Employment, Competition and Firm Performance
A Sub-Saharan Africa Perspective

This thesis addresses employment, competition and firm performance with a focus on Sub-Saharan Africa. The thesis consists of three individual papers and an introductory chapter. The purpose of each paper is to analyze firm performance. The main region of interest is Sub-Saharan Africa where countries in this part of the world are at lower levels of economic development and have experienced economic transition and strong firm investments. The papers contribute to existing industrial organization research by studying the effects of competition on R&D, effects of firm performance on innovation, and the determinants of informal employment and monthly wage earnings.

The first paper focuses on firm performance which is found to affect firm innovation positively. This suggests that a firm's decision regarding the scope of its total sales impacts its innovation capabilities. The second paper investigates the relationship between competition, R&D expenditure and innovation. It is found that a firm's research efforts increase with an increase in levels of competition but at a diminishing rate confirming a non-linear, inverted-U relationship between competition and research expenditures. The third paper analyzes what determines informal employment and monthly wage earnings in formal firms. The results show that marginal benefit of higher education is lower for informal employees and that returns on education are much higher for workers with higher education.
Employment, Competition and Firm Performance

A Sub-Saharan Africa Perspective

by

Johnson Bosco Rukundo

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Abstract

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Johnson Bosco Rukundo
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Introduction and summary of the thesis

1. Introduction

This thesis is composed of three papers which all study firm performance in developing countries. Each paper has its own topic, motivation and research question that relates to firm performance in developing countries. These topics in the thesis are innovation and performance, competition, R&D expenditure and innovation and informal employment in formal firms. Firms play an important role in the development of different economic sectors. This thesis performs a closer analysis of the manufacturing and service firms as they contribute to the growth and development of developing economies. The study of firms provides a basis for differentiating among various fundamental research aspects.

In this thesis, the first research aspect analyses testing the hypothesis that the performance of manufacturing and service firms drives firm innovation which could lead to firm sustainability, growth and development. Many firms consider their performance as a measure of growth and wealth accumulation. The performance of firms provides a basis for decision making and may be evaluated based on their sales, their profits, and the value of their assets, among other measures. The value of sales is highly linked to the market share the firm commands. To increase the value of sales, firms have to increase their share of the market and be more innovative than their competitors. Firm innovation through new products, new methods and processes is closely related to sales performance. The second aspect studied in this thesis is the relation between firm competition, research and development and innovation. Firms compete against each other, implying a ray of patterns in performance. Similarly, innovation and competition play an important role in the study of firm performance. Many firms highly value their performance in a competitive environment and would always want to improve and perform better. Firms efforts to improve their performance may be through the use firm inputs and outputs, considering other variables such as the size and location of the firm, the education of employees, R&D investment and innovative rates. The third aspect addresses informal employment in developing countries which is of great concern. The main question that relates to informal employment is what determines such employment across firms and how it relates to wage earnings. In regard to employees, the question remains whether informal employment benefits the workers and what determines their monthly wage earnings.
The different aspects of firm growth relate to each other and all enhance firm performance. Firms with a large number of formal employees tend to have better performance results; similarly, firms that are highly innovative have better performance compared to non-innovative firms. In most cases, the innovativeness of firms is driven by the high competition between firms. There are various research outputs that relate to innovation studies and how innovation influences performance. While the literature in the field of firm performance and productivity is ample, studies on firm performance in developing countries are still limited. Literature (Shiferaw, 2007; Beck et al., 2005) in the field of industrial organization demonstrates an improvement in research on the growth and development of firms in developing economies. The purpose of firm studies in this thesis is to contribute to this literature on firm performance.

The introductory chapter of this thesis provides a description of the research on firm performance in general, and it highlights the theoretical foundations that relate to knowledge, firm innovation, competition, and their influences on firm performance. The third section provides a brief overview of firm performance in developing countries, while the fourth section highlights empirical approaches and data sources. The last section contains a summary of each paper and its contributions to the thesis.

2. Theoretical foundations of firm performance

The foundation theory of the firm, dates back to neoclassical economists such as Coase (1937) and Hall and Hitch (1939) with an emphasis on firm level analysis, away from industry-level that mainly analyzed markets. This was mainly because firm behavior was less dependent on the theory of perfect competition. Previous economic theory focused on markets and not on why firms existed. Coase (1937) relates a firm to the market through a transaction cost theory. Firms organize their production when the transaction costs of coordinating the same production through market exchange is greater than within the firm (Coase, 1937). This argument was later reconsidered by Richardson (1972) and Jensen and Meckling (1976), who explain that transactions occurring within the firm should be considered a representation of market relationships.
The other strand of firm theory relates to output. In the production process where firms combine labor and capital inputs, the firm’s objective is to minimize the costs of these inputs and maximize profits (Panzar and Willig, 1981). Economies of scope largely depend on the financial and investments status of a firm. The financial aspect is important for firms to maintain firm performance and growth. The financial structure of firms may be relevant to their investment decisions since firms operate in imperfect and incomplete capital markets where the cost of external capital usually exceeds the cost of internal capital (Cleary, 1999). For firms operating in such a setting, investment decisions are responsive to internal funds as they possess a cost advantage over external capital. The investment decisions of firms that are more financially constrained are more sensitive to firm liquidity than firms that are less constrained. Kaplan and Zingales (1995) find that the investment decisions of the least financially constrained firms are most sensitive to cash flow availability.

