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ILO • Employers' Demand for Child Labor in the Pyrotechnics and Fashion Accessories Industries in the Philippines • IPEC

International Labour Organization

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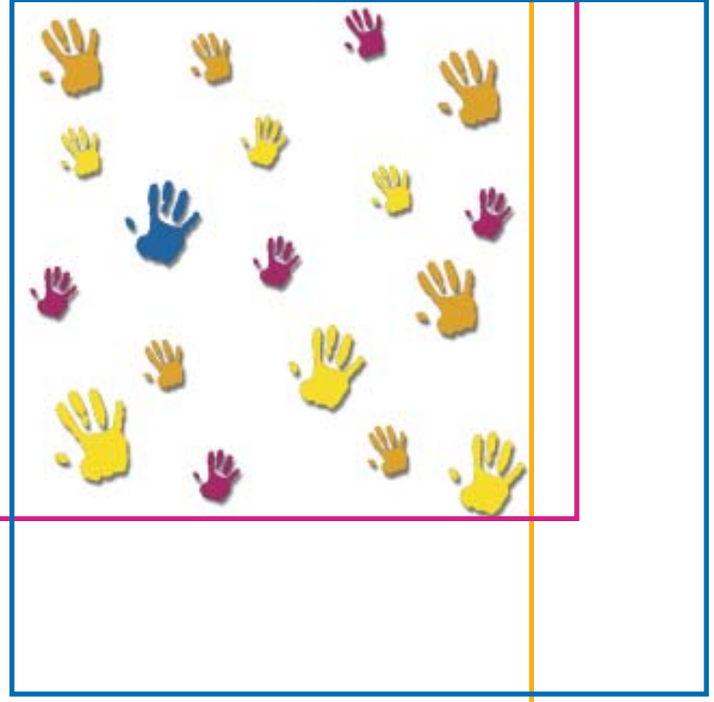

International Programme on the Elimination of Child Labour (IPEC)

Employers' Demand for Child Labor in the Pyrotechnics and Fashion Accessories Industries in the Philippines

Employers' Demand for Child Labor in the Pyrotechnics and Fashion Accessories Industries in the Philippines

An ILO/IPEC–commissioned research study by a group of social scientists from the University of the Philippines and Ateneo de Manila University composed of Fernando Aldaba, Karl Chua, Leonardo Lanzona, Joseph Lim, Rosalinda Pineda-Ofreneo, and Rosario del Rosario. Research assistance by Lourdes Gula, Alvin Firmeza, Ellen Montecillo, Rashiel Velarde, and the PATAMABA is gratefully acknowledged by the authors.

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Contents

Boxes, Tables, and Figures

Boxes

Tables

Figures

Abbreviations

BCPC	Barangay Council for the Protection of Children
CSWCD	College of Social Work and Community Development
DECS	Department of Education, Culture and Sports
DOLE	Department of Labor and Employment
FGD	focus group discussion
GO	government organization
ILO	International Labour Organization
IPEC	International Program on the Elimination of Child Labor
NGO	non-government organization
PATAMABA	Pambansang Tagapag-ugnay ng mga Manggagawa sa Bahay (National Council of Homeworkers)
PO	purchase order
PNP	Philippine National Police
UNICEF	United Nations Children's Fund
UP	University of the Philippines

Foreword

DESPITE efforts to prohibit or place severe restrictions on the employment of children, child labor continues to exist on a massive scale, sometimes in appalling conditions, particularly in the developing world. In most cases, children work because their survival and that of their families depend on it, and oftentimes because unscrupulous adults take advantage of their vulnerability. It is deeply ingrained in cultural and social attitudes and traditions.

Even when it has been declared illegal, child labor continues to be tolerated and accepted as the natural order of things—and much of it is invisible. A wall of silence, indifference, and apathy frequently surrounds it. But that wall is beginning to crumble. Research and empirical studies have significantly contributed to the elevation of the plight of working children as a major issue for the international community to address.

Most research on child labor has focused on the supply side determinants, notably the causes of child labor from the perspective of the family and its economic decisions, or household welfare. Much attention has also been given to paid employment of children due to the concern that they are more vulnerable to exploitation than adults.

However, the evidence that would bear on this premise is lacking. It is this rationale that this study was based upon. The research was undertaken by a group of respected social scientists from the University of the Philippines and the Ateneo de Manila University, led by Dr. Fernando Aldaba. It analyzes the demand-side factors, the findings of which might open another avenue toward mitigating the immensely complex problem that is child labor.

This study endeavors to examine employers' decisions based on differences between adult and child labor, and the demand rationale

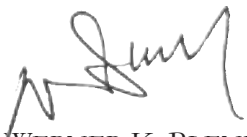
for employing children. The study forms part of a global ILO-IPEC study on wages and productivity of child labor in Ghana, Uganda, India, and the Philippines. For the Philippine study, the focus is on the pyrotechnics and fashion accessories industries in the provinces of Bulacan and Cebu, respectively.

To be of use in business policy formulation, the study has sought to determine and analyze the main reasons for using child labor, the socio-economic contexts of the two industries and the communities where they are located, and the employers' views on other non-economic factors for employing child labor, which are not based on productivity or compensation differences.

