

Factors and remedies for productivity and efficiency among small-scale informal enterprises: a theoretical perspective

Godfred Takyi
Johnson O. Okeniyi
Sunday Enejo Samuel

This is the peer reviewed version of the following article:

Takyi, G., Okeniyi, J. O., & Samuel, S. E. (2022) 'Factors and remedies for productivity and efficiency among small - scale informal enterprises: a theoretical perspective'. *International Social Science Journal*.

which has been published in final form at
<https://doi.org/10.1111/issj.12359>

This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Use of Self-Archived Versions. This article may not be enhanced, enriched or otherwise transformed into a derivative work, without express permission from Wiley or by statutory rights under applicable legislation. Copyright notices must not be removed, obscured or modified. The article must be linked to Wiley's version of record on Wiley Online Library and any embedding, framing or otherwise making available the article or pages thereof by third parties from platforms, services and websites other than Wiley Online Library must be prohibited.

Factors and remedies for productivity and efficiency among small-scale informal enterprises: A theoretical perspective

Godfred Takyi
(Corresponding author)
Nobel International
Business School, Ghana
e-mail:
godfred@nibs.edu.gh

Johnson O. Okeniyi
Nobel International
Business School, Ghana
e-mail:
johnson@nibs.edu.gh

Sunday Enejo
Abertay University, United
Kingdom
e-mail:
s.samuel@abertay.ac.uk

Abstract

The growth and sustenance of firms are primarily determined by their productivity and efficiency. However, the productivity analysis has generally been skewed toward formal enterprises in the extant literature. For developing countries that characteristically have a greater share of informal employment understanding the theoretical foundation of informal productivity and the proposed remedies could be the grounds for further research and deeper thinking for enhanced productivity. The central question of this paper is formulated on how a combined theoretical approach on the characteristics and location of firms could enhance knowledge on the hindering and promoting factors of productivity and efficiency among informal enterprises. Using the PRISMA methodology, 141 theoretical and empirical literature were reviewed, which revealed a central role of local and national governments in providing enabling infrastructure for the informal economy. It was found that factors like knowledge sharing, capitalisation, improved credit sector, geographical concentration, and decongestion of industrial clusters could promote productivity among informal producers. It therefore, falls on various stakeholders to plan and execute policies on infrastructure, land-use policies, tax, and credit that simultaneously lessen the inherent constraints of informality, while enhancing enablers of production.

Keywords: Informal economy, small-scale firms, productivity, efficiency, theory

Conflict of interest statement: We know of no conflicts of interest associated with this publication, and there has been no significant financial support for this work that could have influenced its outcome.

Authors' biographical note:

Godfred Takyi is a lecturer in the PhD. Research Unit at the Nobel International Business School, Ghana. His research interests are informal economy and development economics.

Johnson O. Okeniyi is the Director of PhD Programs at Nobel International Business School, Ghana. His research interests are strategic management and small business development.

Samuel Enejo Sunday is a lecturer at the Abertay University, United Kingdom. His research interests are performance management and oil and gas accounting.

Introduction

The growth and sustenance of firms are generally underscored by their productivity and efficiency (Lee & Lieberman 2010; Benson & Filippaios 2016). Productivity, generally, measures the average output of firms relative to production time and inputs (Baert & Revnaerts 2018; Mishra 2007), and the total productivity of all enterprises in a country constitute the gross domestic product (GDP). Therefore, understanding the productivity at the micro-level is essential for growth at the country-level. However, the productivity analysis has generally been skewed toward formal enterprises in the extant literature. For developing countries that characteristically have a more significant share of informal employment (ILO 2018), understanding the theoretical foundation of informal productivity and the proposed remedies could be the grounds for further research and deeper thinking for enhanced productivity.

Informal enterprises are known to exist on a continuum of legal compliance and characteristics (Kocer, 2016), but generally, the ILO (2013) defines the informal economy as all economic activities by workers and economic units that are - in law or in practice - not covered or insufficiently covered by formal arrangements. In Ghana, where this study was conducted, private enterprises are considered formal if they enrol workers on a pension scheme or another type of social security or medical care (Ghana Statistical Service, 2016). Therefore, any economic unit outside this category is considered informal.

While it holds that productivity and efficiency in informal employment is generally lower than formal occupations, researchers have argued for the potential of high informal productivity by tackling the problems of informality including labour intensiveness, rudimentary technology, and exposure to poorer working conditions (Chen, 2012; Devicienti, Groisman & Poggi 2009; Dhemba 1999; Leandro & Schneider, 2019; Loayza, 2016). However, a universal approach to enhance

employment and production, as well as a unified theoretical explanation of informal productivity are not prominent in the literature. One major reason to this challenge is linked to the heterogeneity, varied functions, and complexity of employments relationships of informal enterprises (Gupta 2016; Vanek, Chen, Carre Heintz & Hussmanns 2014; Wells & Jason 2010). Others have also identified informality variants in terms of scale and employment options among regions and countries (ILO 2016; Williams & Shahid 2016).

This paper aims to discuss the theoretical underpinnings of the productivity and efficiency of informal enterprises, considering the structural variants of informality and the location of informal firms. Two location variants are considered – clusters and isolated sites. In its simplest and generic sense, a geographical agglomeration represents a concentration of related firms and other institutions engaged in closely related economic, research, and development activities (Alacer & Zhao 2010). However, this generic definition encompasses different types of geographical agglomerations, which researchers like Alberti, Sciascia, Tripodi and Visconti (2014) have elaborated on. Madichie and Nkamnebe (2010) also conceptualised a one-building dimension of agglomeration.

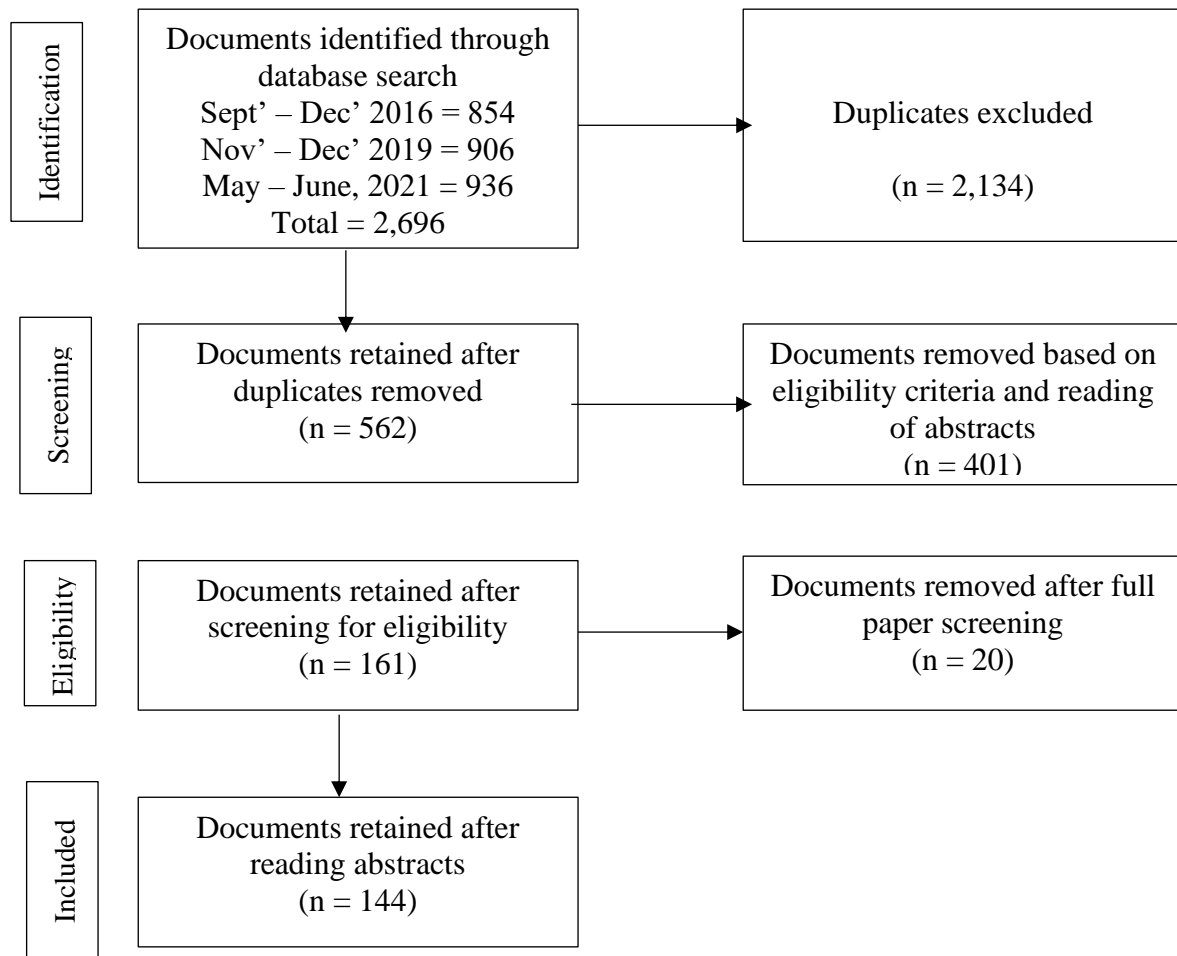
The concept of isolation in enterprise location is built around the idea that, at certain distances apart, the interaction between similar and competing firms reduces considerably. Allen (1977) found that communication between engineering firm falls dramatically when they are more than 30 meters apart. Rosenthal and Strange (2003), on the other hand, discovered that integration among small-scale firms reduce within the first mile (1.6 kilometres), but up to five miles (8 kilometres) for larger firms. Among ad-agencies in Manhattan, Arzaghi and Henderson (2008) found that the localisation effect loses 80 percent of its value at 500 meters apart, but fades away completely at 750 meters apart.