A seminal work on productivity by Solow (1957) provides an empirical test of the neoclassical growth models. Since then, there has been a growing body of literature on performance and its relation to firm growth. Hopehnayn (1992) provides a model where productivity differences persist over a period of time mainly because the competitive advantages acquired by firms do not decay quickly. The model illustrates that large productivity shock in the current period increases the probability that a firm receives a larger productivity shock in a future period. Firms display a remarkably large productivity distribution, and the current relative productivity of a firm tends to be a positive predictor of its future relative position. In addition, a firm’s heterogeneity in productivity and its path dependence play an important role in its performance dynamics at the industry level (Shiferaw, 2007). Therefore, a firm that is performing well today is likely to perform better in a future period. Existing firms in an industry are found to be more productive than new entrants. This indicates that competition between incumbent firms and new entrants may be divergent. The basic assumption is that a firm’s value and an increase in its productivity performance are determined by the market share it possesses and for how it has existed. Thus, a reason why firms tend to control their market share and maintain access to information due to market imperfections (Myers, 1984). The market imperfections mainly come from information asymmetry. Myers and Majluf (1984) argue that asymmetric information problems in capital markets lead to market imperfections. They further note that a firm’s market interactions may not be under its control; the firm may only be able to control other factors, such as internal resources.
2.1 Measuring firm performance

Performance measurement is referred to as a process of measuring the effectiveness and efficiency of economic factors (Neely et al., 1995). Performance measurement is important for effective management of any type of firm (Demirbag et al., 2006). A firm’s success is explained by its performance over a given period of time. Differences in performance levels can vary across firms. For example, differences in the competition level, the use of production factors and consumer demands can affect wage levels and productivity. Firm performance may be social performance or financial performance (Hull and Rothenberg, 2008). The relationship between social performance and financial performance has yielded mixed results (Vogel, 2005; Orlitzky et al., 2003). Some scholars (McWilliams and Siegel, 2000) have argued that there is no relationship between corporate social performance and financial performance, while Pil and Rothenberg (2003) provide reasons to believe a positive relationship exists.

Firm performance in this thesis is mainly defined as financial performance. A firm’s financial performance is measured in different ways, such as return on assets, return on equity, Tobin’s q, profit margin, earnings per share, dividend yield, return on sales, expenses to sales labor productivity, operation profit, sales per employee and many others. La Porta et al. (2002) evaluate firm performance using Tobin’s q. Maury (2006) measures performance using returns on assets to evaluate the effect of family control on firm performance. Bjuggren and Palmberg (2010) use a marginal q to measure investment performance in evaluating the effects of family control over firms. Lööf and Heshmati (2008) use sales as a share of employment to study a causal relationship between performance and investment. Cainelli et al. (2004) measure financial performance by three indicators: the annual average sales growth rate, annual growth rate of employees, and annual labor productivity level. The measures used however, have methodological differences which complicates their comparisons. The measure used in this thesis is sales per employee, which measures the average revenue generated by each employee of the firm. This performance measure is relevant for labor-intensive firms where human capital is more important than physical capital for revenue generation. In studying firms from countries with relatively low levels of industrial development, the revenue per employee measure would be appropriate as a measure that can be captured in firms’ records.
2.2 Knowledge adaptation

Knowledge is defined in different ways. One way is to define it as the result of interaction among scientists (Beckmann, 1994). The concept of knowledge is regarded as a public good (Arrow, 1962) whose consumption does not deter any other individual’s consumption of the same good (Samuelson, 1953). Knowledge is gained by a firm from diverse sources, that is, from its own employees or through external mechanisms. Knowledge is an important tool in the creation of new innovations through R&D process and spillovers between firms (Storper and Venables, 2004). Various scholars (Andersson and Beckmann, 2009; Gertler, 2003 Polanyi, 1967) have endeavored to define knowledge as tacit knowledge and codified knowledge. Tacit knowledge relates more to know-how, whereas codified knowledge relates to information, and it is difficult to transfer to any other individual. Firms possess a degree of absorption capacity to acquire new information and transform it into new products (Cohen and Levinthal, 1990). Such information can be easily transferred between individuals in a firm. Knowledge can be obtained by firms from different sources. Knowledge can be imparted within individuals (Andersson and Beckmann, 2009) and knowledge can also be exemplified in R&D activities and dispersed through publications (Xu and Wang, 1999). In addition, two other sources have been suggested to generate knowledge. These are through international and domestic trade of goods between firms (Romer, 1990) and from licensing.