Needless to say, the conclusions and recommendations advanced by this study are eye-openers, particularly in the formal sector of the economy. It is, indeed, inspiring that the study has emphasized the need for a macro-level research, with focus on the informal economy and subcontracting arrangements. This will consequently yield more insights on child labor, which is predominant in the informal sector.

Decent lives for children cannot be separated from decent work for adults. Eliminating the worst forms of child labor involves sustained efforts that predicate a vision of society and of development.

With the commitment and support of its social partners, the ILO remains true to its goal of bringing an end to the abomination of child labor without further delay. We owe no less to the children whose futures are already lost, and to the many who will have none if we do not act now.



WERNER K. BLENK
Director
ILO Subregional Office
for South-East Asia and the Pacific

Preface

MOST of the literature on child labor has focused on the supply side determinants, i.e., the causes of child labor from the perspective of the household and its economic decisions. This pioneering study in the Philippines analyzes the demand side factors—the employers' decisions based on productivity differences between adult and child labor and other key reasons for employing child labor. The study which utilized a survey among firms focused on two sectors—pyrotechnics and fashion accessories.

The results of the study showed that the top reasons for employing child labor in the pyrotechnics industry in descending order are: 1) children are obedient, 2) children have no vice, 3) children learn easily, 4) children are employed to help their family, 5) children are easy to put to work outside school time, and 6) children are easy to monitor. In fashion accessories, the key reasons in descending order are: 1) children are fast workers, 2) children have sharper eyes, 3) children have no vice, 4) children are obedient, 5) children learn easily, and 6) children can be called to work after and outside school time.

The study recommends that the concerned industries should explore technologies or innovations in the production processes involved that could replace child workers (but not displace adult workers) or enhance adult workers' efficiency, particularly in the paper folding process in pyrotechnics and the nylon stringing process in fashion accessories. In the latter industry, the feasibility of providing adults with eyeglasses for the said activity at a low cost should also be undertaken.

The team also proposes that concerned stakeholders in the two industries address unequal gender roles, alcoholism, gambling, and male violence through gender sensitivity training for employers (women

and men), as well as information dissemination on the new law combating violence against women and children. Eliminating alcoholism, gambling, and family violence may yield higher adult male employment to replace the child workers in the community, especially in economic activities where their productivity is higher than the children. Values and awareness programs for the males should complement these activities so that the unemployed and underemployed males will be more open to do activities typically "reserved" for women and children.

These are but a few of the major findings and recommendations of this study. Our team hopes that it will trigger more research on the demand side factors affecting the employment of child labor in the Philippines. We gratefully acknowledge ILO-IPEC (in Geneva and Manila) for selecting our team to undertake this timely and relevant research project.

FERNANDO T. ALDABA
For the Project Team

Executive Summary

THE literature on child labor has largely focused on the supply side determinants, i.e., the causes of child labor from the perspective of the family and its economic decisions. In contrast, this study examines the demand side factors—the rationale of employers for employing child labor based on the differences they perceive between adult and child labor.

Specifically, the objectives of the study are to determine and analyze 1) the main reasons for using child labor in selected industries and communities, 2) the socioeconomic contexts of the industries and communities selected for the study, and 3) the employers' perspectives on the employment of child labor vis-a-vís other types of labor, and related issues. The aim is to use the findings of the study to formulate policies that will address the child labor problem from the demand side, particularly in the pyrotechnics and fashion accessories industries.

Survey Findings

With regard to the personal and economic profile of the respondents and their businesses, there is a dominance of middle-aged, married, and modestly educated female employers of child labor. The employers surveyed also have an average of 11 years in the industry and depend on their child-employing businesses for their main source of income. While most respondents in pyrotechnics want to transfer out of the industry, most respondents in fashion accessories want to remain in the industry.

On production processes, revenues, expenditures, and the demand for their products, there is a prevalence of subcontracting arrange-

ments. Due to the export orientation of the fashion accessories industry, it has higher revenues and profits than the pyrotechnics industry. The cost structure of the fashion accessories sector is more labor-intensive while that of the pyrotechnics is more non-labor input-intensive. Both industries have peak months toward the Christmas and New Year holidays.

On the employment of child labor in selected processes of the pyrotechnic industry, child and youth workers are widely used in the non-hazardous processes while adult workers are more dominant in the hazardous processes. Moreover, non-hazardous processes are more farmed out to other households while hazardous processes are undertaken more in employers' own households. There are also fewer child workers than youth and adult workers and there are more non-migrant workers in other households.

The average working hours and days in the pyrotechnics industry is shorter for children, and longer for the hazardous processes. Moreover, migrant children tend to work longer. Also, other households performing non-hazardous processes tend to work longer hours while own households work longer hours on hazardous processes.

In fashion accessories, child workers put in shorter hours and days than adult workers while migrant workers labor longer hours in a day than non-migrants. However, even if children work shorter hours and days, their work is still equivalent to full time work. The average piece rate is lower for children compared to older workers. Migrant workers also get higher piece rates.

On the rating of workers, child workers are generally not rated well compared to adults while migrant and own household workers are ranked better. Youths are rated best in processes where they are abundant.

