

# Purchasing Power Parity in the Global Literature: A Bibliometric Analysis

Farhan Fadil Ghifari<sup>1</sup>, Cynthia Sari Dewi<sup>2\*</sup>

<sup>1</sup> Universitas Pembangunan Jaya, [farhan.fadil@upj.ac.id](mailto:farhan.fadil@upj.ac.id)

<sup>2</sup> Universitas Pembangunan Jaya, [cynthia.saridewi@upj.ac.id](mailto:cynthia.saridewi@upj.ac.id)

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## ABSTRAK

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Penelitian bertujuan untuk menganalisis perkembangan riset global mengenai Purchasing Power Parity (PPP) melalui pendekatan bibliometrik. PPP telah lama dikenal sebagai konsep fundamental dalam ekonomi internasional, khususnya dalam menjelaskan dinamika nilai tukar dan hubungan tingkat harga antarnegara. Meskipun kajian mengenai PPP telah berkembang luas, pemetaan komprehensif terkait tren penelitian dan struktur intelektual studi PPP masih terbatas. Oleh karena itu, penelitian ini berupaya mengidentifikasi tren publikasi, tema dominan, pola kolaborasi, serta potensi kesenjangan penelitian dalam literatur PPP. Dengan menggunakan metode kuantitatif deskriptif, data sekunder dikumpulkan dari database Scopus dan menghasilkan 379 artikel ilmiah yang diterbitkan pada periode 2010 hingga 2026. Data dianalisis menggunakan VOSviewer untuk menghasilkan visualisasi berupa jaringan keyword co-occurrence, author co-authorship, dan country co-authorship. Hasil penelitian menunjukkan bahwa PPP tetap menjadi topik utama yang memiliki keterkaitan kuat dengan nilai tukar, inflasi, dan analisis ekonometrika. Literatur PPP didominasi oleh tema-tema seperti cointegration, unit root testing, dan non-linear models, yang mencerminkan kuatnya penggunaan pendekatan kuantitatif dalam penelitian ini. Selain itu, analisis kolaborasi menunjukkan adanya beberapa kelompok peneliti berpengaruh, dengan negara-negara seperti China dan Amerika Serikat berperan sebagai kontributor utama sekaligus pusat jejaring riset global. Secara keseluruhan, penelitian PPP telah berkembang menjadi bidang yang multidimensional karena mengintegrasikan perspektif teoritis, empiris, dan aplikatif. Namun demikian, masih terdapat kesenjangan dalam integrasi topik-topik baru seperti ekonomi digital dan teknologi finansial, serta keterwakilan wilayah negara berkembang. Temuan ini memberikan wawasan bagi arah penelitian selanjutnya dan berkontribusi pada pengembangan literatur keuangan internasional.

## ABSTRACT

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This study aims to analyze the development of global research on Purchasing Power Parity (PPP) through a bibliometric approach. PPP has long been recognized as a fundamental concept in international economics, particularly in explaining exchange rate dynamics and price level relationships across countries. Despite the extensive body of literature, a comprehensive mapping of research trends and the intellectual structure of PPP studies remains limited. Therefore, this study seeks to identify publication trends, dominant themes, collaboration patterns, and potential research gaps in the PPP

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literature. Using a descriptive quantitative method, secondary data were collected from the Scopus database, resulting in 379 scientific articles published between 2010 and 2026. The data were analyzed using VOSviewer to generate visualizations of keyword co-occurrence, author co-authorship, and country co-authorship networks. The findings indicate that PPP remains a central topic with strong connections to exchange rates, inflation, and econometric analysis. The literature is dominated by themes such as cointegration, unit root testing, and non-linear models, reflecting the prevalence of quantitative approaches. In addition, the collaboration analysis reveals several influential research groups, with countries such as China and the United States acting as key contributors and hubs in global research networks. Overall, PPP research has evolved into a multidimensional field that integrates theoretical, empirical, and applied perspectives. However, gaps remain in the integration of emerging topics such as the digital economy and financial technology, as well as in the representation of developing regions. These findings provide insights for future research directions and contribute to the advancement of international finance literature.