The endogenous growth theory (Romer, 1986) holds that innovation, knowledge and human capital are major contributors of economic growth. In a similar argument, firm growth arises from an increase in an individual’s own human capital productivity and the average level of human capital in a firm by increasing the efficiency of production factors (Lucas, 1988). Knowledge embodied in technological form can spillover when traded goods and equipment are exchanged between firms (Karlsson and Gräsjo, 2014). Such knowledge in technological know-how induces R&D investments that generate new innovation of goods, services and processes. A combination of knowledge embodied in individuals and knowledge embodied in technological form provides firms with the capacity to develop new innovation and increase their competitive edge and performance. These two are elaborated in all three chapters of this thesis. Given that most firms in developing countries operate distant from the best practice frontier, there is an extensive sphere of learning. Knowledge spillovers may thus have a large impact on firm performance.

In this thesis, the knowledge studied is mainly knowledge embodied within individuals and knowledge exemplified in R&D activities. Knowledge within individuals allows them to be employed in firms, and they use the same knowledge to advance innovations through R&D. Similarly, firms benefit from individuals’ knowledge to advance the R&D process. Knowledge embodied within individuals can be measured by the level of education (Faggian and McCann, 2008; Glaeser and Mare, 2001), trainings and, to some extent experience of a similar job (Kambourov and Manovskii, 2009).
2.3 Firm innovation practices

Innovation practices vary from firm to firm and there are different explanations how they arise. Various models have been used by different firms for different innovation outcomes. Some firms have used the linear model of innovation, which is described as a ‘folk model’ that has been in place for decades (Godin, 2006). According to Godin’s view, the three stages of the model have experienced a slower development. The first stage spans from the 1900s to World War II, a period that focused on and emphasized basic and applied research. The second began in the 1930s and ended around the 1960s, highlighting a step forward in technological development. The last stage started in the late 1950s, a period when economists added the importance of desperation and use of products to the model. This model has been criticized for being simplistic and misrepresenting reality (Kline and Rosenburg, 1986). The basis for the criticism is the lack of feedback in the model, which is important for future planning. If an idea is successful, future plans are developed, and this requires reflecting on the initial stages of the idea to complement future outcomes. Kline and Rosenburg (1986) argue that the linear model also underestimates the role of design and overemphasizes the role of science. They indicate that the models ignore additional incremental innovations that could have a huge impact on firm’s economic development. Given the criticism of the linear model, firms have adopted the recent idea of innovation systems.

The concept of national innovation systems (NIS) has become widespread since its inception in books by Freeman (1987) and Freeman and Lundvall (1988). The system details the components that relate to the dynamic process leading to knowledge development and innovations (Lundvall, 2007). Hekkert et al. (2007) recommend key functions that should be within the innovation system, such as entrepreneurial activities, knowledge and development, knowledge diffusion through networks, guidance of the search to optimize investment opportunities, the ability of the innovator to enjoy temporary monopoly profits, the mobilization of human and the financial capital and creation of legitimacy. Even though Hekkert et al. (2007) focus on Regional Innovation Systems (RIS), these functions in the innovation system can be extended to the firm level. For example, the mobilization of financial capital is dependent on firm performance through sales and competition among other rival firms, whereas the mobilization of human capital depends on the education levels and training of employees.

Firms may innovate through new products, and services or new marketing methods through various channels. The first channel is through new firm formation, as advanced by Schumpeter (1934). The second channel is through innovation activities in established firms. Schumpeter (1943) advances his view to observe large firms as sources of innovations. He emphasizes that new products and services do not require the formation of new firms to reach the market. This is mainly because these large firms maintain a competitive edge and possess a monopoly power on the market, which could generate higher profits. To introduce new innovations on the market, firms require inputs in the R&D process.
Griliches (1979) illustrated the innovation process with a knowledge production function as follows:

$$ Y = f(K, X, m) $$

(1)

The function shows how a firm’s production function $Y$ depends on the inputs of technological knowledge ($K$), an index of regular inputs such as labor and capital ($X$) and other unmeasured inputs ($m$). In this function, Griliches’ interest was in the development of the technological knowledge of a firm represented by input $K$. The input depends on a vector of relative contribution ($W$) of previous and current R&D expenditures ($R$) and other unmeasured inputs ($z$) as indicated in equation 2 below.

$$ K = g(W'R, z) $$

(2)

Equation 2 illustrates that R&D expenditures play an important role in developing new technologies and innovations. Undertaking R&D activities, firms require endowed human and financial capital. Regarding human capital, firms need highly educated and skilled individuals to undertake R&D activities. R&D activities require knowledge that is epitomized in people rather than firms. It is therefore important to consider the knowledge of workers for R&D. Further, knowledge may be absorbed from spillovers from other firms. Firms also allow for control over workers, increasing the possibility of specialization (Alchian and Demsetz, 1972; Williamson, 1973). Within firms, workers spend time and resources to develop new products. These products increase profitability, and new products might also mean that firms escape competition.

