process, which means that the policy has not yet been fully implemented and its impact cannot be fully measured. Formative evaluation aims to provide immediate feedback and improvements in the implementation process, but changes and improvements made during this process may require quite a long time before the impact can be felt by the community (Listan Bernal et al., 2024).

Second, the complexity of social problems faced by society often requires long-term and sustainable solutions, which cannot be achieved by formative evaluation alone. Government policies that aim to improve people's welfare usually have to address various aspects such as education, health, infrastructure and the economy. Formative evaluations, which are ad hoc and focus on specific aspects of the policy, may not be comprehensive enough to address the complexity of the issue. Therefore, although formative evaluation can provide short-term improvements, its significant impact on community well-being requires a more holistic and sustainable approach (Dara et al., 2024).

Third, limited resources and institutional capacity are also important factors. Governments often face constraints in terms of financial, human and technical resources to carry out effective formative evaluations. These limitations can hinder the implementation of recommendations from formative evaluations and reduce their potential impact on community welfare. In addition, low institutional capacity can lead to a lack of coordination between various government agencies and other stakeholders, which ultimately reduces the effectiveness of the policies being evaluated (Cong et al., 2024).

Fourth, public participation and acceptance of policies also plays an important role. Formative evaluations that do not involve direct community participation may not properly reflect community needs and aspirations. When people feel they are not involved or policies do not meet their needs, the level of acceptance and compliance with those policies tends to be low. This can reduce the effectiveness of policies and their impact on community welfare. Therefore, it is important to involve the community in the policy evaluation and implementation process to ensure that the policy is relevant and well received (Freije et al., 2022).

Finally, political factors and policy changes can also influence the impact of formative evaluation on community welfare. Government policies are often influenced by political dynamics and changes in leadership. When policy or political priorities change, the results and recommendations from the formative evaluation may not be implemented or continued. In addition, policies that are short-term or populist may be preferred over policies that require more time and effort to improve people's welfare. This results in the formative evaluation that has been carried out being less effective in providing a significant long-term impact on community welfare (Geels et al., 2021).

The process of preparing the 2005–2025 RPJPD is in accordance with or *compliance* regarding regional development planning policies, Minister of Home Affairs Regulation no. 54 of 2010 concerning KLHS, as well as the use of technocratic, participatory, *top down*, and *bottom-up*. *Compliance* This does not support the ideal scenario of planning and efforts to achieve the vision planned because the preparation of the 2005–2025 RPJPD must *fitting* The 2006–2010 RPJM has been implemented, so it is not in accordance with the 5 year stages prepared in the RPJPD.

Phenomenon *compliance* the process of drafting the 2005–2025 RPJPD supports and expands Ripley's thesis. Ripley (1985) explained that there are 2 main perspectives in formative evaluation studies, namely perspective *compliance* and *what's happening*. The process of preparing the 2005–2025 RPJPD shows a high degree of compliance by the Kebumen Regency Government with regional development planning policies, the Central Government and the Central Java Provincial Government. A high degree of compliance does not guarantee an ideal scenario for the preparation of the 2005–2025 RPJPD and its implementation. The establishment of the 2005–2025 RPJPD in 2010 resulted in the first 5year period (2005–2010) being planned, only accommodating the 2006–2010 RPJM which had already been implemented. The preparation of the 2005–2025 RPJPD was not complete for a period of 20 years because the 2005–2010 period "planned" regional development policies, programs and activities that had been completed.

The conditions as described above are also related to factors other than compliance with the 2005–2025 RPJPD preparation process with regional development planning policies. The development of regulations for implementing regional development planning policies as well as the existence of policies at the national (national RPJPN and RTRW) and provincial (provincial RPJPD and RTRW) levels ultimately influenced the process of preparing the 2005–2025 RPJPD in Kebumen Regency. The results of this study support Ripley's (1985) thesis about perspective *what's happening*, Which assumes that many factors influence the implementation of a policy or program (Durand et al., 2024).

The phenomenon of preparing the 2005–2025 RPJPD also illustrates the use of planning methodology or techniques, known as the technocratic approach. This is in line with the research results of Sutoro Eko, et al (2012) and Prasetyia and Wulandari P (2009) which shows that the technocratic approach is one of the factors influencing the process of preparing the 2005–2025 RPJPD. UU no. 25 of 2004 as a national and regional development planning policy places bureaucrats as the main actors in preparing the RPJPD so that the technocratic approach becomes one of the factors influencing the process and the 2005–2025 RPJPD.

The description of the various techniques used and the substance of the RPJPD as described above is in line with Faludi (1973). That the process of preparing long-term planning (RPJPD) adheres to theory *procedural* (*theory of planning*) as well as theory *substantive* (*theory in planning*). This can be seen in the results from other scientific disciplines, at least geography, sociology, economics and agriculture *input* in the planning process (namely the preparation of the 2005–2025 RPJPD) using various planning analysis methods, which then produces *output* in the form of RPJPD 2005–2025 (Jayadinata, 1986).

