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**INTER-FIRM DYNAMICS IN THE  
CONSTRUCTION SECTOR**

by

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## **1.0.0: OVERVIEW OF CONSTRUCTION INDUSTRY**

### **1.1 Introduction**

This paper presents and discusses the findings of the construction sector of the Multi-country Study on Private Enterprise Development in Kenya. The first section provides an overview of the construction industry in Kenya, highlighting its importance in employment and income generation, its nature, institutions supporting the industry and state policies relating to the industry. This is followed by a brief on methodology and section three presenting basic analysis and discussion on firm characteristics and organization covering; firm activities, nature of firms, firm size and age, nature of ownership and founder characteristics, employment and work and a brief on foreign and domestic firms. Section five discusses inter-firm cooperation and competition, including; competition between large and small firms, growth of large and small firms, nature of large and small firm linkages and financial linkages. Section six assesses the relationship between linkages and firm growth and the last section presents conclusions and policy implications.

Construction industry is one sector of any economy that directly responds to the activities and performance of both local and external economy. The term construction covers a wide variety of technologies and practices on different scales. Activities within the sector can be viewed as an industrial process, where raw materials are obtained, transformed, waste produced and finished products disposed (UNEP 1996).

The industry is one of the most dynamic sectors in most economies. The industry responds to rapid population growth by planning and building physical infrastructure, thereby significantly contributing to overall economic output (Edmonds and Miles, 1984). It can affect a country's balance of trade as it contributes to the import bill in its requirement for raw materials, finished materials, components, plant and equipment, consultants fees and contractors services (World Bank, 1984; Pack 1989). The industry has a number of forward and backward linkage effects and

a high level of imported material inputs. In cases where a country has problem of generating foreign exchange, shortages of materials are experienced, raising debate on the impact of the construction industry on the economy, especially in relation to its pressure on foreign exchange. In a survey of import content on construction works in a low income housing in Nairobi (Umoja 11), it was revealed that at least 37 per cent of the project cost demanded foreign exchange for purchasing building materials, equipment and fuel (GTZ 1996).

One-tenth of the global economy is dedicated to constructing and operating homes and offices. The industry consumes one-sixth to one half of the world's wood, minerals, water and energy (UNEP, 1996). In the process, the industry causes environmental damage, including forest destruction, air and water pollution and climate destabilization. Although the sector is known to account for a significant portion of employment, due to the extent of sub-contracting and level of casual employment, the data on employment is often unreliable (Bhalla and Edmonds, 1983).

## **1.2 Construction Industry in Kenyan Economy**

In Kenya, the industry is an important source of employment, income and capital formation. It comprises a number of parties including; construction authorities, contractors, developers, architects, engineers, designers, subcontractors, material suppliers, traders and individuals employed as workers in the various firms. In typical construction work the functions of the above parties are interdependent and the need for proper coordination is crucial. In cases where there is poor communication and coordination, inefficiency and poor performance is likely to occur. For a construction firm to be efficient, it has to provide its output be it facilities, buildings or roads within time, budget and specification.

The industry creates investment opportunity for individuals, firms and government, as well as providing the basic infrastructure such as roads, housing, water and sewerage facilities required for the development of other sectors (GOK, 1994). The sector is largely dominated by males as



reflected in 233,327 males and 28,196 females employed. Among these numbers 161, 360 males and 12,323 females are employed within the rural areas; whereas 71,966 and 15,853 of males and females respectively are employed within the urban areas (GOK, 1995)

Prior to 1972 the sector performed well but between 1973 and 1975 the sector like any other sector, was affected by the oil shock crisis. The Kenyan coffee boom and the increase in export receipts accruing to the agricultural sector during the period of 1976 - 1978 resuscitated the sector. This resulted in increased investment in building and construction activities.

From the mid eighties the sector generally performed well and recorded an annual Gross Domestic Product (GDP) of 4.2% creating additional 18.8% thousand jobs between 1985 and 1989. Real gross fixed capital formation also recorded an annual growth rate of 5% (GOK, 1994). A large portion of this output came from public works due to huge spending on construction of sporting facilities for all African games, grain silos, roads expansion, development of national universities and other educational institutions and the Kiambere Hydro-electric project.

In 1992 performance of the industry was poor and negative 2.7% GDP growth rate was recorded and real fixed capital formation dropped by 14% with construction indices dropping from 52% in 1993 to only 6% in 1994 (Kenya 1995). The poor performance was due to the depressed investment in residential and non-residential buildings. This was partly due to the high cost of construction materials and other inputs, high interest rates, coupled with government financial austerity measures and economic recession in general (GOK, 1994). Overall, this was reflected in lack of adequate funds for public projects as demonstrated by most incomplete public projects (public university and other building projects) which begun during the early eighties.

### 1.3 Nature of the Industry

The construction industry has many players which are differentiated in a number of ways, including financial capacity, origin, and type of work done. The building sub-sector and more so those on the upper echelons have been noted to be mainly either non Kenyans or Kenyans of foreign origin. The Chinese, Japanese and the Nordic country firms dominate the non Kenyan foreign firms; whereas the local firms are polarised into Asian and African owned firms. The latter firms are the majority, they handle small jobs and belong to indigenous Africans (Oludhe, 1990).

The foreign and local Asian firms get contracts of higher value and have adequate capital for undertaking assignments. The Asian firms are mostly large and medium, whereas the African firms are small and operate on very minimal capital. Although the Asians firms are local, they tend to organise their operations around tightly knit cliques, which facilitate and enable business development. In comparison to the African firms, the Asians have better access to finance, supplies and markets.

Financing business which is a key component of the industry seem to be more problematic to African firms as opposed to Asian firms. The Asian firms occasionally access huge amounts of finance outside the official bank system and/or get loans from formal banks at very fair interest rates and remission period. These firms account for about 90 percent of local firms and own almost all materials and supplies firms, including; quarries, cement, steel and paint among others<sup>1</sup>. On the other hand, African firms have to largely rely on personal savings and high interest rates and hardly any remission period. This difference is due to the networks that the Asian firms have developed with relevant individuals and institutions relevant for their business. Most African firms are small time operators who in many cases have to rely on upfront payment and renting of equipment before

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<sup>1</sup> Interview with Mwangi Gichuri, Chairman Joint Building Council and Director

beginning any assignment. A significant number dominate the supply of timber, which does not necessary demand extensive network and financing.

#### 1.4 Institutions in Industry

Like all other organizations, all construction firms have to register with the registrar of societies. In addition they have to register with the Minister of Public Works and Housing. The Ministry has categorised firms into eight categories, A - H. A is composed of large firms whose volume of work is unlimited, whereas H can only take work of below Ksh. 2 million as reflected on the table 1.1

**Table 1.1 Ministry of Public Works Categorization of Firms**

<b>CATEGORY OF FIRMS</b>	<b>VOLUME OF WORK IN KSH.</b>
<b>large scale firms</b>	
A	<i>Unlimited Amount</i>
B	75,000,000 - 100,000,000
<b>Medium Scale Firms</b>	
C	50,000,000 - 75,000,000
D	25,000,000 - 50,000,000
<b>Small Scale Firms</b>	
E	15,000,000 - 25,000,000
F	5,000,000 - 15,000,000
G	2,000,000 - 5,000,000
H	2,000,000 and Below

Source: Compiled from Ministry of Public Works and Housing Records and Interviews

The categorization of firms is based on previous work done, equipment owned, availability of transport, number of qualified personnel, financial capability and professional and past client based references. In assessing financial capability emphasis is placed on bank statements and overdraft authorization and limits. Categorization has an influence on whether one gets a public job or not.

