

## **A preliminary study of donors-recipients interaction on foreign grants in Indonesia: A network analysis**

### **Abstract**

The purpose of this study is to analysis the extent to which the engagement of actors in Indonesia's foreign grant network. The data for this paper is obtained from Ministry of Finance of the Republic of Indonesia since semester 1 of 2011 to semester 1 of 2021. This paper examines the pattern of grants made by individual donors to recipients, either planned or unplanned channels. This paper employs a weighted matrix in conjunction with an undirected network. The institutions participating are referred to as nodes. The analysis utilized in this study includes several assessment criteria of network approach. Fruchterman Reingold is used to visualize networks. The undirected graph has 89 nodes. There are 957 foreign grant interactions occurred in Indonesia during this period. Two institutions namely Ministry of Public Works and Human Settlement and Ministry of National Development Planning play a central role. Most of the grants distributed by the two multilateral donors, namely the World Bank (WB) and the Asian Development Bank (ADB). There is difference in the composition of actors in betweenness and closeness centrality. The role of WB is prominent in betweenness centrality. Meanwhile, in closeness centrality, ADB takes an active role in the distribution of foreign grants in Indonesia. The obtained modularity value of 0.310 is acceptable. This number indicates that Indonesia's foreign grant network is well-structured. The data processing yielded a density value of 0.244. These findings show that the density of nodes is quite solid. The triangle approach generates 1431 paths. The clustering coefficient has an average value of 0.1516. Cooperation with foreign donors is a major hope for the regions to grow quickly and catch up, yet it has created its own set of difficulties for the regions.

*Keywords: Donors, Recipients, Foreign grants, Network approach, Indonesia.*

## 1. Introduction

The long-running dispute over the influence of foreign aid on poor and developing countries continues to this day, perhaps even more so than in the preceding four decades. (Radelet, 2011). The issue over foreign aid's impact is still at a crossroads. The use of foreign aid is a contentious issue in the literature on development economics (Burke & Ahmadi-Esfahani, 2006; McGillivray, 2000) . For that reason, the two sides hold diametrically opposing viewpoints. According to Radelet (2011), Milton Friedman, Peter Bauer, and William Easterly are all opposed to foreign aid programs on the grounds that they benefit elites in impoverished nations and maintain bad bureaucracies. On the other hand, the development community, represented by Jeffrey Sachs, Joseph Stiglitz, Nicolas Stern, and others, argued that aid helps alleviate poverty and stimulates growth in places like Botswana, Korea, Tanzania, Mozambique, and Indonesia.

Grants are given for a variety of reasons by the donors. Australia's motivation, for examples, are to 1) promote economic and social progress in developing countries, 2) advance its political strategy, and 3) boost its trade interests (Gounder & Sen, 1999). On the other hand, Kowalski (2011) revealed that foreign aid is a "gift" that serves a variety of purposes, including trading market modernization, fostering autonomy, humanitarian causes, facilitating investment, establishing reciprocity, and purchasing influence.

Aid donations have more than doubled, rather than remaining constant. For example, foreign aid was US\$269 billion in 2012, more than doubling the amount granted in 2002 (Prizzon et al., 2017). Indonesia has received foreign aid since 1945 when the country gained independence. Foreign policy of the old order (Soekarno) and the new order (Soeharto) allowed for foreign aid prior to the 1998 reform (Sukma, 1995). Between 1950 and 1961, Indonesia received significant support from the United States, totaling US\$377 million, divided into US\$70.3 million in grants, US\$113.6 million in loans, and US\$193.1 million in commodity sales. Indonesia also received US\$13 million from Donald Hindley's 1963 Ford Foundation. Nowadays, countries like Australia, Japan, the United States of America, Germany, and others still maintain diplomatic relations with Indonesia.

Until Indonesia's 1998 reform, administrative records for loans and grants were not carefully preserved. Government Regulation No. 2 of 2006 on Loans and/or Grants Receipt and Forwarding of Foreign Loans and/or Grants was the first regulation issued by the government, and it was later superseded by Government Regulation No. 10 of 2011 on Loans and/or Grants Receipt and Forwarding of Foreign Loans and/or Grants. The goal of the government regulation is to maximize the efficacy and efficiency of foreign loans and grant revenues. Another important consideration is that, as of the effective date of Government Regulation No. 10 of 2011, grants, both foreign and domestic, are included as a component of state revenue in the State Revenue and Expenditure Budget.

Indonesia's existing foreign grant mechanism can now be used in two ways, either planned or unplanned, according to a new regulation. The unplanned channel is a form of communication between overseas donors and recipients in Indonesia. Institutions inside

the Republic of Indonesia's territory, including as ministries, provincial governments, district administrations, city governments, and non-governmental organizations, are among the recipients. Meanwhile, the Ministry of Finance, which is in charge of recording incoming grant receipts in the state accounting system, is the planned mechanism.

The study chooses to take this research one step further by looking at the method of interaction foreign grants actors in Indonesia from a network perspective. It highlights two recent research on network both Horowitz et al. (2021) and Bhattacharyya & Intartaglia (2021). Horowitz et al. (2021) applied the concept of centrality from Network Theory to the relationship between aid and growth. They discovered that when a donor provided aid over the recipient's threshold level, the degree of beneficiary centrality was positively connected with beneficiary growth. Whereas, Bhattacharyya & Intartaglia (2021) asserted that Horowitz et al. (2021) did not discuss growth spurts and spells. Additionally, they did not estimate the model with nation fixed effects and time trends. They use degree centrality as the sole metric for determining network aid. In comparison, Bhattacharyya & Intartaglia (2021) provided result on aid diversification using the Gini coefficient, the Herfindahl–Hirschman index, the Theil index, the number of donors, and normalized degree centrality.

This paper differs significantly from the work of the two previous researchers. I am progressing beyond the volume of aid and its effect on growth. This study focusses on networking within the interaction of actors in Indonesia's foreign grant. This paper refers to a network of foreign grants in Indonesia, and the nodes in this research referred to the actors involved in Indonesia's foreign grant network. These actors include foreign donor agencies, Indonesian ministries, government agencies, and local governments. Meanwhile, the edge is the numerous interactions between parties involved in Indonesia's two grant distribution procedures.

This is the first study in Indonesia to contribute to the analysis of foreign grant networks. This study views the mechanism issue as activation procedure of Indonesia's foreign grant network. As such, the purpose of this study is to analyze the extent to which actors in Indonesia's foreign grant network are involved in the mechanisms contained in Government Regulation no. 10 of 2011. Moreover, I pose a key question: how is the structure of the network of actors in the foreign grant mechanism developed in Indonesia? To address this question, the study employs a network analytic approach to determine the extent to which actors were involved in the foreign grant process in Indonesia between 2011 and 2021.

The following sections form the structure of the study. Section 2 contains the theory and a literature review. Section 3 discusses the research method. The results and discussion are presented in Section 4, while section 5 concludes with a discussion of policy implications.

