

Is gender relevant in enhancing economic competitiveness of forest industries? Exploring the wood-furniture value networks in Jepara; Central Java - Indonesia

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ABSTRACT

Although gender is imperative; a gender dimension is often lacking when analysing value chains of most forest commodities. Furniture making is labour-intensive involving a long array of network of activities. Indisputably; those interconnected activities are conducted within the prevailing gendered environment. Furniture making is a mainstay of most inhabitants in Jepara but the intense local competition has compromised the profitability of this industry. Thus it is crucial to find ways for upgrading if the livelihoods of the dependents are to be improved as well as the industry's contribution to national economic growth optimized. This study provides insights on the prevailing gender relations and how such relations can be improved and harnessed to enhance the economic competitiveness of the furniture industry in Jepara; central Java in Indonesia. Such knowledge complements the development of comprehensive scenarios for further upgrading of furniture industry in Jepara particularly and other developing areas with similar issues. Based on 139 observations; the study reveals that both males and females are actively involved in furniture making conducting mainly primary and support activities respectively. However; more males than females are engaged. Furthermore; although both male and female workers' skills are lacking; females' skills may be much poorer. This skill gap between males and females in Jepara furniture industry affects considerably their respective returns to labour. Additionally; women's active involvement is further constrained by socio-cultural environment that dictates gender and the resultant family power relations. Both male and female skills can be enabled in order to achieve cost and differentiation advantages respectively but for women to increasingly and effectively get involved; the socio-cultural environment needs to be revised first. Meanwhile the women's subordinate position can be taken advantage of to enhance economic rents.

Key words: Gender, value chain, furniture industry, Jepara, upgrading; livelihoods

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1.0 INTRODUCTION

1.1 Background

Forest industries are crucial income generators in many economies of the world (Purnomo et al., 2009; Roda et al., 2007; Arnold et al., 1994). In the central Javanese district of Jepara; wood furniture industry contributes about 27% of inhabitants' income (Jepara statistics board; 2008/9). Jepara wood furniture industry employs about 170 000 individuals in over 150,000 mostly small to medium sized enterprises that generate an annual revenue ranging between 11 900 and 12 300 billion INDR³ of added value (Roda et al., 2007). Thus; this industry represents an increasingly important source of revenue and livelihoods to many dependents in Jepara and beyond. It is therefore undeniable that this central Javanese district is also the hub for wood furniture industry in Indonesia.

This study is part of the on-going Furniture Value Chain Project (JFVCP) that seeks to develop scenarios for upgrading the wood furniture industry in Jepara. Given the several scenarios that have been developed; there is still a gap in knowledge of the prevailing gender relations and their impact to the upgrading process (Purnomo et al., 2009; Roda et al., 2007). A gender dimension in value chain analysis is very important since it can capture governance issues more broadly throughout the value chain by unpacking the socio-cultural and economic frameworks in which value chain activities are placed (Barrientos, 2001). Furthermore; although gender has always been narrowed down to refer to inequality; power relations and subordination of women (Barrientos, 2001); it is also about ways of changing those social manifestations to secure greater equality and equity (Ellis, 2000; Agarwal, 1997; Jackson, 1996). The latter point of view of gender is crucial since it seeks to empower the marginalized and the disadvantaged development actors hence equitable benefit sharing.

1.2 Objectives

This study aims to provide insights on the importance of gender in enhancing the economic competitiveness of the furniture industry in Jepara. Specifically; the study attempts to establish the prevailing gender relations in Jepara and to assess how such gender relations affect the formation of social; financial and human capitals in Jepara furniture industry. Knowledge of gender relations complements the development of comprehensive upgrading-scenarios of wood furniture industry in Jepara. However; such knowledge can also be used in other parts of the developing world with similar challenges.

2.0 MATERIALS AND METHODS

2.1 Overview of Jepara regency

The study was conducted in Jepara regency (5°43' 2 0.67"S 6°47' 25.83"S and 110°9' 48.02"E 110°58' 37.40" E) on Java⁴ Island. The name Jepara literally means the

³ A range of 11 900 -12 300 billion Rupiah/year is equivalent to about 1 billion Euros/year basing on 2010 exchange rate.

⁴ Java together with Sumatra; Sulawesi; Bali; Kalimantan; and Irian Java are the six major inhabitable islands that comprise Indonesia.

merchant settlement and its establishment dates back in 700th century but officially recognized in the 15th century when the Portuguese first arrived in that area (Jebara statistic board, 2008/9). Jebara along with other thirty four (34) regencies compose the Jawa Tengah province. Jebara regency is bordered by the Java Sea in the West and North; Kudus and Pati regencies in the East while Demak in the South. Jebara regency is about 100,413.189 hectares with an altitudinal range of 0 to 1,302 metres above sea level (Jebara statistics board; 2008/9). It is subdivided into sixteen (16) sub districts and 194 villages. Tahunan sub district houses Jebara regency's capital: Jebara. The regency governor (Bupati) is the supreme head and is directly connected to the provincial parliament.

Basing on the national population census, (2008); Jebara has about 1,090,839 people living in 275,937 households of which about 726, 252 are eligible voters. The population of Jebara comprises a balanced⁵ number of males and females that are predominantly Javanese with hardly any racial heterogeneity. According to Jebara central statistics board (2008/9); there are more male job seekers⁶ than job positions available. Religiously; the Jebara community is overwhelmingly Muslim. Economically; Jebara is one of the super economies in Jawa Tengah province. The number of existing commercial activities reflects its economic potency. Its vicinity to Jawa sea coupled with improved communication and banking services; Jebara regency is undoubtedly an instrumental commercial link in Indonesia. Jebara boasts of vibrant manufacturing; crop farming; livestock; fisheries and forestry sectors. Manufacturing especially of furniture is the most important economic activity as it employs about 45% of the labour force in Jebara (Jebara statistics board, 2008/9). Large to micro scales furniture firms⁷ are found in Jebara; managed by both foreign and domestic owners. According to Roda *et al.*, (2007) Jebara furniture industry utilizes between 1.5 and 2.2 million m³/year of mostly Teak (*Tectona grandis*), and Mahogany (*Swietenia macrophylla*) as feedstock although other tree species⁸ may be processed occasionally. The logs used in Jebara furniture industry are sourced from both village and state forests within Java as well as from other Indonesian islands (Purnomo et al., 2009; Roda *et al.*, 2007).

