

TRACING THE EVOLUTION OF SEGMENTED LABOR MARKET THEORY: A BIBLIOMETRIC ANALYSIS FROM 1971 TO 2025

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Abstract

This study analyzes the longitudinal development and scientific mapping of Segmented Labor Market Theory (SLMT) from 1971 to 2025 using a bibliometric approach. Introduced by Doeringer and Piore in 1971, this theory has become a foundational framework for explaining persistent labor market inequality, particularly through the division of labor into primary and secondary segments. Despite its origins in the 1970s, no comprehensive bibliometric analysis has been conducted to evaluate the evolution, scope, and interdisciplinary relevance of SLMT. This study utilizes data from Google Scholar and Scopus, processed through Publish or Perish and visualized using VOSviewer, to assess publication trends, citation metrics, and other relevant factors. The results reveal a significant increase in scholarly output, particularly after 2010, with journal articles emerging as the dominant publication type. Citation metrics, especially from Google Scholar, indicate a growing intellectual impact of SLMT across disciplines such as economics, sociology, and labor studies. Network and overlay visualizations illustrate the expansion of research themes, ranging from classical dual labor concepts to emerging topics like informal labor, gender inequality, the gig economy, and digital labor. The density map further identifies core, emerging, and underexplored areas within SLMT research. This study concludes that SLMT remains a relevant and adaptive analytical tool for addressing the complexities of contemporary labor markets, providing a critical foundation for future interdisciplinary inquiry.

Keywords: bibliometric analysis, dual labor market, interdisciplinary research, Segmented Labor Market Theory, VosViewer

INTRODUCTION

Segmented Labor Market Theory, introduced by Michael Piore and Peter Doeringer in 1971, is a significant framework for understanding inequality in labor market structures (Reich et al., 1973). This theory rejects the neoclassical assumption that the labor market is a single homogeneous unit that is competitive and accessible to all workers. Instead, it posits that the labor market is divided into distinct segments: the primary sector and the secondary sector. Each of these segments has unique characteristics, working conditions, and levels of employment protection (Richards, 2020). Primary segments typically offer higher-paying jobs, job security, and better promotional opportunities, while secondary segments are characterized by low-paying jobs, job insecurity, and limited opportunities for career advancement (Eichhorst & Kendzia, 2016; Mulya, 2024).

The labor market is divided into two main segments: the primary labor market and the secondary labor market. The primary labor market provides jobs that offer relatively high wages, good benefits, job stability, decent working conditions, opportunities for promotion, and clear legal protections for workers (Prieto, 2020; Richards, 2020). Workers in this segment typically possess a strong educational background and enjoy higher social status. In contrast, the secondary labor market is marked by low wages, minimal or no benefits, poor working conditions, high turnover rates, and a lack of employment protection (Setyaningsih & Rofi, 2014). These segments are often occupied by women workers, migrant workers, and vulnerable minority groups. In addition to

disparities in working conditions and wages, the theory emphasizes the lack of worker mobility between labor market segments. Workers in the secondary market face significant challenges in moving to the primary market due to structural barriers, including discrimination based on gender, race, education, and work experience (Dickens & Lang, 1992). This results in ongoing inequality in the labor market, with lower market segments facing poor working conditions and low wages, while higher market segments benefit from better protections and advantages (Giupponi & Machin, 2024).

The global development of segmented labor market theory research has demonstrated its significance in understanding the complex and diverse structures of labor markets in both developed and developing countries. This theory challenges the neoclassical view, which treats the labor market as a homogeneous entity, by asserting the existence of distinct market segments. These include the primary segment, characterized by stable, high-wage jobs, and the secondary segment, which consists of low-wage and unstable employment (Harrison & Sum, 1979). Research in developed countries indicates that this segmentation is influenced by factors such as the type of employment contract (permanent vs. temporary), job formality, and geographic and sectoral differences (Dell'Anno, 2022).