The registration with the ministry is important for firms which are interested in taking up public works and is not necessarily required for undertaking non public work construction assignments. International organizations such as the World Bank have contended that registration with the Ministry should not be a requirement barring firms which are not registered with the ministry. Subsequently, projects funded by the World Bank and other international funders are open to all firms so long as they are registered with the registrar of societies.

Nevertheless, registration with the ministry is a good reference for firms. It provides potential clients with an idea of who is capable of doing required construction work. The survey of the industry shows that it is largely the small firms owned by African entrepreneurs who are not registered with the ministry. Most of them rely on small jobs, especially repair works and sub-contracts. When the going gets rough, some of them get employed as workers by the comparatively larger firms.

If requirement of registration with the ministry is effected, a number of foreign firms may not qualify for government projects. This seems to be the rationale for the foreign organisation's insistence that the requirement be waived. A large percentage of firms who qualify to undertake capital and technical intensive projects such as the Tukwell Hydroelectric project are not local firms. Additionally, tenders for such assignments are open internationally and bidding is often done abroad in the countries which are funding the project. This approach favours foreign firms, largely coming

from the country of funding. Besides the huge capital requirement, the foreign bidding limit the possibility of local firms taking up assignments, since the financial implications of going to bid abroad are beyond their means.

Although firms are national in scope, their operations are largely regional and localised. The local registered indigenous firms have partly been favoured at local district levels. In spite of registration of all construction firms being centralised in Nairobi, firms are required to get recommendation from their districts of operations or regions of their mailing addresses. One reference should be from a client and the other from a consultant.

Operations of firms are not restricted to any part of the country, however there is a district preferential bias of 5% in bidding for projects. In this arrangement local firms, which are almost 99 percent indigenous can be offered a tender even though their bidding may be 5% higher than the next contender. This preferential treatment fall among the three tendering systems applied at the district level; single sourcing, selective tendering (includes 5% rule) and open tendering. The first two favour local firms.

The preferential treatment accorded to firms at the district level, does not solve their problems of finances and equipment, a role that was formally played by the National Construction Corporation (NCC). The corporation was establish after independence to support indigenous construction firms. NCC had all professionals and equipment relevant to the construction industry and was resourceful to indigenous firms which were inadequate in many aspects. The firms lacked capital, equipment, technical knowledge and relevant work experience for most jobs.

The role of NCC was to provide an umbrella for small construction firms and act as a broker for jobs upto 10 million. This entailed guaranteeing material supplies, equipment and provision of mobilisation fee. Firms registered with NCC were given preference similar to the one provided at the district level. The council passed money from client to supplier directly and availed equipment to the firms. This arrangement allowed indigenous firms to tender through NCC who leased equipment at reasonable rates, paid upfront and ensured that they were paid and work was acceptable to the client. This arrangement worked as long as the concerned parties were honest to each other. Over-time dishonesty engulfed the corporation and 'fraud killed NCC'. Its managers colluded with the firms and literally misappropriated funds by giving jobs and relevant support to firms which could not deliver, eventually clearing funds, which even the treasury could not reimburse<sup>2</sup>.

The winding up of NCC between 1985 and 1986 resulted in indigenous firms being left in the hands of the market. The firms can not cope with the economies of scale which the Asian and foreign firms benefit from. For example, it is more profitable for the firms to purchase tonnes of supplies as opposed to few containers as practised by most of them. At the same time, they lack capital and equipment resulting in borrowing and hiring respectively at exorbitant rates. These difficulties are contributing to the death of many small indigenous firms as others continue to operate on the margin, including offering themselves as employees of larger firms.

The Joint Building Council (JBC) is another institution which has been supporting the industry, although it deals with comparatively larger firms. It is an association of building and civil engineering contractors and

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<sup>2</sup> Interview with Mr. Mwangi, Chairman Joint Building Council and director \*.

architects. It was established in 1973 as a response to the oil crisis and was charged with monitoring changes in material, supplies and labour prices.

Due to the oil crisis prices of building materials and supplies had gone beyond reasonable prices taking upto 80% of construction budget. This seriously affected the industry and the government had to rescue the industry from collapse. The government in liaison with the JBC under a cushioning arrangement was to reimburse firms the losses incurred due to the oil crisis. The organization has continued to assist firms with information on sourcing, pricing, lobbying government and partly ensuring that firms fulfil what they are required to do.

The small African firms have had their own association (African Construction Association) which has not been very active, partly due poor performance of its members.

### **1.5 State Policy and Construction Industry**

In discussing the construction sector, consideration has to be given to related aspects such as environment, consumers, labour/employment, land, laws and regulations among others. No state policy papers exist in the area of construction sector as is the case in other sectors. Instead policy directions appear in various government documents. Apart from Engineers Registration Act, Cap 530; Estates Agents Act, Cap 533; Housing Act, Cap 117; Architects and Quantity Surveyor's Act, Cap 525 and valuers Act Cap 532, most other laws that apply to the are not specific to the construction sector.

Thus the construction industry is organised and protected by several restrictive laws and by-laws which cut across several sectors and are hardly applied. These laws and by-laws have been noted to contribute to the disorganisation of the sector, especially the residential and office

building sub-sector. Due to their restrictive nature many developers either totally ignore them or seek for ways of going around them. The outcome of this trend, especially within the residential housing sub-sector has been the mushrooming of informal settlements, developed by individual entrepreneurs and sub-standard housing developed by the private formal entrepreneurs. These entrepreneurs use mainly the small firms which are not registered by any government body and essentially are not legal entities. Further, most of them lack relevant skills and qualification.

The above implies that part of the construction industry is not regulated in any way and largely operates without any rules. This has been demonstrated by many collapsing, poorly constructed and even sinking buildings around the capital city of Kenya, Nairobi. Most of these buildings lack minimum planning requirements on ventilation, lighting, general sanitation, and most of all, structural stability (Ndong 1996). This is dangerous to all the parties concerned including the government, consumers, concerned firms and employees.

Another policy concern in the area is the situation of construction firm workers. Although the building industry is the largest single employer outside agriculture, majority of workers are hired as casual labourers and work under difficult and dangerous conditions with no benefits. According to section 2 of the Employment Act (CAP 226) a 'casual employee' means an individual the terms of whose engagement provide for his payment at the end of each day and who is not engaged for a longer period than twenty four hours at a time.

Being casuals, construction workers are not entitled to: protection of wages, leave, housing, health and welfare; and to join trade unions. This is because in regard to employment, statutes; Employment Act, Cap 226, regulation of wages and conditions of employment Act Cap 229 and Trade Unions Act, Cap 233 do not do not apply to them. Further more, in terms



of workmen's compensation Act (CAP 236), casual labourers are excluded from the definition of a workman (S.2). Consequently, casual labourers are

not entitled to compensation under the Act. Considering the working environment in most building and construction sites, this is a dangerous position in law since people have been known to die at such sites.

The lack of registration of small firms is another policy issue. Since most firms are neither registered with the registrar of societies or the Ministry of public transport, they lack credibility and are not able to get required support. At the same time, they can not bid for government and other formal contracts nor access credit which normally require paper certification. It is possible that firms ignore registration due to their limited capital and operation base. However, this denies them opportunities for support, coordination and networking relevant for improving business.