2.2 Data collection

Information on gender relations in Jebara furniture value chain was gathered for a period of about three months from March to June 2010 in two sub districts namely: Tahunan and Jebara (Figure 3.1). These two districts represent almost all the furniture value networks relevant to this study. Besides, they neighbour each other so it minimizes travel costs (time and fuel). A field assistant knowledgeable about the area;

⁵ According to Jebara statistics board, 2008/9 there are 548,953 9 (50.32%) males and 541,886 (49.68%) females

⁶ For instance; there were 21, 743 seekers compared to 37 formal positions available in 2008 (Jebara statistics board, 2008/9). Additionally; there are more male than female job seekers. Consequently; all the male positions are filled and the available vacancies are supposed to be filled by females (Jebara statistics board, 2008/9).

⁷ Jebara statistics board; (2008/9) reports a total of 7,648 licensed companies operating on various scales and utilizing different forms of technologies in Jebara.

⁸ Other species that are processed include: Jack fruit; Mango; Meh; Sono Keeling and pine

fluent in both Bahasa Indonesia and English as well as furniture making was used as a translator and a guide during fieldwork. To identify key actors as well as draw a representative sample for the study; the various actors in Jepara furniture value chain were stratified basing on their major activities. Roda *et al.*, (2007) research findings informed to a great extent the current study. Simple random sampling was used to select the respondents at each specialized stage of operation in the Jepara wood furniture value chain viz: the owners of log parks; sawmills; furniture accessory shops; workshops; integrated furniture firms; warehouses and showrooms. In some cases a senior worker; basing on the position held and tenure in office; is considered for the interview if the owner is unavailable. A combination of both primary and secondary data sources are used in this study namely: Literature review of Jepara furniture value chain project reports; district documents; journal articles; face to face interviews with district forest officials and chairpersons of ASMINDO and APKJ as well as the various value chain actors using a semi structured field form.

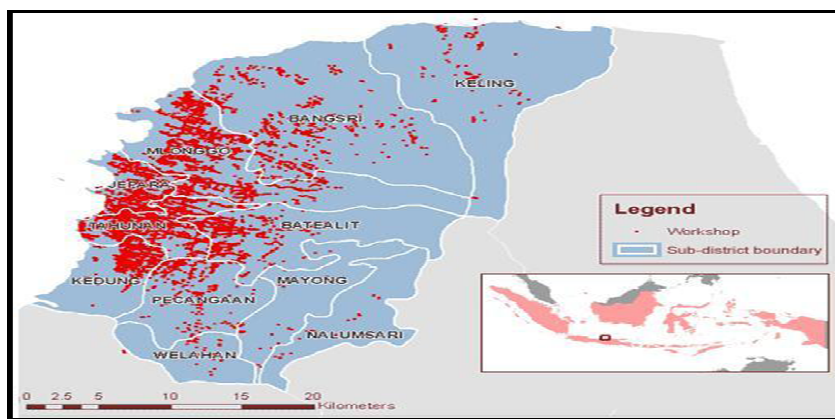


Figure 1.1: Map of Jepara highlighting the sub districts and workshop concentration (Inset is map of Indonesia) (Source: Purnomo *et al.*, 2009)

2.3 Data analysis

Both descriptive and inferential statistics are used to summarize as well as analyze the study data respectively. Microsoft excel, (2007) is used in the statistical analyses. The descriptive statistics used in the study are frequencies; average; standard error among others. Such data distributions are further displayed in the bar graphs and pie-charts. Chi square tests and independent t^9 -test are the two major inferential methods used in this study. This is because such statistical tests are deemed most suitable methods for mostly qualitative data sets like the one in this study (Dythan, 2004). Additionally; SWOT analysis is also used.

2.4 Study concepts

In this study the following definitions are precisely used.

⁹ The t-test is used to test some quantitative parts of this data set whenever necessary

Key informants: are those individuals with exclusively relevant pieces of information in the wood furniture value chain in Jepara. **Wood furniture:** any movable articles such as tables; chairs; wall hangings; wardrobes; windows; beds etc (Collins English Dictionary, 2008) in which wood forms the highest composition of the raw material. Therefore, **furniture making** in this study covers the conversion of wood (planks; logs; plywood) into furniture. **Gender:** behavioural norms ascribed to men and women in a given social group or system (Peter, 2006). **Gender relations:** social constructions of roles and relationships between men and women in a community or system (Baden *et al.*, 1998 as cited in Ellis, 2000). **Value chain analysis (VCA)** describes activities that are required to bring a product or service from conception; through different phases of production; delivery to final consumers and disposal after use (Kaplinsky *et al.*, 2003). Thus a **value chain:** is a model representing interlinked activities that are required to bring a product or service from design, through different phases of production process, delivery to final consumers and recycle after use. **Industry upgrading** refers to a multi-dimensional process that aims at increasing the economic competitiveness of an industry, as well as having a positive impact on social development (ILO, 2006). **Social capital** refers to "*Institutions; relationships, attitudes and values that govern interactions among people and contribute to economic and social development*" (Grootaert *et al.*, 2002). **Human capital** refers to available labour; its education; skills and health (Carney, 1998 as cited by Ellis, 2000). **Financial capital** refers to stocks of money to which a firm has access like loans and savings (Ellis, 2000). An **industry** is a combination of different specialized firms that may all be contributing to the production of a given commodity. Arnold (1994) definition of the firms' scales of operations basing on the number of workers engaged is followed to classify the furniture firms encountered in this study. Therefore; a **small scale enterprise** is defined as a firm that provides employment between 11- 50 workers while a **microenterprise** is one that employs up to ten (10) or fewer workers. **A medium scale enterprise** employs between 51- 150 workers and lastly; a **large scale** enterprise hires at least 151 or more workers. The number of workers for small and microenterprises may include the unpaid family members. **Furniture Warehouses** in Jepara arguably deal mostly in unfinished furniture articles thereby engaging in finishing activities such as sanding; varnishing; crack repairing and packing etc. **A furniture Showroom** is where finished and ready to use furniture is displayed in order to attract buyers. They normally have limited stock that is nicely arranged than warehouses. **A furniture workshop** may also be referred to as a furniture component production and assembly point. In a workshop sawn logs are converted into furniture by carpentry and carving. **A furniture accessory shop** deals in raw materials other than wood that are required in furniture production. For a simplified illustration regarding the trade interactions amongst the Jepara value chain actors refer to Figure 3.2 below.