The central question of this paper is formulated on how a combined theoretical approach on the characteristics and location of firms could enhance knowledge on the hindering and promoting factors of productivity and efficiency among informal enterprises. The characteristics of a firm, including size (Boring, 2019; Clancy et al., 2014), structure (Carillo & Kopelman, 1991; Ogbo et al., 2015), and formality (Amin, Ohnsorge & Okou, 2019; Echevin & Murtin, 2009) of operations have been significantly associated with productivity. The productivity and efficiency effects of informal firms' location, whether in close proximity or isolated from closely related firms, is however not well established in the literature. While there are other broader socio-cultural factors, as well as various employee-level factors that may influence productivity of firms, this paper is limited to the aforementioned factors. We, therefore, interpret our findings with this inherent limitation. The subsequent section addresses the methodology of the study.

Methodology

The methodology for this paper is influenced by Avant's (1993) recommendations on using a systematic review to develop a theoretical framework. The PRISMA approach (Moher et al. 2009; Page et al. 2020) was adopted to identify, organise, screen, and assess the eligibility for including various literary works. The purpose of the initial identification of records was to assemble books, journal articles, website content, and other relevant literary content that discussed theoretical and empirical aspects of informal production, as well as classical and new geography economics. The initial search was conducted between the months of September and December, 2016. An updated search was conducted from November to December 2019, and third update in June 2021 (see Figure 1 for details). Duplicates and the number thereof were identified by matching the titles of the documents, using Python 3.8 and printing the results to file. These duplicates were then removed from the repository.

Figure 1: PRISMA flowchart for document selection



Source: Authors' construct, 2021

In order for a document to be included in the next stage, it was to be from a double-blinded reviewed journal, a reputable publisher, or endorsed by globally recognised research institution. Moreover, the abstract should point a direct theoretical and practical relevance to the objective of this study. Given that this paper attempts a universal theoretical explanation of informal production, the review was not limited by country context. The aim was to synthesise global evidence throughout relevant history. A total of 161 papers were retained after applying these

criteria. A second screening was done by reading the abstracts of all the papers for relevance, In order to reduce selection bias, the papers were randomly assigned to the authors to be further screened and make a list of the relevant papers to retain. The list was synthesised through a discussion, and as a results 144 documents were retained (see the reference section, for the list off the documents).

The papers retained comprise literary works that either explain the main theoretical premises for the study and those that support or contradict the assumptions of the study through empirical research. This approach was to enforce an in-depth critique of the theories and also to identify gaps that could be improved in our synthesised model. The subsequent section reviews the relevant literature and further attempts to synthesise the various theoretical main points for analysing the productivity and efficiency of informal enterprises.

Literature Review

Modernistaion theory and productivity

The modernisation theory states that development is caused by a transition of a traditional economy to an industrialised economy (Jensen, 2001). Dibua (2006) indicated that this theory influenced Rostow's (1960) stages of economic growth, Organski's (1965) stages of political development and Apter's (1965) Politics of Modernisation. Thus, the theory is based on the premise that the progressive evolution of traditional societies to modernised political, cultural, and socio-economic frontiers promotes economic growth for development (Brugger & Hannan 1983; Prateek 2010; Gavrov 2004).

In that regard, the theory also suggests that production, which is the underlying factor of economic growth, must also evolve from traditional methods to industrialised capitalist methods

(Lewis 1954; Pasinetti 1981; Rostow 1960). By traditional methods, the theory focuses on the use of simple tools and human-powered equipment, and differentiates them from electric-powered machines and automated production (Huang 2015; Otchia 2014). Proponents of the theory, such as Lewis (1954) and Rostow (1960), hold that traditional production deters productivity and efficiency, whereas modern machinery encourages optimal productivity and efficiency. This argument has been one of the underlying reasons for studies that found higher productivity and efficiency levels among large scale firms, as compared to small- and micro-scale enterprises.

An OECD (2017a) report indicated that in the United Kingdom, the productivity of micro-firms is at best, 60 percent of the level of large firms. In Turkey and Hungary, the report revealed that micro-firms' productivity is up to 20 percent of the level of large firms. In Finland and Sweden, however, the services of SMEs in were at par with large firms. In another study, Colacelli and Hong (2019) found that the productivity SMEs in Japan was significantly lower than larger firms. These studies suggest that higher rates of modernisation in manufacturing yield greater productivity and efficiency.

The traditional-modern dichotomy is also used as the underlying explanation of lower productivity of informal enterprises, compared to formal firms (Surdej 2017; Taymaz 2009). The argument goes that informal firms are mostly SMEs, forced to operate on a smaller scale for not modernising their production structures. In terms of size, Islams and Amin (2015) found that larger informal firms were even less productive than smaller ones, because of increased inefficiency in production. Thus, dualist (Hart 1971; ILO, 1972; Sraffa 1960), structuralist (Moser 1978; Portes & Schauffler 1993; Tokman 1978), and legalist (de Soto 1989) views of the informal economy are heavily reliant on the different levels of modernisation of production. These are discussed into detail in the subsequent sections.

Dualist theory of informal economy

The early academic literature on informal economy concentrated on the capital limitations within informal sectors. Sraffa (1960), for example, propounded that all activities would be formal, if capital was not in short supply. According to Gibson and Kelley (1994), Sraffa was of the view that informal sector processes will not yield the average rate on profit when evaluated at the prevailing wages and prices. The early literature, therefore, attributed low productivity and efficiency in the informal sector to constrained capital.

Prevailing evidence suggests that financially constrained firms in Europe lost as much as 21 percent of productivity, in comparison to unconstrained firms (Ferrando & Ruggieri 2015) and in nine sub-Saharan African countries financially constrained firms had 6.6 percent lower marginal returns on capital (Amos & Zanhoun 2019). Aghion et al. (2019), on the other hand, established a complex relationship between access to capital and productivity. They found that capital constraints had detrimental effect on long-run productivity, but also kept inefficient incumbent firms out of the market, resulting in an inverted U-shape relationship. Given the proliferation of informal firms in developing countries (Chen 2012; ECLAC & ILO 2014; OECD 2017b), Aghion et al.'s (2019) findings would suggest that informal firms may be as efficient as their formal counterparts.