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**Corresponding Author:**

Name: Cynthia Sari Dewi

Institution: Universitas Pembangunan Jaya, Jakarta, Indonesia

Email: [cynthia.saridewi@upj.ac.id](mailto:cynthia.saridewi@upj.ac.id)

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## 1. INTRODUCTION

Purchasing Power Parity, or PPP, is a key concept in international economics that explains how exchange rates relate to the cost of living in various countries. The idea is based on the law of one price, which says that the same product should cost the same in different places when you convert the prices to the same currency. Over time, Purchasing Power Parity has become an essential framework not only for understanding exchange rate determination but also for analyzing broader macroeconomic conditions, including inflation, competitiveness, and global economic integration (Ang et al., 2021; Ramajo & Ferré, 2010). The importance of Purchasing Power Parity has increased as the global economy has become more connected. As global trade and money movements grow, changes in exchange rates are very important for how economies perform and how people make financial choices. In this context, Purchasing Power Parity is often used as a benchmark to determine if a currency is overvalued or undervalued. This is especially helpful for investors, large corporations from different countries, and people who make important decisions about money and policies because they often deal with complicated financial systems around the world.

In addition, international groups often use PPP-adjusted data to compare how much people earn and the quality of life in different countries, because these numbers show the actual buying power more accurately than just using the current exchange rate. Although it is significant in theory, there is still considerable debate among people about whether Purchasing Power Parity is effective in practical situations. Many research studies have tried to check the theory with various sets of data and different ways of doing the research, but the results are usually not clear or consistent (Mladenovic et al., 2013; Wang et al., 2019). Some studies show that exchange rates tend to move toward Purchasing Power Parity over a long period, but other research points out that there are often lasting differences (Caporale et al., 2011; Mladenovic et al., 2013).

These differences can result from factors such as the costs involved in running a business, limitations on trade activities, and fundamental variations in how different economies are organized. These inconsistencies indicate that Purchasing Power Parity might not completely explain exchange rate movements, especially in the short term, although the approach still offers useful information for long-term studies (Wang et al., 2019). The wide range of research on Purchasing Power Parity shows that scholars from different fields, such as economics, finance, and international business, have long been interested in this topic. However, the fast increase in academic papers has made it harder to properly assess research progress and spot important trends.

## 2. LITERATURE REVIEW

### 2.1 *Concept of Purchasing Power Parity*

Purchasing power parity is a key idea in international economics that explains how exchange rates are set based on the differences in the cost of living between countries. Purchasing power parity is a key idea in international economics that shows how exchange rates relate to the cost of living in different countries. The idea is based on the law of one price, which says that the same product should cost the same in different places when the price is shown in the same money (Krugman et al., 2018). Purchasing power parity is usually split into two types: absolute and relative. Absolute purchasing power parity means that exchange rates are equal to the ratio of price levels in different countries, while relative purchasing power parity says that changes in exchange rates are caused by differences in inflation rates over time (Mankiw, 2021). The main concept of purchasing power parity comes from the law of one price, which says that the same product should cost the same amount in different places when prices are shown in the same currency (Choji & Sek, 2022). In real situations, purchasing power parity gives a basic idea of whether one currency is too high or too low compared to another. Purchasing power parity is usually divided into two types: absolute purchasing power parity and relative purchasing power parity. Absolute purchasing power parity means that the exchange rate between two countries should match the ratio of their overall price levels. However, this strict form does not usually work in real life because economies are different in many ways, like how people spend money, transportation costs, and trade barriers (Eleftheriou & Müller-Plantenberg, 2018). On the other hand, relative purchasing power parity looks at how things change over time, saying that changes in exchange rates are caused by differences in inflation between countries. Therefore, relative purchasing power parity is usually seen as more useful for actual research studies. In addition, purchasing power parity is important in analyzing the economy as a whole and assessing economic policies. International organizations often use this method to compare how much people earn and their quality of life in different countries, taking into account the buying power of money in each place. This adjustment helps remove distortions from nominal exchange rates, offering a more accurate picture of real economic well-being. So, purchasing power parity isn't just an idea used in theory—it's also a real tool that economists use when studying the world economy.