In developing countries, particularly in Africa and Asia, labor market segmentation research employs a dualism model that integrates traditional sectors (agriculture) and modern sectors (industry and services), while also extending to the formal and informal urban dualism (Bhorat et al., 2017). Labor market segmentation contributes to wage inequality, limited labor mobility, and job instability, which, in turn, affects migration dynamics and the structural transformation of the economy. The model helps explain why wages and working conditions vary significantly, even among workers with similar skills (Bhorat et al., 2017; Demekas, 1990).

Research conducted by Eichhorst & Kendzia, (2016); Reich et al., (1973) also highlights that labor market segmentation occurs not only within national boundaries but also geographically between developed and developing countries. Labor migrants from developing nations are often confined to secondary labor market segments in destination countries, facing lower wages and fewer protections than local workers. Based on this research background, this study was conducted to analyze the evolution of the theory from its introduction to the current state in 2025. This research marks the beginning of a bibliometric study that explicitly and cross-disciplinarily focuses on segmented labor market theory, as there is currently no systematic scientific mapping evaluating its development. Studying the evolution of segmented labor market theory is important for providing a realistic understanding of labor market structures and the theory's relevance to modern employment phenomena.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

Segmented Labor Market Theory

Segmented Labor Market Theory emphasizes that the labor market is not homogeneous; instead, it is divided into different segments based on the characteristics of jobs and workers. According to Reich et al., (1973), this segmentation arises from economic and political pressures that divide the labor market into submarkets, each with distinct characteristics, such as primary and secondary markets, as well as divisions by race and gender. Primary markets typically provide jobs with high wages, job stability, and opportunities for advancement, while secondary markets are characterized by low wages, instability, and minimal job protection. Nasikun, (1990) explained that women workers are often concentrated in secondary market segments, which typically offer lower wages and lighter work, such as in the service industry (Seo, 2021).

A notable phenomenon of labor market dualism in Indonesia is the division between the formal and informal sectors. The formal sector is capital-intensive and employs medium to high technology, resulting in higher productivity and income. In contrast, the informal sector is labor-intensive and relies on traditional technology, leading to low productivity and irregular income (Armelly et al., 2021; Witjaksono, 2009). This dualism reflects the segmentation of the labor market,

which leads to inequality in wages and employment opportunities. The dualism hypothesis is crucial for understanding how inequality and labor market segmentation are created (Armelly et al., 2021).

Additionally, segmented labor market theory offers a framework for understanding how structural barriers, such as gender and racial discrimination, reinforce this segmentation. Studies indicate that worker mobility between market segments is quite limited, making it challenging for individuals in the secondary market to advance to the primary market, even when they possess adequate qualifications (Nasikun, 1990).

Dual Labor Market Theory

The Dual Labor Market Theory, developed by economists Michael Piore and Peter Doeringer in the early 1970s, explains the segmentation of the labor market into two main sectors: the primary (formal) sector and the secondary (informal) sector (Klimczuk, 2016). Formal sector jobs are typically associated with higher wages, benefits for employees, and job security, while informal sector jobs often offer lower wages, unstable working conditions, and no employee benefits (Bernabè & Stampini, 2009).

This theory also explains that job security, stable working conditions, and high wages encourage married workers to enter the formal sector (Seo, 2021). Married workers often seek higher incomes due to increased responsibilities, including their children's school expenses, family economic needs, and personal requirements. As a result, they look for jobs that offer higher wages to meet these demands (Prastiwi, 2013; Rafifah & Yeni, 2024). Additionally, recent models enhance our understanding of how firms utilize a combination of primary and contingent (secondary) workers to manage product demand uncertainty. This reinforces the existence of dual labor markets as an equilibrium in conditions of labor market imperfections (Eichhorst & Kendzia, 2016).

