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Labour conditions in Value chains:
The case of ICT firms in Madagascar

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List of Acronyms

CSR: Corporate Social Responsibility
EPZ: Export Processing Zone
GVC: Global Value Chain
ICT: Information, Communication and Technology
ISCO: International Standard Classification of Occupations
VC: Value Chain

Abstract

This paper analyzes the potential effects of insertion in value chains, gender, firm's skill intensity and the skill level of an occupation on labour conditions in Malagasy ICT firms. The results indicate insertion does affect the atmosphere within firms, access to a good health insurance and safety rules. But it appears other items defining labour conditions do not depend only on insertion in value chains. Gender, firms' skill intensity and the skill level of an occupation combined with the insertion factor also have an impact on labour conditions in these firms.

Relevance to Development Studies

Madagascar is a very poor country and the lack of decent work is one of the restrictions to its development. This paper aims to analyze the labour conditions in a new sector in the country. This new sector, ICT, has triggered a lot of expectations because Malagasy people hope it will contribute to the development of the country. This research is especially concerned with an important aspect: labour conditions which is a real challenge for the development of the country.

Keywords

ICT firms, Madagascar, value chains, gender, firm's skill intensity, skill level of an occupation

Chapter I: Introduction

This paper uses the value chains framework for the analysis of labour conditions in Malagasy ICT firms and focuses on specific factors that may affect those labour conditions: gender, the firm's skill intensity and the skill level of an occupation.

The evolution of ICT at the global level

The development of information and communications technology (ICT) is one of the key characteristics of globalization defined as "the growing interdependence of countries mainly through increasing flows of goods and services, international capital and technology" (Betcherman, 2002). One of the consequences of this development is a change in firms' organisation. ICT has permitted the development of far-flung, multi-country based production of goods and services, called global value chains. These global production systems created new opportunities for developing countries; especially for their firms that are enabled to participate in the global market. A new global division of labour was born.

The global production systems concern different sectors of activity including agriculture, industry and also services. The development of international trade in services is a recent phenomenon related to globalization but today it represents an increasing part of international trade. This means in the context of globalization, ICT has not only facilitated the development of global value chains but today ICT is becoming part of value chains as well.

Services offshoring started in the 1970s in developed countries (Ireland) and then moved to developing countries. This trend can be explained by the necessity to cut costs but also because of a shortage of skills in developed countries. It evolved from "being technically impossible (...) to a normal business decision" (Dossani and Kenney, 2007). It is estimated at least 14 million of jobs in the service sector can be offshored (Dossani and Kenney, 2007). This evolution of trade in services, called by some "the second global shift" (Bryson, 2007) was made possible by the development of new technologies but also by new ways of organizing service production systems (Bryson, 2007, p.31). The range of services that can be offshored covers payroll, call centres, telemedicine, conducting of clinical trials, programming, management of corporate e-mail systems, telecommunication networks... (Dossani, 2005). Since 2004, apparently not only low skilled jobs in the services have been offshored but also high skilled ones (positions in R&D, design, accountants...). It means "services offshoring will not only affect routine work, but will also affect many formerly protected highly skilled and well compensated jobs" (Dossani and Kenney, 2007).

This paper examines the situation of firms in the service sector involved in ICT activities. The term ICT services here refers to the OECD definition that considers that ICT services must be intended to enable the function of information processing and communication by electronic means (Aalbers et al., 2005).

Some of the firms analyzed here are working as subcontractors for French, Italian or German firms. ICT offshoring, like other sectors, offers employment opportunities in developing countries as jobs are relocated. Developing countries consider the IT sector as a "rapid opportunity for job creation" (Gurumrthy, 2004). These services require high skilled but also unskilled labour. This reduces the risk of excluding certain types of workers from these types of jobs because of their skills. Others advantages of ICT activities such as low entry barriers, its labour intensity and low economies of scales encourage developing countries with a surplus of manpower and a low capital base to develop them (Varma and Sasikumar, 2004).

Asia today is the continent that benefits most from the situation; especially India that has become the leader in these types of activities. Some Indian companies have been able to develop world known brand names and these offshored activities have generated a lot of jobs there (Dossani, 2005); especially for the technically skilled workers whose employment rate has increased (Varma and Sasikumar, 2004). Between 2002 and 2003 the proportion of IT offshore activities increased by 58% in India (Nathan and Kalpana, 2007).

The development of the ICT sector in Madagascar

Following the Indian example, other countries (China, the Philippines, Israel, Mauritius...) have also decided to take part in this new phase of globalization. Madagascar has recently begun to participate in these types of activities. Some Malagasy firms have started to work for French companies. Their main advantages are the availability of a workforce that speaks French, the presence of a large French community that has already set up its business (Cling et al., 2007) and the time-lag with France of only one or two hours, permitting simultaneous work and interaction of the French and Malagasy firms. Today Madagascar is together with Morocco and Mauritiuss one of the major providers of ICT offshored activities to France.

This recent increase in the number of firms working as subcontractors for French companies is partly due to Malagasy peoples's actions[1] to attract those activities. For instance Malagasy associations in France are now trying to lobby in order to attract more French firms that will subcontract their ICT activities to Madagascar. The Malagasy government also tries to foster the development of these types of activities by granting the status of export processing zones to some firms involved (Razafinakanga, 2005) and by encouraging investments in the ICT sector[2]. For instance in 2005, 25% of those firms in Madagascar were operating under the status of export processing zone[3]. The status of EPZ of these firms shows the importance given by the government to this sector because in Madagascar EPZ is thought to be the most dynamic sector of the economy (Glick and Roubaud, 2006).

Malagasy people have high expectations from these firms. They create employment opportunities, people hope it will stem brain drain as some of these activities require high skilled

[1] See http://www.madagascar-ntic.org/index.php

[2] Ministere de l'Economi, du Commerce et de l'Industrie, n.d.

[3] Offshore Développement, n.d.

workers. These new activities also have the potential for the economy of the country. Between 2000 and 2004, exports from this sector grew by 30%[4]. Plus, if we look at the positive impacts of the insertion of small farmers in global retail companies value chains on their welfare, the technology adopted and on resource management (Minten et al., 2005), we can expect these new ICT firms inserted in value chains to engender these positive trends for the people involved.

These expectations are relevant as in Madagascar, one of the poorest countries in the world, seven people out of ten live below the poverty line (Stifel et al., 2007). This situation encourages people to try to create employment opportunities in order to combat poverty.

Development restriction due to the lack of decent work in Madagascar

However the country already faces a problem of "bad jobs". The majority of workers in Madagascar are considered as "working poor". The main problem of the Malagasy labour market today is not the level of unemployment which is low: 2.6% (Stifel et al., 2007). The major challenge regarding employment is labour conditions. Due to poverty, workers are willing to accept any types of jobs in order to earn an income and support their families. For instance in 2005, even if a large majority of "the working age population was gainfully employed (...), 65.4 percent of them lived in poverty" (Nordman and Wolff, 2008). More than half of the workforce is involved in the informal sector (Razafindrakoto and Roubaud, 2001). The large majority of jobs in which Malagasy workers are involved do not require a high skill level (Stifel et al., 2007).

Compared to other developing or neighbouring countries, Malagasy wages are low. Unskilled workers in production earn 36$ a month whereas in Uganda the same workers earn 57$ or even 145$ in Mauritius (World Bank Group 2005). Worker's productivity is low as well but "Malagasy firms remain competitive when looking at both wages and productivity" (Minten et al., 2005).

Due to these low wages in Madagascar a large and increasing share of workers (30% of the working age population) have to combine different jobs (Stifel et al., 2007). Official statistics estimate one third of the labour force in urban areas is underemployed (World Bank, 2005) but employment professionals consider the real rate is even higher and suggest around 80% of the workforce is underemployed (Ratsiazo, 2008). This is a real problem in urban areas (Nordman and Wolff, 2008).

We are focusing on the characteristics of the labour market in urban areas because all ICT Malagasy firms are concentrated in urban areas, mainly in Antananarivo, the capital and largest city of the country. The table below presents the major characteristics of this population. In addition the large majority of the Malagasy employees in the formal private sector in urban areas is between the age of 25-34 (Nordman and Roubaud, 2005).

Table 1: Labour force characteristics in urban areas

[4] Offshore Développement, n.d.

Total labour force (Thousand)	20,880
Unemployment rate (%)	2
Underemployment (%)	29
Women participation rate (%)	60
Women underemployment rate (%)	42
Skilled labour (%)	46
Informal sector (%)	34

Source: World Bank 2005

This situation does not lead employers to offer good labour conditions. The term "labour conditions" here refers to the types of jobs, wages and benefits, access to social security, labour control, access to training, representation, job security. This concept will be defined more precisely in the operationalisation chapter.

The main issue for Madagascar is to offer "better" jobs to its workforce (Stifel et al., 2007). Offering jobs to its workers is not enough. Obviously access to employment has not led to better outcomes for Malagasy workers for the moment so it is necessary to have jobs of good quality in order to reduce poverty and achieve sustainable development. That is the aim of this paper: to determine whether these new firms (skill intensive and low skill intensive) inserted in value chains in the ICT sector may offer better jobs to labour, for both men and women and both skilled and unskilled workers.

Because one important aspect of this paper is gender, it is necessary to present briefly gender issues in the Malagasy context.

Gender perspectives in the Malagasy context

In the Malagasy labour market, the increasing participation of women in the labour force contributed to the growth of the workforce in the last years (Nordman and Wolff, 2008). Women today constitute about half of the adult workforce but they still have to face discrimination.

First, schooling is more accessible to Malagasy boys than girls (Niccita and Razzaz, 2003) therefore women's access to decent jobs is limited compared to men: (Razafindrakoto and Roubaud, 2001) for example, the formal sector which is characterized by more decent work than the informal one (Stifel et al., 2007) is highly dominated by men, and women are underrepresented (Glick and Roubaud, 2006). The agricultural sector characterized by low wages employs a majority of female workers (Stifel et al., 2007).

Second, among Malagasy workers, division of labour by gender exists. This leads men to be concentrated in high skilled, highly paid positions and women in less stable positions (Niccita

and Razzaz, 2003). In the textile sector 17% of women held temporary jobs, whereas this situation only concerned 3% of men in 2003 (Niccita and Razzaz, 2003).

Third, women have less access to promotion than men: statistics show that in the public administration or in EPZ, fewer women have been promoted than men (Glick and Roubaud, 2008).