Geroski et al. (1993) argue that innovative firms enjoy higher profit margins than non-innovators. For firms to innovate, they need capital for R&D through purchasing tools, paying wages and testing samples (products) of new innovations. Once R&D activities are completed and successful, firms produce new products and services that are sent out to markets. Aghion and Howitt (1992) assert that when new products reach the market, firms enjoy monopoly power with the hope of generating more revenue to cover the costs incurred in developing the same products. This shows that firms need to obtain funds either externally through debt or equity or use profits from the sale of previous products to finance R&D activities. The uncertainty characterizing innovation, makes it difficult for firms to acquire capital financing externally (Hall et al., 2016; Hall, 2002). This is more of a challenge for firms in developing countries that lack capital financing for innovations. Innovation promotion is a relevant policy agenda for developing countries to improve firm performance.
2.4 Competitive structure

Firms usually spend more time scrutinizing market conditions than analyzing how rivals may respond if they make a peculiar decision. Nevertheless, firms are sensitive to competitors’ decisions that concern important critical variables. It is important to note that competition influences firm performance (Baghdasaryan and La Cour, 2013). The competitive pressure increases the impact of privatization on price cost margins (Konings et al., 2005). In highly competitive environments, private firms reduce costs rather than increase prices. The synthetic measures of competition such as price-cost margin, concentration measures and other indicators of market structure, are determined by the firm’s innovation pattern. These measures do not always change in the same direction as competitive pressure. Boone (2000) asserts that when competitive pressure intensifies, the price-cost margin may rise as a result of some inefficient firms exiting the market. Firms may exist the market if they fail to compete with other firms and when they cannot undertake R&D activities. There exists a relationship between the degree of competition of a firm and its R&D intensity (Griffith et al., 2006; Nicoletti and Scarpetta, 2004). Product market competition is one major form of competition for firms. Product market competition may increase the profits of a firm through R&D investment (Aghion et al, 2009).

In an effort to understand the market structure and Schumpeterian patterns of innovation, earlier literature (Malerba and Orsenigo, 1996) has centered on how competition affects innovation. Competition may decrease monopoly rents (Scherer 1996; Geroski 1990; Nickell 1996). Even if the traditional approach has focused on the possible negative relation between competition and innovation, the distance-to-frontier theoretical literature show that competition may also spur innovation (Aghion et al, 2009). The degree of competition and concentration of an industry may determine its own R&D innovation activities (Scherer 1996; Geroski 1990; Nickell 1996). It may be difficult to differentiate competition, concentration and innovation of a firm in regard to performance. Concentrated ownership adjusts motivation and encourages monitoring (Estrin, 2002), while dispersed ownership raises incentives to gain information (Aghion and Tirole, 1997). This may affect the firm’s engagement in innovation. Thus, concentrated ownership may not be the ideal choice in respect to firm performance. Demsetz and Lehn (1985) note that it may be difficult to single out the managerial effort from the effects of exogenous factors in uncertain environments, paving the way for ownership concentration to increase. As such, the relation between firm performance and ownership concentration is obscure. If markets are competitive, firms may not avoid competition by choosing a strategic location.
2.5 Employment dynamics

The classical theory describes employment as wage labor which is hired labor for monetary reward than just as an occupation (Schmidt and Hunter, 1981). The employment theory can therefore be regarded as the decisions of employers to hire labor services and of employees to offer their services. The general theory of employment considers the skills and quantity of labor as one of its basic conditions (Dutt, 1991). The main interest of the theory lies with the employee and employer who negotiate the price of labor without necessarily focusing on the future output of the labor. The general theory explains how firms find it unprofitable to hire labor, even though labor is available to hire on an available ongoing wage rate (Johnson, 1971). The reason behind this explanation is mainly that firms exist to make profits and not to hire labor. However, in the production process, firms require labor as inputs in order to produce goods and services.

Firms demand for labor depends on the ratio of inputs required. The demand and supply of labor determine the real wage rate and the equivalent employment (Klein, 1947). In such a case, it is assumed that full employment is available such that individuals willing to work can find a job at a prevailing wage rate. Once full employment is not attained, unemployment could occur. According to classical economists, employment dynamics may be absorbed to create a scenario where unemployment is temporary. At the micro level, this may not always be the case for firms, since they employ based on the demand for labor. Labor through employment is a key indicator of firm performance and innovation (Brouwer et al., 1993). Firms provide employment to individuals they consider qualified and able to add value to its performance. Young and small firms are seen as key employers with the possible businesses outcomes regarded as diverse (Clayton et al., 2013).
Firms in developing countries employ formally or informally. Formal employment refers to where firms hire employees based on established working conditions such as wages or salaries and defined working hours or workdays (Chen and Hamori, 2013; Mattos and Ogura, 2009). Employees who are hired formally work under an agreement that remains in force until changes are made and communicated to them. On the other hand, informal employment is described as employment without an established work arrangement (Jonasson, 2012; Loayza and Rigolini, 2011). Informally employed individuals often are hired temporarily, are paid in cash, do not pay taxes and do not contribute to social security. These employees are excluded from additional benefits beyond wages and working hours are not guaranteed. The two forms of employment lead to different wage differentials, where formally employed individuals’ earnings are higher than those of the informally employed (Chen and Hamori, 2013; Zuo, 2013; Tannuri-Pianto and Pianto, 2002). Beyond differences in wage earnings, there are other discrepancies between formal and informal employment. For example, there are differentials in returns based on education and gender. Tannuri-Pianto and Pianto, (2002) argues that illiteracy is highly penalized for informal employees and male-female differences are more evident in informal employees (Funkhouser, 1996). A mixture of formal and informal employment in developing countries provides a challenge in regulating the labor market. Informal employment remains important to developing countries as it provides employment to the less educated as an alternative to survival. However, in terms of policy development, informal employment has related implications, such as its effects on taxes.