The top reasons for employing child labor in pyrotechnics in descending order are: 1) children are obedient, 2) children have no vice, 3) children learn easily, 4) children are employed to help their family, 5) children are easy to put to work outside school time, 6) children are easy to monitor.

The top reasons for employing child labor in fashion accessories in descending order are: 1) children are fast workers; 2) children have

sharper eyes; 3) children have no vice; 4) children are obedient; 5) children learn easily; 6) children can be called to work after and outside school time.

On production scale and employment of child labor, simple regression results show that:

1. Paper folding process in pyrotechnics: Higher production is associated with a smaller proportion of adult workers.
2. Fuse preparation process in pyrotechnics: Higher production is correlated to a bigger number of youth and adult workers and higher proportion of youth workers.
3. Powder loading in pyrotechnics: Higher production is associated with a larger number and proportion of adult workers.
4. Wiring process in fashion accessories: Increased production goes hand in hand with increases in the number and proportion of youth and adult workers, and with decreases in the proportion of child workers.
5. Nylon stringing process in fashion accessories: Increased production is correlated to the number of child, youth, and adult workers and increased proportion of youth workers.

On child work and schooling, a significant proportion of child workers in pyrotechnics do not study. Moreover, a majority of youth workers also do not attend school. In contrast, there is better school attendance for child and youth workers in fashion accessories. However, employers claim that child and youth labor have little effect on their schooling.

Recommendations

The following are some general considerations and recommendations to curb the demand for child labor in the two industries.

Working at the macro level

The team recommends a bigger study on the macro level with emphasis on the informal economy and subcontracting arrangements in similar industries affected by the domestic and international market toward a more comprehensive and strategic analysis of employment

behavior and patterns.

There have to be national, regional, provincial, and municipal plans and strategies on key sectors and areas on how to tackle child labor—partly through giving economic incentives to employ adult labor versus child labor via technological and productivity changes and partly through improving and changing the livelihoods of the employers from child-labor intensive, hazardous, and environmentally damaging activities to more adult-labor intensive, healthier, and more environmentally-friendly activities (see below).

Working within the Two Industries

Addressing the Substitution Factors

1. Explore technologies or innovations in the processes, which may replace child workers (but not displace adult workers and subcontracted households' income) or enhance adult workers' efficiency, particularly in the paper folding process of the pyrotechnic industry and the nylon stringing process of the fashion accessories industry. In the latter industry, a feasibility study on providing adults with eyeglasses for the activity at very low and reasonable cost should be undertaken. Tying this to special services of the Department of Health and Department of Labor and Employment should be explored.

Addressing the Availability of Adult Labor and Time

2. Release adult labor to undertake the work currently being done by children. Eliminating alcoholism and gambling may yield higher adult male employment to replace the child workers in the community, especially in economic activities where their productivity is higher than the children. Values and awareness programs for the males should complement these activities so that the unemployed and underemployed males will be more open to do activities typically "reserved" for women and children. Such values and awareness programs would benefit from gender sensitivity training in the communities and among employers. The unusually high response of employers in the survey claiming children as having no

vices (as one of the main reasons for employing children) indicate that such programs may indeed yield beneficial impacts on reducing child labor.

3. Another way to release adult labor to undertake children's work is to address women's multiple burden (in multiple economic activities plus household and rearing activities). This inevitably will allow women to concentrate and work on some of the activities that children are currently doing. Gender sensitivity again plays a crucial role here since a more equitable sharing of domestic tasks can free the women to engage in more productive work, thereby lessening the incidence of child labor. Complementary to these should be the provision of childcare, kindergarten, and other services at the community level which reduce the household burden of the females.

Other Initiatives

4. Strengthen community-based initiatives such as those undertaken by barangay councils for the protection of children to address child labor with the involvement of employers, NGOs, people's organizations, and other stakeholders. There is a need for a dialogue among key stakeholders toward policy coherence, e.g., encouraging or not encouraging the pyrotechnics industry in Bulacan.
5. Economic incentives must be given to employers who will substitute adult for child labor. For example, access to credit or new technologies by small and micro-enterprises may be made contingent on the use of only adult labor in all their production processes.
6. Conduct an information and education campaign among the micro, small, and medium enterprises involved in the two industries on the different kinds of occupational hazards present in their operation (especially in pyrotechnics) and promote technologies and practices to avoid them. The use of masks, gloves, benches with back rests, etc. can be easily propagated. Community-based environmental education, especially in Cebu where manufacturing dust permeates the air, needs to be emphasized as well.
7. Employers should be encouraged to enroll in formal and informal

social protection schemes—Social Security System, Philhealth, Red Cross, Damayan, etc.—to cover accidents, illness, death and other risks for themselves, their workers, and their family members. This can be an especially important safeguard against the hazardous activities in pyrotechnics.

8. Improve the access to and quality of education at the primary and secondary levels especially in areas where industries employing child labor abound. This would raise the opportunity cost of the children being employed in the area. There is also a need to educate both children and parents on children's and women's rights, occupational safety and health, and other related issues. The right of children to an education needs to be emphasized, and ways of guaranteeing/realizing this should be discussed toward more creative strategies—distance learning, non-formal education, vocational training, etc. It will also be useful to integrate programs that will sustain the children's attendance in schools—e.g., scholarships and health and nutrition programs.
9. Monitoring and regulation should focus on health and safety issues and regulations, not on penalizing violators. Peer monitoring can also be encouraged through the establishment of codes of conduct among business associations in the two industries. Smooth coordination among the local government, labor department, police, NGOs, community groups, and other important players in facilitating the implementation of these regulations should be encouraged. Women's and children's desks at police stations should ideally be the ones involved in workplace "visitations" and a program to sensitize them to child labor and gender issues should be instituted to prepare themselves for this work.