### 2.2 *Empirical Evidence on purchasing power parity*

Many studies have looked into whether purchasing power parity really works, but there isn't a clear answer yet. Many studies have looked into whether purchasing power parity holds up in real life, but there's still no clear answer. Early studies based on real data usually did not support the idea that exchange rates adjust to match purchasing power parity, especially in the short term. This was due to factors such as the costs associated with buying and selling, goods that cannot be exchanged between countries, and restrictions on the volume of trade that can take place (Rogoff, 1996). These factors create persistent deviations between exchange rates and their equilibrium values, indicating that exchange rates may not immediately reflect changes in price levels across countries. In addition, issues such as import taxes, imperfect market information, and structural market frictions also

contribute to deviations from purchasing power parity equilibrium (Sulku, 2010). Later studies, however, provide stronger support for the validity of purchasing power parity in the long run. Many researchers use advanced econometric methods such as unit root tests, panel cointegration analysis, and nonlinear adjustment models to investigate whether real exchange rates revert to equilibrium over time (Choji & Sek, 2022; Wallace, 2013). The findings generally suggest that although deviations from purchasing power parity may be substantial in the short term, exchange rates tend to return to equilibrium in the long run. This indicates that exchange rates gradually move toward their fair value, which is consistent with the purchasing power parity hypothesis. Despite this evidence, the speed of adjustment toward equilibrium remains an important issue in the literature. Several studies report that countries may require many years to return to purchasing power parity equilibrium, reducing the practical usefulness of PPP for short-term decision-making (Behera, 2019). Kula et al. (2011), for example, found that deviations from PPP in MENA countries could persist for relatively long periods due to structural breaks and market conditions. Similarly, Behera (2019) showed that while PPP may hold in newly industrialized countries, the adjustment process tends to occur slowly over time. Empirical findings also vary across countries, exchange rate regimes, and economic conditions. Studies generally report stronger support for purchasing power parity in developed economies compared to emerging or developing markets (Ugur & Alper, 2023). In addition, factors such as institutional quality, market efficiency, structural changes, and economic openness significantly influence whether PPP holds in practice. Yilanci et al. (2024) further demonstrated that structural changes and nonlinear dynamics are important considerations in testing the validity of purchasing power parity in emerging economies.

### 2.3 *Purchasing Power Parity in Financial and Economic Context*

In financial management, purchasing power parity helps explain how exchange rates work and is useful for dealing with risks related to different currencies. Multinational companies and global investors frequently use purchasing power parity models to evaluate long-term changes in exchange rates and make informed investment choices (Eun & Resnick, 2018). Purchasing power parity helps explain how currencies are valued by considering inflation differences, which in turn supports better financial planning in international markets. Purchasing power parity is also closely connected to inflation and the actions taken by central banks to manage money supply. Differences in inflation rates across countries can influence currency valuation, making purchasing power parity important for policymakers seeking to maintain economic stability and international competitiveness (Mishkin, 2019).

If exchange rates deviate from purchasing power parity equilibrium, currencies may be considered overvalued or undervalued. This condition can influence a country's trade competitiveness and overall economic performance. A broader economic perspective also uses purchasing power parity to compare purchasing power, income levels, and productivity across countries. International organizations frequently apply PPP-adjusted indicators to evaluate real income, poverty rates, and economic development because these measures provide a more accurate representation of economic welfare by accounting for differences in price levels and purchasing power (Moatsos & Lazopoulos, 2021). Purchasing power parity also has significant implications for global financial integration. As financial markets become increasingly interconnected, the relationship between exchange rates, inflation, and capital movements becomes more complex. Purchasing power parity provides a fundamental framework for understanding these interactions, although it is often combined with other financial and macroeconomic theories to explain real-world market dynamics more comprehensively. Previous empirical studies further show that the validity of PPP may differ across countries and economic regions depending on market structures, exchange rate regimes, and economic integration levels (Güriş & Tıraşoğlu, 2018). In addition, purchasing power parity has been widely used in studies examining long-run

exchange rate behavior and international economic comparisons. Olaniran and Ismail (2023), for example, found evidence supporting relative PPP in West African countries, while (Marques, 2011) reported that PPP could still hold in the long run despite short-run deviations in Brazilian exchange rates. However, Westerlund & Narayan (2015) showed that empirical support for PPP may remain weak in some countries, indicating that PPP should be interpreted carefully when applied to short-term financial analysis and investment decision-making.