## **2. Theory and literature review**

### *Graph Theory*

The criteria for analysis in Graph Theory are modularity and centrality. According to M. E. J. Newman & Girvan (2004), modularity is a criterion for the quality of network community partition. The higher the value, the higher the level of quality. For well-structured networks, modularity levels range between 0.3 and 0.7. Meanwhile, the centrality metric is utilized to identify which node in the network serves as the hub of communication for all other nodes. Degree centrality, between centrality, eigenvector centrality, and proximity centrality are all frequently used measures of centrality. Degree centrality is used by Golbeck & Klavans (2015) to understand the number of edges held by nodes in a network. Previously, Prell (2011) maintained that the degree of centrality is a measure of the activity of nodes in the network and does not take into account the node's influence or popularity. Between centrality is a metric that indicates how much of the shortest path (geodesic) connecting all pairs of nodes in a network passes through a node  $i$  (Fornito et al., 2016). Additionally, eigenvector centrality is a metric for determining the network's prominent nodes or influential nodes (Golbeck & Klavans, 2015). Finally, Closeness centrality is a measure of a node's proximity to all other nodes in the network (Golbeck & Klavans, 2015).

#### *Literature review*

Network analysis is applied in a range of fields, spanning from natural sciences to social sciences, including economics [14, 15]. Previously, Horowitz et al. (2021) attempted to investigate the link between aid and economic growth. Similarly, as demonstrated by Bhattacharyya & Intartaglia (2021), a diversified aid network can boost growth by reducing volatility. Alternatively, it can be detrimental to growth by fostering waste and corruption. They studied the impact of aid diversification on growth, growth acceleration, and growth length. Their study analyzed a big data set spanning the years 1965–2010 and calculated three distinct types of models (panel vector auto-regression, binary dependent variable, and duration). According to the first finding, Granger's diverse support network facilitated progress. Second, it appears as though the "growth spurt phase" was unaffected by aid diversification. Thirdly, it appears as though the "growth spell" is prone to premature end as a result of aid concentration.

There is a paucity of literature on network analysis in the context of foreign grant. As a result, this study would like to share some fascinating stories about the majority of researchers' accomplishment in terms of overseas aid. Donor countries frequently aid countries that establish commercial cooperation regardless of the volume of trade conducted (Swiss & Longhofer, 2016). Cunningham et al. (2017) found that people prioritize aid efficacy when deciding which nations to support with bilateral foreign aid, commensurate with recipient countries' needs as measured by hunger and malnutrition rates. Both criteria are critical. The least significant characteristic is the interaction between donor and recipient countries on a strategic level. It appears as though people want aid

directed toward countries where it is most likely to be beneficial, but not if this means aid is diverted away from areas of greatest need.

Metzger & Guenther (2015) discovered that the majority of studies on the effectiveness of project-based aid use subjective evaluations to assess project performance. This study compares assessment ratings to objective quantitative project indicators based on water supply to gain a better understanding of the factors that influence evaluation ratings. They discovered that evaluation scores were only a poor predictor of increasing water supply. While the best way to represent water supply-related project indicators is through project design variables, assessment ratings place a greater emphasis on project management and implementation.

According to Mosley & Suleiman (2007) two contributions to the debate on aid efficacy demonstrate that it is not just the volume of aid that matters, but also its combination and stability. One specific aspect of this aid strategy is that aid is most effective at alleviating poverty when it funds governmental (and other) spending on agricultural development. Regression research indicates that this is not only direct farm investment but also education and infrastructure spending, with military spending having a negative effect. These three criteria appear to be extremely favorable for the formation of durable pro-poor spending patterns (and particularly pro-agriculture spending patterns). These include risk-averse spending techniques for the poor, the establishment of durable ties between governments and aid donors, and governments' long-term political commitment to pro-poor policies. This argument is advanced in part through an econometric study of panel data from developing nations in general and in part through case studies of sustainable and unsustainable green revolutions in aid-dependent countries in Africa.

Khan & Hoshino (1992) made two novel contributions to the body of knowledge. They started by attempting to quantify the impact of foreign aid on a sample of five nations of South and Southeast Asian countries. Second, they expand the earlier method of combining single equations and two-step least squares by using a nonlinear three-step least squares method to estimate the complete system. The findings reveal that aid has an impact on consumption, investment, and government taxation of the region's countries, but they also demonstrate that the link is complex. Grants and loans, in particular, have a variety of tax implications.

### *Stories of failures and successes of foreign aid*

By studying the majority of the selected literature on foreign aid, we seek to resolve some of the mentioned concerns and specific writers' criticisms of foreign aid. Additionally, this study credit many authors from the Asatullaeva et al. (2021). They found several previously unexplored aspects of foreign aid, including its ineffectiveness, its successful practice, the effect of uncertainty, governance issues, motivations and causes, the critical nature of policy research, implementation, and evaluation, and the practice of foreign aid in Indonesia.

Various older works provide several complaints of foreign aid's failure. According to Mosley et al. (2004) there is a statistically improbable relationship between aid and gross national product in less developed nations. Meanwhile, Khan & Hoshino (1992) revealed that aid includes both official and informal grants and loans from bilateral and multilateral sources; nonetheless, grants impede income initiatives. Additionally, McGillivray (1994) asserted that foreign aid has a negligible direct effect on growth. Thornton (2014) found that a one-percentage-point increase in grant aid reduced tax revenue by 0.2 percent when the effect of government reliance on grants was taken into account. Meanwhile, Nyoni (1998) stressed aid flows increased economic openness and devalued local currencies in Tanzania. Nevertheless, Burke & Ahmadi (2006) studied from 1970 to 2000 revealed that aid had no discernible relationship with growth in Thailand, Indonesia, and the Philippines. Ouattara (2007) claimed in Ivory Coast that various forms of foreign aid tend to deplete public savings and increase reliance.

As reported by Nunnenkamp & Thiele (2006), the focus on low-income countries has remained relatively unchanged in recent years. Certain funders unambiguously prefer recipient countries that foster an environment conducive to effective aid. Radelet (2006) said that aid flows fell in the 1990s when the Cold War ended, and aid was widely condemned for its ineffectiveness at supporting growth and development. However, aid growth began in the late 1990s and all indications indicate that it will continue throughout the decade, albeit at a slower pace than donors anticipated.

According to Williamson (2008) comparable to general aid, which had a negligible effect on economic development, explicit health aid had a negligible effect on human development. Irfan & Nehra (2016) discovered that development aid has been ineffective in Southeast Asia's health and urban sectors. Aid must be oriented toward achieving the Sustainable Development Goals (SDGs) in order to close disparities in the development of the various classes in regional countries. Lancaster (2009) asserts that the effectiveness and consequences of aid have become controversial dispute for a long time and are unconvincing.

Apart from the failed comments, this study have produced a collection of some of the literature's accolades for overseas aid. McGillivray (2000) for instance, studied the effect of foreign aid on the financial behavior of Pakistan's public sector. The results indicated that investment aid is positively correlated with consumer spending and has no effect on taxation. As revealed in a 2005 study conducted in Ghana by Osei et al. (2005), the constructive use of aid to maintain fiscal balance has been demonstrated following Ghana's structural adjustment program since the mid-1980s. The fact that aid has been linked to an improvement in Ghana's fiscal performance demonstrates that it has been carefully spent.

In addition, Heckelman & Knack (2009) emphasize the continued effectiveness of aid in building a pro-growth legislative and institutional atmosphere. Foreign aid has a positive and statistically significant effect on the growth in per capita agricultural income Feeny & Ouattara (2009). On the other hand, Feeny & McGillivray (2011) claimed that a

"significant increase" in foreign aid levels can lead to improved economic growth and, hence, poverty alleviation. Meanwhile, Kaya et al. (2013) observed a significant relationship between agricultural aid and poverty reduction in their estimates. Agriculturally impoverished countries should be more efficient in their utilization of agricultural aid.