## 2.0.0 FIRM CHARACTERISTICS AND ORGANISATION

### 2.1.0 Firm Activities

Field data shows that the construction industry consists of a wide range of activities including building contractors, electrical contractors, metal work contractors, hardware wholesalers and hardware retailers. The building contractors subsector (36.4%) is the most dominant in the construction sector. The next important subsector is electrical contractors with 24.6% of the surveyed enterprises. Hardware retailers (15.2%) and metal contractors (15.2%) followed with equal proportions of enterprises. Hardware wholesalers was the least dominant subsector in the construction sector with 1% of the enterprises.

The construction firms in the survey engage in a range of activities (Table 2.2). The main firm activities are: general building and construction, retailing building materials and general hardware shops. Other important activities are general fabrication, general hardware retailing, repair and renovations and nail manufacturing. Grinding crankshafts and key cutting activities in the construction sector are somewhat limited.

Table 2.2: Construction firms main activities

Firm activity	No	%
Selling building materials	10	15.4
General building construction	21	32.3
General Fabrication	8	12.3
Grinding CrankShafts	1	1.5
repairs and renovations	1	3.1
Key cutting	1	1.5
General hardware shops	4	6.2
Nail manufacturing	2	3.1
Electrical Contracts	16	24.6

Firms in the construction sector tend to specialise by engaging in one construction activity. The main construction firms activities are: general building construction, electrical contractors, and retailing of building materials in order of importance. Other important activities are general fabrication and general hardware retailing. Nail manufacturing, grinding crankshafts and key cutting activities in the construction sector are somewhat limited.

### 2.2.0 Nature of the firm

The dominance of indigenous firms in the construction industry is revealed by ownership linkages Table 2.3.

Table 2.3 Ownership Linkages

Ownership Linkages	No.
Firm Subsidiary of another domestic company	3
Firm Subsidiary of foreign firm	1
Firm owns one or more domestic companies	1
Firm owns one or more foreign companies	3
Firm owned by individual/group with other domestic firms	11
Firm owned by individual	2
Firm has other branches	1
Family Firm	1

Foreign firms' subsidiaries in the construction sector are fairly limited. However, three firms reported owning one or more foreign firms. Single firm units were also few in the construction sector. The sector seems to be dominated by firms with several branches and companies. Family firms were also few.

### 2.3.0 Firm Size and Age

The construction sector is dominated by medium (47.1%) and small firms (45.6%). Only 7.4% of the firms are large according to owner's size determination.

Building construction firms metal workers, electrical works were distributed in all the three size categories. Hardware wholesalers were distributed in two size categories of small and medium while hardware retailers were only in the small enterprise size band.

Most of the firms in the small size band of between one and ten workers were metal workers (23.3%). They were followed by building contractors (16.7%). The next largest category was electrical workers and hardware wholesalers followed with equal proportions of firms (13.3%) (table 2.4).

**Table 2.4: Employment Size by Firm Activity**

Size	Building Contractors		Electrical		Metal Workers		Hardware Wholesalers		hardware Retailers	
1 - 10	5	16.7%	4	13.3%	7	23.3%	4	13.3%	10	33.3%
1 - 50	10	45.5%	10	45.5%	1	4.5%	1	4.5%	0	0
51 above	7	70.0%	1	10.0%	2	20.0%	0	0	0	0

Building contractors (45.5%) and Electrical contractors (45.5%) registered the largest proportion of medium sized firms. Metal workers (4.5%) and hardware wholesalers (4.5%) followed with equal proportions of firms. Firms in the building and construction activity registered the largest proportion of firms with 51 or more employees.

Firms in the metal workers category were the next with 20% followed by firms in the electrical contract activity with 10% of the firms. The oldest construction firm was founded in 1947 while the youngest was started in 1996. The mean firm age of the construction firm is 14 years.

#### **2.4.0 Nature of Ownership and founder characteristics**

Most of the firms were sole proprietorship (40.9%); limited companies were 31.8% while partnerships were 24.2%. Foreign firms subsidiaries were only 1.5% of the firms in the construction sector. Other forms of firm ownership were reported by 1.5%. The number of firm owners ranged between one

to five owners. Majority (91.2%) of the current firm owners (92.4%) founded the firms they are operating, 4.5% bought firms while 3.0% inherited firms from parents.

The extent of domestic firm ownership in the construction sector is also revealed by the directors' nationality. No less than 87.7% of the construction firms were owned by directors of Kenyan nationality. The rest 6.2% were owned by directors of British nationality while 4.6% were of Indian nationality. The directors who did not indicate their nationality were 1.5%.

There is a fair representation of Kenyan ethnic groups in the construction industry in comparison to other studies of small enterprises in Kenya (Kinyanjui, 1997; McCormick et al 1994). Samples for these studies showed a dominance of Kikuyu, Asian, Luo and Kamba in the surveyed industries. Table 2.5 shows the distribution of entrepreneurs, by ethnic background.

**Table 2.5 Ethnic Composition of Entrepreneurs**

<b>Ethnic Group</b>	<b>Number</b>	<b>%</b>
Kikuyu	18	27.3
Kamba	1	1.5
Asian	11	16.7
Luhya	1	1.5
Kalenjin	2	3.6
Luo	12	21.4
Taita	1	1.8
Missing	10	
<b>Total</b>	<b>66</b>	<b>100</b>

The four dominant ethnic groups in the construction industry are Kikuyu (32.1%), Luo (21.4%) and Asian (37.5%) ethnic communities. The minority ethnic groups in the construction industry are Kamba, Luhya and Taita ethnic communities. Some 15.2% of the directors did not indicate their ethnicity.

Three quarters of the construction firms' directors had some form of previous experience before joining or founding construction firms. Most of the previous occupations were related to the construction industry and include: Civil engineering, building construction, electrical works, metal and architectural works. Other directors had previous experiences in accounting and management.

Majority of the directors in the construction firms (65.6%) were local residents who had never lived abroad. Only 34.4% of the directors had lived abroad. The directors had lived in both African and non African countries. The non African countries where the directors lived prior to establishing business in Kenya are: Britain, United States of America, India, Pakistan, Japan, and Australia. The few directors who had lived abroad in African countries, were residents in Uganda and Botswana.

Slightly over a third (34.9%) of the firm directors in the construction sector made visits abroad. The visits abroad were either social or business related. The social visits were mainly visits to relatives - holiday and educational visits. Business related visits involved directors visits to other branch firms, initiate of business contacts, purchase supplies and raw materials as well as fixing collaboration deals with firms abroad.

Building contractors reported the largest mean sales 24 million while hardware retailers reported the lowest mean sales of Kshs. 975,142 as reflected on table 2.6.

**Table 2.6: Mean Sales in the Construction by Activity**

<b>Activity</b>	<b>Mean Sales</b>
Building Contractor	24,31,0,714
Electrical Contractor	4,730,768
Metalwork Contractor	16,256,888
Hardware Wholesaler	6,140,000
Hardware Retailers	975,142

The metalwork subsector reported the second largest mean sales of 16 million. Hardware wholesalers reported a mean sale of 6.13 million while electrical, contractors mean sale was 4.7 million. The mean sales for enterprises in the 1-10 size band was 1.6 m. while for medium sized firms was 12.4m. The mean sales for large firms was 62 million as reflected on table 2.7.