Moreover in terms of wages men and women are not equal : "men fare better than women" (Stifel et al., 2007). This wage gap "exists at each level of education in both the formal and informal sectors" (Stifel et al., 2007) and it is in the informal sector that the gender wage gap is the highest (Stifel et al., 2007). However empirical evidences (Nordman and Wolff, 2008) also suggest this gender wage gap is not really significant in the formal sector. There does not seem to be any glass ceiling effect. The explanation given for this low wage gap is that wages on the whole are low in Madagascar and this "prevents employers from paying some kind of discriminating premium according to gender" (Nordman and Wolff, 2008).

Finally, female unemployment rate is higher than that of male (Razafindrakoto and Roubaud, 2001).

As for the reproductive sphere, the Malagasy society is characterized by huge inequalities between men and women. The household tasks are in large majority under the responsibility of women. A woman spends seven hours more than a man on household duties (Razafindrakoto and Roubaud, 2001).

Given those facts, the main questions driving this paper are the following:

Questions/ subquestions

Main question

- How does insertion into value chains affect labour conditions in the ICT sector in Madagascar?

Subquestions

- Compared to firms that are not inserted in value chains, do firms inserted in a value chain bring more benefits for labour?
- How does skill (at the individual but also at the firm level) affect labour conditions?
- How does gender affect labour conditions?

The choice for the sector is deliberate. In Madagascar, the service sector employs 17% of workers but accounts for 57% of the GDP (Instat, 2007). Therefore this sector is of prime importance for the economy of the country. Plus, we saw earlier the ICT sector is a booming sector in Madagascar: the government looks at it by encouraging investments or by granting EPZ status, the Malagasy Diaspora is working on it in terms of employment creation. That is why it is important today to analyze one important aspect of the sector that others do not: that is labour conditions. So far, it is difficult to find literature dealing with the quality of jobs offered by these new firms that the country is trying to attract even though we have just seen that the major problem is the quality of jobs offered. Therefore it is necessary to try to evaluate whether these types of firms offer better employment opportunities than what already exists.

To determine what are "better" jobs, the ILO's decent work standards based on four strategic objectives: promotion of employment, social dialogue, social protection, fundamental principles and rights at work (ILO, 2008) are used.

Chapter II: Conceptual framework

The global value chain framework

The global commodity chain approach was first formulated by Gereffi in 1994. It is inspired by Wallerstein's world system approach who defined it as "a network of labor and production processes whose end result is a finished commodity" (Clancy, 1998).

Gereffi defined global commodity chains as "global manufacturing system" characterized by four main elements:

- an input-output structure for the product "which refers to the various "nodes" involved in the production (...) each node represents a specific production process linked together in a sequence (chain) in which each stage adds value to its predecessor" (Yeates, 2004).
- geographical dispersion of production
- governance structure ("authority and power relationships that determine how financial, material and human resources are allocated and flow within a chain" (Gereffi, 1994))
- institutional framework: defined by Gereffi as the influence of local, national, international on activities within the chain (Barrientos et al., 2003).

This concept of global commodity chain was further developed by other authors. There has been a shift in the term. The term "global value chain" is now preferred to the initial "global commodity chain". Despite the change in the usage, the idea remains the same. Both global commodity chain and value chain approaches are interested in the organization of global production and distribution systems. These two concepts are closely related, their main difference being the global value chain approach is more influenced by the "international business literature" whereas the global commodity approach has a more sociological perspective and focuses more on the "policy implications of chain research" (Bair, 2005).

This framework enables us to analyze "cross national activities of firms" (Riisgaard, 2008) and to explore how "linkages between production, distribution and consumption of products are globally interconnected along value chains that embody a network of activities and actors"(Riisgaard, 2008).

Theoretical relevance of the paper

The global value chain literature is mainly concerned with manufacturing or primary commodities but the service sector is also concerned even though there are fewer authors who use this framework for their analysis (Clancy, 1998; Yeates, 2004). Some authors find this ignorance of the service sector in the literature not surprising as services are difficult to define. However this tendency should be reversed as "services are too large and important to be

ignored" (Clancy, 1998). In the case of ICT, other authors have already used this framework to analyze the sector. Their main focus was on the issue of upgrading or the identification of patterns of spatial organization as a result of the implementation of ICT in financial services (Grote et al., 2002). The main contribution of this paper is the focus on labour.

The global value chain framework is used for this research work because it is useful in the context of globalization for developing countries. In the case of the firms studied here (Malagasy firms subcontracting ICT activities for firms abroad) the second characteristic (geographical dispersion of production) of commodity chains is well established because the activities in the chains are scattered between Madagascar and France. The last point (the institutional framework) is also an important aspect which the value chain literature considers as an important factor explaining the conditions within value chains.

The focus of this paper on the consequences on labour is deliberate since so far the literature on value chains mainly deals with the consequences of insertion in these chains on a firm level in developing countries rather than on labour. Therefore some authors emphasize the necessity to focus on labour when using the value chains framework (Bair, 2005; Knorringa and Pegler 2007; Riisgaard, 2008). Other arguments from those in favour of this focus are that it is "necessary to fulfil what the proponents of value chain analysis suggest is one of its primary objectives: to map the distributional incomes resulting from participation in international production networks" (Bair, 2005).

These authors claim positive consequences of insertion in value chains on labour are assumed. It can be explained by the "limited effort to distinguish between producers and the workers they employ"(Riisgaard, 2008). This absence of distinction may be misleading because the consequences on labour may be negative (Knorringa and Pegler, 2006) whereas for the employing firm they may positive.

This paper aims to contribute to the literature on the consequences of value chain on labour.

The debate on labour in the value chain literature

As said earlier, firm level analysis of the effects of GVC on labour for the moment is not the core focus of the GVC literature. Very often "researchers employing a GVC approach have (...) examined the circumstances necessary to ensure that participation in global value chains contributes to the development of poorer nations" (Riisgaard, 2008).

The effects on labour tend to be assumed when authors deal with the issue of upgrading. It seems better labour conditions are associated with upgrading. This positive correlation is illustrated in the service sector by Dossani (2005) who does not conduct a firm level analysis but adopts a macro perspective. He established in the case of East Asian economies upgrading was accompanied by "increased employment, rising wages overall, and reduced poverty". This is mainly due to the dominant view for instance held by the ILO according to which "continuously

upgraded processes and products also require higher skilled and motivated workers who can and will earn a premium in the labour market" (Knorringa and Pegler, 2006). In the case of Madagascar, the impacts of insertion of small contract farmers in value chains has been analyzed (Minten et al., 2005). Findings suggest these farmers associated with retail European firms fare much better. The farmers benefit from better welfare due to higher and stable incomes, from shorter lean periods and lower risks and variability (Minten et al., 2005).

Other authors (Bair, 2005; Barrientos et al., 2003; Knorringa and Pegler, 2006; Nadvi, 2004; Nathan and Kalpana, 2007) are less optimistic about the impacts of value chain and consider that, contrary to what Gereffi claims, insertion into value chains neither lead to the development of firms nor improve labour conditions in developing countries: "as we know from a vast and growing literature, firms that successfully participate in global value chains may not deliver benefits to workers in the form of higher wages, greater job security or improved working conditions"(Bair, 2005). Here Bair explicitly refutes the dominant view mentioned previously and refuses to acknowledge the automatic link between insertion in value chain and improved labour conditions.

Empirical evidences on the impacts of GVC on labour proposed by Nadvi (2004) indicate the lack of visibility of the link. Nadvi (2004) refers to different case studies from garments, horticulture and textile sectors in order to determine whether insertion into value may bring benefits for labour. His main findings are "significant employment and income gains to workers, especially women workers (…). Such workers inserted into GVC fare better than workers from similar backgrounds engaged in the domestic non-traded economy".

But he also notes that not all workers can benefit from these advantages, workers within GVCs are more vulnerable, subject to change in their employment contracts and casualisation of work. His main conclusions are the main challenge of these firms is to build stronger ties in order to upgrade skills and improve returns to firms and to labour (Nadvi, 2004).

Following Nadvi's way, other authors (Knorringa and Pegler, 2006; Nathan and Kalpana, 2007; Selwyn, 2007) have also decided to focus on the impacts of GVCs on labour and questioned "the extent to which incorporation into global value chains enables the attainment of improved labour standards leading to *decent work*" (Nathan and Kalpana, 2007).

The main findings are in compliance with Nadvi's empirical findings. It seems the employment and income gains are not contestable as "employment created by incorporation in global value chains is an improvement in the conditions of existence of the producers" (Nathan and Kalpana, 2007). In the export grape branch, Selwyn (2007) declare that workers inserted in value chain benefit from representation, higher wages and welfare conditions.

However, inclusion in value chains is also associated with "increasing insecurity and longer hours, especially at the furthest end of the chain" (Knorringa and Pegler, 2006). In addition workers after a certain period start to feel more pressured (Knorringa and Pegler, 2006), they are subject to more supervision (Selwyn, 2007). On top of that, insertion in value chain may also encourage firms to reduce training leading to no real prospects of evolution and promotion for the workers (Nathan and Kalpana, 2007). Some authors also suggest the development of value

chains affects the nature of employment. Inserted firms are highly encouraged to use casual labour (Nathan and Kalpana, 2007). Other authors go even further by stating inserted firms are encouraged to make use of informal workers with poor conditions to meet "just in time production requirements" (Barrientos et al., 2003)

Because of this absence of automatic link between GVC and improved labour conditions, authors (Knorringa and Pegler, 2006) have developed a set of hypotheses on the prerequisites for the improvements of labour conditions in value chains.

Their hypotheses distinguish three different levels at which improvements in labour conditions are possible.

- At the firm level, there should be improvements when the activities involved require high skill level and tacit knowledge and when management allows workers' representation and training. This first hypothesis referring to skill level points to an important factor affecting labour condition which will be analyzed later.
- At the value chain level, labour conditions should improve when "chain responsibility is more mainstreamed as part of ethical sourcing" (Knorringa and Pegler, 2006).
- At the country level, "when sector-specific labour markets are tighter; unions are more representative and inclusive; when political representation is more effective"(Knorringa and Pegler, 2006).

Gender aspects of the value chain analysis on labour

Other authors (Barrientos, 2001; Barrientos et al., 2003; Dolan, 2004; Tallontire et al., 2005) have also decided to extend the value chain analysis to employment combining it with a gender approach. The latter was pioneered by Barrientos (2001) who argued on its necessity because it helps to understand the division of activities along the chain and because "a gender approach helps to unpack in more depth the ways in which value chains operate at different levels" (Barrientos, 2001).