3. Firms performance in developing countries

Firm behavior and performance in developed countries are different from those in developing countries. In developing countries- especially poor countries, where firms are typically less technologically advanced, have a low level of development and lack the capacity and resources to innovate and compete with similar imported products, firm performance tends to remain inferior (Sönderbom et al., 2006). Sub-Saharan Africa is an interesting case of developing countries at lower levels of economic development that have experienced economic transition and strong firm investments. The economic performance of Sub-Saharan Africa’s manufacturing sector is perhaps best as revealed fragile (Shiferaw, 2007), as the region has experienced declining manufacturing value added to the gross domestic product.
Developing countries are affected by issues related to infrastructure, informality, regulation, trade policies and human capital, which reduce the productivity of firms (Tybout, 2000). In addition, firms in developing countries are often badly managed which substantially reduces their productivity (Bloom et al. 2010). Further, Bloom et al. (2010) find that firm management is particularly poor in large firms, where operations are highly complex because of the effective coordination and management practices required. The poor management is attributed to the limited knowledge and skills in firm management, and owners’ limited time spent on decision making (Eric et al., 2013). Studies have shown that productive firms in developing countries do not expand rapidly due to a mix of financial factors and organizational factors (Hsieh and Klenow, 2009). Many firms in developing countries face financial constraints as a major challenge to their output growth, which mainly affects small firms (Beck et al. 2005). Difficulties in obtaining external finance serve as an entry barrier for new firms. This has a negative effect on competition and productivity. Evidence provided by Bloom et al. (2012) suggests that low levels of competition and high levels of family ownership are key factors that lead to the survival of many poorly run firms in developing countries.

The sluggish industrial growth in Sub-Saharan Africa is partly explained by dysfunctional markets that create entry barriers for small firms and tolerate inefficient incumbents (Collier and Gunning, 1999). Bosker and Garretszen (2012) argue that poor market access and high transaction costs pose a threat to Sub-Saharan Africa’s economic development. In addition, extensive regulation and taxation combined with credit market problems keep small firms from challenging larger firms in the manufacturing sector of developing countries (Tybout, 2000). While a competitive environment is one major challenge, there are also other reasons for inefficient competition, such as firm closures caused by non-business issues. For example, firms may fail to transition to the formal sector. Firm dynamics in developing countries may not solely be driven by market choice. Recent studies focusing on the manufacturing sector, with a broad range of firm size, find that small firms grow faster than large ones, but the probability of exit is higher for small and inefficient firms; this supports the implications of market selection models (Gunning and Mengistae, 2001; Frazer, 20015; Sönderbom et al., 2006).
Africa’s industrial sector, mainly the manufacturing sector, is small, with few modern and international competitive firms. However, in most developing countries, manufacturing firms outcompete service firms in terms of performance (Sønderbom et al., 2006). Griliches (1979) argues that firm output and quality are more difficult to measure in the service industry than in the manufacturing industry. It is difficult to quantify service output since services have become more knowledge-intensive, curbing the use of productivity growth. As the continent is large, many countries experience high transport costs, severe imperfect information, and challenges in the diffusion of new ideas. Gertler (1992) illustrates that firm costs can also cause a premium on external finance that increases as borrower net worth increases. It is only productive firms that have a cost advantage to overcome transport costs and compete internationally (Van Biesebroeck, 2005).

Another challenge facing firms in developing countries is the limited knowledge and access to information. Knowledge and information sharing are important aspects of firm performance and growth in developing countries. Firms located close to each other possess an advantage of benefiting from information spillover, which can be a source of enhanced performance. This spillover could be new business practices, such as marketing methods, training programs for employees, or new technology that could lead to innovations. Javorcik (2004) argues that firms in developing countries lagging behind in innovation can generate knowledge through foreign direct investment. Additionally, firms in the developing countries of Sub-Saharan Africa become more productive as a result of exporting, which leads to knowledge spillovers from competitors and clients abroad and ‘learning by exporting’ (Van Biesebroeck, 2005; Bigsten et al., 2004). However, the participation of developing country firms in international markets remains low, which suggests that local markets could partly be a solution. For firms in developing countries to achieve further growth, performance should be driven by innovation or competition (Aghion and Howitt, 2005) and the expansion of local markets.
Introduction and summary of the thesis