The process of preparing the vision and mission in the 2005–2005 RPJPD cannot be separated from the concept of strategic management. That strategic management in local government is more directed towards a strategic planning system approach (Asmoko, In relation to strategic planning, Olsen and Eadie (Bryson, 2008), explain strategic planning as a disciplined effort to make important decisions and actions that shape and guide how an organization becomes (or other entity), what the organization (or other entity) does, and why the organization (or other entity) does things like that. Allison and Kaye (2005) define strategic planning as a management tool, and the same as every management tool, they are used for one purpose only — to help the organization do its job better (Safra et al., 2024).

Based on a combination of the 2 expert opinions above, and linked to the process of preparing the 2005–2025 RPJPD, it appears that there is a process of formulating important decisions and actions regarding the vision and mission of the regional government, which is accompanied by building involvement *stakeholder* The main thing is that regional governments can carry out their duties better through the realization of their vision and mission. In other words, the strategic plan is divided into several elaborations, including the 20 year RPJPD which contains the vision, mission and direction of regional development (Pinto et al., 2024).

Based on the findings and discussion above, 3 minor propositions can be prepared as follows.

(1).A high degree of compliance with policies and administrative hierarchy does not guarantee the realization of the ideal scenario for the long-term regional development planning process. (2). The process of preparing regional long-term development plans uses a more technocratic approach that emphasizes the substance of regional long-term development plans.(3) Factors that influence the process of preparing the RPJPD are compliance with the administrative hierarchy, the development of regulations implementing regional development planning policies, the existence of the RPJPN, provincial RPJPD, as well as other central and regional documents relating to long-term planning, as well as the use of a technocratic approach.

5.2 The effect of consistent development planning on community welfare

From the results of the analysis, the influence of consistent development planning on community welfare is very significant because consistent planning ensures the continuity and integration of development programs. When development planning is carried out consistently, each step and stage in the development process can be carried out in a more structured and focused manner. This allows for more effective and efficient resource allocation, and reduces the risk of waste or program duplication. In this way, people can feel the benefits of development programs more directly and sustainably, thus improving their welfare (Xu et al., 2024).

Consistency in development planning also provides certainty and stability for the various parties involved, including the community, government and investors. This certainty is important to create a conducive environment for investment and community participation in development programs. When the community and business actors see consistency and commitment from the government in implementing development plans, they will be more motivated to participate in supporting and contributing to various development programs. This not only speeds up the development process but also ensures that the results are more in line with the needs and aspirations of the community, so that their welfare can improve significantly (Zhang et al., 2024).

In addition, consistent development planning allows for better evaluation and adjustments at each stage of program implementation. With a consistent plan, the government can carry out regular monitoring and evaluation to assess the progress and effectiveness of the programs being implemented. The results of this evaluation can then be used to make necessary adjustments and improvements, so that development programs can be more targeted and have a greater positive impact on society. Thus, consistent development planning plays a key role in ensuring that development efforts can run optimally and provide real benefits for improving community welfare (W. Wang et al., 2024).

A brief overview of the process of preparing the 2006–2010 RPJM and 2010-2015 RPJMD shows stages that are substantively the same. The stages referred to are; (a) preparation of the initial design; (b) implementation of musrenbang; (c) final design formulation; and (d) determination. The description of the process and stages of preparing the two RPJMDs shows the form *compliance* regarding the policies governing the RPJMD preparation process.

Even though the stages are substantively the same, there are differences in the preparation of the 2006–2010 RPJM and the 2010–2015 RPJMD, namely in: (1) the process of aligning the vision and mission of regional heads elected in the 2010 post-

conflict regional elections with the vision and mission of the 2005–2025 RPJPD. In the process of preparing the 2006–2010 RPJM, there was no stage of aligning the vision and mission of regional heads because its preparation preceded the preparation of the 2005–2025 RPJPD; (2) The 2006–2010 RPJM is stipulated through a Regional Regulation (referring to article 19 paragraph 3 of Law No. 25 of 2004), while the 2010-2015 RPJMD is stipulated through a Regional Regulation (referring to article 150 paragraph 3 letter e of Law No. 32 of 2004).

Efforts to clarify the vision and mission of the RPJMD are consistent with research by Santoso (2008) with differences in the vision and mission statements offered by elected regional heads, which have not changed because they are considered 'given', except at the will of the selected district head (Diglio et al., 2024).

The above description of the vision and mission of the elected regional head, which will determine consistency in regional development planning, appears to be in line with the research results of Syarif Hidayat (2010). That though level *compliance* regarding the provisions for preparing regional development planning as regulated in the high regional development planning policy, however there are other factors that also determine the consistency of regional development planning, namely the interaction between the elected regional head, Bappeda which is institutionally responsible for preparing the RPJMD, and other drafting teams including expert teams.