Another empirical study such as Amusa et al. (2020) which utilized data from 1981 to 2015 found that long-term aid in the form of grants can help enhance tax collection in Nigeria. Meanwhile, Furukawa (2020) found that concentrating aid project stimulates economic growth in impoverished countries that rely heavily on aid. The SDGs are expected to exacerbate the problem of aid fragmentation.

#### *Foreign aid (grant) in Indonesia*

This study looked for empirical research and policy studies on foreign aid, specifically on foreign grants in Indonesia, but rarely. The study draws on a variety of sources that give extensive facts and analysis about foreign aid in Indonesia. Indonesia is the largest recipient of Australian aid aimed at promoting the economic and social development of developing country populations (Gounder & Doessel, 1997). Indeed, as noted by Arndt (1970) it has grown from a trickle of projects to substantial commodity aid and balance of payments aid.

Sugema & Chowdhury (2008) contended that foreign aid flowing into Indonesia had the following effects: 1) it closes the fiscal gap; 2) it increases routine spending while also increasing development spending; 3) it increases routine spending but not development spending; and 4) it makes the Indonesian government fiscally slothful, rendering it incapable of mobilizing tax revenues through domestic tax incentives. According to Wilmsen et al. (2019) a case study of the Australia-Indonesia technical assistance project – Poverty Reduction Support Facility – from 2010 to 2015 indicate that tensions exist between aid effectiveness principles and their practical application, but these tensions can be resolved through negotiation and political compromise.

### **3. Data and method**

#### *Data and network attributes*

The data for this paper is obtained from the Government Loans and Grants Management Report, which was published by the Directorate of Loans and Grants - Directorate General of Debt Management, Ministry of Finance of the Republic of Indonesia from semester 1 of 2011 to semester 1 of 2021. The study employs a network analysis to denote the structure of links between donors and receivers in Indonesia's foreign grant systems (see Appendix 1). To characterize the network structure of the actors in Indonesia's foreign grant network, this study examine the pattern of grants made by individual donors to recipients, either planned or unplanned channels. The unplanned route refers to the delivery of funding directly from donors to recipients without the intervention of the Ministry of Finance.

Meanwhile, the route proposed is as follows: Donor – Ministry of Finance – Recipient (Ministry or Local Government).

This study employs a weighted matrix in conjunction with a undirected network. The institutions participating are referred to as nodes. Numerous ministries, foreign countries, multinational organizations, local governments are conceptualized as nodes. This study utilises interactions between nodes to create the edges. The interaction in question is the number of donor-recipient contacts. As a result, the adjacency matrix is constructed using data from Indonesia's foreign grant network.

The analysis utilized in this study includes several assessment criteria of network approach. The following are some of the criteria: 1) degree distribution; 2) centrality: betweenness and closeness; 3) modularity; 4) density; and 5) clustering. Fruchterman Reingold is used to visualize networks. At the network and node level, the planned network analysis has been developed. This study uses the open-source program Gephi 0.9.2 to show the topological properties of nodes and lines representing an abroad grant network in Indonesia.

### *Network analysis*

Several analytical methods are used in this paper. The network analysis methods include degree distribute, centrality, modularity, density, and clustering.

#### a. Degree distribution

The degree of a node is equal to the number of edges that are tangent to it, i.e., the number of the node's initial neighbors. Degree of  $k_i$  from node  $i$  defined as  $k_i = \sum_{j \in G} a_{ij}$ . The average of degree is  $\langle k \rangle = 1/N \sum_{i \in G} k_i = 2K/N$ . A network's nodes do not all have the same number of edges. The distribution of degrees among nodes is a critical aspect of the network that may be examined by computing the degree distribution  $P(k)$  namely probability of finding a node with  $k$  links. Degree distribution is defined by  $P(k) = N(k)/N$ , where  $N(k)$  is the number of nodes with  $k$  link (M. Newman, 2010).

#### b. Centrality

In the late 1940s, social scientists developed theoretical graph measuring techniques for identifying the most significant nodes in a network. The measurement is based on the notion of centrality, which attempts intuitively to identify the node that serves as the hub of communication for all nodes in the network. Betweenness centrality and closeness centrality are two critical ideas of centrality that are discussed in this paper.

To begin, betweenness centrality can be defined as the amount to which a node is connected to other nodes via a path (Borgatti et al., 2009). The fraction of the shortest path



linking all pairs of nodes and including the desired node is used to calculate it [44, 45]. Analytically, the centrality of nodes  $i$  represented by  $b(i)$ , is calculated as follows:

$$b(i) = \sum_{j,k} \frac{g_{jik}}{g_{jk}} \quad (1)$$

Where  $g_{jk}$  is number of shortest paths from  $j$  node to  $k$  node ( $j, k \neq i$ ) and  $g_{jik}$  is the minimum number of paths from node  $j$  to node  $k$  that go through node  $i$ .

Second, closeness centrality is a metric for network centrality that is calculated using the average shortest path length between a node and all other nodes in the network. Thus, a definition of what is commonly referred to as the degree of separation between two nodes is provided (Freeman, 1978). Proximity centrality is based on node distance and emphasizes the proximity of one player to other actors in the network. Analytically, the closeness centrality of node  $i$  is defined as the reciprocal of its farness, indicated by  $c(i)$ .

$$c(i) = \sum_j \frac{1}{d(i,j)} \quad (2)$$

where  $d(i,j)$  is the distance between the nodes  $i$  and  $j$ . The closeness centrality of a network “ $N$ -node” can be normalized by dividing by  $N - 1$ , obtaining the formula below:

$$c'(i) = \frac{c(i)}{N-1} \quad (3)$$

### c. Modularity

Modularity is a metric used to assess the quality of a network's community partition. The greater the monetary worth, the higher the quality. Its value ranges from -1 to 1. A graph with a high degree of modularity features dense edges inside the community and edges that span many communities. According to Newman & Girvan (2004) the modularity value for networks with a strong community structure is between 0.3 and 0.7. The following is the modularity formula for a network with weighted edges:

$$Q = \frac{1}{2m} \sum_{i,j} \left[ A_{ij} - \frac{k_i k_j}{2m} \right] \delta(c_i, c_j) \quad (4)$$

$A_{ij}$  = weight of edge between  $i$  node and  $j$  node.

$k_i$  = number of edges attached to  $i$  node.

$m$  = total edge on graph.

$c_i$  = community of  $i$

$\delta(c_i, c_j)$  = function of  $\delta(u, v)$  value 1 if  $u = v$ , 0 is otherwise

To maximize the value of modularity efficiently, it is possible to find the value of modularity using the Louvain method. Louvain's method finds the community at the maximum value of modularity. This method consists of two stages which are repeated until the algorithm cannot increase the value of modularity further. First, each node  $i$  on the network is its own community. Then remove node  $i$  from its own community and move to neighboring community  $j$ . Based on (Blondel et al., 2008) the equation for the second stage is as follows:

$$\Delta Q = \left[ \frac{\Sigma_{in} + 2k_{i,in}}{2m} - \left( \frac{\Sigma_{tot} + k_i}{2m} \right)^2 \right] - \left[ \frac{\Sigma_{in}}{2m} - \left( \frac{\Sigma_{tot}}{2m} \right)^2 - \left( \frac{k_i}{2m} \right)^2 \right] \quad (5)$$

$\Sigma_{in}$  = number of edges on community of  $C$

$\Sigma_{tot}$  = number of edges that incident to node in community of  $C$

$k_i$  = number of edges attached on  $i$  node

$k_{i,in}$  = number of edges of  $i$  node attache in community of  $C$

$m$  = total number of edges in graph.