### 3. METHODOLOGY

This study uses a descriptive quantitative method along with a bibliometric approach to examine how academic literature on Purchasing Power Parity has developed over time. The main goal of this study is to look at research trends, find the main topics being studied, and discover any areas that still need more research. These findings can help guide future studies, especially in global and developing economies. Secondary data were gathered from a total of 379 scientific articles retrieved from the Scopus database. The data was chosen using important keywords, like "Purchasing Power Parity," during the time period from 2010 to 2026. Each article was checked using its metadata, like the title, abstract, and keywords, to make sure it was consistent and related to the research topic. The analysis was done with VOSviewer software to create different types of bibliometric maps. First, they looked at how often words appeared together to figure out the main topics and smaller ideas that are most common in the studies. This analysis illustrates the relationships between key concepts related to Purchasing Power Parity and highlights the evolution of research focus over time. Next, a co-authorship analysis was done to look at how researchers work together, helping to understand the connections between them and identify key people who have a big impact in the field. Third, a country co-authorship analysis was done to find out how different countries work together on research and to show which countries have contributed the most to the development of Purchasing Power Parity studies. The analysis results are shown as network maps, with each group of connected items shown in different colors. These groups show how keywords, authors, or countries are connected, helping to better understand the main ideas and structure of the field. The purpose of looking at these visualizations is to find out what research topics are becoming more popular, what themes are developing, and what new areas are gaining attention in studies about Purchasing Power Parity during the chosen time frame. However, this study has several limitations. The analysis is based only on metadata and doesn't look at the full text of the articles, which might make the interpretation less detailed. Second, the dataset includes only English-language publications found in the Scopus database, which might leave out important studies from other sources. Even though there are some limits, the study gives a clear look at how Purchasing Power Parity research has developed and gives useful ideas for future studies.

## 4. RESULT AND DISCUSSION

### 4.1 Keyword Co-Occurrence Analysis

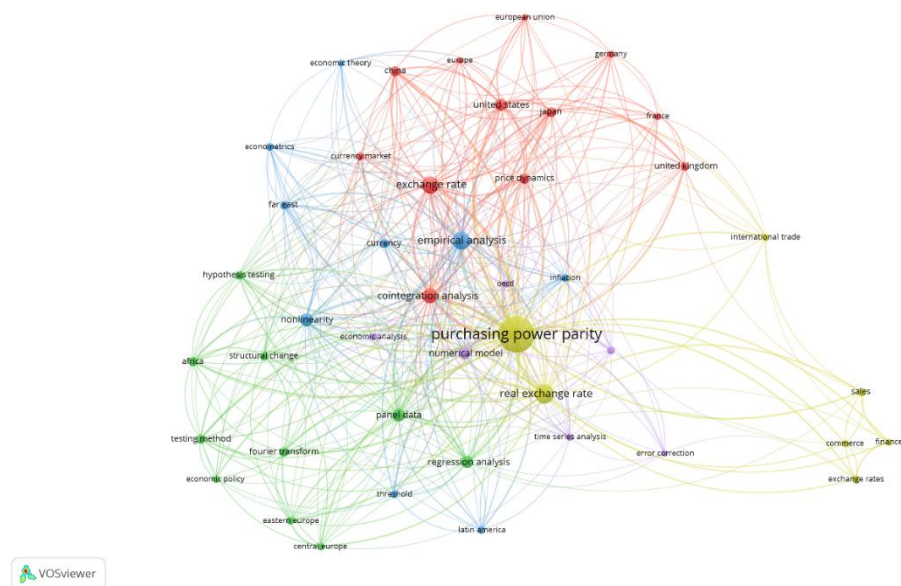


Figure 1. Network Visualization Map Generated by Vosviewer of Keywords Co-Occurrence

The keyword co-occurrence analysis provides a comprehensive overview of the thematic structure within the literature on Purchasing Power Parity (PPP). The visualization reveals several distinct clusters, each representing a specific stream of research that contributes to the development of the field. These clusters not only reflect the diversity of topics but also illustrate how PPP is interconnected with various economic and financial concepts.