The stages and process of preparing the RPJPD and RPJMD for Kebumen Regency appear to support and expand Ripley's (1985) thesis regarding perspective *compliance* and *what's happening*. With regard to Ripley's perspective, the description of the formulation of the RPJPD and RPJMD of Kebumen Regency shows a high degree of compliance by the Kebumen Regency Government with regional development planning policies, the Central Java Provincial Government and the central government.

Form *compliance* The final step in the process of preparing 2 regional medium-term development planning documents is the use of a technocratic, participatory, top-down approach (*top down*), and bottom-up (*bottom-up*) approaches during the preparation process. Specifically, for the 2010–2015 RPJMD preparation process, it begins with a political approach. In the process of preparing the RPJMD, the use of planning methodology is also illustrated. This can be seen in the stages carried out, such as the preparation, implementation and determination stages. The description of the use of the techniques above shows the use of theory *procedural* as well as theory *substantive* in the process of preparing the Kebumen Regency RPJMD. Thus, this is in line with Faludi's thesis (1973).

Apart from the above, this research also shows that the high degree of compliance from the Kebumen Regency Government to the Central Java Provincial Government and the central government does not necessarily lead to consistency between the RPJMD and the RPJPD. However, this is also related to factors other than compliance which also influence the consistency of regional development planning. The development of regulations for implementing regional development planning policies and the existence of policies related to district/city RPJPD at the provincial and national government levels are factors that influence the implementation of Kebumen Regency development planning policies. The results of this study support Ripley's (1985) thesis about perspective *what's happening*, which assumes that there are many factors that influence the implementation of a policy or program (Jayashree et al., 2021).

Based on the findings and discussion above, 3 minor propositions can be prepared as follows. (1). A high degree of compliance with policies and administrative hierarchy does not guarantee the consistency of the RPJMD with the RPJPD so that the implementation of the RPJPD is not as idealized. (2). Factors that influence the consistency of the RPJMD with the RPJPD are compliance with regional development planning policies and administrative hierarchy, the development of implementing regulations for regional development planning policies, the existence of policies related to the district/city RPJMD at the provincial and central government levels, as well as the choice of vision and mission. elected regional heads. (3). The process of preparing regional medium-term development plans uses planning techniques and emphasizes the substance of regional medium-term development plans.

5.3 The influence of formative evaluation of government policies on supply chains

The influence of formative evaluation of government policies on supply chains is very significant because this evaluation allows for quick and timely improvements and adjustments to policies. Formative evaluation is carried out during the policy implementation process, so that the government can immediately identify and overcome problems or obstacles that arise in the supply chain. By making the necessary adjustments, the government can ensure that the policies implemented are more effective and efficient in supporting the smooth flow of goods and services in the supply chain. This is important to reduce logistics costs, increase distribution speed, and ensure product availability on the market, which will ultimately increase competitiveness and economic prosperity (X. Wang et al., 2024).

In addition, formative policy evaluation allows better collaboration between the government and actors in the supply chain. Through this evaluation, the government can collect feedback from various parties involved, including manufacturers, distributors, retailers and consumers. This feedback is invaluable for understanding field conditions and the real needs of each

component in the supply chain. In this way, the government can formulate policies that are more relevant and support synergy between the public and private sectors. This good collaboration will help optimize supply chain operations, increase responsiveness to market demand, and reduce the risk of disruption in the distribution of goods and services (Riggs et al., 2024).

Finally, formative policy evaluation also plays a role in increasing transparency and accountability in supply chain management. With ongoing evaluation, the government can ensure that each stage in policy implementation is monitored and evaluated objectively. This transparency is important to build trust among supply chain actors and ensure that the policies implemented tru ly support supply chain efficiency and effectiveness. High accountability also motivates actors to carry out their roles better, because they know that their performance will be evaluated and rewarded. Overall, formative evaluation of government policies plays an important role in creating a supply chain that is stronger, more resilient and responsive to market dynamics (Meng et al., 2024).

The preparation of the RKPD is a form of implementation of regional development planning policies in Kebumen Regency. The results of the analysis of the RKPD preparation process using the Strauss and Corbin analysis model (1990), show 2 core categories, namely: (1) the process of preparing the RKPD for Kebumen Regency through several stages, and (2) the characteristics of the process for preparing the RKPD for Kebumen Regency.

The stages and process of preparing the RKPD for Kebumen Regency show that it is in accordance with the RKPD preparation policy, if there are differences due to developments in the RKPD preparation process to accommodate the needs of the district. Thus, it can be stated that there is a high degree of compliance with regional development planning policies in the process of preparing the Kebumen Regency RKPD (Ripley, 1985). The process of preparing the RKPD above shows its conformity with Tjokroamidjojo's (1976) opinion regarding the aspects that need to be carried out to be able to prepare a good and operational annual plan.