Human Capital Theory

According to Simanjutak in Prastiwi, (2013) human capital theory explains the motivation for labor to relocate in search of higher income. When workers migrate, they sacrifice their income in their area of origin and incur indirect costs to pursue better earnings in the destination area (Prastiwi, 2013). Todaro, (1969) explains that the decision to migrate is made rationally in response to the income differences between villages and cities. This drives migrants to relocate despite the high unemployment levels in urban areas. However, in Indonesia, the flow of migration does not necessarily enhance the economic welfare of either urban or rural communities. The movement from villages to cities can lead to negative consequences in urban areas, such as increased population density, the proliferation of slums, higher crime rates, and congestion resulting from migration activities (Marta et al., 2020)

The phenomenon occurs in two stages: first, unskilled rural workers migrate to urban areas and spend some time in the urban informal sector. The second stage involves their transition to more permanent jobs in the formal sector (Todaro, 1969).

RESEARCH METHODS

This study employs a bibliometric analysis approach to examine the development and trends of scientific literature on Segmented Labor Market Theory from its introduction by Doeringer and Piore in 1971 through 2025. The aim is to map the structure, dynamics, and direction of knowledge development in this field. Literature data were collected from two primary databases, Scopus and Google Scholar, using the Publish or Perish application as a search engine and metadata manager for scientific publications. The keywords used in the search included "Segmented Labor Market Theory," "dual labor market," "internal labor market," and "labor market segmentation." The search period was confined to 1971-2025, and only thematically relevant scientific articles, books, proceedings, and journals were selected for further analysis.

The collected data was saved in .RIS or .CSV format and analyzed using VOSviewer software to visualize and map bibliometric relationships within the literature. The analysis focused on the frequency of keyword occurrence, collaboration among authors and institutions, and topic development maps to examine the dynamics of segmented labor market theory in a global and multidisciplinary context. The data filtering process was conducted manually to avoid duplication and ensure the relevance of the articles.

RESULTS AND DISCUSSION

Since its formal introduction by Doeringer and Piore in 1971, research on Segmented Labor Market Theory has demonstrated a fluctuating but overall increasing growth trend, particularly after the 1990s, due to heightened attention to labor market inequality, globalization, and work flexibility.

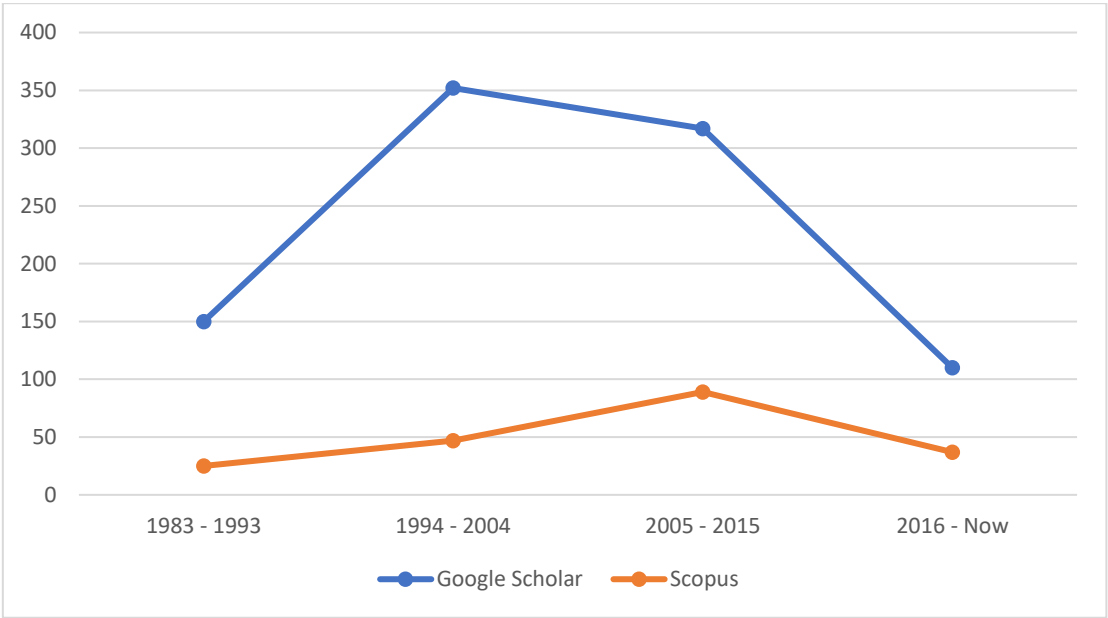


Figure 1: Trend of Segmented Labor Market Research Publications by Year of Publication