According to Sraffa (1960), informal work, in the long-run, yields zero returns, although the returns can be positive in the short-term. From the perspective of the modernisation theory, Hart (1971) and the ILO (1972) supported this notion by coining the term dual economy to suggest economic structure of traditional versus modern sectors. They conceptualised the traditional sector to consist of labour-intensive micro- and small-scale businesses using rudimentary, man-powered technology that are found at the fringes of major cities. On the other hand, the modern sector was

seen as mainly the formalised firms with industrialised and automated production processes (Chen 2012).

Argawala (2009) noted that dualists generally ignore social and cultural system of regulations that drive the informal production. They assumed that there could be no profitable coordination of informal production processes without formal relationships between firms. However, Cruz and Adolfo (2016) argued that profitable coordination of the segmented informal production is possible through different forms of institutional cooperation. This is supported by Mukim (2011) who found that buyer-supply linkages within clusters of informal enterprises improve economic activities therein. Meagher (2011) in Nigeria and Ghose (2017) from India also argued that marginalisation and the poverty-informality linkage is as result of government negligence of the sector, as they are largely ignored regarding infrastructural and political support. Thus, the plight of the informal economy is seen to be more of an imbalance in the political support. This leads to the structural interpretation of the informal economy and productivity.

The structuralist theory of the informal economy

Portes and Walton's (1981) conception of the informal economy shifts the focus from the marginalisation perspective of dualism to the structural linkages between the informal and formal economies. They based their argument on the complementarities, continuities and linkages between formal and informal economies that exploit informal firms for the benefit of informal enterprises. Two main views, labelled as the stagnation perspective and the modernisation view arise from this argument (Moreno-Monroy et al., 2014).

The stagnation view, supported by Moser (1978), Tokman (1978), as well as Portes and Schaffler (1993) holds that during formal-informal subcontracts, formal enterprises enforce tight pricing mandates on informal enterprises, which constricts the capital of informal enterprises and

traps them in survivalist mode. Given the capital restraints, these proponents establish that productivity in the informal economy remains low indefinitely (OECD 2017b; IMF 2017). This notion further reinforces the strong link between informality and low economic growth (World Bank 2014; ILO 2016).

The modernisation perspective stems from the argument that formal enterprises not only seek to reduce costs, but also aim to maximise product and service quality gained from formal-informal linkages (Wattanaputtipaisan 2002). The argument, therefore, goes that formal firms only engage modernised informal firms with the technical and productive capacity to provide the best services (Ranis & Stewart 1999). Marjit (2003) referred to this section of informal firms as capital intensive, whereas Grimm et al. (2012) labelled them as the upper-tier. Studies on formal-informal linkages in Nairobi (House 1984), Nigeria (Arimah 2001), and also in six different West African countries (Boehme & Thiele 2012) confirmed that formal firms are more likely to form links with more capital-intensive informal enterprises, with higher productivity, and more educated workforce. The perspective, therefore, suggests that encouraging more formal-informal linkages can lead to higher overall productivity leading to higher economic growth.

Structuralists generally subscribe to the view that the major drawbacks for informal firms are identified within the larger socio-economic structure, such as poor infrastructural development, lack of government support, and external economies (Ghose 2017; Taymaz 2009; Tobin 1994). In Porter and Watts' (2011) opinion, this can be helped through a clustering of informal enterprises, which attracts government's investment in external economies (Arosanyin et al. 2009; Ghose 2017), and the pooling resources by cluster members (Porter 2000; Pessoa 2010, 2011) to build shared infrastructure enjoyed for the cluster's members. They, however, pose a pertinent question regarding whether clustering of informal enterprises can be a basis for a governance structure,

which regulates the informal enterprises through associations and networks relations. This ushers in the legalist perspective of the informal theory.

The legalist theory of the informal economy

The prime assumption of the legalist theory is that any firm would prefer to be free of regulation or taxation from the government (de Soto 1989). The legalists' perspective of informal employment refers to labour processes where the conditions of work are outside the sphere of public regulation (Chen 2012). They also refer to regulation as the task of the state and society, but could also include regulation by custom. Legalists share the view that informal firms must move towards modern governance structures in order to enjoy state support for increased productivity (Chen 2012). This has been supported by several studies that report that regulated firms generally have higher productivity than unregulated SMEs (Baez-Morales 2015; La Porta & Shleifer 2008; Taymaz 2009), and unregulated large-scale firms (Benjamin & Mbaye 2012).

Crafts (2006), however, found that endogenous growth models provide strong evidence that regulations have adverse effect on total factor productivity. Bridgman et al. (2007) found that from 1934 to 1974 regulation of U.S sugar factories led to significant losses in productivity and in employees' welfare. Using data from U.S companies from 1997 to 2010, Davies (2014) confirmed that the least regulated industries had the most significant gains productivity and efficiency. In OECD countries, Sotiris (2015) found that in the short-run, regulation has no effect on total factor productivity (TFP), but rather found significantly positive long-run effect of light regulations on TFP.

Some reported cases in West Africa suggest higher productivity among informal firms (Echevin & Murtin 2009), and also that informal firms can be more productive than formal firms especially where formal firms incur additional costs through regulations (Amin et al. 2019). Others like Lin

and Truang (2012), and also Combes et al. (2012) proposed that regulation can be encouraged through geographical agglomeration of informal firms. This leads to the discussions on theories of industrial clusters.

Classical theories of industrial agglomeration

Bekele and Jackson (2006) traced discussions on the geographical concentration of industries to the works of Marshall (1890), Weber (1929), Ohlin (1933), and Hoover (1937, 1948). These classical industrial theorists offers a variety of plausible benefits of agglomeration, including a pooled market for specialised workers, accessibility of specialised inputs and services, technological transfers, and reduction in transport expenditure.

An important development in the theoretical discourse on geographic concentration of industries is Weber's (1929) adaptation of agglomeration economies to location theory. The position of the classical location theory was that geographical endowments and transport was important to productivity. Roos (2005) confirmed in a study that as much as 36 percent of productivity in Germany could be attributed to direct and indirect effects of geography. Moreover, controlling for the effects of agglomeration economies reduced the net influence of geography on productivity to seven percent. Studies, including Glaeser (2007), Ellison et al. (2010), and Tsubuku (2016) have also provided evidence in support of Weberian and Marshallian theories that agglomeration leads to reduced transport costs, between suppliers and producers, between producers and customers, and in international trade.

Studies like Otsuka and Yamano (2008) in Japan and Takyi et al. (2013) in Ghana found that overpopulation of enterprises within clusters of SMEs can lead to reduced productivity and profit margins. Others studies in India (Kennedy 1999; Crow & Batz 2006), Brazil (Almeida 2008) Vietnam (Konstadakopulos 2008), and Pakistan (Lund-Thomsen, 2009), as well as cross-country

studies (Blackman, 2006; Huang & Shreekant 2014) confirm environmental degradation resulting from industrial clusters of small-scale firms. These contribute to lessening the productive capacity of industrial clusters.

Contemporary geographical economics models

According to Bekele and Jackson (2006), contemporary geographical economics models adapted monopolistic competition and increasing returns to location theory. Several schools of thought are based on this model, where the notable ones include flexible specialisation school (Brusco 1982), knowledge spillovers and regional innovation systems school (Hassink 2010; Malmberg & Maskel 2002), and industry clusters and competitiveness school (Caves & Porter 1977; Mills, Reynolds & Reamer 2008; Porter 2000).

Flexible Specialization Theory

The flexible specialisation school of thought was conceived by Brusco (1982), while analysing the success of some international production systems during the economic crises of the 1970s. Many studies found that during the crises large firms with inflexible production systems suffered great losses. Brusco (1982), Piore and Sabel (1984), and other researchers including Scott (1988), Pyke, Becattini and Syngberger (1990), as well as the OECD (2000) found that clustered small-scale firms, with flexible operations and social relations, were much more successful during the crises.