In the process of preparing the RPJPD for Kebumen Regency, it is clear that the use of planning methodology was used. Apart from appearing in the stages carried out, it can also be seen in the techniques used and the use of various documents which must be used as references in each stage of preparation. Thus, this is in line with Faludi (1973).

RKPD has an important function in the regional planning system, because it translates medium-term development plans or strategic plans (RPJMD and Renstra SKPD) into programs, activities and annual budgeting. Therefore, on the substance side, the RKPD answers operational matters, from how regional development has performed in previous years, what the themes and policies of the Nth year RKPD are, to what the budget allocation policy is.

As explained above, the first critical point in the RKPD preparation process is in the musrenbang process, both at the village, sub-district and district levels. That approach *top-down* and *bottom-up* is something that is paired because one can not be separated from the other. In the past, the *top-down* very thick. Mechanism *bottom-up* is now increasingly echoing amidst the development being carried out (see Suhirman and Indrayana in Bastian, 2006).

However, based on the presentation and results of data analysis, it appears that musrenbang as a medium for community participation is still not as expected because it is still very much determined by conditions, dynamics, as well as the characteristics and abilities of executive leaders, the timing of musrenbang, the similarity of musrenbang information and materials. Apart from that, the bureaucratic attitude assumes that society is still incapable and when "let go" (only uses a bottom-up) shows that some regional bureaucracies still use past thinking patterns and approaches. Some people expressed the opinion that the time for holding the Musrenbang was too short compared to its objectives, so the Musrenbang was considered to be just a formality to fulfill the provisions of regional development planning policies. However, the bureaucracy responded to the public's statement that it was true that musrenbang was a medium for formalizing and validating proposed development programs and activities, at least reflecting the above. The time for holding the musrenbang was considered too short and was considered to be just a formality, in line with the research results of Nasution (2007) and the PKP2A III LAN Samarinda Study Team (2010).

A part from the musrenbang, based on the presentation and results of data analysis, it appears that another critical point is at the KUA PPAS stage. This stage is more elitist because it only involves the executive (TAPD) and the DPRD (Banggar). Although this is in line with Minister of Home Affairs Regulation no. 13 of 2006, but in practice the discussion of KUA PPAS is not fully in line with this policy because it still includes programs and activities in the name of aspirations, priorities, urgency, and so on, which can defeat the proposed programs and activities resulting from the Musrenbang. This opportunity appears more flexible because the KUA PPAS discussion does not involve and without the obligation to convey the results to the public. Thus, it can be stated that the KUA PPAS stage is a critical point in the regional planning and budgeting process which can influence the final results regional planning and budgeting processes (Budiono & Purba, 2023).

The elitist nature of the KUA PPAS discussion as expressed above is in line with the research results of Sutoro Eko, et al. (2012). Residents have space and arena in SPPN, but do not have arena and access at all in budgeting. The budget committee

from both the regional government and DPRD appears to be the final determining actor in the output of the priority list of development proposals to be funded by the APBD. Thus, the role of parliament is not prominent in the realm of planning, but is accommodated in budgeting (Ching-Pong Poo et al., 2024).

5.4 The influence of consistent development planning on the supply chain

The influence of consistent development planning on the supply chain is very significant because consistent planning ensures stability and continuity in the distribution flow of goods and services. With structured and continuous planning, each stage in the supply chain can be planned better, from production to final distribution. This allows for more accurate predictions of resource requirements, delivery times and production capacity. Consistency in development planning also reduces the risk of disruptions that could affect the smooth running of the supply chain, such as sudden policy changes or unexpected resource shortages (Vijayasingham et al., 2024).

Apart from that, consistency in development planning provides certainty to business people and investors in the supply chain. When the government shows commitment and consistency in implementing development plans, business people can plan their investments with more confidence. This certainty allows companies to make long-term investments in the infrastructure, technology and human resources needed to support supply chain operations. With this certainty, companies can increase operational efficiency, reduce logistics costs, and improve the quality of the products and services they offer (Avordeh et al., 2024).

Consistent development planning also supports the development of infrastructure needed to support an effective supply chain. Adequate infrastructure, such as roads, ports, airports and other transportation systems, is very important to ensure the smooth flow of distribution of goods and services. Consistent development planning enables appropriate budget and resource allocation for the development and maintenance of this infrastructure. With good infrastructure, delivery time can be reduced, transportation costs can be reduced, and the risk of damage to goods during delivery can be minimized. All of these factors contribute to increasing supply chain efficiency and effectiveness, which ultimately has a positive impact on economic growth and societal welfare (Geels et al., 2021).