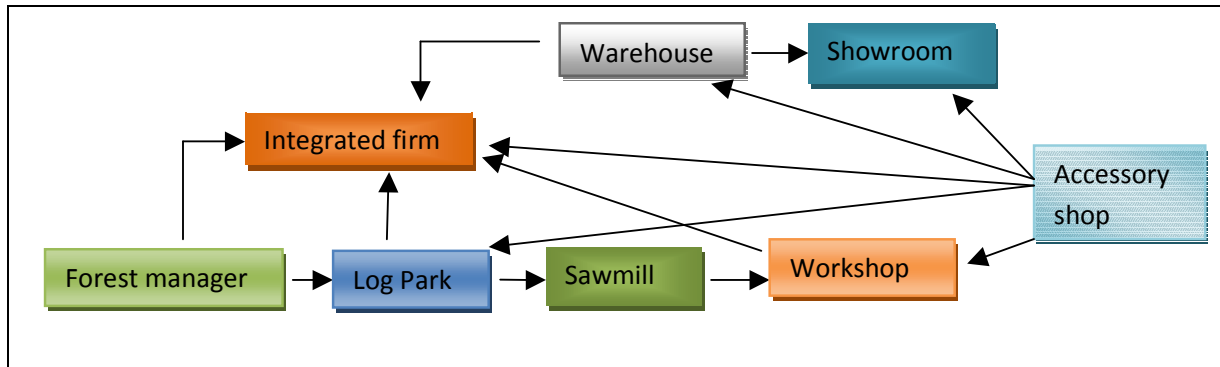


Figure 3.2: Flow diagram representing the interactions amongst the key value chain actors in Jepara (Source: Study data; 2010)

3.0 RESULTS

3.1 Profile of the respondents

The data set used in this study contains a total of 139 observations collected in two sub districts of Tahunan and Jepara. Firm and respondents basic characteristics are summarized in table 1 below. The respondents comprise both owners (90) and senior workers (49). There are marked differences between the number of male and female respondents as both entrepreneurs (92) and workers (47) in this study. Furniture accessory shops are overwhelmingly managed by females while the rest of furniture firms are exclusively male-owned activities. Most respondents are married (117) adults aged between 18-59 years. Most workers especially in the log parks; accessory shops and sawmills have limited formal education. A low number of university graduates is actively involved in furniture production (20) though senior high school entrepreneurs (60) outnumber the rest of the qualifications. Most entrepreneurs have been employed elsewhere before starting their current furniture firms (76) though the ones with less than ten years of previous furniture related work experience are also common in Jepara (63).

3.2 Characteristics of furniture firms

Jepara furniture firms differ in their age and size considerably. Most of the firms are young (<1-10 years) micro enterprises to small scale (132) managed by one person (113) and employing both males and females (96) (table 1). Young firms (89) outnumber old (50) ones. This may mean that new firms have sprung up in Jepara and old ones have either gone out of business or remained constant. Micro enterprises may have been initiated than large scale as they require less startup capital investment and entry barriers may not be as stringent as in the case of large scale firms. Majority of furniture firms in Jepara are male dominated (92) (table 1). This observation coincides with Arnold et al., (1994) observation in wood working industries of South and East Africa. All firms are predominantly full-time (103) operating all year round between 25 - 30 days a month. Although most firms operate six days (77) with only a day of rest depending on the faith of the entrepreneur; those firms operating week long are considerably many (62). Furniture firms in Jepara are clustered spatially lying

approximately within a distance of a kilometre from one another and along car accessible roads. This finding is also reflected in Roda et al., 2007.

3.3 Worker recruitment and skill acquisition in Jepara furniture industry

Employees access Jepara furniture value chain mainly through relations (79) and skills and competences possessed (60) in furniture industry. It is common to find wives as well as other family members running the family furniture businesses in Jepara.

According to this study; the three major ways through which employees acquire; improve and upgrade their skills in Jepara furniture industry are: socialization (139); previous experience (124) and apprenticeship (55). People in Jepara rarely go for formal training in furniture making as such skills are hereditary (ASMINDO; 2009).

3.4 The markets for Jepara furniture products

The four major market outlets that are predominant in Jepara furniture industry are: Local market within Jepara regency (154; 43%); Local market in other Indonesian regencies and islands (91; 25%); Regional markets (66; 18%) implying: China; Taiwan; Malaysia; Korea etc and lastly the overseas markets (49; 14%) that include markets in other continents like Europe; North America; Australia and Africa. The two local market outlets consume both finished and unfinished furniture articles and raw materials. While the regional and oversea markets deal mainly in finished furniture products. All firms can sell to both individual consumers locally and abroad except log parks; sawmills and accessory shops that deal in raw materials. Output differ from firm type to firm type, hence their unit of measurements. Much of the production is on order basis in Jepara furniture industry.