The break-up of mass production into smaller-scale production brings into the argument, the idea of co-dependent specialised small-scale production, working as separate economic units, but co-located to share the benefits of agglomeration. According to Nathan and Overman (2013), this leads to a shift from standardised inputs and outputs to the re-specialisation of certain regions. In

this situation, Storper (1995, 1997) noted that the resulting product differentiation and the consequent heterogeneity of inputs increase the transaction costs of intermediate trade. From this perspective, agglomeration of firms intend, not to reduce transport expenses, as proposed by traditional location theory, but rather to minimise transaction costs.

Arguing from a modernisation perspective, van Dijk and Rabelloti (2005) established that flexible specialisation can only be profitable in developing countries if the government was to take the role of providing adequate infrastructure for industrial districts. This is supported by Kramarz and Kramarz (2014) among metallurgic firms in Poland. Press (2008) also indicated that the benefits of flexible specialisation are maximised with less complex products and within clusters. However, strong-start up dynamics is required for the viability of clusters with flexible specialisation. This makes a case for small informal firms, given that many studies agree that small-scale production allow for flexibility in production (Brusco 1982; OECD 2000; van Dijk, 1995), and the fact that informal firms are generally small-scale (Boateng 2011; IMF 2017; Chen 2012). For example, in Ghana, Dawson (1990) found that deep inter-firm division of labour helped informal engineering workshops at the Suame cluster to improve on innovation, equipment, efficiency, and output.

The flexible specialisation school introduced the concept of untraded independencies, which refers to conventions and informal rules on collaborative and informational networks (Newlands, 2003; Storper 1995). It also covers labour linkages, shared customs, and tenets of communications and knowledge diffusion (Coe, Kelly & Yeung 2019; Heidenreich 2009). Flexible specialisation theory, therefore, highlights the potential of informal firms to develop in agglomerations. This seems plausible, because studies have found that informal firms, as compared to their formal counterparts, are characteristically more specialised (Chen, 2012), flexible (Basole 2014), and

more in tune with vivid social interrelations, in-person encounters, tacit channels of knowledge spillovers, and reciprocal exchanges (Wangare 2015).

Van Dijk and Rabelloti (2005) also argued that flexible specialisation among informal SMEs in Abidjan, Abuja, Accra, and Ouagadougou have made them more competitive than their formal rivals. In their conclusion, they stated that flexible specialisation is important for informal SMEs, because it is a concept that is intertwined with important factors of dynamic SMEs. These factors include inter-firm co-operation in the form of subcontracting, geographical grouping of micro and small enterprises, network of micro and small entrepreneurs, multi-purpose technology, specialisation and flexibility of production, as well as innovative mentality of entrepreneurs.

Knowledge-diffusion theory

According to Hassink (2010), the relationship between industrial cluster and productivity can be explained by knowledge spillovers and collective learning. The central proposition of the knowledge-diffusion theory is that localised channels of forming and sharing knowledge are fostered through geographical concentration of firms (Pinch & Henry 1999; Gohr & Oliveira 2019; Keeble & Wilkinson 2000; Malmberg & Maskell 2002). However, Malmberg and Maskell (2002) as well as Martin and Sunley (2003) argued for a paucity of evidence supporting that proximity between firms leads to exchange of information and knowledge. However, in a critical analysis, most of such studies have focused primarily on formal firms, that have been theorised to be characterised with codified knowledge.

Bethelt and Gluckler (2011) as well as Dixon (2014) noted that knowledge-diffusion in clusters are transferred through personal contacts, knowledge spillovers, as well as shared norms, which are the inherent features of informal enterprises (Basole 2014; Chen 2012; Erika & Watu 2010;

Huber 2010). These demonstrate the significance of geographical proximity productivity and efficiency in informal manufacturing, which is the core premise of the knowledge diffusion school.

The competition school of industrial cluster

Caves and Porter (1977) theorised that the assets, skills, inputs, and staff needed for entrepreneurial ventures are often more readily available and also more easily assembled in industrial clusters. They were also of the conception that local financial institutions and investors will be more ready to invest in clusters, given that such locations hold entire supply chain. From this, Porter (1990) theorised that industrial clusters provide competitive advantage by increasing the static productivity of clustered firms by increasing their innovative capacity. Swann et al. (1998), Papalia and Bertarelli (2009), as well as Chen et al. (2020) supported this notion that clusters tend to attract more firms, and that innovative activity and output are positively correlated with new firm entry and productivity growth. However, this is limited to the inverted U-shape relationship found between the size of clusters and productivity (Nicolini 2003; Maggioni 2012; Wheeler, 2004). Productivity will, therefore, tend to decrease when the maximum mass of firms is surpassed.

According to Porter (2000), and as confirmed by Osarenkhoe and Fjellstrom (2017), the cluster collaborates and builds an overall advantage, which is exploited only by members of the cluster through information exchange and networking. Ter Wal and Boschma (2011) also found that clusters are endowed with different organizational cultures, knowledge and capabilities, which according to Menzel and Fornahl (2010), as well as Valdaliso, Elola, Aranguren et al. (2016) cause clusters to develop unevenly. The evenness, then, creates competition within the cluster amidst collaboration. Porter (2008) asserted that government's role in cluster productivity is to improve general microeconomic capacity by providing appropriate physical infrastructure, as well as

accurate and timely economic information. Wickham (2004), Ali (2012), and Ghose (2017) found evidence in support of the pertinence of government role in cluster development, in Australia, Ethiopia, and Nigeria, respectively.

Garelli (1997) argued that Porter (1990) neglects globalisation and international competition, which suggests that production, does not necessarily need to be close to the end-user. Thus, the need for proximity of firms is undermined by the globality of production, because inputs are widely accessible from many locations. Russell et al. (2014), however, noted that a myriad of economic factors and oil prices have increased global freight costs, although freight volumes have decreased. They noted that many firms are, therefore, turning from off-shoring to near-shoring, which is an approach to procure supplies nearest to the end-market. This is supported by UN-OHRLLS (2013, 2020) and Trademark East Africa (2015) among landlocked African countries and Chaney and Nunn (2018) in the United States.

The main theoretical propositions of informal productivity and efficiency, as well as the remedies for improvement are enumerated in Table 1. The structural theories tend to recommend approaches to modernise informal production processes and governance structures. The most prominent remedy for the informal economy across the theoretical approaches aligns with government involvement in providing general supportive infrastructure for production. This suggests to governments to give more recognition to the informal economy. In this way, agglomerating dispersed informal production could be a means of making their contribution to national growth more recognised through informal taxation. This could further reinforce governments' interest to support informal small-scale businesses.

Table 1: Theoretical approaches to productive and efficient informal sector

<i>Theory</i>	<i>Deterrent factors to productivity and efficiency</i>	<i>Supportive productivity and efficiency factors</i>	<i>Productivity and efficiency remedies</i>
Dualist	Capital constraints; Labour intensiveness; Segregation from cities; Man-powered technology; Low social protection; Low benefits from government interventions; Diseconomies of scale	Profitable coordination of the segmented informal production	Modernisation of production technology; Government regulation of informal firms; Improved credit sector
Structuralist	Exploited formal-informal sub-contracts; Unsupportive macro socio-economic structure; Poor infrastructure; Lack of government support	Profitable subcontracts	Capital intensiveness of informal firms; Clustering of informal firms; Government interventions for infrastructure
Legalist	Remaining hidden to evade taxes; No regulation; Traditional governance structure	Less government interference in production; Avoiding possible bottlenecks and regulatory malpractices; Accrued profits through tax avoidance	Modernisation of governance structures; Relaxing legislations and by-laws on taxes; Geographical agglomeration of informal firms Lin and
Classical location theories	Population congestion; vehicular traffic congestion; stagnation of labour; high rents at clusters; enterprise saturation; environmental degradation	Pooled market; Accessibility of specialised inputs and services; Technological transfers; Economies of scale; Availability diverse labour markets; Improved supplier-customer relationship; Reduction in transport expenditure; Common infrastructure; Urbanisation economies; Location economies	Government provision of infrastructure

Flexible specialisation	Increase the transaction costs of intermediate trade	Flexible operations and social relations; Co-dependent specialised small-scale production	Government provision of infrastructure; Diversified quality production approach
Knowledge diffusion	Erosion of competition needed for economic vibrancy	Tacit channels of knowledge spillovers, and reciprocal exchanges	Collective learning of codified knowledge; Government to improve general infrastructure
Competition school	Over-saturation of enterprises; Over-competition in the cluster; Uneven development of clusters	Overall competitive advantage of the cluster; Faster innovation of cluster members	Decongestion of over-concentrated clusters; Government to develop shared road infrastructure and supporting technology

Toward a unified model

The main theoretical propositions of informal productivity and efficiency, as well as the remedies for improvement are enumerated in Table 1. Generally, the theories propose deterrent and enabling factors of productivity. For classical dualists (ILO, 1972; Sraffa, 1960), factors like capital constraints coupled with labour intensiveness of informal production are major inhibitors of productivity of informal enterprises, whereas coordinated production enhances productivity. Structuralist (Moser 1978; Portes & Schauffler 1993) on the other hand, indicate that while formal to informal sub-contracts could enhance productivity of informal enterprises, they tend to be exploitative (Mehrotra & Biggeri 2007) with complex outcomes (Basole et al. 2014).