#### d. Density

The most researched property at the network analysis level is cohesiveness. Cohesion of a network is a measure of the structure's interconnection and the degree to which it aggregates. Density is defined in the cohesiveness metric as the number of connections divided by the total number of connections in the graph (when each node is directly connected to every other node). The density  $D$  of a directed graph  $G$  with  $N$  nodes is defined as:

$$D = \frac{2[L(G)]}{N(N-1)} \quad (6)$$

Density values range from 0 to 1, and the greater the value, the closer the graph is to its total form (Wasserman, 1994).

#### e. Clustering coefficient

Clustering is a characteristic of a large number of real-world networks. For instance, in a social system, there is a strong likelihood that two individuals connected through an acquaintance will share a third acquaintance. The group coefficient  $C$  can be used to determine the trend. This study considers the subgraph  $G_i$  of each node  $i$  of  $G$ , which is obtained in two steps: (1) remove  $i$  and its first neighbor from  $G$ ; (2) delete  $i$  and all incident edges. If node  $i$  has  $k_i$  neighbors, then  $G_i$  will have a maximum of  $k_i(k_i - 1)/2$  nodes and

edges.  $C_i$  is proportional to the fraction of edges that truly exist and quantifies the group of vertices  $i$ 's local compactness.  $C$  is the average of all nodes'  $C_i$  values (Gough et al., 2012):

$$\mathcal{C}(G) = (\mathcal{C}_i) = \frac{1}{N} \sum_{i \in G} \mathcal{C}_i, \quad (7)$$

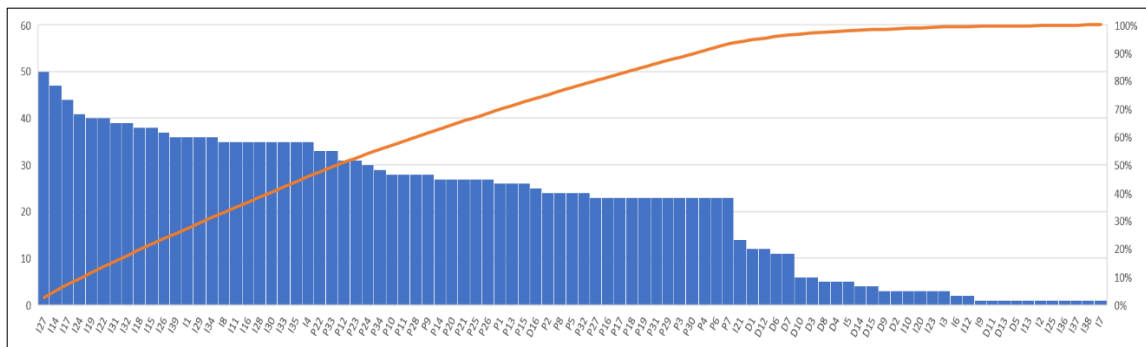
where

$$C_i = \frac{2e_i}{k_i(k_i-1)} = \frac{\sum_{j,m} a_{ij}a_{jm}a_{mi}}{k_i(k_i-1)} \quad (8)$$

where  $e_i$  is the number of  $G_i$ 's side.  $C$ , by definition, accepts values between  $[0,1]$ . It is critical to remember that  $C$  equals the number of triangles in the network (7). By visualizing the distribution of  $C_i$  among network nodes, a more complete description of how the network works can be achieved.

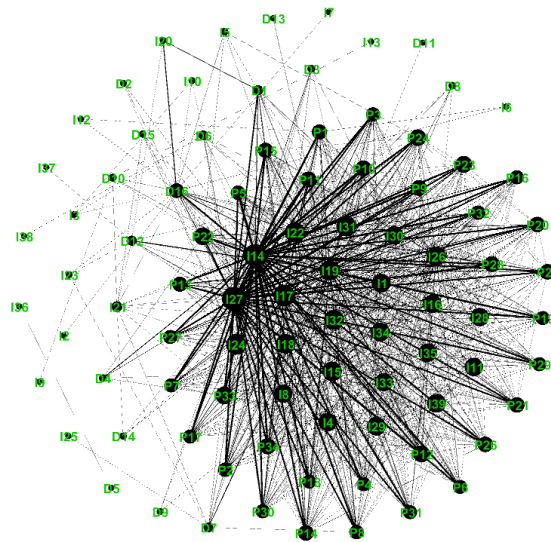
## 4. Result and discussion

The graph type used in this study is a directed graph. As a result, direction and engagement are highly considered. The undirected graph has 89 nodes and 957 edges. This implies that there are 57 institutions in Indonesia that are active participants in the foreign grant network between 2011 and 2021. Additionally, 957 foreign grant interactions occurred in Indonesia during this period. To begin, the degree distribution is analyzed. The graphic below illustrates the outcomes of data processing for degree distribution.



**Fig 1.** Degree distribution

There is one node with a degree of distribution equal to 50. The node is identified as I27. Further, there is the role of I14 in the second place, with a degree distribution value of 47. Meanwhile, 48 institutions have degree distribution with  $\leq 25$  score and rest  $> 25$ . The network of degree distribution can be seen in **Fig. 2**.



**Fig. 2.** Degree distribution

**Fig. 2** depicts those two institutions in Indonesia, namely I14 and I27 play a central role in Indonesia. Most of the grants distributed by the two multilateral institutions, namely the World Bank (WB) and the Asian Development Bank (ADB), was aimed at infrastructure development. In addition, one of the bilateral donors, namely Japan, is very active in providing grant support in the form of infrastructure.

The next phase of network analysis, which is centrality analysis. Two type of centrality that we used for measurement are betweenness centrality and closeness centrality. The following are the 10 institutions with the most centrality in Indonesia's foreign grant network, along with their visualizations.

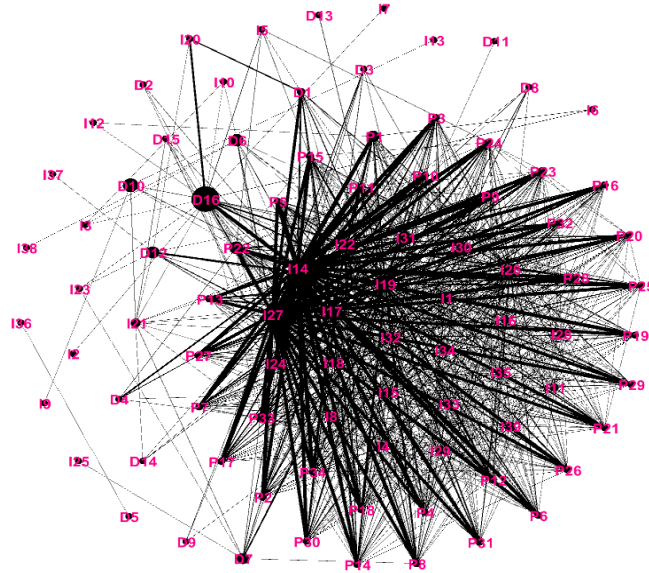
The concept of betweenness centrality is utilized to determine which nodes are most effective in connecting communities in Indonesia's foreign grant network. Ten institutions are listed in the Table 1 that play a crucial role in bridging the distribution of foreign funding in Indonesia. However, D16 plays a critical role in grants network in Indonesia.