**The first cluster (red)** highlights research focusing on exchange rate dynamics within developed economies. Keywords such as exchange rate, price dynamics, and countries including the United States, Germany, Japan, and the European Union dominate this cluster. This indicates that PPP is extensively examined in the context of advanced economies, particularly to understand currency stability, market integration, and international price adjustments. The strong connections among these terms suggest that developed countries remain a primary reference point in testing the validity of PPP.

**The second cluster (blue)** represents the dominance of empirical and econometric approaches in PPP research. Keywords such as empirical analysis, econometrics, cointegration analysis, and currency indicate that most studies rely on quantitative methods to test the theoretical framework of PPP. This cluster reflects the importance of statistical and econometric tools in examining long-run relationships and validating the convergence hypothesis associated with PPP.

**The third cluster (green)** emphasizes advanced methodologies and regional perspectives, particularly in developing and emerging economies. Terms such as nonlinearity, structural change, Fourier transform, panel data, and regions like Africa and Eastern Europe suggest a shift toward more complex analytical techniques. This indicates that recent research acknowledges the limitations of linear models and seeks to better capture real-world economic dynamics, especially in regions with higher volatility and structural differences.

**The fourth cluster (yellow)** reflects the application of PPP in broader economic and financial contexts. Keywords such as real exchange rate, international trade, finance, commerce, and sales demonstrate that PPP is not only a theoretical concept but also widely

applied in analyzing real economic activities. This cluster highlights the relevance of PPP in understanding global trade patterns, financial integration, and business decision-making processes.

**The fifth cluster (purple)** focuses on dynamic modeling approaches, particularly those involving error correction and time series analysis. This cluster indicates that PPP is frequently analyzed using models that capture both short-term deviations and long-term adjustments toward equilibrium. The presence of these methods suggests that researchers continue to explore how quickly and effectively exchange rates return to their theoretical parity levels.

Overall, the clustering results demonstrate that PPP research has evolved into a multidimensional field that integrates theoretical, empirical, and applied perspectives. The strong interconnections among clusters indicate that no single approach dominates entirely; instead, the literature reflects a combination of macroeconomic analysis, econometric modeling, and practical applications. This diversity not only strengthens the robustness of PPP research but also opens opportunities for future studies to explore underdeveloped areas and emerging economic contexts.