From a legalist perspective informal production is hindered by internal governance structures of informal enterprises, but that reduces government interference in production (Baez-Morales

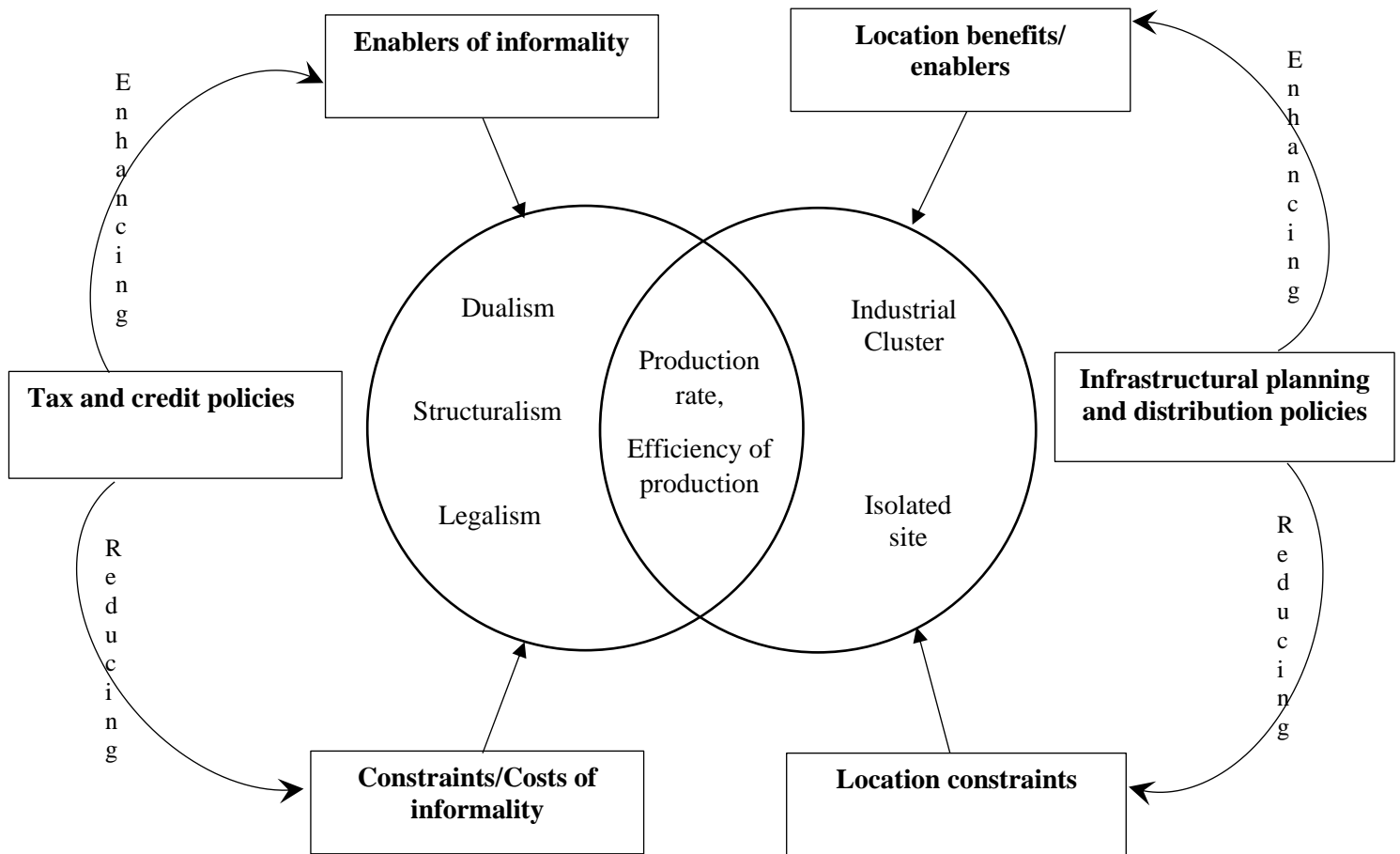
2015; Benjamin & Mbaye 2012). Consequently, they recommend approaches that emphasise modernisation of informal production processes and governance structures, in the midst of increasing access of informal enterprises to the capital market. The most prominent remedy for the informal economy across the theoretical approaches aligns with government involvement in providing general supportive infrastructure for production. This suggests to governments to give more recognition to the informal economy. In this way, agglomerating dispersed informal production could be a means of making their contribution to national growth more recognised through informal taxation. This could further reinforce governments' interest to support informal small-scale businesses.

The location theories also emphasise various enabling and deterrent factors of enterprise productivity and efficiency that could apply to informal enterprises. These would, in essence, inform informal enterprises of their location choices, as seen in the model below (see Figure 2). The model assumes that interaction between the peculiar characteristics of informality and the location factors contribute to the productivity of informal enterprises. Thus, informal productivity influenced not only by the inherent informal governance structures, capital arrangements vis-à-vis labour intensiveness, and legal compliance that define continuum of informality, but also by the co-location with or isolation from related enterprises.

The model also considers the influence of further external factors encapsulated in government tax and credit policies, as well as infrastructural planning and distribution. These are emphasised because all the theories reviewed emphasise shared infrastructural and technological support as a major driver of productivity and efficiency. Moreover, the responsibility of infrastructural

provision, according to the theories, is toward the local and central government agencies. Although informality varies along a continuum of characteristics, the model assumes a more homogeneous identity of informality. We, therefore, advocate for the practical adaptation of the model to difference scenarios.

Figure 2: Unified model of informal production



Source: Authors' construct (2021)

Conclusions and implications

Existing literature on informal production emphasizes the influence of informality on productivity, but with little attention to the influence of location factors on informal production. This paper attempts to advance the idea that informal production could be enhanced through appropriate enabling environment, either in clusters or at isolated locations. The paper therefore merges theoretical frameworks on informality and location economics to further the thinking into enhancing the productivity and efficiency of informal firms. At the core of this is the role of local and central governments to plan and implement tax and credit policies that encourage the capitalisation of informal firms, and simultaneously reduce capital constraints of informality. In so doing, this paper argues that planned industrial clusters could be a tool for encouraging group lending policies that have proven successful in some cases (van Eijkel et al. 2011).

Being highly specialised (Basole et al. 2014; van Dijk 2009), informality allows small capitalisation of firms as avenue for quick self-employment. In isolation, Marshallian and Weberian thinking would suggest that these enterprises would experience higher transportation and transaction cost in collaborating with complementary firms. A colocation approach could overcome such challenges by pulling interrelated informal firms together, thereby creating a mass of complementary specialised groups. Firms within the cluster could then benefit from the overall competitive advantage of the cluster (Bekele and Jackson 2006; Porter 2000), obtained from the ease of access to related services and products in one location (Takyi, 2012).