Table 1. Centrality score

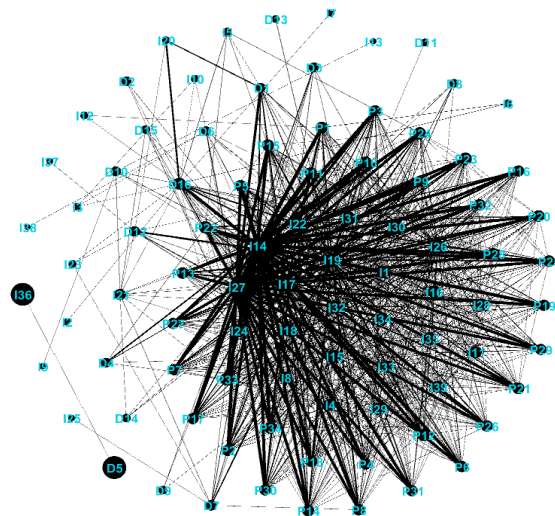
ID	Betweenness	ID	Closeness
D16	440.013	D5	1
I27	259.995	I36	1
I19	245.242	I27	0.682
I14	239.528	I14	0.666
D10	169.382	I17	0.646
I17	149.421	I22	0.618
P22	143.504	I19	0.609
I31	131.274	I24	0.609
D6	130.543	I32	0.605
D12	127.146	I31	0.601

Source: own creation based on the result.

Based on the Table 1, there is difference in the composition of actors in betweenness and closeness centrality. The role of D16 is prominent in betweenness centrality. Meanwhile, in closeness centrality, D5 takes an active role in the distribution of foreign grants in Indonesia. **Fig. 3** shows the betweenness of the donor-recipient network.



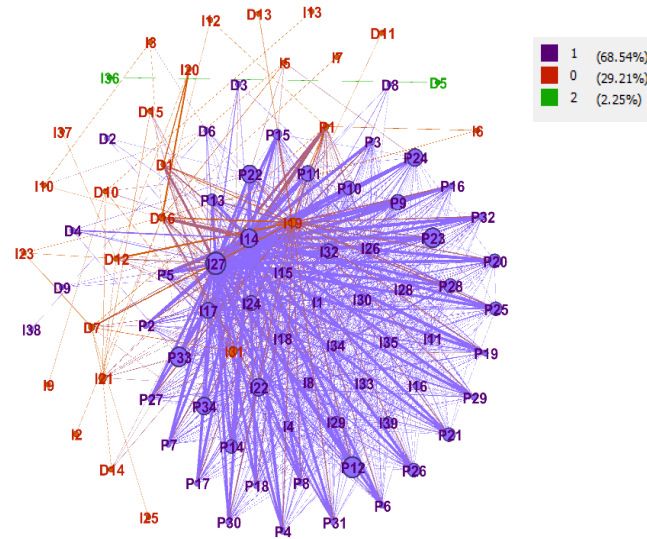
**Fig. 3.** Betweenness centrality



**Fig. 4.** Closeness centrality

**Fig. 4** is a closeness centrality which shows the proximity of a node to other nodes. D5 and I36 are nodes that have the shortest distance between nodes. D5 dan I36 continues to have the

Furthermore, the modularity analysis is the third component of the analysis. I am interested in the modularity value that is used to segment the network into communities. The obtained modularity value of 0.310 is considered to be acceptable because it is within the range of 0.3 – 0.7 (Newman & Girvan, 2004). This number indicates that Indonesia's foreign grant network is well-structured. Additionally, up to 3 communities were gathered. The following graphic depicts a network representation of modularity.



**Fig. 5.** Modularity

Referring to the **Fig. 5**, I27 is a node that plays a critical function in grant scenario. Additionally, the table below summarizes the institutions classified into each of the three-class identified during the modularity study of the foreign grant network in Indonesia.

**Table 2.** Modularity class

Communities	Institutions
0	I9, I13, I37, I25, I7, I2, D13, D11, I20, I6, I12, I23, I3, I10, I5, D10, D1, D15, D14, D12, P1, D7, D16, I21, I19, I31
1	I38, D9, D8, D2, D6, D4, P7, P6, P4, P31, P30, P3, P29, P27, P19, P18, P17, P16, D3, P8, P2, P5, P32, I28, I35, I30, I11, I33, I34, I8, I4, I16, I1, I26, I18, I15, P15, I39, I29, P13, P26, P14, P25, P21, P20, P10, P28, I32, I24, P9, P11, I17, P34, P24, I22, P22, I14, P23, P33, I2, I27
2	I36, D5

Source: own creation based on the result.

According to the chart above, community zero consists of nine donor agencies that have partnered with sixteen Indonesian ministries-agencies and one province. In the group one, six donor agencies collaborated with twenty-three Indonesian ministries-agencies and 32 provinces. In the group two, just one funding agency, two provinces, and two ministries are involved. Meanwhile, the fourth group included one donor and one ministry, but no provinces were included.

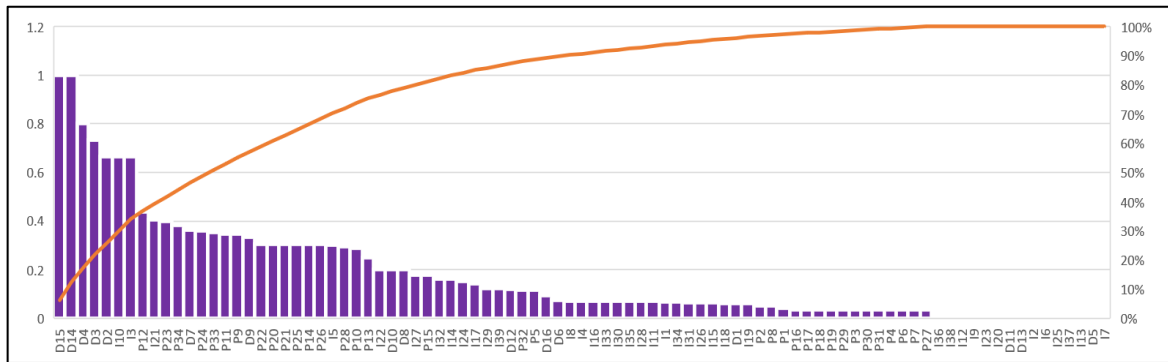
Density is the fourth section of the analysis of the foreign grant network. The data processing yielded a density value of 0.244. These findings show that the density of nodes is quite solid. The density may be caused by the intensity of donors in providing grants.

Then, I employ clustering as the fifth stage of network analysis. As illustrated in **Fig. 7**, there are more networks developed between actors in the foreign grant network in Indonesia. The triangle approach generates 1431 paths. The clustering coefficient has an average value of 0.1516. The following table illustrates how a clustering triangle can be formed from an Indonesian network of foreign grants.

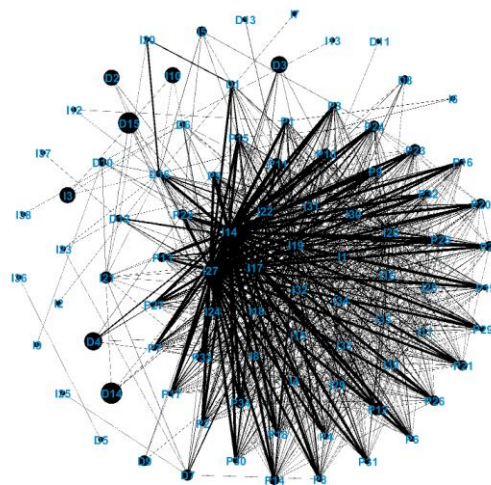
Table 3. Triangle clustering.

cluster	nodes
1	I9, I13, I37, I25, I7, I2, D13, D11, I20, I6, I12, I23, I38, I36, D5, P7, P6, P4, P31, P30, P3, P29, P27, P19, P18, P17, P16, P1, P8, P2, I19, D1, D1, I18, I15, I26, I31, I34, I1, I28, I35, I30, I11, I33, I8, I4, I16, D6, D16, P5, P32, D12, I39, I29, I17, I24, I14, I32, P15, I27, D8, D10, I22, P13
2	P10, P28, I5, P26, P14, P25, P21, P20, P22, D9, P9, P11, P33, P24, D7, P34, P23, I21, P12
3	I3, I10, D2, D3
4	D4, D15, D14

Source: own creation based on the result.