Since one of the articles mainly focuses on Rwanda, it is important to provide a brief review of the literature on informal employment and wage earnings in the paper. Rwanda is a small, poor country with a young population. It is predominantly rural and largely depends on agriculture. More than 80 percent of the population makes a living in agriculture, which is mainly subsistence and contributing only 36 percent of GDP. In Rwanda, the majority of the population is informally employed in agriculture, mining and quarrying, construction, transport and storage and food processing (Steel et al. 2008). The national institute of statistics for Rwanda (2017) reports that approximately 2.7 million people are informally employed; that is, informal employment accounts for almost 91 percent of total employment. Moreover, informal employment jobs are held mostly by male workers (53.8 percent). Like other developing countries, the industrial sector is small, contributing 14.8 percent of GDP. Approximately 28 percent of the labor force is employed in the industry and service sectors (NISR, 2017). The industrial sector in Rwanda is composed of relatively young firms; approximately 80 percent of existing firms entered the market between 2006-2012 (Kamarudeen and Söderbom, 2013). The majority of these firms are small and medium-sized firms employing fewer than 10 workers. In Rwanda, there is basically no national minimum wage, since it was last set in 1974. The government is the largest employer and sets most other formal sector wage rates. Informal sector wages are determined based on negotiations between the worker and employer. Many workers are informally employed in lower-level and part-time jobs, with lower monthly wage earnings.

4. Empirical approach and databases

4.1 Empirical approach

This thesis uses Conditional Mixed Process (CMP) on simultaneous equations models (SEM) and a two-stage least squares approach. The CMP modeling framework is typically that of seemingly unrelated regressions in a broader sense. ‘Conditional’ means that the model can vary by observation while ‘Mixed Process’ means that different equations can have different kinds of dependent variables or response types (Roodman, 2007). This means that CMP allows each equations model to vary by the observations. The CMP implements the systems approach not only for the traditional Heckman selection models, but for any combination of its supported components (Roodman, 2007). The CMP is built on linear models as well as the Gaussian distribution and are seen as occurrences of broad group.
The classical linear regressions and truncated distribution regressions involve censoring. The classical linear regression for each equation and each individual takes the form:

\[ y^* = \theta + \varepsilon \]  
\[ \theta = X'\beta \]  
\[ \varepsilon /X \sim (0, \sigma^2) \]

where \( y \) and \( \varepsilon \) are random variables, \( X = (x_1, \ldots, x_k)' \) is a column vector of \( K \) predetermined variables and \( \beta \) is a vector of coefficients. In the case of maximum likelihood estimations, the assumption is that the errors are normally distributed, though not for large-sample ordinary least squares (OLS). Thus, CMP is a full information maximum likelihood (FIML) estimator for parameters that are structural.

In the thesis, the estimation with CMP is carried out with the SEM system in paper 2 and paper 3. Paper 1 use the two-stage least squares (2SLS) regression analysis. The 2SLS is a statistical technique used in the analysis of structural equations (Angrist and Imbens, 1995). It is an extension of the OLS (Bollen, 1996) and an alternative in SEM modeling. The technique is mainly used when the dependent variables’ error terms are correlated with the independent variables (Hsiao, 1997). In addition, it is used when there are feedback loops in the model. In structural equation modeling, diverse economic models contain endogeneity explained in form of reverse causality (Wooldridge, 2001), and prompts the use of the maximum likelihood method to estimate the path coefficient.

4.2 Databases

The Conditional Mixed Process and two-stage least squares models approaches are demanding in regard to data requirements. In most developing countries, data sets are limited, and when available, data accessibility is restricted or costly. The thesis uses survey data from different sources, which provides the basis to perform different empirical analyses. The countries studied in this thesis are mainly in Sub-Saharan Africa. Though these developing countries have varying backgrounds in regard to resources, religion, history and political settings, they possess nearly the same characteristics and levels of economic growth. These characteristics are both economic and social and include low income per capita, large dependence on agriculture, dependence on exports of primary produce, high rates of unemployment, high population growth rates and many others.
In this thesis, the first two papers are based on enterprise surveys data from the World Bank, and the last study is based on a survey conducted by the researcher himself. The surveys from the World Bank use standards survey instruments and a uniform sampling methodology to yield data comparable across the world’s economies. The use of properly designed instruments by the enterprise survey and the homogeneous sampling methodology provide a substantial foundation for empirical analyses, that yield useful results. These data provide detailed information on firm characteristics, gender participation, infrastructure, trade competition, capacity utilization, innovation and technology, performance measures, etc.

In the first paper, enterprise survey data are used to calculate firm performance, which is one of the dependent variables, along with a second dependent variable, innovation. The data contain information on 2356 firms in both the manufacturing and service sectors for three countries (Kenya, Uganda and Tanzania). The analysis in this paper combines enterprise survey and monetary values on the exchange rate of country currencies based on the World Bank indicators. In the second paper, these data from the enterprise survey are used in a firm-level analysis of only manufacturing firms in ten developing countries.

In paper 3, I analyze the determinants of informal employment and monthly wage earnings in Rwanda. For this purpose, I use unique primary data collected through face-to face interviews from formally established food processing firms for the year 2013. The survey used a questionnaire to administer interviews with 599 employees from 200 randomly selected firms across the country. A possible limitation of these data could be that the sample does not consider variations that occurred since 2013. The data used in this paper are unique in the sense that they were only collected for the targeted sector (food processing) and provided valuable first-hand information that could not have been obtained if alternative secondary data were used. The alternative establishment census data from the national institute of statistics for the year 2011 are general for firms and are not specific to food processing, which is the main reference for the paper.