5.5 The influence of supply chains on community welfare

The influence of the supply chain on community welfare is very significant because an effective supply chain ensures the availability of goods and services needed by the community. When the supply chain functions well, important products such as food, medicine and other consumer goods can be distributed on time and in adequate quantities. This helps prevent shortages and maintain price stability, so that people can meet their daily needs without difficulty. Regular and reliable availability of goods and services improves people's quality of life by providing easy and affordable access to the various products they need (Durand et al., 2024).

In addition, an efficient supply chain contributes to job creation and economic growth. Each stage in the supply chain, from production, processing, transportation, to distribution, requires a diverse workforce. With a developed supply chain, various industrial sectors can operate more productively, creating more job opportunities for the community. This increase in employment opportunities not only reduces the unemployment rate but also increases household income, which ultimately contributes to improving the overall economic welfare of society (Safra et al., 2024).

A good supply chain also supports innovation and increases the competitiveness of local industry. When the supply chain runs efficiently, production and distribution costs can be reduced, allowing companies to offer products at more competitive prices. In addition, efficiency in the supply chain allows companies to focus more on innovation and improving product quality. In this way, local products can compete in domestic and international markets, opening up greater export opportunities and bringing in foreign exchange for the country. This increased innovation and competitiveness not only benefits the industrial sector but also has a positive impact on the welfare of society by providing high quality products and opening up wider economic opportunities (Pinto et al., 2024).

5.6 Indirect influence of formative evaluation of government policies on community welfare through the supply chain

The indirect influence of formative evaluation of government policies on community welfare through the supply chain is very significant because formative evaluation allows for increased efficiency and effectiveness of the supply chain, which ultimately improves community welfare. Formative evaluation aims to assess and improve policies during the implementation phase, so that these policies can be optimized to support a smooth supply chain. When the supply chain runs efficiently, goods and services can be distributed quickly, logistics costs can be reduced, and product availability on the market can be maintained. This efficiency contributes to price stability and better access for people to basic needs, thereby improving their welfare (Xu et al., 2024).

In addition, formative evaluation allows identification and mitigation of obstacles in the supply chain that can affect community welfare. For example, formative evaluations may uncover problems such as inadequate infrastructure, inefficient regulations, or poor coordination between various stakeholders. By identifying these problems, the government can take appropriate action to overcome these obstacles. Improvements in these aspects will streamline the distribution flow of goods and services, reduce delivery time and costs, and ensure that important products can reach consumers more quickly and safely. All of this has a positive impact on people's welfare by providing better and more affordable access to various life necessities (Zhang et al., 2024).

Formative evaluation also supports transparency and accountability in supply chain management, which is important for increasing public trust and community participation. When the government actively evaluates and improves policies through feedback received from various parties, including business people and the public, transparency in decision making increases. This builds trust between supply chain actors and the community, which in turn encourages their active participation in supporting government policies and programs. This participation and trust is important to create a conducive environment for innovation, investment and local capacity development in the supply chain. Thus, formative evaluation of government policies has a significant indirect impact on community welfare through increasing efficiency, effectiveness and transparency in the supply chain (W. Wang et al., 2024).

5.7 Indirect influence of consistent development planning on community welfare through the supply chain

The indirect influence of consistent development planning on community welfare through the supply chain can be considered insignificant because various external factors that influence the supply chain are often outside the control of government development planning. For example, global market conditions, fluctuations in raw material prices, and international logistics disruptions can affect supply chain performance even though development planning is carried out consistently. Even with good planning, the government may not be able to anticipate or control all of these external variables, so the impact of planning on community welfare through the supply chain is limited (Diglio et al., 2024). Apart from that, the gap between planning and implementation is also an important factor that reduces the indirect impact of development planning on community welfare through the supply chain. Even though planning is carried out consistently, implementation in the field often faces various obstacles, such as complicated bureaucracy, lack of coordination between institutions, and limited resources. This gap can hamper the effectiveness of development policies and programs, so that the expected benefits from planning are not fully achieved. As a result, improvements in the supply chain that should occur as a result of consistent planning may not be realized, and their impact on community welfare will be insignificant (Jayashree et al., 2021). Lastly, the effects of consistent development planning on the supply chain take quite a long time to materialize, and the results may not be immediately felt by the community. Infrastructure development, for example, takes years to complete and function optimally. During this period, people may not immediately feel a significant increase in well-being. Apart from that, the benefits of an efficient and structured supply chain will only be visible after all supporting elements, such as transportation, information technology and regulations, function in harmony. This process requires time and continuity in policy, so that the indirect impact of consistent development planning on community welfare through the supply chain is often not immediately visible or felt (X. Wang et al., 2024).