Dolan (2004) also adopts a gender perspective while making her analysis of the fresh vegetable value chain. Her main findings reveal women have to face flexibility and insecurity more often than men. Plus they are more concentrated in casual, seasonal and "unskilled" employment categories where wages are lower (Barrientos et al., 2003; Dolan, 2004). The author concludes the commodity chain relies on the gendered and insecure forms of employment it creates. Here she just confirms Barrientos's argument (2001) stating that "flexible employment, much of it female, plays in the functioning of value chains".

Dolan's empirical evidences are confirmed by other authors' findings (Barrientos et al., 2003; Tallontire et al., 2005). Those authors concluded despite the existence of codes of conduct, insertion in value chains has not contributed to the improvement of the conditions of female or informal workers (Tallontire et al., 2005). On the contrary, it seems insertion in the value chain encourages "flexibilization and feminization" (Riisgaard, 2008) where female employment is

associated with poor working conditions, job insecurity, informal employment relations and long hours that do not allow women to benefit from sufficient time for their domestic tasks (Barrientos et al., 2003).

Several points have been highlighted above on the consequences of insertion in value chains, gender and level of skill on labour conditions. However the main findings concern the primary sector and the focus of this paper is the ICT sector. Therefore we need to continue this literature review with a focus on the type focusing dealing with the effects of skill and gender on labour conditions in the ICT sector.

The influence of gender on labour conditions in the ICT sector

Literature indicates ICT has created employment gains for women and the skills required for these activities are higher than those demanded by the first phase of manufacturing job creation (Hafkin and Taggart, 2001). Moreover, ICT activities mainly depend on knowledge and not on physical skills. These elements encourage optimists to believe ICT is a gender neutral industry (Varma and Sasikumar, 2004) and may create new opportunities for women such as the gain of financial independence, possibility to combine paid work with reproductive roles and more representation in management positions leading to a less discriminatory environment than in other sectors (Howcroft and Richardson, 2007).

However the 25% of women that constitute the global IT workforce (Howcroft and Richardson, 2007) have to face different challenges.

The first major issue is still gender segregation even if the ICT is a new sector of activity. This segregation operates at two levels: vertically and horizontally.

- On the vertical segregation empirical findings indicate high skilled jobs are held by men. Women are concentrated in low skilled jobs: word processing, data entry (Gurumurthy, 2004) and non-managerial positions (Hafkin and Taggert, 2001; Howcroft and Richardson, 2007). They have less access to promotion (Arun and Arun, 2002). However in some countries there are also positive trends for women: for instance in India, the number of female software programmers has increased (Hafkin and Taggart, 2001) but the share of women in the senior workforce remains low (6%) (Nathan and Kalpana, 2007). The main reasons cited for this trend are "problems of relocation (…), inability to work longer due to domestic responsibilities and the difficulties of networking and bonding" (Nathan and Kalpana, 2007) but another explanation provided for the concentration of women in low skilled positions is the image of women as "inferior bearers of labour" (Elson and Pearson, 1981).

- As regards to horizontal segregation: women are more represented in desktop publishing, software programming and not in hardware design or computer maintenance.

The second major challenge faced by women is the feminization of a sector may lead to a "drop in salaries, status, working conditions" (Hafkin and Taggart, 2001). The manufacturing sector is concerned with this issue and the ICT seems to be concerned as well (Howcroft and Richardson, 2007). For instance in the case of software production in India, pay and economic rewards is based on an appraisal system that is seen as unfair and stressful by 32% of women whereas 75% of men agreed to it (Arun and Arun, 2002). Contrary to the public sector, the ICT sector does not provide advantages offered by the public sector such as childcare, flexible hours, maternity leave (Hafkin and Taggart, 2001). In order to avoid the supplementary costs these advantages will generate, employers in the ICT sector just avoid recruiting women (Howcroft and Richardson, 2007).

On the other hand, Ilavarasan (n.d.) comes with different findings and concludes that contrary to what the literature on ICT and gender argues, in the case of two Indian software firms, women do not perform low skilled tasks, men and women experience the same way concerning core job characteristic and group process and the working hours are the same for the two groups. The author explains these different findings by the method of data collection that here relies on firm level data whereas the majority of the IT and gender literature depends on industry level data. This may be important for this research work because the data were also collected on a firm level.

The influence of the firm's skill intensity on labour

To understand the potential influence of the firm's skill intensity on labour, we need to refer to the literature dealing with knowledge intensive firms. These are the firms where the large majority of the workers are well educated (Robertson and Swan, 2003). Literature argues that the management style for these workers has to be different. They require more autonomy, non formal and consensual relationships with their managers, there is not necessarily a clear distinction between the managers and the employees, because the firms needs to retain its workforce whose skills are more scarce (Robertson and Swan, 2003). This statement suggests that in skill intensive firms, labour should benefit from better labour conditions than in firms where the skill intensity is lower.

The influence of the skill level of the occupation on labour conditions

Authors (Knorringa and Pegler, 2006) have developed hypotheses under which labour conditions should improve in value chains. One of them links high skill level with improved labour conditions. It means in high skilled activities, labour should gain from insertion in value chains.

The ICT literature provides empirical evidences confirming that high skilled workers benefit from better labour conditions. Choon Sin and Yong (1995) explained that low skilled workers involved in ICT activities are those who have to work under tension and pressure and more

control, their tasks are monotonous. The negative labour conditions mainly fall on the shoulders of workers occupying low skilled positions.

Labour conditions in the ICT sector

Arun and Arun (2002) provide illustration from software production in India. Their major findings are in this sector, wages are two to three times higher than in the private or public sector. Workers in the ICT sector earn one of the highest wages in India (Varma and Sasikumar, 2004)

However in terms of social welfare benefits (employer pensions and benefits) provided by the software firms the conditions are not seen as advantageous as in the public sector. The conditions of work (flexible office hours, adequate maternity or paternity leave, childcare facilities...) are also not considered as beneficial as in multinational companies (Arun and Arun, 2002) or in the public sector (Howcroft and Richardson, 2007).

As for their working conditions, employees involved in the ICT sector have to work under pressure in "crisis mode" with tight project headlines, longer hours, sometimes night work because they have to accommodate different time zones (Howcroft and Richardson, 2007; Varma and Sasikumar, 2004).

There seems to be little room for collective action or collective bargaining, turnover rates are high as firm loyalty is low (Varma and Sasikumar, 2004).

Chapter III: Operationalisation

The intention was to write an empirical paper on labour conditions in value chains in order to determine the effects that insertion, skill and gender may have on labour conditions.

The hypotheses

From the literature cited earlier we can develop the following hypotheses:

- Insertion in value chains does not necessarily bring benefits to labour conditions
- Skill affects labour conditions: in skill intensive firms labour conditions are better than in non skill intensive firms and high skilled workers benefit from better labour conditions than low skilled workers
- Gender affects labour conditions: women are concentrated in low skilled jobs where labour conditions are not as good as in high skilled activities

Conceptualization of the term "labour conditions"

The term "labour conditions"

The hypotheses above refer to the term "labour conditions" several times. This term is essential for the research as it is the central theme. Therefore it is important to define how the term was conceptualized for this research. We have to understand "labour conditions" as a large expression that can be divided into two categories: conditions of work and conditions of employment. "Conditions of work" are facts both objective and subjective that refer to the situation of the employees at their workplace and job. "Conditions of employment" refer the different points that can be found in an employment contract.

The items

The table below enumerates the different items used to define "labour conditions" for the fieldwork.

Table 2: Items used to define "labour conditions"

Conditions of work	**Conditions of employment**
Position	Wages and benefits
Number of current jobs	Working hours
Employment security	Access to training
Autonomy/ labour control	Access to social security

Career evolution Quality of the working environment Satisfaction with the job Atmosphere Relationships with managers Representation	

These different items were the central focus of the research in Madagascar and were correlated with the types of firms (inserted in value chains or not), the firms' skill intensity, the skill level of the occupation and the sex of the workers. The last point was the question to ask the respondents: could they find other factors affecting their labour conditions?

Some of the items above refer to different elements that will be briefly defined below.

- Under the quality of the working environment, the research aimed to analyze the quality of the workplace in itself: the buildings, the tools and equipments used and the health and safety regulations.
- Employment security meant two things: the rules and practice of dismissal and the contract types.
- Social security covered two elements: retirement pension and health insurance.

These different indicators were not all present in one single firm but the aim here was to compare the situation according to these items and to determine which types of firm (those that are inserted in value chain and those that are not) offer the best opportunities for labour conditions and more precisely which types of firm may lead to "decent work".

The concept of "decent work"

Once the labour conditions were identified it was necessary to determine whether these labour conditions could lead to "decent work". Thus it is also essential to define the concept of "decent work". This concept is composed of four major elements: employment, social protection, workers' rights and social dialogue (Ghai, 2003; ILO, 2008).

- Employment: it "covers work of all kinds and has both quantitative and qualitative dimensions (...). It also refers to adequate opportunities for work, remuneration (...) and embraces safety at work and healthy working conditions"(Ghai, 2003). It means there has to be some protection against unfair dismissal to ensure employment security and that a job can be turned into a career. That is why in the list of items enumerated above it is necessary to examine the quality of the jobs offered (working conditions, number of current jobs, job satisfaction, autonomy)

- Social security and income security are major components. Social security here means meeting people's urgent subsistence needs and providing protection against contingencies (Ghai, 2003). Income security implies the job should provide adequate income according to the standards of each society (Ghai, 2003). The items related to wages and benefits, access to social security and number of current jobs enabled to determine whether this second pillar was respected.
- Workers' rights concern freedom of association, non-discrimination at work and absence of forced and child labour (Ghai, 2003).
- Social dialogue includes the ability of workers to negotiate, present their views and opinion (Ghai, 2003) through independent trade unions and employers' organization.

Once the different indicators defining labour conditions have been identified it was necessary to determine whether they responded to the different criteria of decent work presented here.

The type of data

This research aimed to identify to what extent different factors may affect labour conditions in a particular sector. The goal was to determine the plausibility of a phenomenon rather than its distribution. In order to determine this link collecting qualitative data and not quantitative data was the best solution.

The type of data collected refers to the concept of labour process (what do workers do in their job and how do they feel about it) but also the concept of industrial relations (relations between institutions). In order to retranscript the responses, qualitative data seemed to be the best option.

The technique

Semi structured individual interviews were conducted to enable the interviewees to talk as freely as possible, without fearing what the others or their managers would think and to avoid the influence of other's opinion on the responses of other interviewees. Plus I had to quickly make the employee trust me even though they knew my entry point into their firm was their managers. The issue of labour conditions may be sensitive for some people. That was why it was preferable to be alone with the interviewees. It was necessary to reinforce the confidentiality of the interviews and it was much easier when the interviewee was on his/her own.