**Table 2.7: The distribution of mean sales by firm size**

<b>Size</b>	<b>Mean Sales</b>
1 - 10	1,604,666
11-50	12,476,315
51> and above	62,000,000



### **3.0.0 CAPITAL AND FINANCE IN THE CONSTRUCTION INDUSTRY**

#### **3.1.0 Sources of start-up and present capital.**

Firms in the construction industry obtain start up capital from local and foreign sources. Local sources are however most important. The foreign capital for financing construction was particularly low. Only 4.5% of the construction firms obtained capital from non-local sources. A significant majority of construction firms (93.5%) were started with 100% domestic capital. The rest of the firms were started with 70%, 60%, 51% and 50% of domestic capital.

The domestic sources of start-up capital for firms in the construction sector is rather narrow. In order of importance firms' sources of start-up are: personal savings (83.1%), loan from financial institutions (9.2%) and gift from family (6.2%). Firms drawing capital from other sources are only 3.0%.

Domestic sources of capital played a significant role in supplying construction firms with initial capital. Indeed 95% of firms in the construction sector reported drawing 100% of entail capital from local sources. Three firms reported drawing less than 100% of entail capital from local sources. One firm reported drawing 30%, the second one 60% and the third firm 70%.

The sources for additional capital for construction firms is broader than that of start-ups. Personal savings are, however, unimportant compared to banks when firms are in need of additional capital. Firms in the construction sector derived additional capital from several sources including partners and share holders, family, clan and ethnic institutions, financial institutions and other associated enterprises. Financial institutions

serve as the most important source of additional capital, serving 8.2 of firms in the construction sector. The next ones in importance are non governmental organisations, family, ethnic associations and associated enterprises.

This finding in itself is important, because it tells us that whereas financial institutions are unwilling to undertake the risks of financing start-up, they are more than willing to supply additional capital to firms when needed. Other secondary sources of additional capital to construction firms are Kenya Industrial Estates, business savings and off-shore borrowing. Construction sector firms reported sourcing their present capital from local sources. A large proportion of firms (96.8%) reported drawing a hundred percent of their capital from domestic sources. The rest of the firms drew 30% and 50% of their present capital from local sources. Firms drawing capital from foreign sources were only two. One firm reported drawing 50% of its present capital from foreign sources while the other reported drawing 70% of its present capital from non-local sources.

Interestingly, a large majority of additional capital sources (89.4%) for construction firms are domestic. This tallies with earlier findings on sources of start-up, and current capital and illustrates that in terms of capital base, most of the firms in the construction sector are local, indigenous firms. This is notwithstanding the opening up of the local economy to foreign investment in the recent past.

The construction firms tend to have more dealings with commercial banks than with development financial institutions. Most of the construction firms (39.7%) reported dealings with Kenya Commercial Bank. This was followed by Barclays Bank (33.8%) and National Bank which served 4.4% of the firms. Other banks serving construction firms were: Reliance, NIC,

Biashara (K) Ltd., Baroda, Mashreq, Giro, Habib Bank, Post Bank, Ambank, Commercial Bank of Africa, African Banking Group, Credit Bank and Bank of India. Very few firms in the construction sector had dealings with building societies.

The services offered by these banks to construction firms are current and savings accounts and overdraft facilities. Very few banks offered business advisory services to firms in the construction sector. The development banks serving construction firms are: Diamond Trust, Kenya Industrial Estate, Credit and Commerce and Investment and Mortgage.

## 4.0.0 EMPLOYMENT AND WORK IN THE CONSTRUCTION SECTOR

### 4.1 Employment characteristics

The mean numbers of employees in the construction industries is 83.7 workers. The metal subsector in the construction industry followed by building contractors with 78, electrical contractor electrical contractor 21, Hardware wholesalers 11.

Foreign firms reported a higher mean employment of 628 than local and domestic firms with a mean employment of 25 workers.

The mean numbers of male employees in the construction industry is 74 while that of female employees is 7 workers as reflected on table 4.8.

The metal subsector in the construction industry reported the largest mean of female 37 and male employees. The smallest mean number of female employees in the construction sector was in hardware retailing.

**Table 4.8: Distribution of Male and Female Employees in the Construction Industry Subsectors.**

Industry Subsectors	Mean Male	Mean Female	Total Employment
Building Contractors	74	3	78
Electrical	19	1	21
Metal	266	37	304
Hardware Wholesalers	10	1	11
Hardware Retailers	3	0.7	4

Skill possession is an important consideration for employees in the construction sector.

A fairly large proportion of the construction firms (95.5%) stated that they considered skills while hiring workers'(Table 4.9).

**Table 4.9: Recruitment Considerations**

Recruitment Considerations	No.	%
Ability to communicate	3	4.8
Good Salesmanship	6	9.5
Basic Education	1	1.6
Computer Knowledge	1	1.6
Administration Skills	1	1.6
Building and Masonry Skills	13	20.6
Carpentry and Joinery	1	1.6
Electrical Wiring	16	23.8
Welding of Sheet Metal	5	7.9
Mechanical Engineering	3	4.8
Structural Engineering	1	1.6
Civil Engineering	3	4.8
No Special Skills required	10	15.8
Missing	3	
Total	6	100

The basic skills required by construction firms range from ability to communicate with clients to structural engineering skills. Electrical wiring was the most frequently cited skill required by employers in the construction sector. It is followed by building and masonry. Good salesmanship and sheet metal welding were the next in importance. Advanced skills in civil, and mechanical engineering were also in demand in the construction industry.

Workers in the construction industry were trained in both formal educational institutions and non formal organisations. The formal organisations where workers received training included colleges, schools, and institutes of training and technology. On job training or apprenticeships were the main non formal organisations involved in workers training. Interestingly, equal proportions of workers in the construction sector were trained in formal education (50%) and non formal (50%) organisations.

#### **4.2.0 Work Environment and Working conditions**

Although two thirds of the construction firms indicated that workers' skills were generally adequate, there was a general feeling that the quality of workers' skills in the construction sector could be improved. In some instances the firm owners' reported that workers were seriously lacking in required skills in the construction sector necessitating the need for on-job training and refresher courses. Besides the lack of professionally skilled workers, the construction industry workers also lacked skill flexibility. The few trained workers possessed single skills rather multiple skills which enhance workers to perform specific tasks for which they are trained in.

#### **4.2.1 Workers' Remuneration and Rewards**

Needless to say, workers' participation and enthusiasm in any production system is contingent upon remuneration and reward packages. However, only 18.1% of firms in the construction sector reported offering benefits to their workers. The benefits offered include transport, house, medical and leave allowances. House allowance is the most common followed by transport and medical allowance. Firms sharing profits with workers through monetary bonuses at the end of the year were limited and far between.

Albeit the lack of information to conclusively map out employer and labourers relationships in the construction sector, we observe that, relationships in this sector are organised within the mass production model whereby work is reduced to labour. In this context, labourers remuneration is hinged upon basic needs for human survival (Piore, 1990) and tend to perform routine production tasks. This employee-worker situation denies the worker ownership of the product he/she creates in the production process and participation in any meaningful work or action in the firm<sup>3</sup>.

### **4.3.0 Job Structure and Labour Force Characteristics**

The category of workers in the construction sector are: owners, managers, clerical workers, regular production workers, casuals and trainees. Most of the workers are however, concentrated in the two main categories, namely: regular production workers and casual workers categories. Workers in the trainee and management categories are few.

#### **4.3.1 Labour Force Characteristics**

Workers in construction firms differ in terms of education levels and gender. Table 4.5 shows that workers in the construction have some formal education. The largest mean number of workers completed form four. The next largest mean number of workers had completed primary, while the next largest number of workers completed form six.