**Fig. 6.** Distribution score of clustering coefficient



**Fig. 7.** Clustering of foreign grants

The first to fifth sections of this study demonstrates that the system for distributing foreign grants in Indonesia, which is based on Government Regulation No. 10 of 2011, results in two distinct patterns, namely planned and unplanned processes. Between 2011 and 2021, it was discovered that the majority of foreign donor funding were organized through the I14 intermediary and then disbursed to regions and other ministries that had already submitted grant bids or to regions-areas in desperate need of aid.

I14, I27, and I17 are the ministries that receive the greatest fund. For example, several grants won by I14 in 2011 included help from AusAID-Australia in the form of capacity training services. Not only is grant provided to I15, but also to I17 in the form of education grants. Meanwhile, M11's funding are typically in the form of development grants, such as post-disaster reconstruction from the World Bank or emission reductions from KFW-Germany.

Nevertheless, certain donors appear to have their own distinct qualities as evidenced by funds distributed in Indonesia. For example, JiCA Japan gives contributions in the form of money and services with an emphasis on infrastructure, such as the development of waterways in DKI Jakarta in 2011, and pedestrian bridges in NTB Province in 2014. Additionally, JiCA-Japan contributes to disaster management in Indonesia and the strengthening of the country's influenza laboratories. Not only does JiCA-Japan contribute to the health sector, but also to the transportation sector in Indonesia, particularly the vessel traffic system.

Other donor organisations, such as AusAID, donate huge fund in Indonesia's development. This institution plays a critical role in advancing education in Indonesia. Scholarships at the Master and Doctoral levels are frequently sought after by scholarship seekers in Indonesia. Apart from education, AusAID-Australia frequently makes funding to various provinces in eastern Indonesia in the infrastructure sector. Additionally, the grants support women's empowerment and pro-poor regional development activities.

KFW-Germany supported Indonesia with grants in the form of money and services. Since 2011-2021, KFW-Germany and the German government have contributed immensely planned and unplanned grants. Numerous grants were made in 2011, including those for the construction of road and energy infrastructure in Aceh Province. Then, in 2013, KFW-Germany expanded its award program to include conservation and climate protection. KFW-Germany also provided funding in 2015, primarily for railway lines in East Java Province, particularly in the city of Surabaya. KFW-Germany continued to focus on the forestry industry and the environment in the years that followed, particularly on emissions reduction and carbon reduction, as well as forestry projects with the Ministry of Forestry and the Environment.

The WB is also one of the most frequent multilateral donors to Indonesia. From 2011 through 2021, WB was constantly involved in aid distribution. Aid is supplied in the form of cash, services, and goods. Infrastructure, technical assistance, empowerment, and governance, as well as post-disaster rehabilitation and reconstruction, are priority areas.



Empowerment of villages, education, health, transportation, carbon emissions management, and public financial management.

ADB also has critical role in Indonesia. Similar to the WB, the ADB prioritizes the distribution of its grants. The ADB focuses on river protection, training, poverty alleviation, education, and health, energy efficiency, forestry and biodiversity, and sustainable infrastructure aid. In addition, UNIDO in 2013 has been engaged in awarding grants to Indonesia. UNIDO focuses on the empowerment of villages, women, environmental and forest conservation, and disaster management. According to grant reports, the majority of UNIDO's disbursement processes are planned and include the Ministry of Finance as an intermediary.

Meanwhile, UNDP contributed to grant distribution from 2012 to 2021. From the current focus, it appears as though UNDP is focusing on a variety of areas, including governance, empowerment in several provinces, environmental conservation, waste management, partnerships, biodiversity, supply chains for marine commodities, climate change, traditional mining, and health governance. UNDP distributes grants in a structured and direct manner. UNDP chose to collaborate directly with the Ministry of Health in 2021 as part of a health governance grant. Similarly, in 2016, in coordination with the Ministry of National Development Planning, UNDP worked on partnership and disaster management. In 2017, UNDP collaborated with the Ministry of Environment and Forestry to address biodiversity challenges in a number of Indonesian regions.

Grants from the IsDB are typically focused on specific sectors of the agricultural system. In 2020, the grant will be awarded in partnership with the Ministry of Agriculture and will total US\$500,000. IFAD has been actively disbursing grants through both planned and unplanned procedures since 2011. IFAD gave aid according to a specified system in 2011 and 2012. Meanwhile, in 2016, grant was provided in direct collaboration with the Ministry of National Development Planning, with a focus on economic development. Then, in 2018, IFAD distributed grants in the rural empowerment program through a direct method in partnership with the Ministry of Agriculture. Additionally, IFAD granted support to the Ministry of Villages and Development of Disadvantaged Regions in the same year, totaling SDR246,000 for the Village Development program. In 2019, IFAD granted cash aid to four provinces in Indonesia, including South Kalimantan, West Java, East Java, and South Sulawesi. Not only that, but IFAD also pays special attention to Indonesia's eastern region, which lags behind the western region in a variety of fields. The aid was directed toward a number of provinces, including Papua, West Papua, Maluku, North Maluku, and East Nusa Tenggara. Additionally, the support works in collaboration with the Ministry of Villages and Underdeveloped Development, which is tasked with the responsibility of integrating rural economic development. The five eastern provinces got total of EUR1,360,000.

The EU is a donor that makes grants through two well-established processes. Between 2011 and 2014, the EU distributed aid according to a predetermined scheme. The EU's

objective region is more focused on commerce, infrastructure, governance, and alternative energy sources. Meanwhile, in partnership with the Ministry of Finance and the Ministry of Education, the EU offered funding in the education sector in 2015. In partnership with the Ministry of Environment and Forestry, the EU gave aid on climate change-related issues the same year. In 2015, a total of US\$3,876,197 in aid was awarded. The Ministry of National Planning and Development collaborated on this project. The EU assisted in the Trade Cooperation initiative in 2017 and 2018. The total amount of aid disbursed during those years was EUR22,500,000.

I believe that the role of established regulations could result in a number of future issues, regardless of whether donor agencies offered planned or unplanned aid to the Indonesian government. For example, requiring donors to register their activities with the Ministry of Finance causes delays in direct grant distribution, perhaps resulting in grant funds being abused or inaccurate award goals. As a result, the lengthy grant administration process may influence future grant distribution decisions made by donors. Donors will use the perception of poor government administration as a benchmark for increasing aid amounts or even stopping it altogether.

On the other hand, donors' direct transfer to ministries will create a new issue, namely budget abuse. Some ministries failed to submit financial reports to the Ministry of Finance on the use of these donations between 2011 and 2015, resulting in reports on the use of foreign funds receiving negative ratings from the Republic of Indonesia's Supreme Audit Agency. As a result, a new approach for distributing foreign aid in Indonesia is urgently important to avoid becoming trapped. Government policies must be both binding and adaptive to be widely accepted by all parties.