Semi structured interviews were conducted because interviews are a good technique to gather information on people's experiences and views (Laws et al., 2003) and that was one of the information to collect when the workers were asked about the conditions of work, how they felt about their jobs, their working environment, their colleagues, the nature of their relationships with their managers.

I am aware that some of the responses from the workers may be biased: I was alone with the interviewees and nobody could react to what the interviewee said and they did not know me well. That was why at least five workers from each firm were interviewed. These workers were selected on the basis of their sex and skill level of their occupation. The firms' managers were also interviewed in order to triangulate all the information from different perspectives and to have the most objective information possible. Thus here triangulation was done by using different sources and not different techniques. The technique of the interview was used for all of the interviewees only the questions differed (see appendix).

Sampling method

Firm sampling

The workers were from firms located in the centre of Antananarivo, the capital city of Madagascar, where most of the ICT firms are located because in other places access to ICT infrastructures is more difficult.

The four firms used for the fieldwork were all involved in ICT activities. Two of them were inserted in value chains (firms A and B). Here it means at least 80% of their activities are meant for firms that are not located in Madagascar but in France, Italy, Germany. Among those two firms, one was a skill intensive firm (webdevelopment and webmarketing): firm A. The other one was specialized in low skill intensive activities (mainly data processing, audiotyping): firm B.

The other two firms (firms C and D) were not inserted in global value chains: they worked only for firms based in Madagascar. One of them two was skill intensive (webdevelopment and webmarketing) the other one was low skill intensive (webmarketing and call centres). These four firms are all recent firms.

Two different groups of firms(inserted firms and non inserted) were chosen to enable a comparison between them, in order to determine which group of firms may offer better labour conditions and to reply to one of the leading questions of the research work.

The distinction between the skill intensive firms and the low skill intensive was deliberate in order to analyze the potential effects of the firm's skill intensity on labour conditions as suggested in the literature review.

This led to this type of firm sampling:

Table 3: Firm sampling

Firm A	Firm B	Firm C	Firm D

Inserted in value chains	Inserted in value chains	Not inserted in value chains	Not inserted in value chains
Skill intensive firm (60% high skilled activities, 40% medium skilled activities)	Low skill intensive (100% low skilled activities)	Skill intensive firm (70% high skilled activities, 30% medium skilled activities)	Low skill intensive (20% high skilled intensive activities, 40% medium skilled activities, 40% low skilled activities)

Firm A was created in 2005 by a couple of French man and woman. The woman is from Malagasy origin but both of the managers studied in France. They arrived in Madagascar in 2005 to set up their firm which was created to be immediately inserted in global value chains. For the moment, they are only focusing on foreign customers which are French, German or Italian travel agencies but they are planning to also focus on the local market within a year. They have two types of activities which are subcontracted by the foreign firms: webdesign and webmarketing and employ 34 people.

Firm B was created in 2001 by a French man who, after experiencing other countries in Africa (Guinea and Morocco) as a trader in ICT activities, decided to settle in Madagascar as he considered the Malagasy labour legislation to be more flexible and because labour is cheap. His customers are all French small law practices or notary offices that have decided to outsource their audio typing and data entry activities in Madagascar because of the quality of the service that is cheaper. Today firm B employs less than 70 people.

Firm C was created by two Malagasy men in 2005 and is composed of 47 people. This firm works as a subcontractor for ICT activities but all of its activities are for local firms (banks, insurance companies...). This firm is the leader in its activities (webdevelopment and webmarketing) for the local market and they are now thinking about extending their customers to foreign firms but this new branch would only represent 15 to 20% of the firm's activities.

Firm D is a Malagasy firm created in 2001 and provides ICT services (webmarketing and call centers) to local firms only. Its customers are mainly large Malagasy firms as firm D is a renowned firm in Madagascar. Firm D employs 68 people.

The entry points into firms A, B and C were the firms' managers. It really helped to organize the interviews. The managers agreed to let me interview anyone I wanted. This really made the task easier because I spent less time convincing the workers to take part in the interviews. In fact, the managers of these firms agreed to cooperate because they were also interested to know about the findings because of the lack of information about their sector. I am aware that this may have affected the responses from the respondents and that is also why I preferred to be alone with the workers when interviewing them, to ensure them about the confidentiality of their responses.

As for firm D, things were more complicate: my entry point was an employee who introduced me to some of her colleagues who agreed to participate and interviewing the firm manager became a problem but the solution will be explained later.

Population sampling

Stratified purposeful sampling based on the skill level of the occupation and on the sex of the interviewee was used. Two groups of population were interviewed: the firms' managers and the workers. Different groups of people were interviewed in order to have different perspectives on the labour conditions of every firm and to triangulate everything afterwards.

- The firm's managers

The first group of interviewees were the firms' managers. They belong to the group 1120 of the ISCO classification (ISCO-08). The current managers of firms A, B and C were interviewed. The firm's managers interview were initially planned to take place before the workers but for firms A and C it was not possible because of a problem of schedule. For firm A, there were two firm managers: one man and one woman. They were interviewed simultaneously. As for firm D, the entry point was a worker who was not convinced her managers would appreciate the research topic. So it was decided not to contact her current manager and to interview a former manager of the firm who left a year ago instead.

The focus of the interviews was the conditions of employment. These interviews enabled me to introduce myself to the managers and to explain my intentions. They helped me as much as they could as luckily for me they were also interested in the findings. The managers from firms A, C and D really tried to reply to the questions. Firm B's manager also participated even though the answers were not very satisfying. Most of the time, he tried to avoid replying to the questions but he still allowed his employees to participate, did not interfere and respected the confidentiality of the responses.

The interviews with the managers of firms A, B and C took place within the firm during working hours.

- The group of workers

The second group of interviewees consisted of workers: 6 workers from firms A, B and C. For firm D only five workers could be interviewed. Workers were interviewed because they are the first concerned with the situation, they know better than anyone what their labour conditions are. The respondents were all involved in the firms' predominant ICT activities.

The focus of the interviews was labour conditions, especially conditions of work. For firms A and C, the interviews took place outside the working place and not during working hours. Their managers allowed them to start later or leave the office earlier to participate in the interviews. For firm B, the workers were not allowed to leave early or come later so the

interviews were conducted during working hours but in a private room inside the firm. The workers form firm C were all interviewed outside their office, not during working hours.

Stratified purposive sampling based on the sex and the skill level of the worker's occupation was used. These two criteria were chosen for the sampling of the population in order to analyze the potential influence of gender and the skill level of an occupation on labour conditions as seen earlier in the literature review.

Out of these six workers male and female occupying high or medium or low skilled positions were interviewed.

The concept of skill is a debated issue. Some see it as an objective element which is an "acquired capability, property" (Sturdy et al., 1992) and some see the concept of skill as a subjective fact. Authors even claim it is an ideological category based on sex or power (Phillips and Taylor, 1980). This paper conceptualized "skill" as an objective fact and used the ISCO classification of occupations to determine to which skill level the interviewed workers belonged to. The high skilled workers belonged to the group 2513 of the ISCO classification, the medium skilled were in the group 2434 of the ISCO classification and the low skilled workers belonged to the group 3511 (ISCO-08).

The table below summarizes the characteristics of the population interviewed from each firm.

Table 4: Population sampling

Firm A	Firm B	Firm C	Firm D
6 workers interviewed	6 workers interviewed	6 workers interviewed	5 workers interviewed
Four medium skilled workers: one man and three woman	Five low skilled workers: two men and three women	Three medium skilled workers: one man and two women	Two low skilled workers: two women
Two high skilled workers: one man and one woman	One team responsible: one woman	Three high skilled workers: two men and one women	Three medium skilled workers: one man and two women

Convincing the workers from firms A and C was not really difficult. Their managers had told them about the research and ensured they would not interfere with the results. In firm B, the manager also agreed to let everyone participate not to interfere with the results, but the workers remained reluctant t. A lot of them asked several times if their manager really agreed to it and three of them initially agreed and then refused to do it. Compared to firms A and C,

convincing the workers from firm B was much more difficult. As for the workers from firm D, I also had to spend a lot of time to find workers willing to cooperate. This was made difficult by the fact that I had to contact and meet individually the colleagues of my entry point and convince them first; and then only I could schedule a meeting for the interview that outside their office and not during their working hours.

Chapter IV: Data analysis

This chapter presents the data collected from the fieldwork and the labour conditions in the four firms presented in the previous chapter. Based on these findings, we will try to determine the potential link between labour conditions and insertion in value chain, the firms' skill intensity, the skill level of the occupations and gender.

Employment gains

The literature review presented earlier showed that insertion in value chains can offer benefits for employment (Dossani, 2005; Minten et al., 2005). The fieldwork in Madagascar confirms this general statement. Malagasy firms operating in value chains were created to respond to the demand of foreign firms willing to outsource their ICT activities in cheaper areas. Thanks to the creation of new ICT offshored firms, new jobs were created. For instance in 2005, 5000 jobs were created in Antananarivo because new ICT firms were created[5]. Because of that, some of the interviewees really appreciated working in value chains. Their arguments followed Dossani's (2005) positive point of view concerning insertion in value chains. One interviewee (A5) explained insertion in value chains was very positive, because it was the only way for Malagasy firms to have activities and consequently create jobs. He argued the Malagasy market is not interesting so Malagasy firms have to cooperate in value chains. That person (A5) argued the future of ICT activities and the employment associated with it in Madagascar are only possible through value chains. A question still remains though about the creation of new ICT firms: why do the foreign firms willing to outsources their activities create new frims and do not cooperate with existing ICT firms?

As for the nature of the employments gained, one can see through the firm sampling there are different categories of jobs according to different skill levels. The fieldwork was carried out in two inserted firms. One could find activities for high skilled workers (webdevelopment), for medium skilled workers (webmarketing) and low skilled workers (data entry, call centres). Firms inserted in value chains can offer a diversity of activities, have the potential to respond to the needs of workers willing to join them. The high skilled jobs offered are new because we saw earlier for the moment, the majority of jobs available in Madagascar does not require a high skill level (Stifel et al, 2007). Now we have those newly created ICT firms which have the potential to respond to the needs of high skilled workers who suffer the most of open unemployment (Stifel et al., 2007). But this variety is not specific to inserted firms only because in firms C and D (non inserted firms), one could also find a variety of positions according to different skill levels thus in itself the output of the inserted firms is not specific and also concerns non inserted firms.