#### 4.2 Co-Authorship Analysis

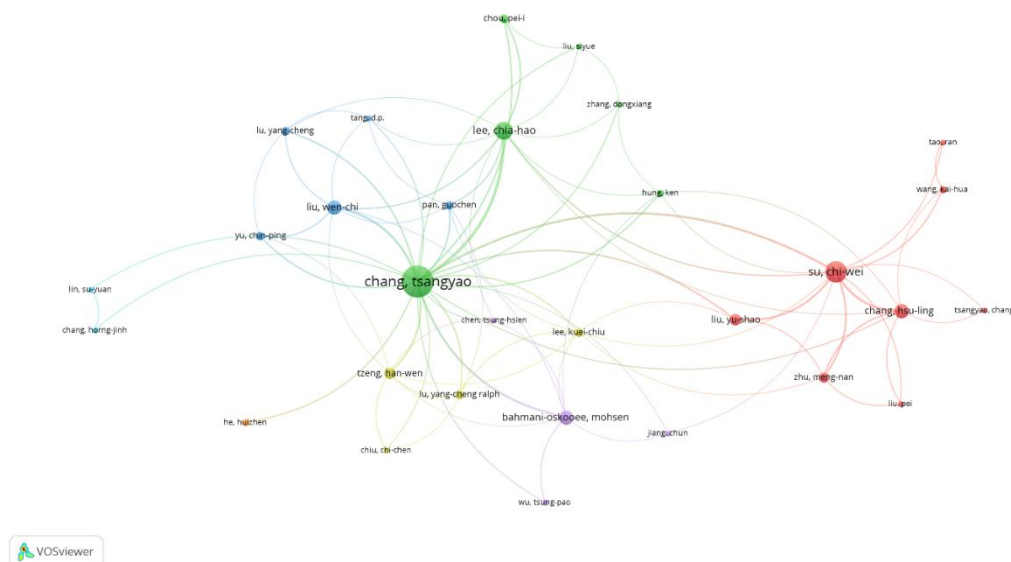


Figure 2. Network Visualization Map Generated by Vosviewer of Co-Authorship

The co-authorship network provides a comprehensive overview of collaboration patterns among researchers in the field of Purchasing Power Parity (PPP). The visualization reveals several distinct clusters of authors, each representing a group of researchers who frequently collaborate and contribute to specific streams of the literature. The structure of this network highlights not only the key contributors in the field but also the extent of academic collaboration and knowledge dissemination.

**The first cluster (green)** is centered around chang, tsangyao, who appears as one of the most influential and highly connected authors in the network. This cluster includes several closely linked collaborators such as lee, chia-hao and liu, siyue, indicating a strong and consistent research partnership. The dense connections within this cluster suggest an active research group that significantly contributes to the development of purchasing power parity literature, particularly in empirical and econometric studies.

**The second cluster (red)** is dominated by su, chi-wei, who also demonstrates a high level of connectivity with other authors such as liu, yu-shao and chang, hsu-ling. This cluster reflects another major research group with a strong focus on purchasing power parity-related topics. The presence of multiple connections indicates frequent collaboration and

suggests that this group plays an important role in advancing research, possibly in areas related to exchange rate dynamics and applied econometrics.

**The third cluster (blue)** includes authors such as liu, wen-chi and lu, yang-cheng, who are connected through a network of moderate collaborations. This cluster appears to represent a smaller but still relevant group of researchers contributing to purchasing power parity studies. The connections within this cluster indicate a more specialized or focused research direction, possibly involving regional or methodological aspects.

**The fourth cluster (yellow)** highlights authors such as tzeng, han-wen and lu, yang-cheng ralph, indicating another collaborative group with links to the main network. Although this cluster is less dense compared to the major clusters, it still contributes to the overall structure of the research field, suggesting the presence of emerging or less dominant research collaborations.

**The fifth cluster (purple)** is represented by authors such as bahmani-oskooee, mohsen, who is well-known in purchasing power parity literature. This cluster shows connections with other groups, indicating cross-collaboration and intellectual influence across different research streams. The presence of such authors suggests the integration of established scholars within broader collaborative networks.

Overall, the co-authorship network demonstrates that purchasing power parity research is characterized by several dominant research groups with strong internal collaboration and moderate inter-group connections. Certain authors act as central nodes, bridging different clusters and facilitating knowledge exchange across the field. This structure indicates that while the research community is somewhat segmented into groups, there is still a level of interconnectedness that supports the continuous development of purchasing power parity literature.

#### 4.3 Country co-authorship analysis

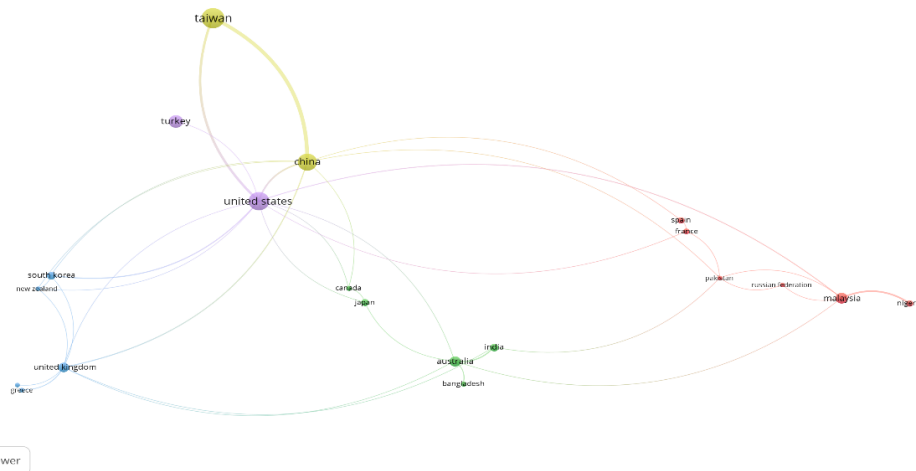


Figure 3. Network Visualization Map Generated by Vosviewer of Country Co-Authorship

The country co-authorship network provides an overview of international collaboration patterns in the literature on Purchasing Power Parity (PPP). The visualization illustrates how different countries are interconnected through joint research activities, forming several clusters that reflect regional and global collaboration trends. The network structure highlights key countries that act as central hubs, facilitating knowledge exchange and contributing significantly to the development of PPP research.