Working Away from the Two Industries

1. The state through the local governments must be able to provide information and training on alternative livelihoods for small entrepreneurs. Promoting viable and stable alternative sources of income, such as rice trading, trading of other products, animal raising, vegetable growing, tricycle and jeepney driving, handi-

crafts—which were mentioned as other sources of income in the survey—may shift employers' businesses away from child-labor employment. Such training should be complemented by microfinance services to supplement capital requirements and, where applicable, marketing and technical assistance. This is especially true in Bulacan where many of the employers interviewed had expressed their desire to shift to other profit earning endeavors that are less hazardous and more profitable than the pyrotechnics business. In Cebu, diversification of livelihood activities would smoothen incomes of small and micro-enterprises as the fashion accessories industry is particularly vulnerable to fluctuations in the global market.

2. Economic incentives (e.g., access to credit, training and marketing assistance, or new technologies) must be given to employers who will shift away from industries that employ child labor to alternative enterprise activities. This will encourage them to try new kinds of businesses that are also financially rewarding but do not utilize child work. Economic alternatives, however, should be sustainable and viable, so that those who choose to explore them do not go back to their sector during peak seasons (as has happened in the past in pyrotechnics). Thorough feasibility studies and capability building programs need to be implemented to ensure success.
3. Strengthen multi-agency bodies such as the Task Force to Eliminate Child Labor in the two industries/areas to implement comprehensive strategies which also address the demand side, and to lobby for coherent policies to confront persistent industry issues and ensure the survival of both employers and workers through industry development or a shift to alternative industries. Also a community- and area-based approach involving all stakeholders (GOs, NGOs, community-based organizations, informal workers' organizations, church-based groups, civic groups, etc.) is essential to provide comprehensive support services for working children, their parents, and their families toward the elimination of child labor.

Chapter 1

Introduction, Methodology, and Review of Literature

Rationale and Objectives of the Study

The literature on child labor has largely focused on the supply side determinants, i.e., the causes of child labor from the perspective of the family and its economic decisions. In contrast, this study examines the demand side factors—the rationale of employers for employing child labor based on the differences they perceive between adult and child labor.

Specifically, the objectives of the study are to determine and analyze 1) the main reasons for using child labor in selected industries and communities, 2) the socioeconomic contexts of the industries and communities selected for the study, 3) the employers' perspectives on the employment of child labor vis-a-vís other types of labor, and related issues. The aim is to use the findings of the study to formulate policies that will address the child labor problem from the demand side.

The expected output is a better understanding of the demand for child labor in the pyrotechnics and fashion accessories industries based on an empirical analysis of the survey results and focus group discussions in the context of industry trends, subcontracting chain, and community information and initiative. Demand-oriented policies to address the issue of child labor can then be proposed.

Methodology and Conceptual Framework

Conceptual Issues

Given the objective of analyzing employers' decisions to utilize child labor, the following conceptual issues are considered:

Definition of Child Labor

For this study we use the International Labor Organization (ILO) and Philippine government definition of child labor as employment of boys and girls below the age of 15. Although there may be valid arguments that some child labor activities in the pyrotechnics and fashion accessories industries are hazardous (and therefore there may be legitimate reasons to include youths between 15 to 17 years of age), this study takes the more conservative approach of defining child labor as employment of children below 15 years of age.

Profitability and Compensation

It must be borne in mind that the concept of profit maximization or cost minimization in the Philippine study is in the context of paying piece rates in subcontracting arrangements. Thus, the standard neoclassical model of hiring labor until its marginal product reaches the real wage does not hold. A simple approach is given in a later section. The concept of compensation thus focuses on the piece rates for particular tasks in the production process rather than wages per unit time. Piece rates are usually paid for specific outputs in different stages of production.

The Use of Household Labor

Another major distinction from the firm-based neoclassical economics model is the use of household labor aside from hired individual labor. There are dynamics in household labor which involve savings from overhead costs, teamwork, built-in supervisory mechanisms, and social relations different from firm-based employment. Some of these prove to be quite important.