5. A summary of the thesis papers

The final section of this introduction presents the summary of the three papers in the thesis. The three papers study firm performance in relation to innovation, R&D expenditure, competition and employment. All papers highlight and study the developing country context in which firms and individuals finds themselves and how it is related to their performance. Each paper responds to a research question that is related to firm performance.
The first paper, *Firm Performance and Innovation in Developing Countries. Evidence from Firm-Level Survey* analyzes the relationship between firm performance and innovation in developing countries. Specifically, the paper studies how firm performance influence innovation. Innovation is a fundamental instrument of firm growth strategy to maintain a competitive edge (Gunday et al., 2011). The paper orients the study based on three arguments. First, firm performance may be linked to innovation through an increase in profits generated by greater investment in R&D (Aghion et al., 2009). Second, firms may enhance their innovation by increasing their performance through external linkages and assistance from foreign firms (Hull et al., 2008). Third, an increase in firm performance through increased sales would possibly increase innovativeness, especially where firms have limited access to capital. Previous studies (Lee et al., 2010; Lööf and Heshmati, 2008) have studied the effects of firm performance on innovation with a focus on developed countries. The first paper hypothesizes that there is a positive relationship between a firm’s performance and its innovativeness in developing countries. The analysis uses detailed cross-section data of 2356 manufacturing and service firms from three developing countries¹ for the year 2013. The data provide detailed information about firms and their employees. Firm performance is defined as sales per employee, and innovation is defined as an introduction of a new or substantially improved product or service. Two structural models (first-stage equation for performance and second-stage equation for innovation) are estimated by two-stage least squares in an attempt to correct for simultaneity bias.

The results suggest that firm performance in terms of sales per employee positively relates to innovation. This indicates how a firm’s decision regarding the scope of its total sales impacts its innovation capabilities. A further analysis carried out between manufacturing and service firms confirms the same positive relation for firms in the manufacturing but not for service firms. From the results of this study, one can conclude that in addition to other factors, firm performance in developing countries plays an important role in positively influencing innovation. These results suggest that firms may increase their sales to generate more income and profits, which could be channeled to undertaking innovative activities. Therefore, increasing sales through an increased market share may reduce the capital gap that limits most firms in developing.

¹ Kenya, Uganda and Tanzania
The second paper in this thesis, *The Relationship between Competition, R&D, and Innovation. A study of ten Sub-Saharan countries* examines the performance link between a firm’s competition, R&D expenditure and innovation in pursuit of analyzing firm performance in developing countries, as in paper 1. Unlike the first paper, which examines the direct relations between firm performance on innovation, this paper examines the relation between competition, R&D expenditure and innovation for manufacturing firms. Manufacturing firms in developing countries are believed to be in a transition from investment-based growth to innovation-based growth (Sanfilippo and Seric, 2016). In this transition, firms act competitively to attain innovation, and this may be achieved through investments in R&D. The interest is to further explore how research effort through R&D investment relates to innovation opportunity, which determines the innovation outcome. Different levels of competition intensity between firms leads to different innovation outcomes through R&D expenditure. High competition intensity leads firms to invest less in R&D, thus leading to low innovation, whereas low competition intensity increases expenditure on R&D (Aghion et al., 2005), thus raising innovation. The analysis of the relation between competition, R&D expenditure and innovation outcomes in this paper is extended to ten developing countries. Similar to the first paper, data are analyzed at the micro firm level with a focus on firm characteristics. The data used are for 2013 and 2014 and provides information on 1033 firms from ten developing countries in Sub-Saharan Africa. For each firm, the number of competitors, the R&D effort, and the innovation outcomes are stated. In addition, information on the control variables can be traced from the data set. To analyze the relationship, the paper develops three simultaneous equation model (SEM) composed of equations for competition, research and development and innovation to form structural models. The structural models are estimated with a Conditional Mixed Process, a maximum likelihood estimator.

The results show that when firm competition intensity increases, the research effort reduces, and this lowers innovation. In other words, increased competition in manufacturing firms decreases their probability of undertaking R&D. These results present empirical support for the importance of the R&D efforts of a firm, which enable it to undertake innovation, taking the intensity of competition into consideration. Thus, the paper helps fill the research gap by showing that firms in developing countries may increase their R&D effort, which will lead to innovation with a lower competition intensity.

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2 Uganda, Tanzania, Kenya, Zambia, Democratic Republic of Congo, Ghana, Senegal, Burundi, South Sudan and Nigeria.
The final paper, *Informal employment and Monthly Wage Earnings: Evidence from food processing firms* focuses on the determinants of informal employment and wage earning in formally established firms in Rwanda. Informal employment in developing countries has become a concern in terms of priorities for firm development and the growth of the private sector and economies (Loayza and Rigolini, 2011; Amaral and Quintin, 2006; Dessy and Pallage, 2003; Fortin et al., 1997). Rwanda, like many other developing countries, has witnessed huge growth in informal employment, coupled with low wages for the majority of the employees in the informal sector (Steel et al., 2008). An increased focus on the regulations of informal employment stems from the growing negative impacts on those who are engaged in informal employment and earn less income. The well-being of informal employment workers is significantly lower than that formal employed workers. In addition, informal workers receive little or no legal protection. Their employment is highly unstable, and their incomes are irregular and very low (ILO, 2002). It is argued that informal employment coupled with low wage earnings influence the quality of life in both urban and rural areas of developing countries (Chen and Hamori, 2013; Zuo, 2013). Firms can play an important role in improving the livelihoods of workers by considering the kind of employment they offer.