Table1: A summary of main characteristics of surveyed firms and respondents in Jepara (Frequency of)

Firm Characteristics	Frequency	Respondents characteristics	Frequency
Age range		Interview category	
◦ ≤ 1-10	89	◦ Workers	49
◦ 11-20	40	◦ Owners	90
◦ ≥ 21	10	Age groups	
Total working days per week		◦ 18-35	77
◦ 6 days (Sunday rest)	20	◦ 36-59	61
◦ 6 days(Friday rest)	57	◦ 60+	1
◦ 7 days (no rest)	62	Sex	
Total daily opening hours		◦ Male	92
◦ 5 hours (8-noon)	16	◦ Female	47
◦ 10 hours (7-16)	103	Marital status	
◦ ≥ 10 hours (24hours)	20	◦ Married	117
Ownership arrangements		◦ Never married	19
◦ Single	113	◦ Others (separated & widow)	3
◦ Partnership	26	Formal education	
Transportation means		◦ University	20
◦ Pick up	120	◦ Senior High school	60
◦ Truck	100	◦ Junior high school	30
◦ Container	42	◦ Elementary	27
◦ Delivery by salesmen	22	◦ No formal education	2

Sex composition of workers		Years of experience	
◦ Both males & females	96	◦ ≤ 1-10	63
◦ Females only	3	◦ 11-20	51
◦ Males only	40	◦ ≥21	25
Size of firms based on no. of workers		Determinants of workers' recruitment	
◦ Micro enterprise (1-10)	103	◦ Expertise	60
◦ Small scale (11-50)	29	◦ Kinship	79
◦ Medium scale (51-150)	4	Methods of skill acquisition	
◦ Large scale (≥151)	3	◦ Socialization	139
Markets		◦ Experience	124
◦ Jepara	154	◦ Apprenticeship	55
◦ Local	91	◦ Formal training	18
◦ Regional	66	◦ Others (On-job orientation)	23
◦ Oversea	49		

Source: Study semi structured field guide, 2010

3.5 Common products and accessories in Jepara furniture industry

Different actors in Jepara furniture value chain specialize in the production of an assortment furniture products and accessories such as the ones listed in table 2 below. Some actors like log parks; furniture accessory shops; sawmills and workshops deal in raw materials whereas warehouses and showrooms handle semi-finished to finished furniture products. Most of the inputs such as logs; furniture components and all the finishing materials are outsourced from outside Jepara regency. Additionally; semi-finished furniture articles are also sourced from micro enterprise workshops by small to medium scale enterprises. Integrated large scale firms may combine furniture production and commercial activities. In Jepara; improved telecommunication services such as hand phones and internet are crucial in securing products and commodities.

Table 2: Jepara furniture products and their sources

Firm type	Furniture articles and accessories	Source of products
Furniture accessory shop	<ul style="list-style-type: none"> ◦ Finishing products: sanding paper; sanding machines: thinner; wood stain; teak oil; glue ◦ Furniture catalogues ◦ Protective gear: face masks & tarpaulin ◦ Packaging materials & accessories: paper boxes; polystyrene; strings; cutter; cello tape ◦ Furniture tool spare parts ◦ Furniture construction tools: saws; carpentry tools; glass; plywood; screws; nails; rubber bands etc 	<ul style="list-style-type: none"> ◦ Sourced from Semarang¹⁰; Pati¹¹ and Kudus and delivered by salesmen to shops in Jepara
Showroom	<ul style="list-style-type: none"> ◦ Living room & interior design: sofa sets, lamp shades & stands, wall hangings; ◦ Kitchen & dining furniture: chests; boards; tables 	<ul style="list-style-type: none"> ◦ Sourced from Jepara workshops and ware houses

¹⁰ Semarang is provincial city for Tengal Jawa Province

¹¹ Pati and Kudus are neighbouring regencies to Jepara

Ware house Workshop	<ul style="list-style-type: none"> & chairs; room dividers; ◦ Religious furniture: calligraphy; ◦ Business furniture: tables; stools & chairs; display chests ◦ Animal furniture: bird cages ◦ Bedroom furniture: beds; dressing mirrors & tables; wardrobes; hangers ◦ Children furniture: toys; board games; swing benches 	<ul style="list-style-type: none"> ◦ Own workshop production
Integrated firm	<ul style="list-style-type: none"> ◦ Garden furniture 	<ul style="list-style-type: none"> ◦ Own workshop production; ◦ Sourced within Jepara workshops and warehouses
Log park	<ul style="list-style-type: none"> ◦ Teak and mahogany logs ◦ Teak planks 	<ul style="list-style-type: none"> ◦ East & west Java village & state forests ◦ Other Indonesian Islands like Sulawesi; Kalimantan
Sawmill	<ul style="list-style-type: none"> ◦ Sawn teak & mahogany planks 	<ul style="list-style-type: none"> ◦ Jepara furniture workshops

Source: Study field guide, 2010

3.6 Worker categorization by sex by firm

There are both male and female workers in Jepara furniture industry. However; there are relatively more males than females in each of the firm types (Figure 1). There is not any firm type in which females outnumber males though; the number of female and male workers in the warehouses; accessory shops and showrooms seems more balanced. Furthermore; saw mills; workshops and log parks employ the fewest number of female workers in Jepara. This is because of the nature of the activities are perceived to be either more risky or ergonomically demanding by women. Integrated firms are associated with a large number of workers in Jepara. This finding coincides with Roda et al., (2007) study result. The association of female and male workers to different furniture firm types is further highlighted by a significant chi test result. The number of female and male workers found in a given firm is related to the firm type ($X^2 = 150.686$; $P > X^2 = 0.0001$; Critical 5% level = 12.592).

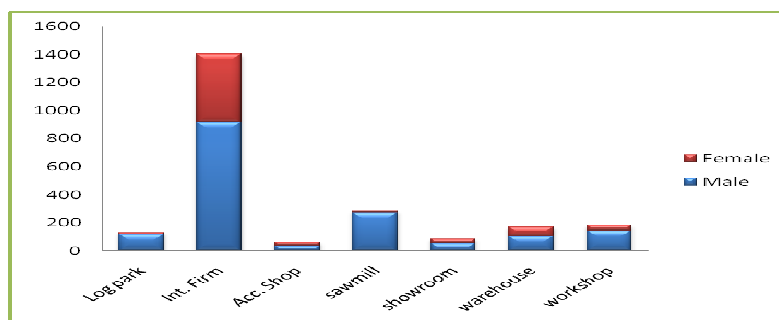


Figure 1: Worker distribution by sex by value network (Study field guide, 2010)

Following from figure 1 above; it may be concluded that men dominate furniture activities in Jepara. In table 3 below highlight the reasons why men dominate the furniture industry in Jepara. It is interesting to learn that men's dominance of furniture activities is not simply because they are more skilful and knowledgeable about wood and machines than women.