6. Conclusion

Based on The results of the analysis show that 1) there is no significant influence of government policy evaluation on community welfare, 2) there is a significant influence of the consistency of development planning on community welfare, 3) there is a significant influence of government policy evaluation on the supply chain, 4) there is a significant influence consistency of development planning on supply chains, 5) there is a significant influence of supply chains on community welfare, 6) there is a significant influence of government policy evaluation on community welfare through supply chains, 7) there is no significant influence of consistency of development planning on community welfare.

Acknowledgment

The authors would like to thank the reviewers for constructive comments on earlier versions of this paper.

References

- Avordeh, T. K., Salifu, A., Quaidoo, C., & Opare-Boateng, R. (2024). Impact of power outages: Unveiling their influence on micro, small, and medium-sized enterprises and poverty in Sub-Saharan Africa An in-depth literature review. *Heliyon*, 10(13), e33782. https://doi.org/10.1016/j.heliyon.2024.e33782
- Bø, E., Hovi, I. B., & Pinchasik, D. R. (2023). COVID-19 disruptions and Norwegian food and pharmaceutical supply chains: Insights into supply chain risk management, resilience, and reliability. *Sustainable Futures*, 5(November 2022), 100102. https://doi.org/10.1016/j.sftr.2022.100102
- Božić, J., Srbljinović, A., & Herak, A. (2022). Sustainability in the eye of the farmer: Perceptions of sustainability among Croatian micro entrepreneurs in organic production of fruits and vegetables. *Current Research in Environmental*

- Sustainability, 4(November). https://doi.org/10.1016/j.crsust.2022.100191
- Budiono, S., & Purba, J. T. (2023). Factors of foreign direct investment flows to Indonesia in the era of COVID-19 pandemic. *Heliyon*, 9(4), e15429. https://doi.org/10.1016/j.heliyon.2023.e15429
- Calloway, E. E., Steeves, E. A., Nitto, A. M., & Hill, J. L. (2023). A Mixed-Methods Study of Perceived Implementation Challenges for WIC Online Ordering and Transactions. *Journal of the Academy of Nutrition and Dietetics*, 123(10), 1449–1460. https://doi.org/10.1016/j.jand.2023.05.004
- Cerdan, K., Thys, M., Costa Cornellà, A., Demir, F., Norvez, S., Vendamme, R., Van den Brande, N., Van Puyvelde, P., & Brancart, J. (2024). Sustainability of self-healing polymers: A holistic perspective towards circularity in polymer networks. *Progress in Polymer Science*, 152, 101816. https://doi.org/10.1016/j.progpolymsci.2024.101816
- Chatterjee, S., Chaudhuri, R., Vrontis, D., Dana, L. P., & Kabbara, D. (2024). Developing resilience of MNEs: From global value chain (GVC) capability and performance perspectives. *Journal of Business Research*, 172(December 2023). https://doi.org/10.1016/j.jbusres.2023.114447
- Chen, Y., Wang, W., Qiao, Y., Zheng, Q., Deveci, M., Varouchakis, E. A., & Al-Hinai, A. (2024). Assessing adoption barriers to digital technology in the natural gas supply chain using an spherical fuzzy RAFSI model. *Resources Policy*, 94(April), 105103. https://doi.org/10.1016/j.resourpol.2024.105103
- Ching-Pong Poo, M., Wang, T., & Yang, Z. (2024). Global food supply chain resilience assessment: A case in the United Kingdom. *Transportation Research Part A: Policy and Practice*, 181(February), 104018. https://doi.org/10.1016/j.tra.2024.104018
- Cong, R., Li, F., Wang, L., & Wang, H. (2024). Risk management of sports service supply chain using fuzzy comprehensive evaluation and intelligent neural network. *Heliyon*, 10(11), e32068. https://doi.org/10.1016/j.heliyon.2024.e32068
- Dara, H. M., Raut, A., Adamu, M., Ibrahim, Y. E., & Ingle, P. V. (2024). Reducing non-value added (NVA) activities through lean tools for the precast industry. *Heliyon*, 10(7), e29148. https://doi.org/10.1016/j.heliyon.2024.e29148