## 5. Conclusion

The results of the network analysis are the consequence of Indonesian government laws in place since 2006, which were later revised in 2011. The primary goal of these regulatory reforms is to increase the effectiveness and efficiency of grant receipts, particularly international funds. The two grant distribution procedures authorized in the regulation, as well as the network analysis results, indicate that the I27 has assumed a central role. The benefit of having such a planned procedure in place is that all types of funds distributed by foreign donors are properly reported in the state's financial balance sheet. Three modularity classes were identified through the analysis of modularity classes, emphasizing the extent to which actors in the foreign grant network worked according to their interests. Additionally, the network analysis results suggest the existence of various network clusters, indicating that foreign grant collaboration is not only a planned method, but also a unplanned mechanism.

Despite creating a decentralized structure, regions in Indonesia continue to encounter difficulties. Cooperation with foreign donors is a major hope for the regions to grow quickly and catch up, yet it has created its own set of difficulties for the regions. The

impediment is that the regions must work through the Ministry of Foreign Affairs and the Ministry of Home Affairs. Although it is not specifically mentioned in Government Regulation No. 10 of 2011, the system for cooperation with these ministries must be implemented. The cumbersome bureaucratic process appears to continue to be an impediment for regions led by leaders with international connections. The poor quality of the domestic bureaucracy may contribute to the inertia of regional development. As a result, regions often rely on grants from within the country, which come from private donations and government-owned enterprises.

Furthermore, the ministry's direct engagement with foreign donors necessitates special attention, notably in terms of budget utilization reporting. The red report cards issued by the Audit Board Republic of Indonesia during couple years ago warrant attention, as they indicate that there is a problem of grant misuse in numerous ministries that serve as receivers. The ministries responsible for procuring foreign funding in Indonesia must be more prudent in managing their budgets and stay on track. Strict consequences must also be included in legislation governing the procurement of foreign grants to prevent power abuse. Additionally, beneficiaries must also ensure that grant projects do not swell routine budgets because of project companions, as previously believed Sugema & Chowdhury (2008) and that they can accommodate long-term political commitments. Further research may relate to foreign grant networks associated with institutionalist theories because the subject matter is very close to public policy analysis.

## Appendix 1

### List of abbreviation

I1	Agency for the Assessment and Application of Technology (BPPT)
I2	Audit Board of the Republic of Indonesia
I3	Comission of Eradication Corruption
I4	Coordinating Ministry for People's Welfare
I5	Coordinating Ministry for the Economy
I6	Fauna and Flora International (FFI)
I7	Financial and Development Supervisory Agency (BPKP)
I8	Goods/Services Procurement Policy Institute (LKPP)
I9	Indonesian Institute of Sciences (LIPI)
I10	Indonesian Police
I11	Investment Coordinating Board (BKPM)
I12	Leuser International Foundation (YLI)
I13	Meteorology, Climatology, and Geophysical Agency (BMKG)
I14	Ministry of Public Works and Human Settlements
I15	Ministry of Agriculture
I16	Ministry of Communication and Informatics
I17	Ministry of Education and Culture
I18	Ministry of Energy and Mineral Resources
I19	Ministry of Environment and Forestry

I20	Ministry of Finance
I21	Ministry of Health
I22	Ministry of Home Affairs
I23	Ministry of Industry
I24	Ministry of Law and Human Rights
I25	Ministry of Manpower
I26	Ministry of Marine and Fisheries
I27	Ministry of National Development Planning
I28	Ministry of Social Affairs
I29	Ministry of State Secretariat
I30	Ministry of Trade
I31	Ministry of Transportation
I32	Ministry of Villages, Development of Disadvantaged Regions and Transmigration
I33	Ministry of Women's Empowerment and Child Protection
I34	National Board for Disaster Management
I35	National Council on Climate Change
I36	National Search and Rescue Agency
I37	Presidential Working Unit for Development Supervision and Control (UKP4)
I38	Supreme Court
I39	Vice Presidential Secretariat
P1	Aceh
P2	Bali
P3	Banten
P4	Bengkulu
P5	DI Yogyakarta
P6	DKI Jakarta
P7	Gorontalo
P8	Jambi
P9	Jawa Barat
P10	Jawa Tengah
P11	Jawa Timur
P12	Kalimantan Barat
P13	Kalimantan Selatan
P14	Kalimantan Tengah
P15	Kalimantan Timur
P16	Kalimantan Utara
P17	Kepulauan Bangka Belitung
P18	Kepulauan Riau
P19	Lampung
P20	Maluku
P21	Maluku Utara
P22	Nusa Tenggara Barat
P23	Nusa Tenggara Timur
P24	Papua
P25	Papua Barat
P26	Riau
P27	Sulawesi Barat
P28	Sulawesi Selatan
P29	Sulawesi Tengah
P30	Sulawesi Tenggara

P31	Sulawesi Utara
P32	Sumatera Barat
P33	Sumatera Selatan
P34	Sumatera Utara
D1	ADB
D2	Australia
D3	Australia - AUSAID
D4	Australia-DFAT
D5	Denmark - Danida
D6	EU
D7	Germany-KFW
D8	IFAD
D9	IsDB
D10	Japan-JiCA
D11	The gef
D12	UNDP
D13	UNIDO
D14	USA
D15	USA-USAID
D16	WB

## References

- Amusa, K., Monkam, N., & Viegi, N. (2020). Can foreign aid enhance domestic resource mobilisation in Nigeria? *Journal of Contemporary African Studies*.  
<https://doi.org/10.1080/02589001.2020.1774519>
- Arndt, H. W. (1970). Australian Economic Aid To Indonesia. *Australian Outlook*.  
<https://doi.org/10.1080/10357717008444372>
- Asatullaeva, Z., Aghdam, R. F. Z., Ahmad, N., & Tashpulatova, L. (2021). The impact of foreign aid on economic development: A systematic literature review and content analysis of the top 50 most influential papers. In *Journal of International Development*.  
<https://doi.org/10.1002/jid.3543>
- Bhattacharyya, S., & Intartaglia, M. (2021). Foreign aid network diversification and its impact on growth, growth acceleration, and growth spell. *Review of Development Economics*.  
<https://doi.org/10.1111/rode.12762>
- Blondel, V. D., Guillaume, J. L., Lambiotte, R., & Lefebvre, E. (2008). Fast unfolding of communities in large networks. *Journal of Statistical Mechanics: Theory and Experiment*, P10008. <https://doi.org/10.1088/1742-5468/2008/10/P10008>
- Borgatti, S. P., Mehra, A., Brass, D. J., & Labianca, G. (2009). Network analysis in the social sciences. In *Science*. <https://doi.org/10.1126/science.1165821>
- Brandes, U. (2001). A faster algorithm for betweenness centrality. *Journal of Mathematical Sociology*. <https://doi.org/10.1080/0022250X.2001.9990249>