Due to the easy of entry into informality (Chen 2012), there is the tendency for informal industrial clusters to experience diseconomies resulting from overconcentration of firms (Sonobe 2012). It, therefore, implies that industrial clusters for informal firms must be pre-planned, designed, and monitored to accommodate a specified number and types of firms that maximises

location economies and competitiveness, through inter-firm linkages and structural exchange. Local assemblies, in consultation with relevant stakeholders, would have to integrate informal clusters into existing town and country plans, and make provisions to relocate illegally sited informal firms into clusters. In Ghana for example, illegally sited informal wood workers were successfully relocated to a cluster, through the joint effort of the Kumasi Metropolitan Assembly, informal artisanal associations, and foreign donor agencies (Attuquayefio & Abdulai 2010). Congested clusters experiencing diseconomies would also have to be uncluttered through strategic relocation of firms into new clusters, through stakeholder collaboration.

References

- ALBERTI, F. G., SCIASCIA, S., TIPODI, C. AND VISCONTI, F., 2014. *Entrepreneurial growth in industrial districts: Four Italian cases*. Cheltenham, UK: Edward Elgar Publishing.
- ALI, M., 2012. *Government's role in cluster development for MSEs: Lessons from Ethiopia*. Bergen: Chr. Michelsen Institute.
- AMIN, M., OHNSORGE, F. L. AND OKOU, C., 2019. *Casting a shadow: Productivity of formal firms and informality*. Policy Research Working Paper 8945
- AMOS, S. AND ZANHOOU, D. A. K., 2019. Financial constraints, firm productivity and cross-country income differences: Evidence from sub-Saharan Africa. *Borsa Istanbul Review*, 19(4), 357-371.
- ARIMAH, B. C., 2001. Nature and determinants of the linkages between informal and formal sector enterprises in Nigeria. *African Development Review*, 13(1), 114-144.
- AROSANYIN, G. T., IJAIYA, G. T., OLUDOYI, S., AJAYI, M. A. AND IPINGBEMI, O., 2009. Government assistance for informal sector enterprises in Nigeria: a case study of tire repair service in Ilorin, Kwara State. *Ghana Journal of Development Studies*, 6(2), 99-122.
- ATTUQUAYEFIO, D. K., AND ABDULAI, A-R., 2013. *Environmental and Social Management Plan (ESMP): Construction of access roads with kerbs and drains at Sokoban wood village, Kumasi*. Retrieved on June 11, 2016 from http://www.lgcsp.mlgrdghanagov.com/pdf/SAKOBAN%20WOOD%20VILLAGE_ESMP_DRAFT%20REPORT.pdf
- AVANT, K., 1993. Using a systematic literature review to develop a theoretical framework for research. *Vård i Norden*, 13(4), 15-17.

- BAERT, L. AND REYNAERTS, J., 2018. *Agglomeration, congestion and plant level productivity in Belgium*. Leuven: VIVES Research Center for Regional Economics, Faculty of Economics and Business.
- BASOLE, A., 2014. Informality and Flexible Specialization: Labour Supply, Wages, and Knowledge Flows in an Indian Artisanal Cluster. *Development and Change*, 47(1), 157-87.
- BENJAMIN, N. AND MBAYE, A. A., 2012. *The informal sector in francophone Africa: Firm size, productivity and institutions*. Washington, D.C: World Bank.
- BORING, P., 2019. The relationship between firm productivity, firm size and CSR objectives for innovations. *Eurasian Business Review*, 9(3), 269-297.
- BRIDGMAN, B., QI, S. AND SCHMITZ, J. A., 2007. *Does Regulation Reduce Productivity?: Evidence from Regulation of the US Beet-sugar Manufacturing Industry During the Sugar Acts, 1934-74* (No. 389). Federal Reserve Bank of Minneapolis Research Department Staff Report 389
- BRUGGER, B., AND HANNAN, K., 1983. *Modernization and revolution*. Melbourne: Routledge.
- CARILLO, P. M., AND KOPELMAN, R. E., 1991. Organization structure and productivity. *Group & Organization Studies*, 16(1), 44–59.
- CAVES, R. E. AND PORTER, M. E., 1977. *The Quarterly Journal of Economics*, 91(2), 241-261.
- CHANEY, S. AND NUNN, S., 2018. Rising Transportation Costs Help Drive Up U.S. Business Prices. *The Wall Street Journal* Retrieved on November 09, 2019 from <https://www.wsj.com/articles/u-s-producer-prices-rose-in-june-1531312286>

- CHEN, M. A., 2012. *The informal economy: Definitions, theories and policies*. Manchester: Wiego Limited.
- CHEN, X., WANG, E., MIAO, C., JI, L. AND PAN, S., 2020. Industrial clusters as drivers of sustainable regional economic development? An analysis of an automotive cluster from the perspective of firms' role. *Sustainability*, 12(7), 2848.
- CLANCY, D. K., AND ROMÁN, F. J. 2014. The Impact of firm size on the productivity of resources. In *Advances in Management Accounting* (vol. 22), pp. 1-24. Emerald Group Publishing Limited.
- COE, N. M., KELLY, P. F. AND YEUNG, H. W., 2019. *Economic geography: a contemporary introduction*. John Wiley & Sons.
- COLACELLI, M. AND HONG, G. H., 2019. *Productivity drag from small and medium-sized enterprises in Japan*. International Monetary Fund Working Paper No. WP19/137
- COMBES, P-P., DURANTON, G., GOBILLON, L., PUGA, D. AND ROUX, S., 2012. *The productivity advantages of large cities: Distinguishing agglomeration from firm selection*. IZA Development Paper No. 6502, pp. 1-42
- CRAFTS, N., 2006. Regulation and productivity performance. *Oxford Review of Economic Policy*, 22(2), 186-202.
- CRUZ, G. AND ADOLFO, G., 2016. *Agglomeration economies in the presence of an informal sector: The Colombian case*. Documento CEDE Working Paper No. 2016-15
- DAVIES, A., 2014. *Regulation and productivity*. Arlington: Mercatus Research Center.
- DE SOTO, H., 1989. *The other path*. London: IB Taurus.

- DEVICIENTI, F., GROISMAN F. AND POGGI, A., 2009. *Informality and poverty: Are these processes dynamically interrelated? Evidence from Argentina*. ECINEQ Working Paper, No. 146, pp. 1-26
- DHEMBA, J., 1999. Informal sector development: A strategy for alleviating urban poverty in Zimbabwe. *Journal of Social Development in Africa*, 14(2), 5-19.
- DIBUA, J. I., 2006. *Modernization and the crisis of development in Africa: The Nigerian experience*. London: Ashgate Publishing Ltd.
- DIJK, M. P. V., 1992. How relevant is flexible specialisation in Burkina Faso's informal sector and the formal manufacturing sector?. *IDS bulletin*, 23(3), 45-50.
- DIXON, A. D., 2014. *The new geography of capitalism: Firms, finance, and society*. Oxford, Oxford University Press.
- ECHEVIN, D. AND MURTIN, F., 2009. *Identification of the productivity gap between formal and informal sectors in three Western African countries*. Prepared for the CSAE conference, 22nd-24th March 2009, St Catherine's college, Oxford
- ECLAC AND ILO., 2014. *The employment situation in Latin America and the Caribbean: Employment formalization and labour income distribution*. Geneva: ILO.
- ELLISON, G., GLAESER, E. L. AND KERR, W. R., 2010. What causes industry agglomeration? Evidence from coagglomeration patterns. *American Economic Review*, 100(3), 1195–1213.
- FERRANDO, A. AND RUGGIERI, A., 2018. Financial constraints and productivity: evidence from euro area companies. *International Journal of Finance & Economics*, 23(3), 257-282.
- GARELLI, S., 1997. *The four fundamental forces of competitiveness: The world competitiveness yearbook*, Lausanne, Switzerland