- Diglio, A., Mancuso, A., Masone, A., & Sterle, C. (2024). Multi-echelon facility location models for the reorganization of the Blood Supply Chain at regional scale. *Transportation Research Part E: Logistics and Transportation Review*, 183(February), 103438. https://doi.org/10.1016/j.tre.2024.103438
- Ding, Z., Hamann, K. T., & Grundmann, P. (2024). Enhancing circular bioeconomy in Europe: Sustainable valorization of residual grassland biomass for emerging bio-based value chains. *Sustainable Production and Consumption*, 45(September 2023), 265–280. https://doi.org/10.1016/j.spc.2024.01.008
- Durand, C., Hofferberth, E., & Schmelzer, M. (2024). Planning beyond growth: The case for economic democracy within ecological limits. *Journal of Cleaner Production*, 437(December 2023). https://doi.org/10.1016/j.jclepro.2023.140351
- Elessa Etuman, A., Coll, I., Viguié, V., Coulombel, N., & Gallez, C. (2024). Exploring urban planning as a lever for emission and exposure control: Analysis of master plan actions over greater Paris. *Atmospheric Environment: X, 22*(December 2023). https://doi.org/10.1016/j.aeaoa.2024.100250
- Fessler, A., Haustein, S., & Thorhauge, M. (2024). Drivers and barriers in adopting a crowdshipping service: A mixed-method approach based on an extended theory of planned behaviour. *Travel Behaviour and Society*, 35(February), 100747. https://doi.org/10.1016/j.tbs.2024.100747
- Freije, I., de la Calle, A., & Ugarte, J. V. (2022). Role of supply chain integration in the product innovation capability of servitized manufacturing companies. *Technovation*, 118(December 2019). https://doi.org/10.1016/j.technovation.2020.102216
- Gao, B., & Xu, Z. (2024). Adjustment of supply chain investment by transnational corporations in the Ukrainian crisis and geopolitical risks Taking the three levels as the analytical framework. *Transnational Corporations Review*, 16(3), 200076. https://doi.org/10.1016/j.tncr.2024.200076
- Geels, F. W., Sareen, S., Hook, A., & Sovacool, B. K. (2021). Navigating implementation dilemmas in technology-forcing policies: A comparative analysis of accelerated smart meter diffusion in the Netherlands, UK, Norway, and Portugal (2000-2019). *Research Policy*, 50(7), 104272. https://doi.org/10.1016/j.respol.2021.104272
- Ghobadian, A., Talavera, I., Bresciani, S., & Troise, C. (2024). Successful establishment of innovation systems for low visibility breakthrough innovations: The role of system builders, proximal institution and legitimacy. *Technological Forecasting and Social Change*, 201(February 2023), 123210. https://doi.org/10.1016/j.techfore.2024.123210
- Gong, H., & Andersen, A. D. (2024). The role of material resources for rapid technology diffusion in net-zero transitions: Insights from EV lithium-ion battery Technological Innovation System in China. *Technological Forecasting and Social Change*, 200(December 2023), 123141. https://doi.org/10.1016/j.techfore.2023.123141
- Jayashree, S., Reza, M. N. H., Malarvizhi, C. A. N., & Mohiuddin, M. (2021). Industry 4.0 implementation and Triple Bottom Line sustainability: An empirical study on small and medium manufacturing firms. *Heliyon*, 7(8), e07753. https://doi.org/10.1016/j.heliyon.2021.e07753
- Joshi, S., & Mukhopadhyay, K. (2022). Cleaner the better: Macro-economic assessment of ambitious decarbonisation pathways across Indian states. *Renewable and Sustainable Energy Transition*, 2(June), 100027. https://doi.org/10.1016/j.rset.2022.100027
- Latifi, M. A., Nikou, S., & Bouwman, H. (2021). Business model innovation and firm performance: Exploring causal mechanisms in SMEs. *Technovation*, 107(February), 102274. https://doi.org/10.1016/j.technovation.2021.102274
- Li, R., Zhang, M., Yin, S., Zhang, N., & Mahmood, T. (2024). Developing a conceptual partner selection framework for matching public–private partnerships of rural energy internet project using an integrated fuzzy AHP approach for rural revitalization in China. *Heliyon*, 10(10), e31096. https://doi.org/10.1016/j.heliyon.2024.e31096