The publication trend in Segmented Labor Market Theory (SLMT) has demonstrated dynamic growth over the last five decades. From the early 1970s to the mid-1980s, the number of publications remained relatively low and stable, reflecting the early conceptual phase when the theory was introduced by Doeringer and Piore (1971) and gained limited attention among academics. In the 1990s, there was a consistent, slow increase, indicating the broader application of SLMT in studies related to inequality, labor market dualism, and employment issues in developing countries. A sharper increase emerged in the early 2000s as labor market complexity grew due to globalization, migration, and market deregulation. A significant surge occurred after 2010, signaling that SLMT had become a relevant theoretical framework for explaining new issues such as precariat work, the gig economy, and structural informality. Both Google Scholar and Scopus exhibit a consistent upward trend projected to continue until 2025, suggesting that this topic not only remains relevant but is also revitalized through interdisciplinary approaches and the integration of modern analytical methods.

In addition, the types of publications from the Google Scholar and Scopus databases show significant diversity. Table 1 presents the development trend of Segmented Labor Market Theory publications by publication type.

Table 1. Trend of Research Publications by Publication Type

No	Publications	Database	
		Google Scholar	Scopus

1.	Article	808	173
2.	Book Chapter	19	4
3.	Book	158	3
4.	Conference Paper	14	3
5.	Review	1	14
	Total	1000	197

Source: Publish or Perish, 2025

The data indicates that journal articles are the primary contributors to the development of Segmented Labor Market Theory (SLMT) literature. Both the Google Scholar and Scopus databases show a significant increase in the number of journal articles, particularly since the 2000s, highlighting SLMT's emergence as a major topic in established academic discourse, especially within the fields of economics, sociology, and labor studies. In addition to journal articles, theses, dissertations, and books or book chapters also make important contributions, especially in Google Scholar, which encompasses a wide range of publication formats. Theses and dissertations reflect graduate students' interest in exploring this theory in depth and its applicability, particularly in the context of developing countries. Meanwhile, contributions from books and book chapters suggest efforts to re-conceptualize or integrate SLMT into a broader theoretical framework.

In the Scopus database, which tends to be more selective, conference papers represent a smaller yet significant portion, highlighting ongoing and experimental academic discussions around SLMT in various scientific forums. Overall, this trend indicates that although SLMT theory originated over five decades ago, the types of academic publications featuring this theory have been diverse and continue to expand, reflecting its relevance and adaptability to the evolving dynamics of the global labor market.

Table 2. Citation Metrics of Segmented Labor Market Theory

Citation Metrics	Database	
	Google Scholar	Scopus
Publication years	1972 – 2025	1982 – 2024
Citation years	53 (1972 – 2025)	43 (1982 – 2024)
Papers	1000	200
Citations	949629	11262
Cites/year	17917.53	261.91
Cites/paper	949.63	56.31
Cites/author	625505.75	11262
Papers/author	673.08	200
Authors/paper	1.87	1
h-index	554	57
g-index	974	92
hI, norm	449	57
hI, annual	8.47	1.33
hA-index	108	11

Source: Publish or Perish, 2025

Trends in citation metrics for literature addressing Segmented Labor Market Theory (SLMT) show a significant increase over the last two decades, with a notable spike beginning in 2000 and peaking around 2020. In Google Scholar, the number of citations is considerably higher than in Scopus, reflecting the broader coverage of various types of publications, including theses, reports, proceedings, and articles that have not been formally indexed in highly reputable journals. This trend indicates that SLMT is not only seeing growth in the number of publications but is also increasingly being referenced by other studies, highlighting its growing relevance in explaining modern

employment dynamics. Although the number of citations in Scopus is lower in absolute terms, the consistent upward trend still reflects the influence of SLMT within more rigorous and filtered academic literature.