On Analyzing Employers' Decision to Employ Child Labor

Assuming Substitution between Adult and Child Labor

In analyzing decisions to utilize child labor, one approach is the ILO methodology given in "Wages and Productivity in Child Labor: A Framework for Research"—which implicitly assumes that there is substitution between child labor on one hand and adult labor on the other. In this approach, the following factors may determine the decision to employ children:

1. Children provide cheaper labor costs. To test this, the piece rates paid to children have to be compared with those paid to adults in tasks where child labor is utilized.
2. Children do particular tasks better (nimble fingers argument). Though frowned upon by most child labor studies, the possibility that girls and boys are employed in particular tasks because they perform better in terms of speed, quality, or patience cannot be precluded a priori. Including this variable can actually prove or disprove the nimble fingers argument in the industries covered in this study.
3. Children are hired for some tasks because they are more docile and obedient. Similar to the above, including this variable can prove or disprove this controversial issue.
4. Children are hired because they are more flexible with work time, are more available, and agree more readily to work extended hours compared to adults. This argument will have to explore the employment of child labor to meet peak season demands and sudden unanticipated increases in orders.
5. Children are employed because they represent available excess labor, compared to scarce adult labor, that can be used to increase production to fill subcontracted orders. In keeping with its empirical approach, the study remained open to this possibility to forestall any bias in the identification of demand side factors that influence the utilization of child labor.
6. Child labor provides a committed supply of relatively skilled labor (relative to the production of the particular product) over a

longer period of time than adults as employed children grow increasingly skilled (as they go up the learning curve) in the production processes and become committed to produce for the subcontractor over the years.

On Viewing Child Labor as Part of Household Labor: Complementarity between Adult and Child Labor

An added approach is to view child labor as part of household labor as described earlier. In this approach children are viewed as part of a production team unit, thus opening the possibility of complementarity between child and adult labor. The special characteristic of children as the lowest members of a production team, which exhibits hierarchical and supervisory arrangements, becomes prominent.

The choice of household labor, as opposed to individually hired (adult and/or child) labor, may be due to the following factors:

1. Given that some of the tasks are done at home by household members, the employer saves on rent, electricity, and other costs associated with the workplace.
2. It is difficult for government agencies to monitor violations of labor standards and regulations in household production.
3. The employer saves on monitoring and supervisory costs, which the adults undertake naturally with the children. This can explain also why certain tasks are done both by adults and children working alongside each other.
4. The strong social and emotional bond among the household members may have positive effects on productivity—e.g., speed and quality of work of the production team (the teamwork argument).
5. Items 2 and 3 above, as well as the lower compensation threshold of children, may result in an overall decline of piece rates and labor costs for the employer.
6. The availability of child labor in the household after and outside school hours provides more flexibility in meeting quotas or orders from buyers.

The Role of Household and Non-Household Migrant Labor

In the pyrotechnics industry, household and non-household mi-

grant labor are hired (usually families, including children) by some subcontractors to produce part of the orders. In this regard, the decision to utilize migrant labor also becomes crucial and contractual arrangements with them may differ from that with native families.

A Simple Analytical Framework

The above approaches may be summarized in the following simple equation:

$$dQ = Q_a\, dL_a + Q_c\, dL_c + Q_{am}\, dL_{am} + Q_{cm}\, dL_{cm}$$

where dQ = change in output

Q_i = marginal product (or speed) of i

dL_i = change in labor input (in terms of person-time) of i

i = a, native adults
c, native children
am, migrant adults
cm, migrant children

The above equation illustrates some of the possible reasons for the demand for children.

1. If Qi of children is higher than that of adults (nimble fingers argument), demand for children and labor input for children will be higher
2. If the supply of adult labor is limited, then dL_a cannot go up and children and migrant families will be used.
3. If children are more readily available and reliable, dL_c and dL_{mc} are more certain to be derived than dL_a and dL_{ma}. Thus, given similar productivity between adults and children, more children time will be used.
4. If substitution prevails, Qi of adults and children will be independent of each other. If, on the other hand, adults and children are complementary (due to the supervisory or teamwork arguments), then Qi is enhanced with more inputs of the other type of input,

and the use of both types of labor reinforce each other (the second order cross-derivative is positive).

What the above model doesn't include is "wage" or piece rates. It is obvious from a cost minimization process that the lower the piece rate for a particular labor input *i*, *ceteris paribus*, the more of that input will be used.

Other Variables Examined

Other related variables analyzed include:

1. The extent of training of girls and boys on the particular tasks they undertake.
2. The relation of schooling and employment of children. Are school children hired as much as out-of-school children? Is their schooling affected by work (especially during peak periods or sudden increases in orders)?
3. What are the other kinds of payments or benefits given to child and adult labor, such as advances, credit access, bonuses, and free lodgings and food (especially for migrants)?
4. What are the main problems of employers in filling orders? What are their responses to these, and are employment patterns affected?
5. What are the extent of, reasons for, and the responses of employers to a) unfilled orders, b) defective/rejected orders, and c) orders that are cancelled?

Surveys and Focus Group Discussions

A survey with purposive sampling of 100 employers/subcontractors for each of the two industries—the pyrotechnics and fashion accessories—was undertaken. Subcontractors are employers who contract households and individuals for the production of particular products. Subcontracted households that farm out orders to workers of other households other than their own are also considered employers. The survey for pyrotechnics was conducted in Pulong Buhangin, Sta. Maria, Bulacan; that for fashion accessories, in Laray, Talisay City, Cebu.

To aid in the design of the survey questionnaire, focus group dis-

cussions (FGD) with employers, household workers, non-household workers, and migrant workers were conducted. Ultimately, a separate questionnaire was used for each industry, but the two were essentially the same and differed only with regard to various specificities of the industry concerned. They were also carefully devised to enable cross comparisons to be made.