- GAVROV, S., 2004. *Modernization of the empire: Social and cultural aspects of modernization processes in Russia*. Moscow: URSS.
- GHOSE, A. K., 2017. Informality and development. *The Indian Journal of Labour Economics*, 60(1), 1-16.
- GIBSON, B. AND KELLEY, B., 1994. A classical theory of the informal sector. *The Manchester School*, 17(1), 81-96.
- GOHR, C. F. AND OLIVEIRA, I. S. V. D., 2019. Collaboration in cluster-based firms as a source of competitive advantage: evidence from a footwear cluster. *Production*, 29. e20180018. <https://doi.org/10.1590/0103-6513.20180018>.
- GRIMM, M., KNORRINGA, P. AND LAY, J., 2012. *Constrained gazelles: High potentials in West Africa's informal economy*. World Bank.
- GUPTA, U. K., 2016. An analysis for the Cobb- Douglas production function in general form. *International Journal of Applied Research*, 2(4), 96-99.
- HART, K., 1971. Informal Income Opportunities and Urban Employment in Ghana. In R. Jolly, E. De Kadt, H. Singer & F. Wilson, eds., *Third world employment: Problems and strategy*. Harmondsworth: Penguin, 34-54
- HASSINK, R., 2010. Regional resilience: a promising concept to explain differences in regional economic adaptability?. *Cambridge journal of regions, economy and society*, 3(1), 45-58.
- HEIDENREICH, M., 2009. Innovation patterns and location of European low- and medium-technology industries. *Research Policy*, 38(3), 483-494
- HILL, C. W., AND SNELL, S. A., 1989. Effects of ownership structure and control on corporate productivity. *Academy of Management journal*, 32(1), 25-46.

- HOOVER, E. M., 1937. *Location theory and the shoe and leather industries*. Cambridge, MA: Harvard University Press.
- HOOVER, E.M., 1948. *The location of economic activity*. New York: McGraw Hill.
- HOUSE, W. J., 1984. Nairobi's informal sector: Dynamic entrepreneurs or surplus labour?. *Economic Development and Cultural Change*, 32(2), 277-302.
- HUBER, F., 2012. Do clusters really matter for innovation practices in Information Technology? Questioning the significance of technological knowledge spillovers. *Journal of economic geography*, 12(1), 107-126.
- INTERNATIONAL LABOUR ORGANISATION., 1972. *Employment, incomes and equality: Strategy for increasing productive employment in Kenya*. Paper presented at the 15th International Conference on Labour Statisticians. ILO, Geneva.
- INTERNATIONAL LABOUR ORGANISATION., 2016. *Challenges of the informal economy and experiences in facilitating formalization*. Paper prepared for the ILO Regional Seminar on the Role of Trade Unions in Facilitating the Transition from the Informal to Formal Economy, 3-5 August, Colombo, Sri Lanka.
- ISLAM, A. AND AMIN, M., 2015. *Does firm size matter for productivity? The case of informal firms in Africa*. Retrieved on December 18, 2019 from <https://blogs.worldbank.org/developmenttalk/does-firm-size-matter-productivity-case-informal-firms-africa>
- JENSEN, R.J., 2001. *Illinois: A History, modernizers, traditionalists and post-moderns make state history*. Illinois: Illinois University Press.
- JOSHI, J., PRICHARD, W. AND HEADY, C., 2013. *Taxing the informal economy: Challenges, possibilities and remaining questions*. IDS Working Paper, No. 429, pp. 1-37.

- JURGENS, U., 2004. An elusive model: Diversified quality production and the transformation of the German automobile industry. *Competition & Change*, 8(4), 411-423.
- KEEBLE, D. AND WILKINSON, F. (eds), 2017. *High-technology clusters, networking and collective learning in Europe*. London: Routledge
- KRAMARZ, M. AND KRAMARZ, W., 2014. The flexibility and specialization of resources-competitive strategies of materials decoupling points of a network supply chain of metallurgic products. *Procedia-Social and Behavioral Sciences*, 111, 741-750.
- LEAL-ORDONEZ, J. C., 2013. *Tax collection, the informal sector, and productivity*. Working Papers No. 2013-22. pp. 1-43
- LEE, G. K. AND LIEBERMAN, M. B., 2010. Acquisition vs. internal development as modes of market entry. *Strategic Management Journal*, 31(2), 140–158.
- LEWIS, W. A., 1954. Economic development with unlimited supplies of labor. *The Manchester School*, 22(2), 139–91.
- LOAYZA, N. V., 2016. *Informality in the Process of Development and Growth*. World Bank Working Paper No. 7858.
- MADICHIE, N. O., & NKAMNEBE, A. D., 2010. 51 Iweka Road (Onitsha, Nigeria): could this single African address redefine business cluster development?. *World Review of Entrepreneurship, Management and Sustainable Development*, 6(3), 229-243.
- MAGGIONI, M. A., 2012. *Clustering dynamics and the location of high-tech-firms*. New York: Springer Science.
- MALMBERG, A. AND MASKELL, P., 2002. The elusive concept of localization economies: towards a knowledge-based theory of spatial clustering. *Environment and Planning A: Economy and Space*, 34(3), 429-449

- MARSHALL, A., 1890. *Principles of economics*. London: Macmillan
- MARTIN, R. AND SUNLEY, P., 2003. Deconstructing clusters: chaotic concept or policy panacea?. *Journal of economic geography*, 3(1), 5-35.
- MEAGHER, K., 2011. Informal economies and urban governance in Nigeria: Popular empowerment or political exclusion?. *African Studies Review*, 54(2), 47-72.
- MEHROTRA, S., AND BIGGERI, M., 2007. *Child labour and subcontracted home-based manufacturing in low and middle-income Asia*. Florence: UNICEF.
- MENZEL, M. P. AND FORNAHL, D., 2010. Cluster life cycles—dimensions and rationales of cluster evolution. *Industrial and corporate change*, 19(1), 205-238.
- MCCANN, F. AND MCINDOE-CALDER, T., 2012. *Determinants of SME loan default: The importance of borrower-level heterogeneity*. Research Technical Papers 06/RT/12, Central Bank of Ireland.
- MILLS, K. G., REYNOLDS, E. B. AND REAMER, A., 2008. *Clusters and competitiveness: A new federal role for stimulating regional economies*. Washington, DC: Brookings Institution.
- MISHRA, S. K., 2007. *A brief history of production functions*. Working Paper Series Social Science Research Network (SSRN), pp. 1-25. Retrieved on December 13, 2016 from <https://pdfs.semanticscholar.org/3e14/dcff6ed4918532668caebc286b18cd40dd39.pdf>
- MOHER, D., LIBERATI, A., TETZLAFF, J., ALTMAN, D. G., AND PRISMA GROUP., 2009. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS medicine*, 6(7), e1000097.

- MORENO-MONROY, A. I., PIETERS, J. AND ERUMBAN, A. A., 2014. Formal sector subcontracting and informal sector employment in Indian manufacturing. *IZA Journal of Labor & Development*, 3(1), 22. DOI:org/10.1186/s40175-014-0022-2
- MUKIM, M., 2011. *Industry and the urge to cluster: A study of the informal sector in India*. SERC Discussion Paper, No. 72, pp. 1-60.
- NATHAN, M. AND OVERMAN, H., 2013. Agglomeration, clusters, and industrial policy. *Oxford Review of Economic Policy*, 29(2), 383-404.
- NEWLANDS, D., 2003. Competition and cooperation in industrial clusters: The implications for public policy. *European Planning Studies*, 11(5), 521-32.
- NICOLINI, R. (2003. Chapter: Why do firms cluster? In A. O'Sullivan, *Urban economics* (pp.45-69. Boston, MA: McGraw-Hill.
- OGBO, A. I., CHIBUEZE, N. F., CHRISTOPHER, O. C., AND ANTHONY, I. A., 2015. Impact of structure on organizational performance of selected technical and service firms in Nigeria. *Corporate Ownership & Control*, 13(1), 1278-1284.
- OHLIN, B., 1933. *Interregional and international trade*. Cambridge, Mass: Harvard University Press
- ORDONEZ, J. C. L., 2010. *Informal sector, productivity and tax collection*. Retrieved on July 22, 2016 from <http://www.laef.ucsb.edu/pages/conferences/gad10/papers/leal.pdf>
- ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT., 2017a. Productivity gaps across enterprises. In *Entrepreneurship at a Glance 2017*. Paris: OECD Publishing.
- ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT., 2017b. *Excessive informal sector: A drag on productivity*. Retrieved on September 15, 2019 from

<https://oecd-development-matters.org/2017/08/30/excessive-informal-sector-a-drag-on-productivity/>

OSARENKHOE, A. AND FJELLSTRÖM, D., 2017. Clusters' vital role in promoting international competitive advantage-towards an explanatory model of regional growth. *Journal of Regional Research*, 2017(39), 175-194.