- Burke, P. J., & Ahmadi-Esfahani, F. Z. (2006). Aid and growth: A study of South East Asia. *Journal of Asian Economics*. <https://doi.org/10.1016/j.asieco.2006.02.006>
- Cunningham, H., Knowles, S., & Hansen, P. (2017). Bilateral foreign aid\_ how important is aid effectiveness to people for choosing countries to support? *Applied Economics Letters*. <https://doi.org/10.1080/13504851.2016.1184372>
- Feeny, S., & McGillivray, M. (2011). Scaling-up foreign aid: Will the “big push” work? *World Economy*. <https://doi.org/10.1111/j.1467-9701.2010.01291.x>
- Feeny, S., & Ouattara, B. (2009). What type of economic growth does foreign aid support? *Applied Economics Letters*. <https://doi.org/10.1080/13504850701221832>
- Fornito, A., Zalesky, A., & Bullmore, E. T. (2016). Fundamentals of Brain Network Analysis. In *Fundamentals of Brain Network Analysis*. <https://doi.org/10.1016/C2012-0-06036-X>
- Freeman, L. C. (1978). Centrality in social networks conceptual clarification. *Social Networks*. [https://doi.org/10.1016/0378-8733\(78\)90021-7](https://doi.org/10.1016/0378-8733(78)90021-7)
- Furukawa, M. (2020). The effect of project aid fragmentation on economic growth. *Development in Practice*. <https://doi.org/10.1080/09614524.2019.1662371>
- Golbeck, J., & Klavans, J. L. (2015). Introduction to Social Media Investigation: A Hands-on Approach. In *Introduction to Social Media Investigation: A Hands-on Approach*. <https://doi.org/10.1016/C2014-0-01104-5>
- Gough, D., Oliver, S., & Thomas, J. (2012). An introduction to systematic reviews / David Gough, Sandy Oliver, James Thomas. In *SAGE Publications Ltd*.
- Gounder, R., & Doessel, D. P. (1997). Motivation models of Australia’s bilateral aid program: The case of Indonesia. *Bulletin of Indonesian Economic Studies*. <https://doi.org/10.1080/00074919712331337245>
- Gounder, R., & Sen, K. (1999). What motivates foreign aid: A case study of Australia’s aid to Indonesia. *Journal of Developing Areas*.
- Heckelman, J. C., & Knack, S. (2009). Aid, economic freedom, and growth. *Contemporary Economic Policy*. <https://doi.org/10.1111/j.1465-7287.2008.00123.x>
- Horowitz, A. W., Kali, R., & Song, H. (2021). Rethinking the aid–growth relationship: A network approach. *Review of Development Economics*. <https://doi.org/10.1111/rode.12707>
- Irfan, Z. B., & Nehra, A. (2016). Analysing the aid effectiveness on the living standard: A check-up on Southeast Asian countries. *Journal of Urban Management*. <https://doi.org/10.1016/j.jum.2016.07.001>
- Jackson, M. O. (2010). Social and Economic Networks. In *Social and Economic Networks*. <https://doi.org/10.1093/acprof:oso/9780199591756.003.0019>
- Kaya, O., Kaya, I., & Gunter, L. (2013). Foreign aid and the quest for poverty reduction: Is aid to agriculture effective? *Journal of Agricultural Economics*. <https://doi.org/10.1111/1477-9552.12023>

- Khan, H. A., & Hoshino, E. (1992). Impact of foreign aid on the fiscal behavior of LDC governments. *World Development*. [https://doi.org/10.1016/0305-750X\(92\)90068-7](https://doi.org/10.1016/0305-750X(92)90068-7)
- Kowalski, R. (2011). The Gift - Marcel Mauss and international aid. *Journal of Comparative Social Welfare*. <https://doi.org/10.1080/17486831.2011.595069>
- Lancaster, C. (2009). Sixty Years of Foreign Aid. *International Journal: Canada's Journal of Global Policy Analysis*. <https://doi.org/10.1177/002070200906400312>
- McGillivray, M. (1994). The impact of foreign aid on the fiscal behavior of Asian LDC governments: A comment on Khan and Hoshino (1992). *World Development*. [https://doi.org/10.1016/0305-750X\(94\)90190-2](https://doi.org/10.1016/0305-750X(94)90190-2)
- McGillivray, M. (2000). Aid and public sector behavior in developing countries. *Review of Development Economics*. <https://doi.org/10.1111/1467-9361.00084>
- Metzger, L., & Guenther, I. (2015). How to Assess the Effectiveness of Development Aid Projects: Evaluation Ratings versus Project Indicators. *Journal of International Development*. <https://doi.org/10.1002/jid.3189>
- Mosley, P., Hudson, J., & Verschoor, A. (2004). Aid, poverty reduction and the “new conditionality.” *Economic Journal*. <https://doi.org/10.1111/j.1468-0297.2004.00220.x>
- Mosley, P., & Suleiman, A. (2007). Aid, agriculture and poverty in developing countries. *Review of Development Economics*. <https://doi.org/10.1111/j.1467-9361.2006.00354.x>
- Newman, M. (2010). Networks: An Introduction. In *Networks: An Introduction*. <https://doi.org/10.1093/acprof:oso/9780199206650.001.0001>
- Newman, M. E. J., & Girvan, M. (2004). Finding and evaluating community structure in networks. *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics*. <https://doi.org/10.1103/PhysRevE.69.026113>
- Nunnenkamp, P., & Thiele, R. (2006). Targeting aid to the needy and deserving: Nothing but promises? *World Economy*. <https://doi.org/10.1111/j.1467-9701.2006.00836.x>
- Nyoni, T. S. (1998). Foreign aid and economic performance in Tanzania. *World Development*. [https://doi.org/10.1016/S0305-750X\(98\)00047-3](https://doi.org/10.1016/S0305-750X(98)00047-3)
- Osei, R., Morrissey, O., & Lloyd, T. (2005). The fiscal effects of aid in Ghana. *Journal of International Development*. <https://doi.org/10.1002/jid.1258>
- Ouattara, B. (2007). Foreign aid, public savings displacement and aid dependency in Côte d'Ivoire: An aid disaggregation approach. *Oxford Development Studies*. <https://doi.org/10.1080/13600810601167579>
- Prell, C. (2011). Social Network Analysis: History, Theory and Methodology. In *Social network theory and educational change*.
- Prizzon, A., Greenhill, R., & Mustapha, S. (2017). An ‘age of choice’ for external development finance? Evidence from country case studies. *Development Policy Review*. <https://doi.org/10.1111/dpr.12268>

- Radelet, S. (2006). A primer on foreign aid (Working Paper No. 92). In *Working Paper*.
- Radelet, S. (2011). A Primer on Foreign Aid. *SSRN Electronic Journal*.  
<https://doi.org/10.2139/ssrn.983122>
- Sugema, I., & Chowdhury, A. (2008). Has aid made the Government of Indonesia lazy? *Asia-Pacific Development Journal*. <https://doi.org/10.18356/7e962ab2-en>
- Sukma, R. (1995). The Evolution of Indonesia's Foreign Policy: An Indonesian View. *Asian Survey*. <https://doi.org/10.2307/2645547>
- Swiss, L., & Longhofer, W. (2016). Membership has its privileges: Shared international organizational affiliation and foreign aid flows, 1978-2010. *Social Forces*.  
<https://doi.org/10.1093/sf/sov117>
- Thornton, J. (2014). Does foreign aid reduce tax revenue? Further evidence. *Applied Economics*.  
<https://doi.org/10.1080/00036846.2013.829207>
- Wasserman, S. (1994). Social Network Analysis in the Social and Behavioral Sciences. *Social Network Analysis: Methods and Applications*.
- Williamson, C. R. (2008). Foreign Aid and Human Development: The Impact of Foreign Aid to the Health Sector. *Southern Economic Journal*. <https://doi.org/10.1002/j.2325-8012.2008.tb00898.x>
- Wilmsen, B., van Hulten, A., & Kaasch, A. (2019). Resolving the tensions between the principles of aid effectiveness: an Indonesia-Australia technical assistance project. *Development in Practice*. <https://doi.org/10.1080/09614524.2018.1561829>