However, if we look at the sample of interviewees, these employment gains still seem to be limited to a very small proportion of the population. All of the workers in both group of firms come from the city. When one knows Madagascar is still an agrarian country (Minten et al., 2005) with more than 80% of its population living in rural areas, one realizes these new jobs only

[5] Offshore Développement, n.d.

concern 20% of the whole population. Contrary to the workers form the textile industry who in majority are from rural areas (Nicita and Razzaz, 2003), those in the ICT sector are from urban areas, they all studied in the city. Plus, they all went to school, all of them at least graduated from high school. This is a real small proportion of the population because in the region of Antananarivo, the average years spent in education is 4.5 years (Nicita and Razzaz, 2003) and in Madagascar 30% of the workers had access to primary education and 15% attended secondary education (Stifel et al., 2007). On top of that, contrary to the workers in non inserted firms, those in inserted firms have to speak French because their managers are French people who do not speak Malagasy. This problem of language is a major difference between inserted and non inserted firms and represents a barrier for the large majority of Malagasy workers who do not speak French. These characteristics suggest these employment gains from insertion in value chain do not concern everyone. The potential advantages are still limited to a very small proportion of the population. This suggests the ICT sector in itself cannot currently contribute to the general poverty reduction of Malagasy workers. The employments created do not have the potential to address significantly the problem of the Malagasy labour market.

If we analyze the gender aspect of the question, new ICT firms in Madagascar generated employment for both men and women. But in the four firms, female employees do not seem to gain as much as had expected those who thought of the ICT sector as a gender neutral industry (Varma and Sasikumar, 2004). The gender perspective of the value chains literature is also valid here (Dolan, 2004).

Gender segregation is still visible, especially vertical segregation. The table below summarizes the share of women in different positions in the four firms. It shows a concentration of women in medium or low skilled positions and their quasi absence in high skilled positions where men are more present. It still illustrates the division of labour based on the sex of workers (Phillips and Taylor, 1980).

Table 5: Share of women at different skills level for each firm

Firm A	Firm B	Firm C	Firm D
In **high skilled** positions: 22%	**Team managers**: 33%	In **high skilled** positions: 7%	In **medium skilled** positions: 67%
In **medium skilled** positions: 82%	Large majority of workers (**low skilled** positions): 80%[6]	In **medium skilled** positions: 66%	In **low skilled** positions: 84%

[6] According to workers'and author's estimations

For instance in firm C, there is only one woman occupying high skilled positions (engineer, webdeveloper) for fourteen men. In the medium skilled positions (redactors) there are three men for nine women. The gender balance of firm A (inserted in value chains) is the same. There are two men in medium skilled positions (webmarketing) and eleven women whereas two women work as webdevelopers for nine men. As for firm B, the exact figures were not available but according to the employees (B2, B3,B5) and the manager (B7) the large majority of its employees are women. In firm D, the employees (D1,D3,D4,D5) claimed there was no segregation in their firm : men and women had equal chances to become team or department manager. But more detailed analysis of the firm's structure revealed women only manage administrative departments (auditing, human resources...). The technical (related to ICT) and strategic positions are held by men. Based on these findings, one may still reasonably argue women are still concentrated in low or medium skilled positions (Gurumurthy, 2004; Hafkin and Taggert, 2007; Howcroft and Richardson, 2007) and their share in high skilled positions remains very low (Nathan and Kalpana, 2007).

The reasons given for this situation are diverse. The first reason given by one of the managers of firm A (A8) is the few female applications for high skilled positions (webdeveloper). The second reason is the manager's own preference. A8 explained he did not like to have too many woman in this position because it is a very demanding job in terms of time and energy. He thinks women are not as available as men because of their household duties. Here again we find household duties as one of the reasons explaining the low share of women in high skilled positions mentioned in the literature (Nathan and Kalpana, 2007). He (A8) also added it was a way to "protect" women from the male engineers: they are very machos, they keep mocking their female colleagues. The contradiction here is A8 pretends to protect the female employees, but at the same time his action consists of not giving jobs to women and that is hardly any form of protection.

His argument dealing with the male colleagues mocking their female colleagues was confirmed by a male web developer (A5): he thinks his position is very intellectual and women do not have the capacity to capture and understand everything. A female engineer (A3)explained it was hard for her to fit in but she tried to ignore those remarks and she also felt secured because one of the firm's managers is female. In firm C, a female engineer (C2) explained it was difficult for her because she gets remarks that her male colleagues do not get from their managers like "don't forget to tell us when you will get married". C2 revealed that kind of questions raises doubts in her mind.

As for the concentration of women in low skilled positions, the reason given by the manager of firm B (B7) is his preference to have women because of their docility and less argumentative characters. That is why he prefers to employ female workers. The value chain literature (Barrientos, 2001; Dolan, 2004) using gender perspective appears to be helpful to understand the situation. It seems value chains here again rely on female workers and the flexible form of employment that comes with it. The activity performed by firm B are not skill intensive; leading firms to be much more competitive between them (both at local and global levels) and to try to decrease their labour costs as much as possible. But then when we look at the situation of firm D, it appears the situation is not typical to inserted firms, non inserted firms behave the same way: firm D also is composed in majority of female workers. The reason for this situation given by D6 is the large majority of female applications leading us to refer to Phillips' and Taylor's arguments (1980) to understand the situation.

Employment security

Concerning employment security, both inserted firms have hardly dismissed any of their employees since their existence. Firm B's manager explained he had hardly dismissed any of his employees despite a high turnover rate in the firm. The managers of firms A and C also explained they do not like to dismiss their employees. On the contrary, in firm D, two interviewees (D1, D2) claimed three cases of dismissal are questionable because these dismissed people were all trade unionists who according to the Malagasy labour law are supposed to benefit from legal protection. If we just rely on these findings one could say inserted firms seem to offer employment security.

However, one employee in firm B (B4) explained the manager's strategy is not to dismiss people but to "encourage" his employees to resign by making a lot of remarks. This leads to an increased hostility and pressure in the firm. We cannot draw immediate conclusions from these findings: the question of employment security does not appear to be related to the insertion of the firm in value chains or not. The data collected do not indicate that gender or skills play any role either. It seems, here, it is the style of the management, the manager's personality that matter more.

As for the types of employment contracts offered, the inserted firms show two possibilities: in one case (firm A) the employment contract is clear, the employees have written employment contracts, they perfectly know their employment conditions. In the other case (firm B), the employees do not have any written contracts, they only have verbal agreements. When asked, the workers (B1, B2, B3, B5, B6) could not answer with certitude what type of contract they had (indefinite or fixed term). This lack of knowledge concerning their real status or conditions is a real element of vulnerability as it reduces the possibility of contestation from the employee. But the lack of written legal proof also reduces the possibility of legal action from the employees as the Malagasy law requires a written contract (art. 6 Code du travail). One way to explain this difference seems to be the firm's skill intensity and the literature on knowledge intensive firms (Robertson and Swan, 2003) because firm A is a skill intensive firm whereas firm B is not.

But then, with the findings from firms C and D, the previous explanation is not sufficient anymore. In firm C, workers only have oral employment contracts whereas in firm D they all have written contracts. Thus absence of written contract is not specific to value chains or related to skill intensity only. Gender does not seem to play any role either because it is not only men or women who get written employment contracts. It is not also the date of existence because firm B is a relatively old firm compared to firms A and C so probably the management style may explain this situation.

The only difference that can be explained by insertion in value chains is firm B's use of freelance employees. This is an element of vulnerability of the workers because they cannot really plan their income every month, they do not have access to the advantages offered by the firm (health insurance). It is a form of flexible form of contract. They only earn piece-rate wages depending only on the amount of tasks performed. This may confirm some of the empirical

findings stating that insertion in value chains force firms to use more often casual employment (Nadvi, 2004; Nathan and Kalpana, 2007) and to rely on insecure forms of employment (Dolan, 2004) because of fierce competition between firms.

But this last point is the only sign confirming this point of view. We have just seen insertion in value chains alone cannot explain the absence of written employment contract. We need to add the firm's skill intensity factor to explain the situation because firm A does not offer freelance contracts. This could confirm the first hypothesis developed (Knorringa and Pegler, 2006) stating labour conditions in value chains should improve when the activities require a high skill level. Here we see that casual form of employment can only be found in a low skill intensive inserted firm.

Conditions of employment

Different points will be analyzed here: first the wages, then the working hours, then the access to some form of social protection, access to training and we will conclude with labour representation.

Wages and other benefits

Wage gain (or wage loss) from insertion in value chains seems to depend on the skill level of the activity which becomes an intervening variables. The wages of webdevelopers are higher in non inserted firms (700 000 Ariary/month: 371 $) than in inserted ones (600 000 Ariary/month: 318 $). But for low skilled and medium skilled activities the wages in inserted firms are higher. For instance, a redactor in a value chains earns 400 000 Ariary/month (212$) whereas the same workers earns 250 000 Ariary/month (132$) and his team manager earns 350 000 Ariary/month (186$).

Table 6: Wage levels for each type of firms at different skill levels in Ariary

	Firm A	Firm B	Firm C	Firm D
High skilled workers	600 000	-	700 000	-
Medium skilled workers	400 000	-	250 000	260 000
Low skilled workers	-	175 000	-	150 000

Compared to the wages in other sectors, these wages are relatively high. For instance in production an unskilled worker earns 36$ and here the same worker earns at least 80$. It indicates the ICT sector in itself offers wage gains to its employees.

As for financial bonuses, all employees from the two groups are normally entitled to have access to them. In the non inserted firms (firms C and D), employees get their bonuses if the activity of the firm has increased, their bonus is not related to their individual performance. In

the two inserted firms (firms A and B) however the granting of bonuses is related to the performance of each employee. It means that contrary to non inserted firms, firms inserted in value chains do not automatically give bonuses to their employee. It adds pressure on the employees and here again we come back to the management style in value chains where, despite employment gains workers in value chains have to work under more pressure and supervision (Knorringa and Pegler, 2006; Selwyn, 2007).

Other forms of benefits are also accessible to the employees. Based on the collected information, non inserted firms tend to grant more benefits to their employees: firm D for example pays the internet access at home for some its high and medium skilled workers. Firm C pays for the transportation fees of its employees when they have to work overtime, gives free lunch to all of its employees everyday (this benefit is really appreciated by the interviewed workers). Firms A and B do not offer such advantages even though firm B also pays for the transportation fees of its employees and provides a mean of transportation for its night workers, but this last measure is a legal requirement (art. 84 Code du travail). The major advantage offered by firm A is a gender measure that is really appreciated by its female employees: after their maternity leave, they are allowed to work shorter hours if they breast feed their child. No other firm in the sample offers this advantage. Its introduction was due to the female firm manager who really insisted on it: the sex of the manager seems to have an influence on the implementation of gender aware regulations within a firm and this has nothing to do with insertion or not.