Table 3: Reasons why men dominate furniture making in Jepara

Responses	Frequency
1.Cultural division of labour between males and females	136
2.Men are physically stronger and braver than women	130
3.Men are more skilful & knowledgeable about wood &machines than women	106
Total	372

Source: Study field guide, 2010 (Respondents would give more than one reason)

3.7 Gender in Jepara furniture industry

Specialization between males and females in Jepara value chain is inevitable. As is shown in table 4 below; males are engaged in ergonomically demanding productive activities such as sawmilling; lifting etc. On the other hand; females basically complement the productive process. The females' supportive roles such as financial management; customer service and sanding are indispensable in Jepara furniture value chain. Although a distinctive categorization of activities between the two sexes may exist as it is in table 4 below; such theoretical well defined categorization are limited practically in Jepara at present. This is because females are increasingly taking an active part in furniture production. Nonetheless; a limited list of mostly strenuous activities is still unique to males: Lifting; loading and offloading; sawmilling; carpentry; spray finishing; physical sourcing of raw materials like during log auctions; relief carving; saw doctoring and repairing of other machines.

Basing on the list of the set of tools used in Jepara furniture industry; few actors such as mills; and integrated firms may be incurring high fixed costs due to machinery. Otherwise; most firms are micro enterprises that use simple process tools that can even be owned by the hired workers. Telecommunication tools like phones; faxes and internet are crucial in the day-to-day operations of Jepara furniture industry.

Table 4: Male and female activities in Jepara furniture value chain

Firm type	Masculine activities	Feminine activities	Tools used
Sawmill	<ul style="list-style-type: none"> ◦ Lifting ◦ Grading & marking ◦ Offloading & loading of logs ◦ Furniture components production ◦ Saw doctoring ◦ Transport 	<ul style="list-style-type: none"> ◦ Finance management ◦ Customer service ◦ Payments 	<ul style="list-style-type: none"> ◦ Measuring tools: tape, volume table; markers ◦ Stationery: Record and receipt books ◦ Communication: Hand phones ◦ Sawmill; sharpeners; oil; water; generator ◦ Lifting tools: wooden or metallic poles and nylon string
Log park	<ul style="list-style-type: none"> ◦ Lifting; sorting & piling ◦ Loading and offloading ◦ Log sourcing & delivery arrangements 	<ul style="list-style-type: none"> ◦ Customer service ◦ Cash receipt 	<ul style="list-style-type: none"> ◦ Measuring tools: tape, volume table ◦ Stationery: Record and receipt books; calculators; markers ◦ Communication: Hand phones ◦ Lifting tool: wooden or metallic poles; and nylon string
Workshop	<ul style="list-style-type: none"> ◦ Assembling furniture components; drilling; nailing; screwing ◦ Chain sawing ◦ Glass & veneer shaping ◦ Kiln drying of wood ◦ Product design ◦ Weaving ◦ Carving ◦ Upholstery ◦ Sourcing of furniture raw materials ◦ Marketing & Pricing ◦ Distribution to warehouses ◦ Business decision making 	<ul style="list-style-type: none"> ◦ Secretarial duties ◦ Accounts 	<ul style="list-style-type: none"> ◦ Communication: Hand phones ◦ Furniture construction & assembling tools ◦ Protective gear: face masks ◦ Stationery: Record and receipt books; calculators; markers
Warehouse	<ul style="list-style-type: none"> ◦ Furniture crack repair ◦ Grinding or rough sanding ◦ Packing of heavy furniture articles ◦ Spray finishing & sand sealing ◦ Marketing & Pricing ◦ Lifting; loading & offloading 	<ul style="list-style-type: none"> ◦ Sanding ◦ Packing ◦ Record keeping ◦ Cleaning ◦ Customer service 	<ul style="list-style-type: none"> ◦ Communication: Hand phones; email & webpage; fax; catalogues & business cards; sign posts ◦ Packaging materials ◦ Furniture finishing & repair materials ◦ Stationery: Record and receipt books; calculators; markers; ◦ Protective gear: face masks, tarpaulin
Showroom	<ul style="list-style-type: none"> ◦ Capital investment & consumption decisions ◦ Lifting; Arranging; grading; displaying ◦ Marketing & distribution 	<ul style="list-style-type: none"> ◦ Customer service ◦ Accounts ◦ Cleaning 	<ul style="list-style-type: none"> ◦ Stationery: Record and receipt books; calculators; markers; ◦ Communication: Hand phones; email & webpage; fax; catalogues & business cards; sign posts ◦ Business furniture: display cabinets, chests, till ◦ Cleaning & dusting materials
Accessory shop	<ul style="list-style-type: none"> ◦ Lifting; ◦ Loading & offloading of heavy items ◦ Sourcing of furniture 	<ul style="list-style-type: none"> ◦ Customer service ◦ Record keeping 	<ul style="list-style-type: none"> ◦ Stationery: Record and receipt books; calculators; markers ◦ Communication: Hand phones; email & webpage; fax; catalogues & business cards; sign posts

Source: Study field guide, 2010

3.8 Remuneration arrangements by sex across the Jepara furniture value network

Male and female labour is remunerated differently in Jepara furniture industry. Males' wage rate is normally higher than females in every firm type despite an equal time allocation to their activities. Additionally; while women are usually paid per day worked except women carvers; men are paid per piece produced or per cubic metre lifted or sawn per day. In this way men earn more than women in most cases. Although, there may be days when men may earn less or even not at all but women earn their constant daily wage if they report to the duty stations. All the payments are scaled and executed on a weekly basis: ending either on Thursday or Saturday for the Muslim and Christian owners respectively. This gender wage gap is captured in Figure 2 below and an additional significant t-test result. The independent t-test result reveals that males' returns to labour is higher than female wage in Jepara furniture industry ($P=0.000284$; $P \leq 5\%$). According to this study females are paid less because females engage in less strenuous activities (114; 24%); lack unique furniture making skills (90, 19%) and they too engage in less risky activities (86, 18%) amongst other reasons.