The increase in citations indicates that Segmented Labor Market Theory (SLMT) has evolved from an early theoretical concept into a widely used framework in cross-country, cross-sector, and cross-disciplinary empirical studies. Topics such as labor market segregation, gender inequality, informal labor, and the gig economy contribute to the high citation rate, as SLMT effectively explains these phenomena. Overall, these citation metrics demonstrate that SLMT is not only growing quantitatively in publications but also gaining significant intellectual impact in the global academic literature.

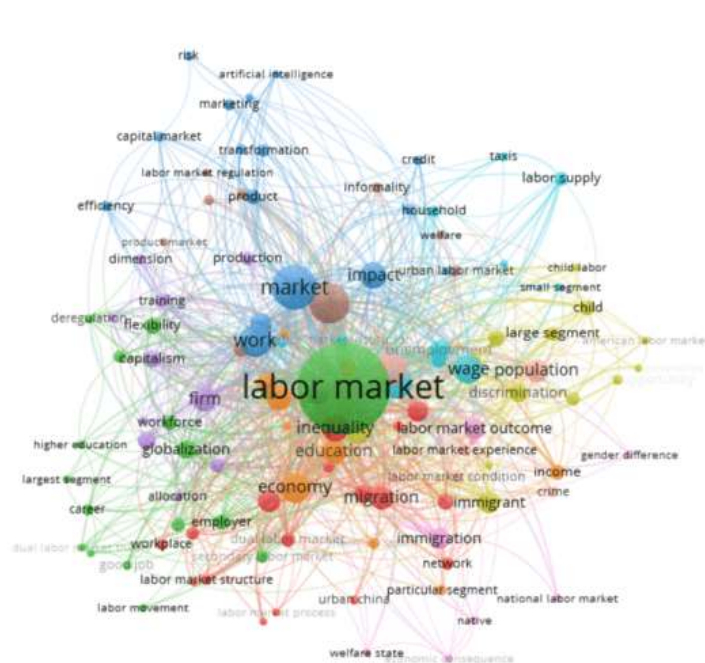


Figure 2. Network Visualization

In the network visualization presented in Figure 2, clusters are represented by different colors. These clusters indicate themes or topics that frequently co-occur in the literature. Based on the colors and distribution of the dots, there appear to be at least four main clusters:

1. Green Cluster (central: "labor market")

The main cluster illustrates the core of Segmented Labor Market Theory, highlighting inequality in the labor market caused by institutional and structural factors. Education and economic issues are significant variables that contribute to labor segmentation, leading to opportunity and wage dualism. Central topics include labor market, inequality, education, economy, while relevant keywords are dualism, allocation, globalization, low wage, labor market outcomes.

2. Blue Cluster (central: “market”, “work”)

This cluster examines the relationship between the labor market and aspects of production and economic efficiency. It explores the connections between Segmented Labor Market Theory and the impact of skills, training, and market regulation on job allocation. Central topics include the market, work, product, training, and production, while relevant keywords are efficiency, capital market, transformation, and flexibility.

3. Red Cluster (central: "immigration", "income")

This cluster reflects the sociological and demographic approach in SLMT. Issues such as immigration, discrimination, and crime are often linked to inequality and instability within specific segments of the labor market. Central topics include immigration, income, crime, and discrimination, while relevant keywords are immigrant, welfare state, gender difference, and particular segment.

4. Yellow Cluster (central: “population”, “child labor”)

This cluster emphasizes the demographics and employment of children and vulnerable groups, highlighting the population dimension and those most affected by segmentation. Central topics include population, labor supply, child labor, and opportunity, with relevant keywords such as small segment, generation, and urban labor market.

5. Purple Cluster (central: “dual labor market”)

This cluster focuses on historical and geographical aspects, featuring case studies of labor market dualism in regions such as China and examining labor market history. Central topics include the dual labor market, labor history, and urban China, with relevant keywords such as labor movement, labor market processes, and good jobs.

6. Light Brown Cluster (central: “impact”)

Focus on the influence of labor market policies, informal employment, and regulatory dynamics. This cluster enhances the understanding of how structural interventions create segmentation. Central topics include the impact of informality and labor market regulation, with relevant keywords such as credit, welfare, and transformation.