One may conclude, in terms of benefits, non inserted firms seem to offer more benefits to their employees. But non inserted firms also have benefits which are really appreciated by the workers so the style of management, or the sex of the manager may also have to be taken into account to explain the labour conditions.

Working hours

In the non inserted firms, workers have to work eight hours a day (from 8 am to 18 pm) from Monday to Friday with two hour lunch break. They do not have to work on public holidays. The same rules applies to the workers in firm A but in firm B the situation is totally different. Workers work also 8 hours a day but some start at 6 am, others at 13 pm and others have to work at night. Night workers were only found in that inserted firm. This finding could bring a nuance to previous findings concerning the working hours in the sector that stated that night work was necessary to accommodate different time zones (Howcroft and Richardson, 2007; Varma and Sasikumar, 2004); this statement does not distinguish between the type of firms or ICT activities. With the distinction brought by the firm sampling, we get here a more precise characteristic of the type of ICT firms in which one can find night work. Plus here the geographical dispersion of the value chains does not create a very important time lag between the buyers and the service providers and does not force workers to work at night.

In firm B, workers have to work six days a week, even during the week end. Contrary to the labour law (art. 81 Code du travail) they have to work on public holidays as well. Workers can only take breaks during a certain period of time (30 minutes per day). In the other firms there are no such rules. In non inserted firms, the employees can take breaks anytime they want and leave the building. Firm A also enables its employees to take as many breaks as they want, however

their managers confessed they do not really appreciate their employees leave the building during working hours even though they are not sanctioned. The case of firm B confirms previous findings describing that workers in value chains have to work longer (Knorringa and Pegler, 2006) but the case of firm A does not confirm it. The reason for this difference between firms A and B may once again be explained by the firm's skill intensity and this would also confirm the first hypothesis developed by authors linking high skill level and improved labour conditions in value chains (Knorringa and Pegler, 2006).

The workers from firms C and D explained they had time to have a social life whereas in firms A and B, only some of them really talked about having a social life. Some of them (from firm B) even added they had to combine different jobs so they had no time for that. This would be in line with the statement that insertion in value chains is associated with more pressure and intensified working pace (Barrientos et al., 2003; Knorringa and Pegler, 2006).

Apparently, insertion in value chains plays a role on the intensity of the working hours. But in itself it cannot explain the difference between firms A and B where the working hours and days are much more intense. The firm's skill intensity then should explain this difference and reinforce this intensity in value chains.

Gender also appears to play a role, because when asked about social life, the female employees in majority were the ones who replied not having that possibility because they also have their household duties. Thus insertion in value chains, the firm's skill intensity and gender tend to play a very important role on this point.

Social security

All four firms give access to a form of social security to their employees: a medical insurance which is more protective than what the Malagasy labour law prescribes. This medical insurance is a real gain for labour because this kind of insurance does not concern informal workers at all (Glick and Roubaud, 2006) and compared to the system proposed by the legal system which grants employees a medical service of poor quality, the health insurance proposed by the four firms is much better.

The data collected suggest non inserted firms (firms C and D) offer the best option for their medical insurance. In firm C for instance, the employees only have to pay 20% of their medical fees and have access to good hospitals. In firm D, there is no agreement with any doctor or hospital but the employees only have to pay 25% of their medical fees.

Compared with the inserted firms these conditions are very attractive. Firm A has an agreement with a medical centre: the employees have to pay 50% of their medical fees. Firm B also has an agreement with a medical centre but even the firm manager confessed the quality of the care provided there is very bad and the employees confirmed this point of view.

The findings here contradicts Selwyn's findings (2007) who suggested that insertion in benefits leads to improvement in workers' welfare because here we see the workers in non inserted firms fare better in terms in terms of health insurance.

None of them gives access to any form of retirement pension. This lack of measure regarding retirement pensions is one of the disadvantage of workers in the private sector compared to the public sector.

Access to training

Access to training does not seem very common in the ICT sector. This is surprising because in the formal sector half of the workers is supposed to have been trained (Milberg and Amengual, 2008). Here only one firm offers access to training to its employees: a skill intensive and non inserted firm (firm C). The employees of the firm who got access to training were the high skilled workers and after completion of their training they are bound to stay within the firm for at least two years. Thus here skills seems to play a role: the skill level of the occupation seems to be a determinant factor because only a category of workers has access to it confirming the literature dealing with better labour conditions and high skilled workers.

As for the inserted firms, none of them offers training to its employees for the moment. One of the managers of firm A said they were thinking about it but they and are planning it for the future. The situation for the time being suggests that inserted firms do try to reduce their expenses on in house training (Nathan and Kalpana, 2007).

Labour representation

In terms of labour representation, workers from only one firm (firm A) said they (A1, A2, A3, A6) had effective representation. These workers were those in a skill intensive and inserted firm. In firm B and C there was no representation at all. As for firm D, workers are represented by a trade union seen as inefficient by the employees. In fact, in firm D trade unionists have been fired despite a legal protection. From these findings one may reasonably argue that for the moment only firms inserted in value chains may offer effective labour representation. However the absence of labour representation is not specific to the ICT sector because in Antananarivo only a very small portion of wage workers are unionised and workers do not seem to be receptive to trade unions' actions (Glick and Roubaud, 2006). This situation does not make firms B, C and D particular, on the contrary, the presence of labour representation in firm A is innovative.

The presence of a labour representation in firm A may confirm the third hypothesis developed by authors linking improved labour conditions in value chains and effective trade unions (Knorringa and Pegler, 2006) because at a general level one may say the labour conditions in firm A are relatively correct (see previous findings for more details). But this conclusion is not as strong as it could be because there does not seem to be any link between the relatively correct labour conditions in firm A and the presence of worker's representation. This form of representation was settled only in May 2008. It is a very recent institution in the firm so it is unlikely to be the reason for the labour conditions in firm A, it as rather a manifestation than a cause.

The conclusion here is, apart from labour representation, the conditions of employment are generally better in non inserted firms. This tendency is not about to change soon as according to

the managers of firm A inserted firms are under constant pressure from their customers to cut their prices so it is hard for them to offer attractive labour conditions and remain competitive. On top of that, the use of CSR does not really seem to have any effect. The manager of firm B explained his firm is part of an ethical organization but the problem is the customers abroad do not care at all about labour conditions so inserted firms can still do anything they want because nobody asks them for anything. Ethical sourcing was supposed to guarantee improved labour conditions in value chains (Knorringa and Pegler, 2006) and here we see the use of CSR does not contribute to any improvements. The data here then contradict the hypotheses developed by authors.

Quality of the working environment

In terms of working conditions, the findings do not enable to say whether inserted firms can or cannot offer decent working environment. One has two possibilities. In firm A, the working environment was very attractive. The office is a large and clean house. It was the cleanest firm of the four firms. The workers had access to a kitchen and a large garden for their breaks and for lunch. The working tools were also comfortable to use (computers, seats...). On the other hand, in firm B the working tools (seats and computers) were old and not comfortable to use: the employees complained more about eye or back problems than in the other firms. This difference between firm A and B here again may be explained by the skill intensity. Insertion in itself does not seem to explain the different conditions in firms A and B.

As for firms C and D, they also had comfortable tools to use and really showed concern for health and safety rules: working on PCs can be very exhausting for the eyes; both firms have decided to give laptops to their employees because laptops are more convenient for the eyes. Firm C has specific rules for safety. Thus in terms of health and safety regulations, one may conclude workers in non inserted firms fare better. This partly contradicts Selwyn's findings (2007) who argued that insertion in value chains contributed to the workers' welfare improvement because the non inserted firms show more concern and also because only one certain type of inserted firms (skill intensive firm) can effectively contribute to the improvement of workers' welfare (refer to the findings related to firm A presented earlier). It is mainly the low skill intensive and inserted firm (firm B) that does not show real interest in the welfare of its workers. Here again we see the first hypothesis (Knorringa and Pegler, 2006) linking high skill level and improved labour conditions in value chains being confirmed.

Atmosphere within the firms

This point is where the distinction between inserted firms and non inserted firms is really obvious.

In inserted firms (firms A and B), workers work in silent. They hardly talk to each other and one of the firm manager (A8) confirmed he puts pressure on his workers on purpose. On the other hand, in both non inserted firms, workers talked to each other, they were joking loudly,

they seemed more relaxed and the interviews confirmed it. In firm B, the discipline is even stronger: the workers are not allowed to talk in Malagasy, if they do so their bonus is reduced, they are under constant camera surveillance. Apparently, the literature dealing with the management style in value chains where workers are under more supervision and pressure (Knorringa and Pegler, 2006; Selwyn, 2007) is verified here.

In value chains, this supervision seems to be reinforced in low skill intensive firms and this would confirm again the first hypothesis (Knorringa and Pegler, 2006) linking a high skill level and improved labour conditions in value chains . In firm B, the discipline is very strict compared to all three other firms and the employees (B3, B4, B5, B6) complained about this strict discipline. They are not allowed to leave the building during working hours, they are not allowed to speak in Malagasy language inside the building otherwise their wages decrease. This form of restraints is a strong form of labour control.

Relationships with the managers

The relationships with the managers are also very different between the two groups. In the non inserted firms (firms C and D), two employees (C1, C3) explained they felt close to their managers, they considered their managers as their friend. An employee of firm D (D1) explained she had the impression her manager really tried to be her friend and she found it amusing. She and her colleague (D1) explained because of that, the atmosphere at the workplace is not stressful at all even though they (D1, D2) do not think this is the right behaviour from a manager. In firm C, the firm manager (C7) said he often goes out with some of his employees. It may confirm previous empirical findings (Knorringa and Pegler, 2006) describing workers in value chains as people working under pressure because in the two inserted firms the relationships between managers and employees are less relaxed, they can be either just professional or even conflictual.

However these relationships with the managers in the non inserted firms are not the same for everyone. Only high skilled workers said they felt close to their managers. When firm C's manager (C7) said he went out with some of his employees, he added that it was only with the engineers (the high skilled workers). He (C7) did not express the same interest for his medium skilled workers: "they are low skilled workers, I cannot be too close to these kind of employees, otherwise I may lose my authority, they may take advantage of the situation". This difference leads to a difference in the employees' treatment in firm C. The high skilled workers (predominantly male) do not have to follow strictly the rules of the firm. For instance, if an engineer wants a day off, he just has to warn the manager without following a strict procedure. But if a medium skilled worker wants a day off, he needs to follow a strict process, the employee is not guaranteed the request will be accepted. High skilled workers can start their day a bit late, it is not a problem but medium skilled workers have to clock in and out and are supposed to work under camera surveillance even if the manager (C7) admitted he had never checked on the camera. This could suggest only high skilled workers in non inserted firms are the ones who really seem to have good relationships with their managers; so one cannot generalize the statement according to which relationships between workers and employees are more relaxed in non inserted firms.