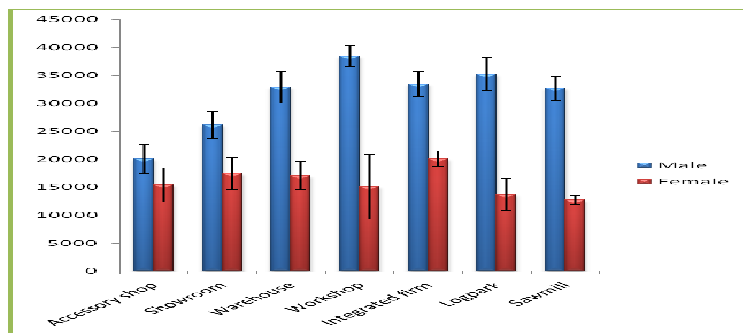


Figure 2: Remuneration of male and female workers in Jepara

Table 5 presents the results of the SWOT analysis for Jepara furniture industry. These basically relate to skills in furniture making and management; institutions; culture etc.

Table 5: Summary of SWOT analysis results for Jepara furniture industry upgrade

STRENGTHS

- Hereditary furniture-making skills and knowledge possessed by both men and women.
- Employers' positive perception of women's labour
- Submissiveness of women: women never complain as men when paid less; most women are convinced that men get more tired although they spend equal hours working
- Men and women workers perceived-need of improving their business and furniture making skills through further training

WEAKNESSES

- Family power relations that lead to subordination of women
- Stereotyping and stigmatization of women involvement in predominantly male activities
- Husbands get insecure if their wives work outside their homes and earn financially
- Unwillingness of women to learn new skills later in life
- Unwillingness of both parents and children to invest in higher education in Jepara
- Reliance on hereditary skills only thus workers may be lacking efficient technical and business management skills
- Labour intensive nature of technology currently used in Jepara furniture industry that deters women and the disabled to participate in some activities
- Negative perception of local institutions

OPPORTUNITIES

- Improved telecommunication services
- Newly created furniture institutions: APKJ & ASMINDO that train entrepreneurs
- Structural adjustment programs that have enabled women as men to get involved in economic activities
- Women emancipation program that was triggered by Kartini; a local female activist

THREATS

- Cultural and religious doctrines that shape gender
- Weak local institutions that are unable to enforce rules

Source: Study results, 2010

4.0 Discussion

Furniture value addition is a lengthy and labourious economic activity (Kaplinsky et al., 2003). Thus; various forms of specialization are imperative in such a case. This is evident in Jepara furniture industry; which comprises a myriad of value addition networks namely: log parks; sawmills; furniture accessory shops; workshops; warehouses; showrooms as well as the tree growers¹².

4.1 Gender issues in Jepara furniture value chain

Both males and females are hired in the vertical and horizontal dimensions of Jepara furniture value chain either on a permanent or semi-permanent basis depending on the nature of activities to be executed. These workers play indispensable roles to ensure an undisrupted flow of goods and services in furniture production. Thus a finished furniture article is a combination of different input skills; and capabilities of both male and female workers deployed at the different nodes of the value chain (Figure 3).

¹² It should be noted that tree growers are not covered in details in this study due to limited resources although the forest office in Jepara was contacted to get an overview of log supply in the furniture industry.



Figure 3: Men and women at work in Jepara furniture industry (Study data; 2010)

Although both males and females are employed in Jepara furniture industry; in relative terms more males than females are engaged. Three major reasons explain this observation. Firstly; this is because of cultural division of labour between males and females. Culturally; men's time is dedicated to productive activities as income earners for the entire family while women are responsible for reproductive home-based activities. Secondly; men are perceived to be physically stronger and more risk takers than females. Furniture activities at the moment in Jepara are manual requiring a lot of muscular strength which is naturally lacking in most female counterparts. Women's inability to engage in strenuous activities may stem from the labour intensive nature of the current technology being used in the different firm types. For instance in the log parks and sawmills; nylon strings; wooden skids and wooden and metallic poles are used by the male workers to lift large diameter logs. Additionally; some of furniture activities are dangerous like sawmilling; finger joinery using the spindle; lifting of heavy items among others. Quite often male workers have not only been physically disabled but also cosmetically deformed: i.e. they lose some of their body parts like fingers; toes; and backs; and their palms and shoulders harden too. This may be exacerbated by lack of appropriate gears. Women naturally are risk averse so they hardly engage in such activities. Thirdly; men are more skilful and knowledgeable about wood and machinery than women in Jepara. This is due to the nature of training and the degree of exposure boys and girls receive while young. In this regard, boys are more exposed to furniture making as girls to domestic activities. This kind of training equips boys and girls with relevant skills needed in their adult life as men and women to fulfill their gender. Consequently in Jepara; due to cultural division of labour husbands have a high opportunity cost of time to engage in domestic chores just like wives to engage in furniture value addition outside their homes. Married women are expected to be excellent home makers and responsible house wives. Therefore; it is natural for a woman to stop wage employment outside her home as soon she marries in Jepara. However; most furniture making activities are home-based¹³; many women do engage actively in furniture making in Jepara.