All concerned agreed that the quality of the questionnaire was critical to the success of the study, Thus, no one begrudged the time devoted to refining it. The questionnaires were piloted—at least three times for each industry—from late July to September 2004. Economists and survey specialists also met several times to further refine successive versions of the questionnaire, incorporating suggestions from both the field and ILO's International Program on the Elimination of Child Labor (IPEC). Finally, the twelfth version was approved as final.

Additional FGDs were undertaken after the survey to validate the results.

Eliciting Truthful Responses

The main constraint in surveys involving child labor is eliciting truthful responses. To mitigate this, the study team used a non-government organization (NGO), the PATAMABA, to conduct the surveys. The rationale for this was that some of the employers were PATAMABA members and the rest knew of its existence in the community. Thus, respondents would feel more at ease and be more open with PATAMABA members conducting the survey than with complete strangers. Furthermore, employing child labor was not generally seen as a shameful thing in the communities concerned, inasmuch as it was part of family labor and especially since the children worked under the supervision of their parents and mostly go to school.

Still, there was clearly a need to validate the answers of the respondents. FGDs were again employed after the surveys results were derived to validate them and to answer such questions that the results themselves had raised. Validation with the subcontracted households and key informants in the community were also undertaken. Ecologi-

cal questions were also asked of employers/subcontractors, concerning other employers/subcontractors. The key ecological questions involved the 1) incidence of child labor and 2) factors determining the employment of children.

Overview of Relevant Literature: Demand Factors

Child labor is a major problem in the Philippines. Its incidence is high despite the presence of national and international laws that prohibit various forms of child labor. Poverty, as many studies have confirmed, is the primary reason and the dominant factor why children are forced to work. Parents send their children to work as insurance against adult income fluctuations. The relative poverty of household enterprise owners is also a reason why they hire children (IIR 1988).

The literature on child labor has primarily focused on the supply side or the determinants of child labor from the perspective of the family and/or household and its economic decisions. Studies on demand side determinants, though not scarce, are considerably fewer than supply side studies. A study of demand factors in child labor must necessarily look at the employers of children. Employers of children hold key answers to the rationale behind hiring children. Factors affecting the demand for child labor can be viewed at different levels, i.e., the macro, meso, and micro levels.

Macroeconomic Environment and Demand Factors

Several macroeconomic conditions make child labor favorable, though they do not directly determine child labor demand. A number of them are discussed below.

Size of the Informal Industry

The size of the informal industry is often cited as having a strong positive influence on the demand for child labor (Ano 2002, Bonnet 1993, DOLE 1993, Goonesekere 1993, ILS 1994, Lim 2002, Venus-

Masilang 1991). The informal industry is made up of family-owned small-scale operations, which depend heavily on indigenous resources, simple technologies, and cheap labor (Ballescas 1987). Moreover, the informal industry is also difficult to monitor in terms of labor laws and standards, making it conducive to child labor. The informal industry is also characterized by piece rate compensation. The piece rate payment system makes it possible for adults to call upon children to help in production (IPEC 1999). This is especially true when a certain quota of orders must be met.

Legal and Government Factors

Despite laws prohibiting various forms of child labor, it still persists. The lack of child labor law enforcement, regulation, and information combined with generally weak social safeguards sets the stage for the proliferation of child labor (Aldaba et al. 2004, del Rosario & Veneracion 1987, Edralin 2002, ILS 1994, Lim 2002, Salazar 1988). Moreover, by not addressing basic employment provision and providing adequate and accessible social services, the economic, social, and political systems are tacitly creating the conditions favorable for child labor.

Trade Unions

The presence of trade unions and the degree of unionization of workers as a whole have a negative impact on child labor in the industries that are unionized (Abdalla 1988, del Rosario & Veneracion 1987, Salazar 1988). Guillen-Marroquin (1988) noted that by hiring children, union problems and wage hikes are circumvented. Furthermore, Del Rosario (1996) observed that employers hire children because they were easier to lay-off when production is low and also pose no resistance to such action.

Globalization

Some studies point to globalization, i.e., increased competition, as a cause of rising child labor incidence. Child labor utilization tends to rise as developing countries increasingly use cheap child labor to gain a competitive advantage in world markets (Apit 1998, ILS 1994,

Villamil 1999). An ILO study (1998) on the Indian carpet industry revealed that importers were sensitive to price and a significant rise in carpet price could dampen the industry leading to a sharp increase in the demand for child labor. Cigno et al (2002), however, using cross-country data found no empirical evidence that trade per se increases child labor. In fact, the same data showed that trade has no significant effect or at best reduces child labor.

The Labor Market

The availability of employment opportunities and the supply of children have an effect on child labor prevalence. For instance, Guillen-Marroquin (1988) observed that employers take advantage of the restricted employment opportunities in the highlands of Peru to hire children. This also seems to be true in certain industries in the developing world.

Industry and Gender Specific Factors

Certain industries tend to have a higher incidence of child labor. Del Rosario and Veneracion (1987) observed that child labor demand in the garments industry seems to be a result of the existence of domestic ready-to-wear and foreign markets, as well as cheap labor strategies inherent in such industry. Children's gender is a strong determinant of demand for child labor in certain industries. Del Rosario and Veneracion (1987) observed that garments tend to be female dependent while wood production, construction, agriculture, and fishing tend to favor male children. Gatchalian (1986) observed that in wood production, boys constituted 64% of total children employed, while in garments girls (97%) strongly dominated child employment.