But apart from the skill level of the occupation, another factor, gender, seems to be an important element affecting the relationships with the managers. Firm C's manager does not have the same relationships with his male and female employees. He feels close to the male high skilled workers and has more relaxed relationships with the male employees. On the contrary, he (C7) does not feel that way for the female workers, especially the medium skilled workers: "they are women (...) I have to be strict with them and impose discipline otherwise they will not respect me". These kind of statements contradicts the point of view of optimists presented earlier who expected the ICT sector as a less discriminatory environment (Varma and Sasikumar, 2004; Howcroft and Richardson, 2007). But it confirms that gender and the skill level of an occupation play an important role in the relationships with the managers in non inserted firms.

In the inserted firms (A and B), the relationships with the managers are different: in firm A they remain very professional but the employees did not complain about it. In firm B they are conflictual. In firm B, all four female employees said they found their firm manager too severe: "Mr. X is very severe and very strict... he often quarrels with the employees" said an employee (B4). The case of firm B seems to be in line with the arguments developed by the pessimists on insertion in value chains (Knorringa and Pegler, 2006; Nathan and Kalpana, 2007; Selwyn, 2007), but it only concerns one firm so the statement needs to be nuanced because the firm's skill intensity seems to explain the difference between firms A and B.

A point worth mentioning is firm B's manager did not say his relationships with his employees were under tension but said there were often misunderstandings because of cultural differences. This argument could explain why the relationships are different between inserted and non inserted firms (inserted firms are managed by French people) but when we analyze firm A's situation there were no reports of conflicts or tension between the French managers and their employees so the argument cannot be used here.

In firm B, apparently another determinant element is gender. Only female interviewees really complained about the manager and their relationships with him. The male interviewees did not. The female employees had the impression they were discriminated against because of their sex: "Mr. X does not like women: it is mainly men who become team manager" (B4), "pregnant women are afraid to tell about their condition because he is not going to like it and will make disrespectful remarks about them" (B5), "he more often yells at me than at my male colleagues, if he has a problem with a male colleague, he still yells at me and not at the male employee who is directly concerned" (B4) "I cannot support Mr X" (B6).

To conclude, it appears relationships with managers are influenced by gender and insertion in value chains. In general in non inserted firms, the relationships seem better, they are under less supervision but this statement has to be nuanced. Insertion cannot explain everything. Skill seems to play a decisive role at two different levels.

First, the influence of the firm's skill intensity between firms seems to be reinforced in value chains. It appears the difference of labour conditions between skill intensive and low skill intensive firms within inserted firms is much more important than in non inserted firms. This

does not only concern the matter of relationships with employees but also the atmosphere within the firm.

Second the skill level of the occupation combined with a gender dimension: skilled workers seem to get along better with their managers especially when they are in skill intensive firms be it in inserted or non inserted firms. On the contrary low skilled workers, particularly female, do not seem to have really good relationships with their male managers, especially in low skill intensive and inserted firms. As for medium skilled workers, it seems their situation is much more comfortable in high skilled inserted firms.

Job satisfaction

No interviewed employee complained about having a very dissatisfying job. It was mainly the medium and low skilled workers who complained about their tasks: they found it repetitive. These complaints came from employees from both groups of firms. In firm B, only women really complained thus it seems other parameters (skill level of the activity and gender) have to be taken into account to really analyze this point.

However, some points are first worth mentioning as well because the workers had different arguments to explain why they think insertion or not in value chains is more favourable for labour. On one hand, two workers (C1,D2) working in the two non inserted firms explained they were proud to work for the local market only and not having to rely on the external market. On the other hand, the interviewed workers in value chains (A2,A3,A6) said that working in value chains permits them to work in a foreign language and to practice other languages (French and German) as well.

However these arguments do not really help us understand the benefits (or not) from insertion on labour and to really understand this aspect of job satisfaction, it seems the gender factor is the most relevant element and affects the way workers feel about their jobs in different ways.

First, gender seems to play a role concerning the question of insertion in value chain and its consequences on the way workers feel about their jobs. A female employee involved in value chains (A4) explained that, as a female employee, working in value chains represent a huge advantage because she can avoid discriminatory attitudes from the customers: "being a woman in a workplace is not always easy and when added to that pressure, you have to face customers who make you feel that you are not competent because of you sex it is worse. At least here I know I will never have to meet the customers so I do not have to worry about it and it really takes off the pressure". This question of gender discrimination when meeting customers was then confirmed by another female interviewee (C2) not involved in value chains. She explained "it is hard to be a woman when you meet a customer. Most of the times, they are men and the large majority of them thinks women are not good enough to be working in ICT, so I have to work harder than my male colleagues to prove that I am as good as them and this is really hard" (C2). Thus in that aspect, insertion in value may represent a form of relief for women because they can avoid enduring discriminatory attitudes from customers. On this point, the findings here seem to

contradict previous findings which were more negative on the consequences of insertion in value chains on female workers who are supposed to face insecurity and inflexibility (Barrientos, 2001; Barrientos et al., 2003; Dolan, 2004; Riisgard, 2008). Here on the contrary, insertion in value chain, and particularly the second element characterizing value chains: geographical dispersion (Gereffi, 1994), "protects" women from direct discriminatory attitudes from the customers which may affect the way workers feel about their job.

Second, gender combined with the skill level of the occupation factor also seems to affect the way workers feel about their job. It varies according to sex and skill.

In high skilled positions, women are the most affected since they are in minority. In terms of wages and bonuses, they earn the same income as their male colleagues, but for their career evolution, they have more difficulties: they think (A3, C2) they do not have the same chances as their male colleagues and their male colleagues who were interviewed also think that their female colleagues do not have that much chance to be promoted. This belief may effectively hinder women's career evolution because they may not ask for a promotion because they think they have no chance. This is a clear confirmation of the previous findings which revealed women in ICT sector had less access to promotion (Arun and Arun, 2002).

In medium skilled positions, the interviewed women seem to be in a better position. In this kind of positions, women are in majority. They still earn the same wages as their male colleagues. Both sex benefit from the same benefits. They seem to have more chances to see their career effectively evolve. In firms A and C, a woman became a team manager. In fact women seem to face less difficulties in these positions. It is the men who suffer from the situation. A male employee (A6) explained at the beginning he was surrounded by women; it was not easy for him, he felt excluded and could hardly bond with anyone. In addition to that, the male high skilled employee of the same firm also made jokes about him being a "woman" as well because he holds a "female position". As result, that man (A6) does not see himself remaining there for a long period.

In low skilled positions, there is a concentration of women but here both men and women are affected by their sex. Women are the first concerned because they are in majority. Literature indicate women in low skilled position do not have very good labour conditions. The interviews with female workers from firm B confirmed it. These workers explained their situation is worse than that of their male colleague because the firm manager does not treat men and women equally. It is mainly men who become team manager: out of six team managers, only two are women and the firm manager more often reprimands them than their male colleagues. Pregnant women are afraid to tell about their condition and the manager often makes disrespectful remarks about his pregnant employees.

But men may also be affected by their sex in low skilled positions. A male employee (B1) performing low skilled job explained at the beginning, his manager did not really like him because he was a man. The manager wanted a woman because he thought women are more fitted for low skilled jobs. Therefore the manager started to be mean with that male employee and made a lot of remarks as well only because he did not have the right sex for the job. On top of that, he also has problems accepting his position: he is ashamed of telling people outside the firm what kind of position he occupies. He is afraid people will laugh at him because of his

"female position" that he considers humiliating. This could confirm the idea that feminization of a position is associated with a decrease of the social status associated with it (Hafkin and Taggart, 2001). This male employee showed difficulties accepting his situation because the social status associated with his position is not supposed to be his, not acceptable for a man because he occupies what the society calls a typical "feminine position". On the contrary, the female interviewees did not express any shame about their position. They seem to have well accepted their condition despite occupying a positions that is seen as "inferior". This acceptance by the female employees illustrates the idea according to which female workers' work is seen as inferior because they "carry out into the workplace their status as subordinate individuals" (Phillips and Taylor, 1980) leading society to classify women's work as unskilled and men's work as skilled.

Chapter V : Conclusion

To conclude, we can say the development of the ICT sector has created employment for different skill levels and substantial income gains for Malagasy workers.

However only a small proportion of the workforce can benefit from these gains (urban and educated workers). In addition to these constraints, Malagasy workers have to solve the language barrier to access inserted firms. In terms of gender, the Malagasy ICT firms do not seem to be gender neutral firms: women are still concentrated in low skilled positions where labour conditions are less attractive.

As for the labour conditions of the four firms, we have identified different factors affecting their labour conditions.

Insertion in value chains mainly affects the atmosphere within firms, the workers' access to a satisfying health insurance and the existence of health and safety rules. As for job satisfaction, workers from inserted and non inserted firms have their own arguments but one important element however is that in terms of discriminatory attitudes by the customers, the geographical dispersion of value chains represents a form of protection for female workers. The data suggest insertion in value chains, despite some "protection" for female workers, does not really help to improve labour conditions and does not to lead to decent work. Compared to those in non inserted firms, workers in value chains have to work under more pressure, do not have access to an interesting health insurance and they do not benefit from specific health and safety rules ore measures. The findings are in line with the pessimists on insertion in value chains (Bair, 2005; Barrientos et al., 2003; Knorringa and Pegler, 2006; Nadvi, 2004; Nathan and Kalpana, 2007).

But only those items are directly affected by insertion in value chains. It seems then the value chain literature still has gaps which need to be filled to obtain a more detailed explanation of the situation. Insertion needs to be combined with other factors to cover the whole situation.

First, the firm's skill intensity and reference to the literature on knowledge intensive firms (Roberston and Swan, 2003) need to be added to the insertion factor to explain some items. Low skill intensity and insertion explain the more intense, longer working hours and less classical working days of one of the firms. It also explains the use of casual forms of employment and the conflictual relationships with the managers. The influence of the firm's low skill intensity is reinforced when we add the insertion factor: it tends to worsen labour conditions and does not contribute to the achievement of decent work.