4.2 Gendered rewards in furniture value addition in Jepara

Masculine activities in Jepara furniture industry are more remunerative than feminine ones. This is because masculine activities are basically primary activities while feminine activities are truly support activities in this value chain. Therefore; despite both male and female workers spending equal working time per day; male workers in Jepara furniture value chain get more tired than female counterparts. Men conduct ergonomically demanding and risky value chain activities in harsher working environments. For instance men as compared to women carry out their activities in either blazing tropical

¹³ Home-based may mean at home or less than 1km from home

sun or rain like in insufficiently sheltered makeshift log parks; sawmills and workshops. Males have to conduct such activities because they are capable but also if they are to satisfy their chief financing role in the households means that they have to engage in more onerous and thus more remunerative economic activities. This model of operation has serious implications to de jure female headed households which may lack the capacity to match the prevailing labour market requirements to realize substantial rewards. Female headed and maintained households may lack the courage; muscle and the favourable socio-cultural environment in which to carry out such tasks as this may as well be defying the prevailing local norms and customs. Furthermore; men are not constrained by relevant skills and strength as women in finding more remunerative employment. So in a given firm; men may not be recruited to carry out limited tasks but a wide range of activities. Versatility of men earns them more wage and employability while lack of it by women under rates their payment and restricts their employment opportunities too. A good number of male accounting officers at sawmills in Jepara confessed lifting logs in emergency circumstances like when some of the workers fail to turn up for work some days. Cultural bias may also influence rewards in Jepara furniture industry between male and female workers. Regarding the view that males are breadwinners; pay bride price and even the fact that males consume more (smoke and polygamous) than women may influence the resultant rewards. Female subordination as well as male superiority may also be replicated in Jepara furniture value chain. It was reported during the interviews that male workers usually resent certain wage rates but women never complain when paid less as men. This may imply that men have higher opportunity costs than women as well as men have greater degrees of freedom to find better paying jobs elsewhere than women. Furthermore; men are paid more than women because men possess unique sets of furniture making skills like relief carving (Figure 4 below); carpentry; milling amongst others as compared to women who can mostly afford ubiquitous activities such as sanding; packing and customer service. This stems from the type of socialization designed to model the respective sex's ability to execute the culturally allocated tasks.



Figure 4: Relief furniture carving in Jepara done by men mostly (Study data; 2010)

4.3 Weaknesses and threats to furniture industry upgrading in Jepara

The cultural and religious doctrines that shape gender in Jepara are serious challenges. Culturally men and women are charged with productive and reproductive activities respectively. This division of labour may disadvantage women's activity in furniture value addition. Yet women's involvement in furniture value chain is indispensable since it buffer costs.

Family power relations that lead to subordination of women is another issue in Jepara. As family heads; men have been reported to become insecure if their spouses earned their own incomes and it is even worse when wives earn more than the husband (s). Family power relations is a serious challenge as a reasonable number of furniture firm employers expressed concerns of losing their excellent female accounting officers after marriage. One sawmill owner reported that he had so far lost four female secretaries after getting married. It should be noted that unmarried women employees in Jepara are too unreliable as after marriage they are most likely to stop working. So the unmarried females are most likely to be discriminated against by employers than happily married female job seekers.

Stigmatizing and stereotyping of working females especially the sanding women as well as those women who have ventured into predominantly males' activities like carving. This kind of working environment for women may not bring out the best in them and may discourage others to get engaged. On another hand; most females have been reported to be unwilling to learn new skills in later in life especially those skills they missed when young.

It was reported that parents and their children in Jepara are unwilling to invest in higher education especially after senior high school. They prefer to start businesses thereafter. This may lead to incompetency in technical operations such as business management and wood science. Yet advanced skills in such relevant fields are crucial to competitive advantage creation and sustenance.

The labour intensive nature of technology used in Jepara furniture industry does not only hinder females; the disabled but also the youths. For instance the wooden /metallic poles and the nylon string used in the log parks to lift large diameter logs may deter potential young employees to take part. This may have implications to the labour costs of the firms as a result.

Institutions are important since they ensure legal security through law enforcement. So institutions may be sources of a competitive advantage. However, the ones in Jepara are weak. The furniture firms in Jepara perceive them as costs rather than benefits. This negative perception of the concerned institutions stems from the: reported elite capture tendencies of the leaders; unclear objectives to the prospecting members and the bureaucracy involved to gain membership.

4.4 Strengths and opportunities to upgrading Jepara furniture industry

Effective; efficient and sustainable upgrading scenarios should build on locally available resources. In Jepara the ensuing aspects may be crucial to furniture industry upgrading:

The critical furniture making skills and expertise accumulated through the years by males and females in Jepara. Thus; both males and females in this regard are key

agents of change as they have unique skills and capabilities; which are relevant to upgrading.

Improved telecommunication system in Jepara facilitates fast information and products flow among the myriad of furniture value chain actors. Internet and mobile phones skills should be enabled especially to women entrepreneurs. Such an initiative may facilitate an increased active participation of female entrepreneurs whose lone mobility is highly restricted. Furniture accessory shops; log parks and carving women can enormously benefit from this service as their suppliers and employers would just be a click or a call away.

Most entrepreneurs in this study acknowledged the lack of business management and efficient furniture production skills. One log park owner admittedly stated;

" I have no business management skills at all and I barely know whether I am doing is optimal or not since I just got the log park management idea from my successful cousin who is also learning by doing."

The above highlighted log park owner may not be the only one in Jepara but several of such cases are possible. Therefore; this self perception of the problem and the need to arrest it serves as a stepping stone for relevant intervening programs. The newly established furniture institutions in Jepara: APKJ and ASMINDO may play a major role in this respect.

The positive perception of females' employment by employers in Jepara is remarkable. Firm owners appreciated female employers and commended their patience and loyalty. Furthermore; despite the fears by most men in Jepara of female empowerment from reliable sources of incomes, majority of the respondents supported the empowerment of their wives and daughters. A male respondent commented that;

"The definition of a good housewife is long overdue for revision and realization. The current grooming process for the wife-to-be should be modified to include not only domestic skills but also family income generating skills."

So at present it seems some families try to emphasize not only domestic skills to girls as before but also income generation skills through education. A change in mind set serves as an avenue for female increased access to formal employment such as furniture value addition. This in turn lowers labour costs due to the industry.