The network visualization demonstrates that Segmented Labor Market Theory has a broad range of applications, including macroeconomics, employment policy, immigration, and social inequality.

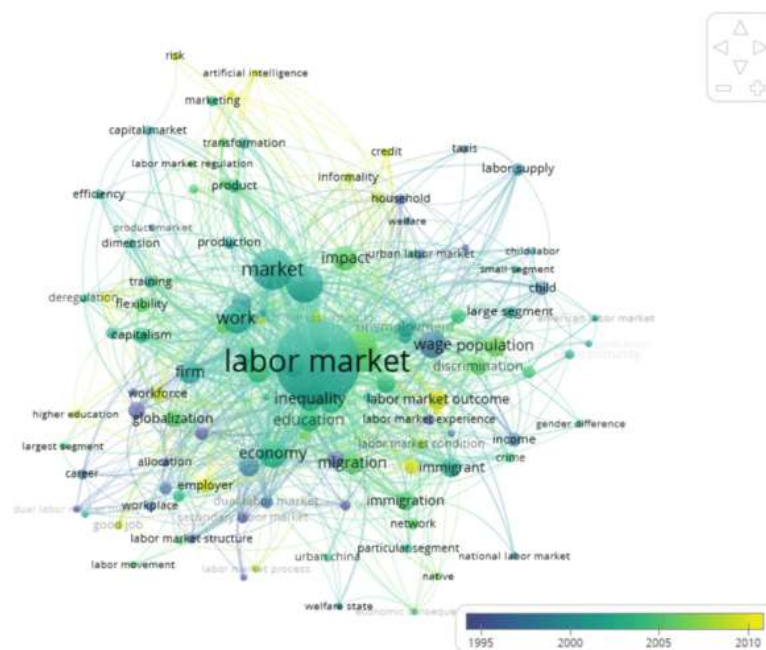


Figure 3. Overlay Visualization

The Overlay Visualization illustrates the temporal dimension of publications and the interrelationships between topics or keywords based on their average year of occurrence. Dark purple to dark blue (1995-2000) represents the early topics that dominated the initial discourse on

Segmented Labor Market Theory. Green (2000-2010) signifies the consolidation phase of the theory, during which themes began to shift towards interdisciplinary linkages. Yellow (2010-present) highlights new or emerging topics, often reflecting contemporary research directions.

1. Purple-blue is an early core theme of Segmented Labor Market Theory, emphasizing the dichotomy between primary and secondary sectors and the role of institutions in creating labor market segmentation. Many of these terms appear in the early literature from the 1970s to the 1990s, reflecting the theory's roots.
2. Light green represents stable green. These themes remain relevant over time and highlight the key theoretical strengths of Segmented Labor Market Theory in explaining structural inequality in the labor market. The green color indicates the consistency of occurrence during the 2000-2015 period.
3. Light yellow and bright yellow nodes indicate relatively new research topics that began to gain attention between 2015 and 2025. These topics reflect the evolution of Segmented Labor Market Theory, focusing on issues related to technology, finance, and the complexity of households as units of analysis in labor segmentation.