Second, the skill level of the occupation, as suggested by Knorringa and Pegler (2006), needs to be taken into account in addition to the insertion factor to explain some of the items. High skilled workers not inserted in value chains earn more whereas medium and low skilled workers in inserted firms fare better financially. Plus, only high skilled workers in skill intensive and non inserted firm have had access to training so far. This issue of high skill level and improved labour conditions in value chains is important but so far, the value chain literature does not seem to

have dealt with it. Only hypothesis have been developed. Further research would be very valuable.

Third, gender associated with insertion in value chains also play a role in explaining the concentration of women in low and medium skilled positions and the situation in firm B where female workers have to face flexibility, informal employment relations, bad relationships with the managers, pressure and tension within the workplace.

Apart from insertion alone or its combination with other factors, other elements also play a role in explaining the results.

Gender plays a predominant role to explain the nature of relationships between employees and managers. Men have better relationships with their male managers than women. These relationships tend to worsen with the skill level of the employees: the lower we go in the skill level of the occupation, the worse these relationships are. The tension is at its highest for low skilled female workers in inserted firms.

This combination of gender and skill level of the occupation also affects the way workers feel about their jobs. In high skilled positions, women have more difficulties to really appreciate their positions. They are discriminated against by their colleagues, their managers. They feel more comfortable in medium skilled positions whereas men have more difficulties to fit in. In low skilled positions, where the labour conditions are worse, women seem to be more satisfied with their jobs than men who do not easily accept their positions.

As for labour representation, employment security and benefits offered by the firms, the four initial factors (insertion, skill level of the occupation, the firm's skill intensity and gender) do not really help to understand the situation.

Only one firm offers effective labour representation but given the local context (labour representatives are not really considered by employees), this situation is not surprising. This may indicate that the lack of workers' representation is not linked to the firms but more to the Malagasy situation in itself.

Finally for employment security, the management style or the managers' personality could explain the different situations. The sex of the manager also seems to play a role in the establishment of some benefits or rules which are gender aware.

In terms of policy relevance and implications, we also see here insertion in value chains does not necessarily bring better outcomes for workers, especially for female low skilled workers. But for medium and high skilled workers, insertion in value chains can be interesting in terms of labour conditions, especially if they are engaged in skill intensive firms which offer more guarantees for labour. Thus, the creation of skill intensive inserted firms could be one opportunity to offer better jobs to Malagasy workers. Another alternative is to encourage ICT firms not to just rely on domestic or global markets but to have a combination of both. That

way, low skilled workers could still integrate the ICT sector without the constraints created by value chains.

We can say the hopes triggered by the development of Malagasy ICT firms are relevant. The sector in itself presents advantages (higher wages, different skill level required, new activities). The major challenge remains the issue of labour conditions and if policy makers or employment professionals are still willing to encourage the development of those firms, the issue of labour conditions should be considered more seriously.

As for the use of the value chains framework for the analysis of labour conditions, this paper aimed to contribute to that literature. But we also saw that for the analysis of labour conditions, the value chain framework does not seem to be sufficient and other important parameters need to be added to have a more accurate analysis.

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Appendix 1: Interview with the workers

General presentation

Sex
Age
Education
Professional experience (before current situation)
Origin
Marital status
Family setting (children, breadwinner...)

Position of the worker in the firm

Worker's perspective of the firm history (especially before/after insertion)
Description of current position
Adequacy with educational level
When did he/she start in the firm
Contract type
Reason for joining the firm (interest, financial, personal…)
Other jobs simultaneously

Income

Level of income compared to workers in other firms
Sufficient for their daily life

Benefits

Access to benefits
Types of benefits
Which type of workers has access to benefits

Training

Access to training
Who has access to training

Career evolution

Has the worker experienced a promotion within the firm ? from which position to which position
Has the worker seen any colleague within the firm that has evolved ?
Has the worker the impressin that he/she cane volve in the firm ?

Representation

Can they organize for representation ?
Do they have a trade union ? are they trade union members ?

Autonomy

Relations with managers (conflictual or normal)
Control or autonmy, how?

Can take initiatives? examples

Job satisfaction

Worker's satisfaction with the job
Worker's satisfaction with the salary
Worker's satisfaction with the atmosphere and the managers
Does the worker see him-/herself within the same firm within 3 years why?
In general how long do their colleagues stay within the firm ?

Factors affecting labour conditions

Major factor affecting their labour conditions (skill level, gender, size of the firm, insertion in VC, others)

Appendix 2: Interview with the firms' managers

Introduction/ Bonding

Presentation of the manager

Sex	
Age	
Education background, place of education	
Professional background (from where)	
Function	
Others (nationality, place of origin...)	

Presentation of the firm

History of the firm
Main activity of the firm
Number of employees
Major customers
Description of the VC

- Input/ output
- Geographical dispersion of production
- Governance structure
- Institutional framework

Reason for insertion in VC
Effects of insertion

Detailed presentation of the firm's activities

Occupation	Contract type	Number of workers	Sex of the majority of workers

Conditions of employment

General impression

Are the conditions better than in other firms?

Why?

Have they improved or become worse since your insertion in VC?

Where are the main differences between your firm and others?

Level of turnover?

How long do workers stay within the firm?

According to your experience and opinion why do they leave or why do they stay?

Wages

Level of wages offered for different categories of workers

Positions	Level of wages	Comparison with other firms	Fixed level or negociation with employee

Benefits

Apart from wages, what types of benefits are offered to the employees (financial or non-financial)

Why do you offer benefits

Comparison with other firms/ before after

Categories of workers that benefit from these benefits

Working hours

Working hours of the firm

Are there different working hours? Why?

How do you adapt to the level of activity (flexibility, overtime...)

Workers holidays

Comparison with other firms

Workers'protection

Employment security: rules for dismissal

Work security (health and safety regulations)

For the firms of VC do they have CSR? Which role does it play? Does the lead firm have any control on labour conditions? How? Why?

Social protection

Health insurance

Retirement insurance

Comparison with other firms

Training

Types of training offered

Reason for offering or not training

Comparison with other firms

Conditions for access to training

According to the manager which factors mainly explain labour conditions in their firm

Insertion in value chain or not
The skill intensity
The worker's sex
The firm size
Their educational background
Their origin
Others

Appendix 3: List of interviewees

Interviewee	Characteristics
A1, 09/08/2008	Woman, 26 years old, married and expecting a child Holds a three year degree obtained in Madagascar Joined the firm a year ago Started as a redactor and after six months was promoted to become head of the marketing department, manages 13 people in her team
A2 10/08/2008	Woman, 31 years old, married, her husband lives in France Holds a three year degree obtained in Madagascar Joined the firm 18 months ago Works as a redactor
A3 09/08/2008	Woman, 27 years old, married with one children Holds an engineer diploma obtained in Madagascar Joined the firm two years ago Works as a webdeveloper
A4 09/08/2008	Woman, 23 years old, single lives with her parents Holds a bachelor degree obtained in Madagascar Joined the firm six months ago and works as a redactor
A5 11/08/2008	Man, 30 years old, married Holds an engineer diploma obtained in Madagascar Joined the firm three years ago Works as a webdeveloper
A6 12/08/2008	Man, 29 years old, single, lives on his own Holds a three year degree obtained in Madagascar Joined the firm two years ago Works as a redactor
A7 16/08/2008	Woman, 29 years old, lives with A8 with whom she has a child, French with Malagasy origins Graduated from a business school in France Created the firm with A8 in 2005, own and manages the firm with A7
A8 16/08/2008	Man, 32 years old, lives with A7 with whom he has a child, a Frenchman, settled in Madagascar in 2005 to create the firm with A7 Holds an engineer diploma obtained in France, own

	and manages the firm with A8
B1 24/08/2008	Man, 24 years old, single lives with his parents Holds a two year degree in Madagascar Joined the firm a year ago but does not plan to stay for a very long period of time Works in the call centre department
B2 25/08/2008	Man, 41years old, married with three children Graduated from a Malagasy high school Works in the data entry department Joined the firm three years ago
B3 17/08/2008	Woman, 24 years old, single lives with her parents Holds a two year degree obtained in Madagascar Works in the audio typing department, has a freelance status, started to work for the firm a year ago
B4 14/08/2008	Woman, 44 years old, single mother with three children Graduated from a Malagasy high school Joined the firm six years ago, started in the audio typing department as a simple employee and became team manager five years ago
B5 16/08/2008	Woman, 20 years old, single mother with a child, lives on her own Graduated from a Malagasy high school Joined the firm a year ago Works in the data entry department
B6 16/08/2008	Woman, 27 years old, single lives with her parents Joined the firm six months ago, before was working for another inserted firm Graduated from a Malagasy high school
B7 14/08/2008	Frenchman, 41 years old, is married to a Malagasy woman with whom he has a child Settled in Madagascar in 1997 and created the firm in 2001. Before coming to Madagascar, was in other countries in Africa Owns and manages the firm
C1 12/08/2008	Man, 41 years old, married with two children Is an engineer, studied in Madagascar Joined the firm a year ago Is the manager of the webdevelopment department (technical director)
C2 12/08/2008	Woman, 28 years old, single lives on her own Holds an engineer diploma obtained in Madagascar

	Joined the firm three years ago Creator of websites
C3 13/08/2008	Man, 25 years old, single lives with his parents Holds an engineer diploma obtained in France Joined the firm six months ago Creator of websites
C4 14/08/2008	Man, 29 years old, single lives with his parents High school graduate Joined the firm two years ago Works as a redactor
C5 16/08/2008	Woman, 24 years old, single lives with her parents Holds a two year degree obtained in Madagascar Joined the firm six months ago Redactor
C6 19/08/2008	Woman, 24 years old, single lives with her parents Holds a three year degre obtained in Madagascar Joined the firm ten months ago Started as a redactor and after five months was promoted team manager
C7 22/08/2008	Man, 26 years old, married one child Graduated from a business school in Madagascar Founded the firm in 2005 with another man, is the manager of the firm
D1 13/08/2008	Woman, 27 years old, single, lives with her parents Graduated from high school in Madagascar Has been in the firm for 7 years Works as a redactor
D2 27/08/2008	Woman, 32 years old, married with 2 children Has been in the firm for 4 years Holds a three year degree from the university in Madagascar Works as a redactor
D3 21/08/2008	Man, 26 years old, single, lives with his parents Works in the webmarketing department Holds a three year degree from an private institute in Madagascar Joined the firm a year ago
D4 19/08/2008	Woman, 21 years old, single, lives with her parents Works in the call center department Joined the firm 6 montsh ago

D5 23/08/2008	Woman, 20, single mother of a child, lives with her parents Works in the call center department Joined the firm 8 months ago
D6 30/08/2008	Man, 41 years, married, 3 children Former manager of firm D, left a year ago after 7 years in firm D