Meso Demand Factors

At the meso level, sociocultural reasons, psychological reasons, societal value systems, and community characteristics affect the demand for child labor. Del Rosario and Veneracion (1987) observed that the attitude of responsibility arising from constant reinforcement of cultural values prevalent in a child's community affects the demand for

child labor. The internalized family expectations that everyone must contribute to household income gives reason for parents and relatives to hire their children or kin. In addition, the acceptability of child labor in the community as observed by Edralin (2002) is probably conducive to hiring children. Moreover, the dynamics in household labor, which involves teamwork, built-in supervisory mechanisms, and social relations that differ from firm-based employment, is also a determinant of child labor demand.

Employer surveys reveal that employers hire children because they believe they are doing the children's parents a favor in smoothing their income (Aldaba et al. 2004, del Rosario 1991 & 1996). Again, this reinforced societal value seems to increase the prevalence of child labor. As long as a community sees advantages in hiring children, it seems likely that child labor in the community will continue.

From an inter-generational perspective, tradition dictates that children follow the footsteps of their parents (IPEC 1999). This is further reinforced if parents themselves worked during their childhood as this gives them a reason to make their own children work. Lim (2002) observed that many employers turn out to be parents or relatives of children. However, it is interesting to note that some Philippine child labor studies reveal that parents do not force their children to work and that a large majority of children (70-80%) actually decided on their own to work (DOLE 1993 and Tungpalan 1992). Studies also show that if a family has a tradition of engaging in hazardous work, then the likelihood is high that children will follow suit.

Finally, community characteristics have a say in child labor demand. Demand for child labor is easily influenced by the available supply of children. In communities where there are many children, it is observed that child labor incidence is relatively high compared to places where there are less children. For instance, Raymundo (2004) observed that the incidence of child labor is higher in areas with high fertility rates.

Micro Demand Factors

At the micro level, demand for child labor is determined by both eco-

nomic and non-economic reasons. Economic reasons include factors that affect production, such as the production technology, schedule, and cost, while the non-economic reasons primarily include traits of children not found in adults. Substitution and complementarity factors are also present.

Production technology

Firms with production technology characterized by unskilled, manual, and repetitive tasks and backward technology tend to hire more children. In general, higher capitalization and the use of more advanced production technologies reduce the demand for child labor. Lim (2002) observed that backward production is conducive to child labor since this requires more unskilled manual labor that children, and not adults, take. Ano (2002) stated that labor-intensive and simple technological requirements continue to allow easy participation in the work process by anyone interested, children amongst them. On her part, Edralin (2002) remarked that the demand for low quality products from the poor gives rise to child labor incidence.

Overseas, studies also support this notion. Abdalla (1988) and Salazar (1988), who studied child labor in Egypt and Colombia respectively, also observed that less technologically advanced processes and most manual tasks engage more children while the use of sophisticated equipment in larger workshops tend to reduce the need for child labor. Moreover, Levy (1985) observed that mechanization of agriculture in Egypt tends to reduce the demand for child labor. Del Rosario (1991), however, found that employers with higher capitalization in the garments and agriculture industries hire more children, contrary to the generally accepted notion that advancement in technology reduces the demand for child labor. (Does capitalization, in this case, mean more machines and equipments or simply higher financial capital, which affects scale of production and not capital goods?)

In many firms using child labor, it was observed that the production supply chain involves subcontracting. Studies show that subcontracting as a means of fulfilling sudden product demands and keeping labor costs low, partly in response to competition set in by globaliza-

tion, prominently increases child labor utilization (Ano 2002, del Rosario & Veneracion 1987, DOLE 1998, ILS 1994). Furthermore, these kinds of firms with short-term horizons tend to cut down on costs and limit investments in capital equipment and tenure of employees, which paves the way for hiring children (Lim 2002).

Production Schedule

The demand for child labor is also determined by the production schedule. Many studies observed that seasonality of production, due to exogenous factors such as unstable local and foreign demand, conditions intrinsic to various seasons, and availability of inputs to production increase the demand for child labor. To meet fluctuations in demand, children are favored because of their immediate availability for sudden part time work, their flexible working hours, their agreeing to work even for very low wages or in extreme cases even none, and their availability during the night in the case of agriculture (Abdalla 1988, del Rosario 1991 & 1996, DOLE 1993, Guillen-Marroquin 1988). In addition, a DOLE study (1998) found that the difficulty of maintaining a stable production schedule due to intense global competition pressures firms to resort to subcontracting and thus hiring of children.

Production Process

Different tasks in the production process can dictate the demand for child labor. Del Rosario (1996) analyzed from surveys that enterprise owners recruit children mainly due to their suitability for "fine finishing tasks," in addition to lower labor costs. Children were reported to be better than adults in trimming garments. They were also willing to perform the finishing requirements of garment enterprises that adults were reluctant to accept. In Cebu's fashion accessories industry, stringing of beads is done by children as the task requires extraordinary patience and sharper eyes that adults tend not to have. In a related study, del Rosario (1991) found that in the junk shop industry, employers hire male children since they can easily walk the streets in search of trash.