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The sample of firms offering workers with benefits is too small to carry out further analysis on how this firms differ with those that do not offer any benefits.

The lowest mean number (10) of workers reported having some primary education (table 4.10).

**Table 4.10: Workers' Level of Education**

Level of Education	No. of Workers	Mean Number of Workers
Some Primary	560	8
Completed Primary	2097	31
Completed Form Four	3244	47
Completed Form Six	678	10

It appears that employment in the construction sector is largely male dominated as shown on table 4.11. The distribution is not any different within the job structures.

**Table 4.11: Distribution of Workers by Gender and Job Categories in 1996**

Job Categories	Male	Female
Working Owners	96	13
Managers	64	2
Clerical Works	278	64
Regular Production	2462	457
Casuals	1900	34
Trainees	112	4
<b>Total</b>	<b>4,912</b>	<b>574</b>

In all the job categories the proportion of male workers is higher than that of female workers.



### 4.3.2 Employment change in the Construction sector.

Firms in the metal work contractors subsectors reported a mean job increase of 123.6 while building contractors reported a mean of 41.5 workers. The lowest mean employment change was in electrical contractors mean employment was 6.3, hardware wholesalers 4.5 and hardware retailers 2.7.

Firms in the construction sector reported a change in employment between 1996 and the time the firm was founded. The largest number of jobs gained in a firm was 172 while the largest number of jobs lost was 47. The mean for the entire period is 39.2 jobs.

Firms in the metal work contractors subsectors reported a mean job increase of 123.6 while building contractors reported a mean of 4 workers. Electrical contractors mean employment was 6.3, hardware wholesalers 4.5 and hardware retailers 2.7 as reflected on table 4.13.

Table 4.13: Job Change by Activity

Activity	Mean No. of Jobs
Building Contractors	41.5
Electrical Contractor	6.3
Metal Contractor	123.6
Hardware wholesalers	4.5
Hardware retailers	2.7

## 5.0.0 INSTITUTIONS AND DEVELOPMENT

The element of association and collaboration through both formal and informal organizations has become important as economic pressures hit many firms. Most firms, especially formally registered ones have to deal with public institutions in one way or the other. There are also private institutions and NGOs which provide different services and support to firms. Small firms which have difficulty in accessing required resources tend to associate with each other more than large firms who have accumulated adequate resources or have contacts with formal financial institutions. The construction industry is known to have a number of small firms which are likely to have linkages with other firms and institutions.

### 5.1.0 Associations

Data from the field survey shows that 34.4% of the firms interviewed belong to some association, whereas 65.6% did not belong to any association. Most small firms did not belong to any association as shown in the crosstabulation on table 5.14.

Table 5.14 Membership in Association by firm size

Size of Firm	Yes	No	N	Significance
Small	5(17.2%)	24(82.8%)	29(100%)	.2800
Medium	11(50%)	11(50%)	22(100%)	.0658
Large	5(50%)	5(50%)	10(100%)	.5647

This seem problematic, since the umbrella body (NCC) that previously cushioned the firms is no longer in existence. Firms struggle on their own with some offering themselves as employees of other firms during hard times. Availability of a working business association would provide more meaningful alternatives during hard times. Key informant interviews pointed

out that large firms are cushioned by both their associations and informal networks, which avail support especially in the area of finance and supplies, including favourable credit conditions.

All the associations the firms belonged to, except one were business associations. The associations included; Federation of Kenya Employers, Kisumu Business Association, Electrical Contractors, Kenya Association of Building, Kenya African Contractors, Kenya National Chamber of Commerce, Kenya Association of Manufacturers, Kamukuji Jua Kali Association, Kenya Institute of Engineers and Community Welfare Association. Six of the firms belonged to the Kenya Association of Building, three belonged to the Kenya Association of Manufacturers and another three to Federation of Kenya Employees.

Most of the associations protect, support and assist firms in a number of ways, including; improving and safeguarding business, providing legal advice and settling labour disputes as indicated on table 5.15.

Table 5.15: Main Purpose of Association

Main Purpose of Association	%	Total
Not Applicable	42	66.7
Safeguard traders and members	5	7.9
Legal Advice on regulations	1	1.6
Settle Labour Disputes	4	6.3
Financial Assistance	1	1.6
Strive for Better Business Opportunities	4	6.3
Assist Businessmen	2	3.2
Coordinating Body for Architects	2	3.2
Professional Consultancy	1	1.6
Missing	4	-
Total	66	100

Only two firms assisted with personal and/or family expenses, with one assisting at least once a month and the other assisting once or twice a year. This finding shows that the associations operating within the construction industry, are not welfare oriented as in other small scale businesses (Mitullah, 1997). The associations mostly serve as business safeguards and advisory economic safety nets; whereas others are umbrella bodies which both regulate and protect firms and employees.

Advice on legal matters covered areas such as certification, licensing and other forms of regulations. Striving for better business opportunities included assisting in linking firms to overseas markets and also in coordinating markets and raw materials. Most of the firms were active in their associations as reflected in the 17 out of 22 firms which indicated that they attend association meetings.

The finding that small firms largely do not belong to any association, including welfare associations which have been found to be very prevalent and beneficial to small scale enterprises does not augur well for the industry. Small firms are largely owned through sole proprietorship and owners have to ensure that all requirements are available in order to ensure the survival of the firm. In other industries, sole proprietors have been recorded to rely on informal networks and welfare associations. These options provide back up to business, especially during hard times and their absence within the small scale construction industry might explain the dismal performance of the industry.

### 5.2.0 Markets

Majority of the firms (85%) have their major customers located within their districts of location with mean total sales and or assignments ranging between Ksh 957,142 and 24,310,714 as reflected on table 5.16.

**Table 5.16: Current Mean Total Sales by Activity**

Activity	Mean Sales (Ksh)	Cases
Building Contractor	24,310,714	14
Electrical Contractor	4,730,769	13
Metal Work Contractor	16,256,888	9
Hardware/Wholesale	6,140,000	5
Hardware Retailer	957,142	7
Sign. = .1961		

Only 6.7% of the firms had their major customers located elsewhere in Kenya. The responses were not different for main customers who were indicated to be also located within the district of operation (44.8%) and elsewhere in Kenya (32.3%). Customer location was in line with areas where the samples were drawn and surrounding areas.

Nairobi recorded the highest number of customers. This is in line with the sample size for Nairobi, and further supports the fact that most firms have their customers located within and/or around the urban centres where they are located. Both Kisumu and Eldoret followed the same trend, with no firms from the three urban centres covered recording any customer located outside their provinces of location. Interviews with key informants revealed a number of explanations for this outcome. It was observed that most firms operate on small scale and do not take expensive contracts which warrant moving outside their areas of location. In some cases it implies that there are many construction firms and/or few construction work and moving outside one's area of operation may not be cost effective. Additionally, the district bias of awarding contracts discussed in chapter one also provides an explanation.

There were only 4 firms which had goods and services which were exported. It is therefore not possible to assess market linkages between foreign and domestic firms. The four firms exported using foreign buyers and private trading agencies. None of the firms used government trading agency. Among the firms using foreign buyers only 2 sold direct at start and another 2 in 1990 and 3 during the survey (1997). One firm had used private trading agency at start, during 1990 and was still using the same channel during the survey. There were no other marketing channels used for exporting.