**The first cluster (yellow)** is centered around China, which appears as one of the most influential countries in the network. China shows strong collaboration links with Taiwan and also connects to several other countries, indicating its strategic role in bridging

regional and global research. This suggests that China has become a major contributor to PPP studies, particularly in the context of emerging economies and international finance. The strong collaboration pattern involving China is also consistent with previous PPP studies focusing on Asian economies and exchange rate dynamics.

**The second cluster (purple)** is dominated by the United States, which serves as another central hub in the network. The United States is connected to multiple countries, including China and Turkey, reflecting its strong involvement in international research collaborations. This highlights the country's role as a global leader in academic research, particularly in economic and financial studies related to PPP.

**The third cluster (blue)** includes countries such as the United Kingdom, South Korea, New Zealand, and Greece. This cluster represents a network of collaborations primarily among developed and semi-developed economies. The United Kingdom appears as a key node within this group, indicating its importance in facilitating research partnerships and contributing to PPP-related studies.

**The fourth cluster (green)** consists of countries such as Australia, India, Japan, Canada, and Bangladesh. This cluster reflects a mix of developed and developing economies, suggesting a growing interest in PPP research within diverse economic contexts. The connections within this cluster indicate increasing collaboration across regions, particularly in Asia-Pacific countries.

**The fifth cluster (red)** highlights Malaysia as a central node, connected with countries such as Pakistan, the Russian Federation, Nigeria, France, and Spain. This cluster indicates the presence of research collaboration among developing and transition economies, as well as links with European countries. The position of Malaysia suggests its emerging role in PPP research, particularly within regional and cross-continental collaborations.

Overall, the country co-authorship network demonstrates that PPP research is characterized by both regional clusters and global linkages. Certain countries, such as China and the United States, act as key hubs that connect different regions, while other countries form smaller but meaningful collaborative groups. This pattern indicates that PPP research is increasingly globalized, with growing participation from both developed and developing countries, thereby enriching the diversity and scope of the literature.

## 5. CONCLUSION

This study provides a comprehensive overview of the development of Purchasing Power Parity (PPP) research from 2010 to 2026, highlighting the evolution of themes, methodologies, and collaboration patterns within the field. The findings indicate that PPP remains an important topic in international economics, particularly in studies related to exchange rates, inflation, and macroeconomic dynamics. Most studies continue to focus on exchange rate behavior using econometric approaches such as cointegration analysis, unit root tests, and time-series models. Recent studies also demonstrate a growing shift toward more advanced methodologies, including nonlinear models and structural break analysis, reflecting attempts to better capture complex economic realities (Ali et al., 2021; Yilanci et al., 2024).

The co-authorship analysis reveals that PPP research is dominated by several major collaborative groups with strong internal research connections. Some authors act as important bridging nodes that facilitate knowledge exchange across clusters. In addition, the country co-authorship analysis shows that PPP research has become increasingly internationalized, with major contributions from countries such as China and the United States, alongside growing participation from emerging economies. These findings suggest that PPP research continues to expand both geographically and academically.

However, this study also identifies several limitations and opportunities for future research. Much of the existing literature remains heavily quantitative and econometric in nature, with limited integration of alternative analytical perspectives. Emerging topics such as the digital economy, financial technology, cryptocurrency, and digital financial integration are still underexplored within the PPP framework. Furthermore, several developing regions remain relatively underrepresented in the literature. Therefore, future studies should incorporate broader methodological approaches, examine contemporary economic issues, and explore less-studied regions to enrich the understanding of exchange rate dynamics in an increasingly interconnected global economy.

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