Some women entrepreneurs in Jepara furniture industry also attribute their courage and inspiration to Kartini; a local legendary female activist who spearheaded women emancipation programs in Jepara especially. This may mean that females can be mobilized easily drawing on such a role model. Female active participation at micro level in Jepara has numerous advantages such as: it buffers labour costs and also ensures continuity and flexibility of furniture business activities. Husbands especially

reported that their wives' active involvement relieves them of the economic stress they normally endure alone if their wives had no idea of family income generation but looking forward to husbands' financial support. Furthermore, female participation creates a platform where men and women explore their strengths and weaknesses in business development and growth. Naturally; women and men have different capabilities due to their biological make up and form of socialization they have experienced. According to Arnold *et al.*, (1994); females' risk averseness may be detrimental to industry growth as compared to males' risk taking. This is because women entrepreneurs are most likely to diversify their economic activities in order to insure against business risks while male entrepreneurs may expand their capacity instead leading to economic growth. Therefore; collaboration between men and women may be more appropriate than single sex proprietorship to industry growth.

5.0 Conclusion

Both men and women play crucial roles throughout the Jepara wood furniture value chain by specialization of labour although fewer women than men are engaged currently. Women normally conduct support activities whereas men carryout primary activities. This is due to difference in skills; strength and cultural responsibilities. The perceived difference in skills and capabilities contributes to wage differentials between men's and women's labour. Returns to women's labour are always significantly less than that of men. The skill gap between men and women in Jepara furniture industry may be attributed to the cultural division of labour whereby men and women are assigned productive and reproductive activities respectively. Consequently; men and women receive different training while young to equip them with relevant skills to use later in adult life. Culturally; men are obliged to contribute to the financial welfare of the entire family. Thus; men's cultural role of financial provision to the family may earn them either a wage premium or preferential treatment during recruitment in Jepara furniture industry. Male and female workers in Jepara access the Jepara furniture value chain mainly through kinship although expertise may be a prerequisite. Family labour especially from housewives is imperative in buffering production costs of such firms.

Technologically; Jepara micro furniture firms use ergonomically cumbersome tools in production as well as management. Acquisition of improved tools and equipments may permit increase in output and enhance product quality. It may also allow increased participation of women and youths. However; there is remarkable use of telecommunication means like hand phones and internet in distribution and marketing of furniture products. This has enabled firms to save on their variable costs such as transportation costs of the raw materials among others as a well as enabling active participation of women whose lone mobility may not be permitted. Additionally; internet services have linked directly local producers to more dynamic international markets. Though, computer literacy and other machinery operations among female workers may still be low. Skills in furniture making in Jepara are acquired mainly through socialization with furniture makers from childhood; and learning through practice thereafter. Although women are singled-out to be less skilful in the study, almost all the male entrepreneurs especially micro-enterprise proprietors hardly had any form of formal training in furniture

making and business management. Such skills are hereditary in Jepara. The lack of advanced skills and formal operations contribute to the micro enterprises' exploitation by elite actors in furniture value chain.

Firms in Jepara are able to raise economic rents as well as minimize their costs by outsourcing most of their inputs. Additionally; micro-enterprise owners offset costs on their employees; especially female domestic labour. Furthermore; male workers may be preferred to female workers since the males can conduct multiple tasks once hired. Though there are female workers in Jepara furniture value chain; their participation is constrained by the socio-cultural environment. Consequently: women's less payment may not be crucial at the moment but their access to the value chain could be the biggest challenge. The cultural and religious doctrines that shape gender and family power relations between husband (s) and wives need to be addressed to create a suitable environment for women to exercise their capabilities easily. Therefore; there are macro policy implications for this to occur. However; women's subordinate position in Jepara can be taken advantage of to enhance economic rents in the mean time.

Economically; barriers to business entry; manipulation of productivity factors such as labour (specialization) and entrepreneurial skills (training); plus networking through membership to business institutions (social capital) raise economic rents. But most of these attributes are in their infancy in Jepara furniture industry generally. As a result of low barriers to entry: old furniture firms in Jepara can't withstand the ever increasing forces of competition from the new entrants. The low barriers to entry may reflect informality of operation of Jepara furniture industry. The informality of operations disadvantages not only firms but also workers. Bureaucratic measures to new firm entering the value chain should be applied by the relevant institutions to guard against immediate entry as well as create a basis for legal security for the participating firms.

Furthermore; strong institutions can improve product quality through regularization for quality control. Additionally; strong institutions can improve workers' welfare in relation to working conditions and rewards thereby attracting and keeping innovative individuals to the industry. Lastly but not least; institutions can invest in market research cheaply especially in assessing customer satisfaction. Customer satisfaction assessment in Jepara may be more important than product development since customers pass on their product specifications and designs to furniture makers. Therefore; there is a need to encourage increased participation in the newly created furniture institutions: ASMINDO-Jepara and APKJ in Jepara by improving trust between the leaders and the led. This may be achieved by guarding against reported elite capture; make leaders of such institutions accountable; (re) formulate clearer or locally SMART objectives for such institutions; popularize the institutions locally by reaching out to the intended users not only those along the main roads but also those off the highways both males and females. In so doing social capital may be enhanced. Formalization of firm operations by setting standard measures for firms' entry like the minimum working capital; the critical level of technology ; workers' insurance and product quality control. International Organisation for Standardizing (ISO) can be drawn on in this respect.

Lastly; men and women are relevant agents of change in Jepara furniture industry upgrading process. Women can create economic rents through cost advantage while men through differentiation advantage if both invest in skill improvement. If women skills are enabled and the surrounding socio-cultural environment revised by sensitizing the masses; an increased number of women can take part in furniture production thereby improving flexibility; equity; effectiveness and efficiency in the value chain. There is therefore a need to complement informal training with formal training to enable efficient furniture making techniques and business management principles. Furniture entrepreneurs in Jepara can be trained in basic business economic theory like benefit cost analysis to enable them determine their products' prices rationally. This raises the issue of the role of education institutions in Jepara regency to the upgrading process of Jepara furniture industry. Furniture making and economic theory can therefore be emphasized in the local education curriculum to make sure that school dropouts have at least the minimum relevant formal skills in furniture making and business management.

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