The other construction firms covered in the survey deal with a number of trading agencies ranging from 1 to 195. Hardware and wholesalers were dominant marketing channels. Majority of the firms dealt with government agencies. The survey showed that a number of main customers (62.1%) had particular quality or design requirements with a total of 30.3 per cent not having any particular requirements. The particular main requirements

included; high quality products (13.6%), completion according to specification given (13.6%), high quality efficient electrical installation (9.1%) and quality graded products (9.1%) as reflected on table 5.17

**Table 5.17: Quality and Design Requirements**

Quality and Design Requirements	Frequency	Total %
High Quality Products	9	13.6
Completion according to specification	9	13.6
Quality efficient Electrical Installation	6	9.1
Quality Graded Products	7	10.6
British Products or Equivalent	3	4.5
Guarantee After Completion of Work	2	3.0
Tendered work with specification (quantity, strength and duration)	1	1.5
Durability of Buildings	1	1.5
Sufficient Space	1	1.5
Different Design Requirements	1	1.5
Product must meet Kenya Bureau of Standard Requirement	1	1.5
Modifications to suit Local Conditions	1	1.5
High Quality Finishing	1	1.5
Not Applicable	23	-
<b>Total</b>	<b>66</b>	<b>100</b>

Most (57.6%) customers in the construction industry do not offer any particular benefits. Only 33.3 per cent offered benefits such as assessing products, commenting and providing new ideas on business improvement (6.6%) and being loyal customers (6.6%) as reflected on table 5.18

**Table 5.18: Benefits Offered by Customers**

<b>Benefits Offered</b>	<b>Frequency</b>	<b>Total %</b>
Assessing, Commenting and Providing ideas	4	6.6
Being Loyal Customers	4	6.6
Assists in Advertising	3	4.9
Prompt Payment of Dues	3	4.9
Friendship and Financial Assistance	2	3.3
Channels for clinching Lucrative Contracts	2	3.3
Exposure to New Building Methods	1	1.6
Upfront Payment	1	1.6
Provision of Transport	1	1.6
Provision of Distribution Outlets	1	1.6
Not Applicable	39	65.1
Missing	5	-
<b>Total</b>	<b>66</b>	<b>100</b>

Most inputs used by the firms are obtained from both domestic retailers (29), wholesalers (45), domestic importers (9) and foreign suppliers (10). Only 2 firms obtained their inputs from cooperatives. The number of suppliers had increased for most (45.5%) firms over the last five years. A total of 43.9 per cent had experienced no change, whereas 4.5 per cent had experienced a decrease.

The factors contributing to change in number of suppliers included; increase of suppliers (9.1%), trade liberalization (4.5%), increased in production capacity (4.5), competition with upcoming businesses (4.5%) among others as shown on table 5.19



Table 5.19: Reason for Change In Number of Suppliers

Reason for Change In Number of Suppliers	Frequency	Total %
Increase of suppliers	8	12.1
Trade Liberalization	3	4.5
Increase in Production Capacity	3	4.5
Competition with Upcoming Businesses	3	4.5
Liberalization and diversification of suppliers	3	4.5
In order to ensure safety net for unreliable suppliers	2	3.0
Search for best Deal	2	3.0
Availability of inputs	1	1.5
Due to new products	1	1.5
Better services, price and reliability	1	1.5
Depends on Seasons (eg.rainy or dry)	1	1.5
Some suppliers have stopped operations	1	1.5
Due to Site of Contract	1	1.5
Increase in Contracts	1	1.5
Depends on size of job and site	1	1.5
Increase in sales	1	1.5
Not Applicable	33	50.0
Total	66	100

### 5.3.0 Competition

Competition is a key aspect of any business. It has been alleged that within the construction industry there is cut-throat competition. This type of competition make important business information be kept by individual firms and in some cases by few individuals within a firm. A large (89.4%) percentage of firms pointed out that there was competition in the industry, with only 10.6 per cent indicating that they had no competition.

The survey of the industry shows an intense competition ranging from one competitor to 100. A total of 37 firms were competing with 45 firms belonging to small scale category. Another 20 firms were competing with 157 firms in the medium scale category whereas 7 firms were competing with 445 firms in the large scale category. Table 5.20 shows the nature of competition small firms face by size of firms, revealing that small firms largely

Table 5.20 Small Firm Competition by Size of Firm

Size of Firm	Yes	No	Chi Square/Significance
Small	23(79.3%)	6(20.7%)	Chi.Sq.= 3.05 Significance= .54
Medium	13(61.9%)	8(38.1%)	Chi.Sq. = 1.4 Significance= .7055
Large	4(40%)	6(60%)	Chi.Sq.- 1.96 Significance= 0.3745

compete with firms of equivalent sizes with very limited competition with large firms. Statistics for large firm competition by size and competition by activity and size of firms could not be computed due to empty row cells in crosstabulations.

Key informant interviews<sup>4</sup> confirmed the nature of competition. It was noted that there was too much competition with most small firms only getting maintenance and repair contracts. The competition is largely based on who knows who and the inherent networks which particular firms develop. The prevalence of competition is clearly reflected in the labour only sub-contractor. Firms do rely on sub-contracts whenever they are not able to get jobs. Key informant interviews further revealed that since the winding up of the NCC, most indigenous firms have been unable to operate.

Most firms which are doing well have equipment, capital, right contacts and are able to 'grease hands' and manipulate relevant individuals and organizations. Most of them pay 10% upfront and another large informal amount for processing papers and cheques. There are very few indigenous firms among these numbers and a cross examination of the various office block buildings littering the skyline of the capital city Nairobi, shows that they are almost wholly being developed by the Asian developers and contractors. The collapse of NCC resulted in more business for the Asian firms and less business for indigenous firms. An example of one indigenous firm which previously had 27 architects which reduced to only three architects by 1997 was given as an illustration of poor business performance among indigenous firms.

There is need to create market for contractors, especially indigenous ones. It seems Asians have an upper hand within the construction industry. Asian developers tend to use a design team full of Asian firms, which in turn recommends largely Asian contractors. On the other hand, public projects tend to use design teams dominated by Africans with an infusion of a few

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<sup>4</sup> Interview with Professor Syagga, Dean Faculty of Architecture, Design and Land Development, University of Nairobi.

Asians who are able to pay up-front. This are largely the few indigenous African firms which are registered and are able to compete with firms largely owned by foreigners and indegenous Asians.

The main basis for competition in the industry is price, product quality, availability and accessibility of materials. The firms have greater local competition mainly within their town of location and surrounding area. Only thirteen firms indicated other basis of competition as shown on table 5.21

**Table 5.21: Other Basis of Competition**

<b>Other Basis of Competition</b>	<b>Total Number</b>
Variety and Quality of Product	4
Accessibility of Customers	2
Efficiency	2
Marketing of products and services	2
Stocking of Raw Materials	2
Discount Systems	1
<b>Total</b>	<b>13</b>

Further assessment of competition among all firms confirms the afore mentioned position that most firms frequently compete with firms within their size category with limited competition across size categories as shown on table 5.22

Table 5.22: Firm Competition

Firm Size	Freq	%	Infre	%	N Total
Large firms same line	34	54.8	28	45.2	62
Small firms same line	31	60.8	20	39.2	51
Large firms different line	23	35.9	41	64.1	64
Small firms different line	17	31.5	37	68.5	54
Key: Fre: Frequent Infre: Infrequent					

#### 5.4.0 Trade Liberalization and Technology

Trade liberalization and type of technology used are considered important factors in any industry. A probe on these areas shows that the two have affected the industry in different ways. Trade liberalization was viewed both positively and negatively with 48.5 per cent of the firms indicating that it had resulted in free market operation. Firms had freedom to organize business activities without harassment from the authorities.