The analysis of the study is performed using survey data collected through face-to-face interviews with employees from a sample of food processing firms in Rwanda. This set of data contains information about individual employees’ status and, individual and firm-level characteristics. Similar to the second paper, a simultaneous equation model composed of equations for informal employment and monthly wages using a Conditional Mixed Process estimator is estimated. This estimator is appropriate as it controls for unobserved heterogeneity. In the model, informal employment is modeled with a probit model, whereas the wage equation is modeled with ordinary least squares. The results from this analysis are consistent with those of previous studies indicating that the marginal benefit of higher education is lower for informal employees (Tannuri-Pianto et al., 2002; Gallaway and Bernasek, 2002; Guther and Launov, 2012). Further, education plays a key role in explaining monthly wage earnings, as the returns on education are much higher for employees with higher education.

The study contributes to the literature on informal employment and wage earnings in Rwanda mainly in the food processing industry. This industry is a potential market for inputs from the vast agricultural sector, which employs more than 80 percent of the Rwandan population. Compared to other industries such as manufacturing and tourism, the food processing industry can induce a greater increase in incomes of workers and farmers once it is well developed. The influence of knowledge through education is shown to be of great importance in monthly wage incomes and the type of employment in Rwanda.
References


Introduction and summary of the thesis


International Labor Organization. (2002). Decent work and the informal economy. ILO, Geneve


Collection of Papers

Paper 1
Firm Performance and Innovation in Developing Countries. Evidence from Firm-Level Survey

Johnson Bosco Rukundo

Paper 2
The Relationship between Competition, R&D expenditure and Innovation.
A study of ten Sub-Saharan countries

Johnson Bosco Rukundo

Paper 3
Informal Employment and Monthly Wage Earnings:
Evidence from food processing firms

Johnson Bosco Rukundo
Paper 1
Firm Performance and Innovation in Developing Countries: Evidence from Firm-Level Survey

Johnson Bosco Rukundo

Previous version published in Corporate ownership and control
ABSTRACT

Using micro data from enterprise surveys, this paper investigates the relationship between firm performance and innovation in developing countries in the East Africa region. The study’s purpose is to empirically test the importance of firm performance, in terms of sales per employee, for a firm’s proneness to innovate, particularly in developing countries. A two-stage least squares (2SLS) model is applied to a sample of 2356 firms from the manufacturing and service sectors. The results show that firm performance is a significant factor contributing to firm innovation. The same relationship holds for manufacturing firms only. The findings underline the importance of firm performance, as demonstrated in increased sales, for innovation. The findings differ from previous research studies that focus on innovation’s impact on performance and add to the limited research on performance and innovation studies in developing countries.
Paper 2
The Relationship between Competition, R&D expenditure and Innovation: A study of ten Sub-Saharan countries

Johnson Bosco Rukundo
THE RELATIONSHIP BETWEEN COMPETITION,
R&D EXPENDITURE AND INNOVATION

A STUDY OF TEN SUB-SAHARAN COUNTRIES

Johnson Bosco Rukundo

ABSTRACT

This paper explores the relationship between competition, R&D expenditure and innovation in developing countries in Sub-Saharan Africa. To this end, firm-level survey data for 1033 firms in ten developing countries in Sub-Saharan Africa from the World Bank’s enterprise surveys are used. The paper uses a Conditional Mixed Process estimator (CMP) to estimate a simultaneous equation model system composed of equations for research and development expenditures, innovation and competition. The findings confirm an inverted-U relationship between competition and research expenditures. The results suggest that a firm’s research efforts increase with increases in competition but at a diminishing rate and finally decreases at high levels of competition. These results are robust across several sensitivity tests. The paper adds to the limited existing research on competition, R&D expenditure and innovation in developing countries.
Paper 3
Informal Employment and Monthly Wage Earnings: Evidence from food processing firms

Johnson Bosco Rukundo
INFORMAL EMPLOYMENT AND MONTHLY WAGE EARNINGS:

EVIDENCE FROM FOOD PROCESSING FIRMS

Johnson Bosco Rukundo

ABSTRACT

This paper examines the role of education in determining informal employment and monthly wage income. The empirical analysis applies a conditional mixed process estimator in a simultaneous equation model based on primary survey data collected from face-to-face interviews with employees of formally established firms in the food processing industry. The results indicate that education relates to informal employment. Specifically, the findings indicate that higher levels of education reduce the probability that individuals will be absorbed in informal employment while increases in education levels increase monthly wage earnings. Policies that support reducing the share of informal employment and disparities in monthly wage earnings would enhance the growth of food processing firms in Rwanda.
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