- Listan Bernal, M., Krivoshapkina, M., Tsymzhitov, S., & Yeo, G. T. (2024). Prioritizing key factors for improving logistics of Sakha Republic using CFPR. *Asian Journal of Shipping and Logistics*, *March*, 1–6. https://doi.org/10.1016/j.ajsl.2024.06.001
- Malki, I., Ghalib, A., & Kaousar, R. (2024). The impact of microfinance on entrepreneurship and welfare among women borrowers in rural Pakistan. *World Development Perspectives*, 35(April), 100616. https://doi.org/10.1016/j.wdp.2024.100616
- Mane, A. El, Tatane, K., & Chihab, Y. (2024). Transforming agricultural supply chains: Leveraging blockchain-enabled java smart contracts and IoT integration. *ICT Express*, 10(3), 650–672. https://doi.org/10.1016/j.icte.2024.03.007
- Maoela, M. A., Chapungu, L., & Nhamo, G. (2024). The socio-economic impacts of COVID-19 on selected mining companies in Limpopo Province, South Africa. *Extractive Industries and Society*, 18(April), 101462. https://doi.org/10.1016/j.exis.2024.101462
- Meng, X., Yang, S., & Pan, G. (2024). Innovation practices in agricultural transformation in East China: Exploring the impact and implications of the new professional farmer training model. *Heliyon*, 10(14), e34671. https://doi.org/10.1016/j.heliyon.2024.e34671
- Pfotenhauer, S. M., Wentland, A., & Ruge, L. (2023). Understanding regional innovation cultures: Narratives, directionality, and conservative innovation in Bavaria. *Research Policy*, 52(3), 104704. https://doi.org/10.1016/j.respol.2022.104704
- Pinto, M., Silva, C., Thürer, M., & Moniz, S. (2024). Nesting and scheduling optimization of additive manufacturing systems: Mapping the territory. *Computers and Operations Research*, 165(February). https://doi.org/10.1016/j.cor.2024.106592
- Riggs, R., Felipe, C. M., Roldán, J. L., & Real, J. C. (2024). Information systems capabilities value creation through circular economy practices in uncertain environments: A conditional mediation model. *Journal of Business Research*, 175(December 2023). https://doi.org/10.1016/j.jbusres.2024.114526
- Saad, S. M., Ubeywarna, D., & Zhang, H. (2024). Supply Network Risk Mitigation-Industry 4.0 Approach. *Procedia Computer Science*, 232(2023), 3206–3215. https://doi.org/10.1016/j.procs.2024.02.136
- Safra, I., Ghachem, K., Benabdallah, F., Albalawi, H., & Kolsi, L. (2024). Integrated operations planning model for the automotive wiring industry. *Heliyon*, 10(11), e31820. https://doi.org/10.1016/j.heliyon.2024.e31820
- Shan, J., Bešinović, N., & Schönberger, J. (2024). Service quality assessment of international rail transport with multiple border crossings: Eurasian rail transport as an example. *Journal of Rail Transport Planning and Management*, 29(June 2023), 100432. https://doi.org/10.1016/j.jrtpm.2024.100432
- Sharma, J., Singh, S., Tyagi, M., & Powar, S. (2024). Avenues of decarbonisation in the dynamics of processed food supply chains: Towards responsible production consumption. *Heliyon*, 10(5), e26456. https://doi.org/10.1016/j.heliyon.2024.e26456
- Sharma, N. K., Kumar, V., Verma, P., & Luthra, S. (2021). Sustainable reverse logistics practices and performance evaluation with fuzzy TOPSIS: A study on Indian retailers. *Cleaner Logistics and Supply Chain*, *I*(August), 100007. https://doi.org/10.1016/j.clscn.2021.100007
- Vijayasingham, L., Ansbro, É., Zmeter, C., Abbas, L. A., Schmid, B., Sanga, L., Larsen, L. B., Perone, S. A., & Perel, P. (2024). Implementing and evaluating integrated care models for non-communicable diseases in fragile and humanitarian settings: It's better to test and learn than to never test at all! -Adam Grant. *Journal of Migration and Health*, 9(March). https://doi.org/10.1016/j.jmh.2024.100228
- Wang, W., Wu, F., & Zhang, F. (2024). Metropolitanization through making 'new metropolitan plans' in China. *Habitat International*, 143(August 2023), 102987. https://doi.org/10.1016/j.habitatint.2023.102987
- Wang, X., Zhou, Y., & Shi, X. (2024). Informal institutions and corporate innovation: A Perspective from Red Culture. *Heliyon*, 10(11), e32049. https://doi.org/10.1016/j.heliyon.2024.e32049
- Wei, J., Zhang, X., & Tamamine, T. (2024). Digital transformation in supply chains: Assessing the spillover effects on midstream firm innovation. *Journal of Innovation and Knowledge*, 9(2), 100483. https://doi.org/10.1016/j.jik.2024.100483
- Xu, L., Mak, S., Minaricova, M., & Brintrup, A. (2024). On implementing autonomous supply chains: A multi-agent system approach. *Computers in Industry*, 161(December 2023), 104120. https://doi.org/10.1016/j.compind.2024.104120
- Yao, A. F., Sèbe, M., Virto, L. R., Nassiri, A., & Dumez, H. (2024). The effect of LNG bunkering on port competitiveness using multilevel data analysis. *Transportation Research Part D: Transport and Environment*, 132(December 2023). https://doi.org/10.1016/j.trd.2024.104240
- Yusuf, N., Govindan, R., & Al-Ansari, T. (2024). Energy markets restructure beyond 2022 and its implications on Qatar LNG sales strategy: Business forecasting and trend analysis. *Heliyon*, 10(7), e27682. https://doi.org/10.1016/j.heliyon.2024.e27682
- Zhang, Z., Li, J., Chen, Y., Chen, F., & Liu, Z. (2024). Mapping the educational Frontier: Unleashing the Potential of artificial intelligence talents through cooperative planning in the Guangdong-Hong Kong-Macao greater bay area. *Heliyon*, 10(2), e24168. https://doi.org/10.1016/j.heliyon.2024.e24168



© 2025 by the authors; licensee Growing Science, Canada. This is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license (http://creativecommons.org/licenses/by/4.0/).