Liberalization had contributed to prices being freely set and import and export procedures made easy. In turn, this has increased the number of new entrants, further intensifying competition. Another 6.1 per cent of firms noted that the number of suppliers had increased and many firm requirements are easily available at lower costs. Another positive aspect was the ability of firms to import high quality goods and sell at cheaper prices.

Some firms (28.7%) did not view competition positively. They noted that it had no effect on business, since business depended on seasons. Other negative responses included; business was low (3%), firms are illegally importing cheaper and inferior goods in the market and selling at cheaper prices (3%) and prices have gone up (1.5%) among others.

Firms had varied responses on the importance of technology in business. Whereas 16.7 per cent indicated that none of their business aspects needed technology, a significant percentage (30.3) of firms pointed out that it was important in the area of inventory control. Other responses included; administration, administration and production, administration and inventory control and production. It seems that most firms do not rank technology high as an aspect of production and communication. Instead it is largely valued in the area of administration, especially in the area of inventory control. This is partly due to the small and medium operation of firms and their low scale localised operations, which may not need high quality technology both in the area of communication and production.

Main factors of choice of technology differed across firms with working faster in order to gain a competitive edge and track of market being dominant (15.2%), followed by good work performance (7.6), survival of business (6.1%), a combination of computerisation and working hard to gain competitive edge. Some firms noted that computerization makes work easier, reduces the number to be employed and ensures reliability and efficiency in business.

Other single firm responses in the area of choice of technology included; product quality for attracting more customers, computerisation, durability and availability, client choice, computerisation and competitive edge, computerization, durability and availability, keeping track of market and competitive edge, product quality, cost effectiveness, speed, ease of communication and cost effectiveness, computerization and keeping track of the market, speed, ease of communication and competitive edge, product quality and cost effectiveness.

Firms were able to compare their technology to that of their competitors. Majority noted that their technology and that of their competitors were the same with slight variations. Other firms (7.6%) were noted to have superior technology; whereas the four firms which operated internationally were better placed than their local competitors, although their foreign competitors were ahead of them in technology. Other single firm responses included; inability to compare, recognise advanced technology, competitors operate on same line and competitors have advantage.

## **6.0.0 INTERFIRM COOPERATION: LINKAGES AND SUBCONTRACTING**

### **6.1 The Case for Inter Firm Cooperation**

Interfirm cooperation is now widely acknowledged as a key firm strategy for competitive local, national and international industrialisation. The third Italy industrialisation model and the Asian Tigers industrialisation strategy serve as success stories of inter-firm cooperation globally. Inter-firm cooperation is envisioned in terms of relations and interactions between firms at different stages of production (Sabel, 1982, Pyke et al, 1990, Brusco 1990, Becattini and Trigilia (1983) quoted in Brusco 1991). Sabel (1982) views inter-firm cooperation as interaction between final firms and stage firms. Final firms being those firms with a direct access to the market while stage firms are those firms that are indirectly linked to the market.

Brusco (1990) views inter-firm cooperation as cooperation and collaboration between firms at different stages of the production processes in technical innovation and design. Becattini and Trigilia (1983) quoted in Brusco (1991) define inter-firm interactions as firm collaborations in the provision of real and common services. In this study, we view inter-firm cooperation in terms of relation between firms, linkages and subcontracting between firms. In the construction sector, interactions between firms were in the following areas: general building, plumbing, electrical, civil, structural and welding works.

#### **6.2.0 Firm Collaboration**

Firms in the construction industry collaborate with other firms. Collaboration is between large and small firms as well as with domestic and foreign firms.



### **6.2.1 Large Firm Collaboration by Type of Activity in the Construction Sector**

Firms in the construction sector collaborate in all the five firm categories. Hardware retailers (40.0%) reported the largest number of firms collaborating with large firms. Electrical contracting firms reported the second largest number of firms (20.0%) collaborating with large firms. Firms in metal work (13.3%), Building contractors (13.3%) and Hardware wholesalers (13.3%) reported equal proportions of firms collaborating with large firms.

### **6.2.2 Firms Collaboration by Domestic-Foreign Ownership**

It is interesting to note that only 28.6% of the foreign owned firms reported collaborating with other firms in the construction sector. The rest 71.4% were not collaborating with other firms. In the case of local owned firms and those owned by both locals and foreigners, only 15.5% collaborated with firms in the construction sector. A large proportion of these firms, 84.5% did not collaborate with local firms.

The number of firms a firm in the construction sector may collaborate with range from one and sixty. The mean number of firms a firm in the construction sector may collaborate with is ten. The firms collaborate in order to obtain and acquire raw materials, financial support and technology (table 6.23). Cooperation is also based on the need to exchange information, set products' prices and carry out market trend studies.

Table 6.23: Factors underlying Firm Collaboration.

Factors underlying Firm collaboration	Number	%
Raw material supply	5	7.6
Subcontracting	19	28.8
Technology consultations & Information exchange	17	25.8
Financial support	1	1.5
Pricing	1	1.5
Market trend studies	1	1.5
Business contacts	1	1.5
Commission sales	1	1.5
Not Applicable	20	30.3

Two main activities - subcontracting, and technology/ information needs spur collaboration between firms. Raw materials supply constitute another important trigger for firm collaboration in the construction sector. Market related factors and general business contacts are other sources of business contacts.

The significance of collaboration in technological consultations is underlined by the following response from one firm, "new technologies have been acquired through collaboration with other firms especially in the area of new machinery". Another firm stated that through collaboration with other firms "we exchange business ideas, support each other in times of problems or needs, set prices together, provide consultations to each other. Subsequently we have been able to improve our products and even introduce new ones in the market". These responses show that firm collaboration in the area of technology consultation contributes greatly to new product development.

### 6.3.0 Firm Types and Subcontracting

The study reveals that in the construction sector cooperation between firms does exist. Indeed 47.7% of the enterprises surveyed subcontract work to other firms. It appears that subcontracting activities in the construction sector are mainly carried out among domestic firms. Indeed, 96.6% of the firms in the survey reported subcontracting work to domestic firms. Only 3.4% of the firms in the construction sector subcontracted work to foreign firms. Subcontracting activities take place across all the three firm size categories - small, medium, and large. More foreign firms subcontracted work to other firms than those which did not, slightly over half of the foreign owned firms (57.1%) reported subcontracting portions of their business to other firms. Foreign owned firms that did not subcontract portions of their businesses were 42.9%. Local firms and those mixed/foreign reported 47.4% of firms subcontracting work and 52.6% of firms that did not subcontract work.

Subcontracting work in the construction sector has been going on for two decades. One firm reported having begun subcontracting activities to other firms as early as 1974. Subcontracting activity in the construction sector seems to have intensified after 1993. Table 6.24 presents the various activities subcontracted to other firms.

Table 6.24: Type of Activities Subcontracted to other firms

Type of Activities	No. of firms	%
Plumbing	8	22.8%
Electrical Works	11	31.4%
Machine Repair	1	2.9%
Work in distant location	2	5.7%
Activities not in our line of specialisation	3	8.6%
Welding and Metal Fabrication	3	8.6%
Partitioning and roofing	3	8.6%
Making security boxes	1	2.9%
Bridges and road construction	2	5.7%
Telephone services	1	2.9%
Missing	31	
Total	66	100%

It is interesting to note that three of the most frequently subcontracted works: electrical (31.4%), plumbing (22.8%), welding and metal fabrication (8.6%), fit into the phases of construction where we expected different but collaborating firms to be in existence. Other construction activities that naturally lead to subcontracting include: partitioning and roofing, activities and job situated in distant locations.