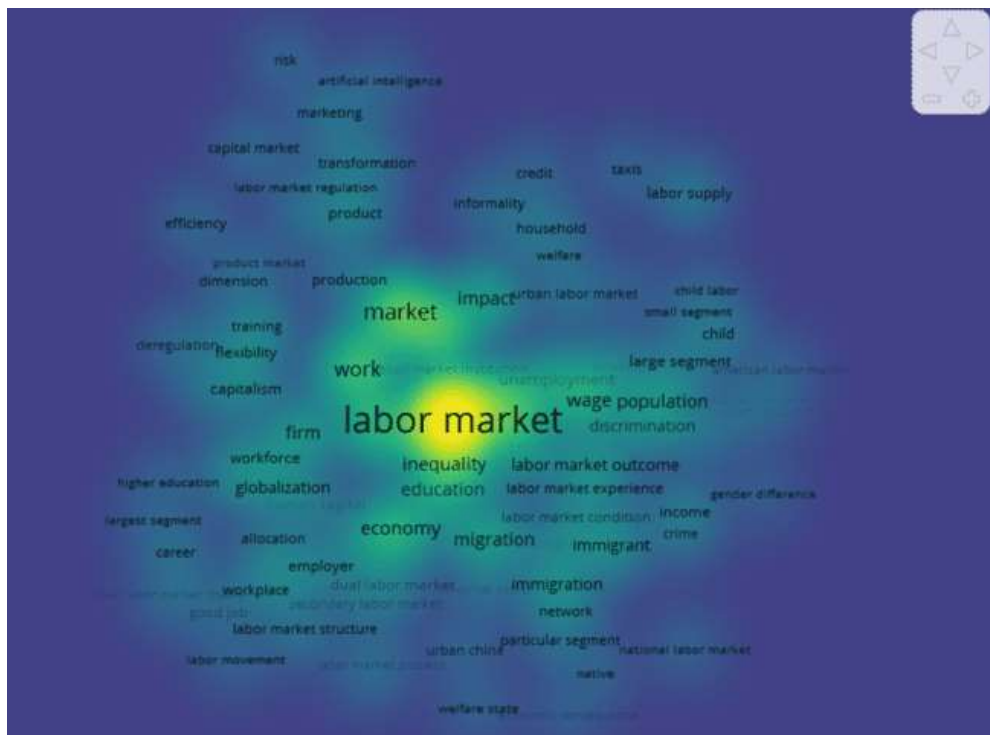


Figure 4. Density Visualization

This visualization displays the density of research surrounding a particular keyword. The color indicates both the frequency of occurrence and the link strength of that keyword in the literature. Bright yellow (high density) signifies that the topic is frequently discussed and very central. Green to dark green (moderate density) indicates that the topic appears often, being relevant but not dominant. Dark blue to purple (low density) shows that the topic rarely appears and is still marginal or emerging.

1. The Core Zone (Bright Yellow) represents the primary focus of Segmented Labor Market Theory research. The "labor market" serves as the centerpiece of the discourse, with work, education,

and inequality as key dimensions frequently used as main variables in studies related to Segmented Labor Market Theory.

2. The Intermediate Zone (Light Green - Green) indicates that these topics are frequently studied within the context of SLMT as explanatory variables or outcomes, particularly in contemporary empirical research on labor market outcome disparities between groups.
3. The Marginal Zone (Dark Green - Blue) highlights topics that are less prevalent but are gaining attention. Many of these reflect emerging interdisciplinary themes or specific contexts, such as the informal economy, urbanization, and institutional influences.
4. The Outermost / Low Density Zones (Dark Blue) represent new or specialized topics that have not yet been extensively researched. This presents a potential research gap for further exploration.

CONCLUSION

Based on a bibliometric analysis of publications discussing Segmented Labor Market Theory (SLMT), it appears that the development of this theory has experienced significant growth over the last five decades. Publications began to increase consistently in the 1990s, with a sharp spike after 2010, influenced by the theory's increasing relevance in explaining structural inequality, migration, informality, and flexible work dynamics. Scholarly journal articles dominate publication types, particularly in the Scopus and Google Scholar databases, with Google Scholar showing broader coverage of books, book chapters, and dissertations. In addition to quantity, the high number of citations, especially in Google Scholar, indicates that SLMT is not only growing in the number of publications but also exerting a major influence on global academic literature across various disciplines.

The network visualization and temporal analysis support these findings by illustrating the diversification of themes, shifting from the classic concept of labor market dualism to more contextual and contemporary issues such as gender inequality, urban labor, technology, and digital labor markets. The central focus of the discourse remains the keyword "labor market," which is strongly connected to education, inequality, and migration. Density and overlay analysis reveal that while core topics remain dominant, several new topics have emerged, indicating future research opportunities, particularly in interdisciplinary and applied domains. Thus, SLMT not only endures as a classic theoretical framework but also continues to evolve into a relevant analytical tool for understanding the complexities of modern labor markets.

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