OTSUKA, A., 2020. How do population agglomeration and interregional networks improve energy efficiency? *Asia-Pacific Journal of Regional Science*, 4(1), 1-25.

OTSUKA, A. AND YAMANO, N., 2008. *Industrial agglomeration effects on regional economic growth: A case of Japanese regions*. Paris: OECD.

PAGE, M. J., MCKENZIE, J. E., BOSSUYT, P. M., BOUTRON, I., HOFFMANN, T. C., MULROW, C. D., AND MOHER, D., 2021. THE PRISMA 2020 STATEMENT: AN UPDATED GUIDELINE FOR REPORTING systematic reviews. *Bmj*, 372.

PAPALIA, R. B. AND BERTARELLI, S., 2009. The role of local agglomeration economies and regional characteristics in attracting FDI: Italian evidence. *International Journal of the Economics of Business*, 16(2), 161-188.

PASINETTI, L. L., 1981. *Structural change and economic growth*. Cambridge: Cambridge University Press.

PESSOA, A., 2010. *Competitiveness, clusters and policy at the regional level: Rhetoric vs. practice in designing policy for depressed regions*. FEP Working Papers 386, Universidade do Porto, Faculdade de Economia do Porto.

PESSOA, A., 2011. *The cluster policy paradox: externalities vs. comparative advantages*. FEP Working Papers Research, No. 431 pp. 1-25

- PINCH, S. AND HENRY, N., 1999. Paul Krugman's geographical economics, industrial clustering and the British motor sport industry. *Regional Studies*, 33(9), 815-827.
- PIORE, M. J. AND SABEL, C., 1984. *The second industrial divide: Possibilities for prosperity*. New York: Basic Books.
- PORTES, A. AND WALTON, J., 1981. *Labour, class, and the international system*. New York: Academic Press.
- PORTES, A. AND SCHAUFFLER, R., 1993. Competing perspectives on the Latin American informal sector. *Population and development review*, 19(1), 33-60.
- PRATEEK, G., 2010. *Modernization theory: Oxford Research Encyclopedia of International Studies*. Oxford University Press.
- PYKE, F., BECATTINI, G. AND SYNGBERGER, W., eds., 1990. *Industrial districts and Inter-firm cooperation in Italy*. Geneva: International Institute for Labour Studies.
- RANIS, G. AND STEWART, F., 1999. V-goods and the role of the urban informal sector in development. *Economic development and cultural change*, 47(2), 259-288.
- ROOS, M., 2005. How important is geography for agglomeration? *Journal of Economic Geography*, 5(5), 605-620.
- ROSENTHAL, S. S. AND STRANGE, W. C., 2003. Geography, industrial organization, and agglomeration. *Review of Economics and Statistics*, 85(2), 377-393.
- RUSSELL, D., COYLE, J. J., RUAMSOOK, K. AND THOMCHICK, E. A., 2014. The real impact of high transportation costs. *CSCMP's Supply Chain Quarterly*. Retrieved on November 12, 2019 from <https://www.supplychainquarterly.com/topics/Logistics/20140311-the-real-impact-of-high-transportation-costs/>

- SRAFFA, P., 1960. *Production of commodities by means of commodities*. Cambridge: Cambridge University Press.
- STORPER, M., 1995. The resurgence of regional economies, ten years later: The region as a nexus of untraded interdependencies. *European Regional and Urban Studies*, 2(3), 191-221.
- STORPER, M., 1997. *The regional world: Territorial development in a global economy*. New York: The Guildford Press.
- SWANN, G., PREVEZER, M. AND STOUT, D., 1998. *The dynamics of industrial clustering: International comparisons in computing and biotechnology*. Oxford University Press.
- TAYMAZ, E., 2009. *Informality and productivity: Productivity differentials between formal and informal firms in Turkey*. Middle East Technical University, ERC-Economic Research Center Working Paper No. 0901.
- TER WAL, A. L. J. AND BOSCHMA, R., 2011. Co-evolution of firms, industries and networks in space. *Regional Studies*, 45(7), 919–933.
- TOBIN, J., 1994. Poverty in relation to macroeconomic trends, cycles, and policies. In S. Danziger, G. Sandefur, and D. Weinberg, eds, *Confronting poverty: Prescriptions for change*. The University of Wisconsin-Madison: Institute for Research on Poverty, 147-167.
- TOKMAN, V. E., 1978. An exploration into the nature of informal-formal sector relationships. *World Development*, 6,(9–10),1065–1075
- TRADEMARK EAST AFRICA., 2015. *Logistics innovation for trade lift*. Retrieved on November 20, 2016 from <https://www.trademarkea.com/projects/logistics-innovation-for-trade-lift/>
- TSUBUKU, M., 2016. Endogenous transport costs and firm agglomeration in new trade theory. *Papers in Regional Science*, 95(2), 353-362.

- UN-OHRLLS., 2020. *Report on best practices for effective transit transport corridor development and management*. http://unohrlls.org/custom-content/uploads/2020/06/CORRIDOR-REPORT-_FINAL-_UN-OHRLLS_28May2020.pdf
- UN-OHRLLS., 2013. *The development economics of landlockedness: Understanding the development costs of being landlocked*. <http://www.lldc2conference.org/custom-content/uploads/2014/04/Dev-Costs-of-landlockedness11.pdf>
- VALDALISO, J., ELOLA, A., ARANGUREN, M. AND LOPEZ, S., 2011. Social capital, internationalization and absorptive capacity: The electronics and ICT cluster of the Basque Country. *Entrepreneurship & Regional Development*, 23(9-10), 707-733.
- VAN DIJK, M. P., 1995. Flexible specialisation, the new competition and industrial districts. *Small Business Economics*, 7(1), 15-27.
- VAN EIJKEL, R., HERMES, N., AND LENSINK, R., 2011. Group lending and the role of the group leader. *Small business economics*, 36(3), 299-321.
- VANEK, J., CHEN, M. A., CARRE, F., HEINTZ, J. AND HUSSMANNNS, R., 2014. *Statistics on the informal economy: Definitions, regional estimates & challenges*. WIEGO Working Paper (Statistics), No. 2, pp. 1-41.
- VAN DIJK, P. M. AND RABELLOTTI, R., 2005. *Enterprise clusters and networks in developing countries*. London: Frank Cass and Co Ltd.
- WANGARE, B. J., 2015. Knowledge management in the informal sector a review of Kenya's Jua Kali industry. *International Journal of Economics, Commerce and Management United Kingdom*, 3(10), 257-278.

- WATTANAPRUTTIPAIAN, T., 2002. SME subcontracting as a bridgehead to competitiveness: an assessment of supply-side capabilities and demand-side requirements. *Asia-Pacific Development Journal*, 9(1), 65-87.
- WICKHAM, M., 2004. *Industrial cluster development: The role of government in a regional Australian economy*. PhD thesis, University of Tasmania.
- WILLIAMS, C. C. AND SHAHID, M. S., 2016. Informal entrepreneurship and institutional theory: Explaining the varying degrees of (in)formalization of entrepreneurs in Pakistan. *Entrepreneurship & Regional Development*, 28(1-2), 1-25.
- WHEELER, C. H., 2004. Evidence on agglomeration economies, diseconomies, and growth. *Journal of Economic Geography* 4(4), 421-437.
- WORLD BANK., 2014. *Poverty reduction and economic management network economic policy and debt department*. Washington, D.C: World Bank.