Save for firms subcontracting works located away from their operating stations and those involving bridge and road construction, the other subcontracted works are in specialised construction activities such as making of security boxes, telephone and security equipment. Using this evidence we can safely opine that works subcontracted to other firms in the sector are to a large extent dependent on "stages" of production in the construction sector and the need for specialised skills or technologies.

#### 6.4.0 Subcontracting Activities by Firm Type

In this section we examine the type of activities firms in the construction sector receive as subcontract work.

Electrical works subcontracts are received by firms in building, construction (16.7%), electrical contractors (66.7%) and metal workers (16.7%). Repair works are received by metal workers (66.7%) and Hardware retailers (33.3%).

All subcontract of building logistics is received by building construction firms. The same applies to works related to partitioning and roofing.

Hardware wholesalers receive subcontracts of supplying materials especially for roofing and floor materials.

Building contractors also receive subcontracts for civil works and excavations.

Hardware retailers receive subcontract works for supplying merchandise to large firms in small quantities.

Building contractors are key players in subcontracting activities in the construction sector. Firms in the construction sector subcontract work because it lowers production costs, minimises labour disputes and allows subcontracting firms to focus on their core activities. In addition, firms subcontract work to other firms in the construction sector because of:

- lack of skilled personnel
- heavy work load
- lack of licences in electrical works
- lack of sufficient funds.

#### **6.4.1 Reason of Subcontracting Work by Type of Activity**

Lack of skilled workers as a factor for subcontracting work was common among all the three activities in the construction sector. Firms in general building construction reported the largest proportion of firms (50.0%) subcontracting work because of lack of skills. These firms were followed by electrical contractors (37.5%) and metal contractors (12.5%). The building contractors also subcontract work because of heavy workload, lack of licenses and lack of sufficient funds. Firms in the other two activities, electrical works and metal fabrication did not indicate subcontracting work due to lack of licenses, sufficient funds or heavy work load.

Although we observed earlier that work subcontracted to other firms is based on "stages" of production and need for specialised skills or technologies, the reasons that prompt firms in the construction sector to put out work to other firms do not directly emanate from specialisation and division of labour in the construction sector as stipulated in theory. Handing out work to other firms in the construction sector emerges from structural inadequacies characterising firms in this sector. These inadequacies are related to skills, resources, licensing and inability to handle excess work. Thus, subcontracting in this sector is more of passing on work or purchasing services from other firms rather than putting out work to collaborating firms. This phenomenon is generated by inadequacies in firms organisation strategies rather than demands of a vibrant and competitive industry such as the one found in Third Italy or in the Asian Tigers. In these places competition and nature of markets has

led to the evolution of a network of specialised small firms characterised by a marked division of labour which naturally leads to subcontracting between firms.

This being the case then, our research and policy concerns involve the need to deepen specialisation and division of labour in the construction sector in order to facilitate the evolution of a competitive construction sector.

### **7.0.0 Challenges to Deepening Firm Collaboration**

In order to deepen firm relationships and interactions in form of collaboration and subcontracting we need to understand the reasons behind lack of relationships between firms in the construction sector. Firms with no relationships with other firms expressed a variety of reasons for non-collaboration. To begin with a number of firms stated that they did not see the need for firm collaboration while others argued that firms collaboration is illegal. Firms also expressed unwillingness to share their own initiatives and ingenuities acquired through considerable financial investments and analysis of market forces. It appears that while some firms do not see the need to collaborate with others, there are other firms that strongly wish to keep secrets to themselves. These situations and conditions create a tendency for firms to integrate vertically rather than horizontally. This observation is reinforced by one respondent who stated that "It is difficult to collaborate in this field because most firms are independent and operate on their own in order to keep business secrets".

Collaboration for technological consultations between small firms is inhibited by limitations characterising these firms especially small ones. One small firm operator stated that "I am an individual, and the firms I collaborate with are also small firms which lack modern skills, technology and have no opportunity of acquiring new or improved technologies that have come up". In addition, it was also indicated that firm collaboration for technological consultation is limited by the fact that small firms tend to use similar technologies, thus there is nothing to share between them. Besides, the firms are involved in their own survival struggles because of extreme competition in the field.



Importation of technology and supply of expatriates and technical know how in firms with foreign share holders serves as further deterrent to firms' interactions and collaboration in the construction sector. Small and large firms interactions in the construction sector is deterred by lopsided firms' perceptions of other firms and camouflaged firms' conflicts and rivalries. For example, one small firm said the following about large firms: "Large firms are well established. They operate in permanent buildings and would always want smaller firms out of business". This response characterises large firms in the construction sector as predatory, always seeking ways and means of eliminating small firms. Conversely, large firms' misgivings about small firms were expressed by the following response: "small firms have nothing to offer and cannot assist us in any way. We have nothing to gain from them!" This observation implies that small firms are limited in several ways and are far below the expected standards required by large firms in the constructions sector. This view is supported further by attribution of non collaboration between firms to poor quality products.

In summary, we can attribute firm non-collaboration and interactions to the following: Lack of awareness, lack of openness between firms, product quality, firm perceptions, conflicts and rivalries between firms.

### **8.0.0 Conclusion and Policy Issues**

Findings from this study show that inter-firm collaboration within the sector is full of suspicion and is not mutually beneficial and there is need to make collaboration more attractive to participating firms. Data reveals that smaller firms are constantly manipulated and pushed to take up sub-contracts or offer themselves as labour in order to survive within the industry. In most cases they are able to sufficiently handle the same projects as the main contractors. However, since they either lack equipment, are not able to hire equipment from comparatively larger firms due to the unnecessary exorbitant prices or are not able to afford fee for public relations, they end up as sub-contractors.

For small firms, especially indigenous ones to live and prosper there is need for institutionalised support. This can be achieved by having institutions organized along the lines of NCC, but run by stakeholders in the industry. Federation of Kenya Employers (FKE) has been trying to fill the gap left by NCC by providing training in the areas of tendering, management and budgeting. However, firms are not exposed to information on the industry and yet this is very relevant for their development. Hardly any of the many NGOs focus on the construction industry. The few (Intermediate technology, Appro-Tech among others) focus on building materials and technology. There are no organisations with relevant documented information on the industry for intelligent tendering and understanding business dynamics. Availability of an information based NGO would use its network to inform the industry on location and cost of appropriate building materials and suppliers.

In relation to improved firm collaboration and interaction, the following tentative actions are proposed. It is hoped that further research and cooperation among relevant institutions within the industry will lead to more actions. The Chamber of Commerce and construction firm associations would play a key role in implementing proposed actions:

- Creation of dialogue between firms through trade fairs, open days, exhibitions, demonstrations of successful firm collaboration.
- Visits to countries where firm collaboration is a success such as Third Italy or the Asian Tigers
- Upgrading of firms especially small ones: through market leaders franchising to small firms, affirmative action for technology upgrading in small firms, product standardisation, performance certification.
- Training and exposure of small firms to methods of tendering, management, budgeting and sub-contracting
- Minimisation of firm rivalry and conflicts
- Research into firm behaviour and strategies in the construction sector
- Awareness creation and popularisation of firm interactions such as collaboration and subcontracting, through the media.

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