Children's physical characteristics fit snugly in some tasks. For in-

stance, children's small size are favored in fishing boats since they occupy less space, and drug traffickers prefer children because they are harder to detect (Aldaba et al. 2004). Overseas, employers in Egypt's leather tanning industry prefer to hire children to do numerous petty tasks while reserving tasks requiring skills or strength to adults (Abdalla 1988).

The special place children fill in certain tasks seem to concur with the observation that substitution between adult and child labor in certain tasks is not possible. One factor often cited is the nimble fingers argument—children with small fingers have the special ability to make finer and more detailed work. This argument was cited in Aldaba et al. (2004) as occurring in the pyrotechnics industry. While the nimble fingers argument is cited in some studies, it is frowned upon by many child labor studies. ILO studies and workshops (1998) found that the nimble fingers argument is not well founded. One study cited the Indian carpet industry in which both adults and children work side by side in specialized tasks. Moreover, the same study observed that in tasks that call for dexterity, adults and children performed the same task without significant differences. Overall, ILO found that children were not economically necessary in the Indian carpet industry and thus replaceable. In addition, the study cast doubt on whether the use of child labor had actually made the industry more competitive. A separate IPEC study (1999) also had similar conclusions.

Some argue that the substitution assumption is shaky and that the complementarity assumption provides a better explanation for child labor use given evidence that adults and children work side by side in certain industries. Complementarity views the child as part of household labor and the production unit and may not be easily separable. The special characteristic of children as the lowest members of a production team with intrinsic hierarchical and supervisory arrangements becomes prominent.

Production Costs

The cost of child labor as a demand factor has been subject to a lot of debate. Studies are not unanimous on this. In principle, a low market clearing wage is likely to increase the incidence of child labor

because they become good substitutes to unskilled adult workers whose reservation wages are likely to be higher (Basu & Van 1998). However, many household firms that hire children pay piece rates, rendering standard neoclassical labor market theories inapplicable.

On the one hand, some studies support minimization of cost as a reason for hiring children. These reasons include simply lower wages (or piece rates) of children, the nonpayment of overtime wages and benefits, the possibility of working without pay, and children being more agreeable to lesser pay than adults for the same type of unskilled work (Adballa 1988, del Rosario 1991 & 1996, Edralin 2002, Lim 2002). Use of child inputs indirectly reduce cost since it is claimed that children are more efficient as they work faster than adults.

On the other hand, other studies found this fallacious. ILO workshops and studies (1998) in Indian industries employing children observed that children and adult pay differentials were not significantly large. Furthermore, ILO found that the savings realized from children were small, amounting to only 5-10% in the Indian carpet industry. Similar results were observed by a separate IPEC study (1999).

Non-economic reasons

Guillen-Marroquin (1988) observed that children in Peru's gold panning industry are generally more compliant than adults and tend to accept without question the tasks assigned to them and their working and living conditions. Moreover, children were preferred because they were more likely to be cowed by forthright and demanding adults. Del Rosario (1991 & 1996) observed that employers in the garments industry indicated in surveys the following reasons for hiring children: they do not complain and are easy to control, they have more stamina and do not easily get tired; they are cleaner, neater, faster, more alert, more docile, less hardheaded, more manageable, easier to train, more enthusiastic, and have keener vision.

ILO (1998) and IPEC (1999) studies noted the following nonpecuniary reasons for hiring children: children are less aware of their rights, less troublesome and more willing to take orders, willing to do monotonous work over long hours without complaining, more trust-

worthy, less likely to steal, and less likely to be absent from work. It was noted that less absenteeism is important in an informal setting where daily rates or piece rates are paid. Lim (2002) and Edralin (2002) also found similar results.

In contrast, some studies in the yarn-based and car repair industries and in agriculture revealed that children were not hired since they are less skillful, more careless and wasteful, prone to stealing, and definitely not better than adults in most tasks (del Rosario 1991).

Chapter 2

General Profile of the Pyrotechnics and Fashion Accessories Industries

Pyrotechnics

The Philippine pyrotechnics industry[1] started as a very lucrative, informal, micro, and household-based enterprise catering to the traditional needs of Filipinos during times of festivity. This century-old industry is concentrated mainly in the province of Bulacan in Central Luzon, particularly in the towns of Baliwag, Bocaue, San Rafael, and Sta. Maria. At its peak, the industry was estimated to be worth P400 million, involved 368 licensed manufacturers and dealers, provided livelihood to more than 100,000 people, and contributed about one percent of total provincial gross revenue in Bulacan. (Florendo 2000).

The Bulacan Pyrotechnics Association worked for the legalization of pyrotechnics production to avoid police harassment and to improve safety conditions aimed at reducing accidents. At that time, police would just make surprise raids and "confiscate" the firecrackers, sometimes making the workers scamper away while trying to hide production materials, leading to disastrous explosions. The industry was legalized in 1992 with the passage of Republic Act 7183, which regulated the manufacture and distribution of pyrotechnics devices. With legalization, police would still come and just grab their "share,"

1 A complete discussion of the industry is in Appendix E

but not as often as before.[2]

Membership in the Bulacan Pyrotechnics Association dwindled from about 800 in the 1980s to about 160 in 2000, and further decreased to 70 because of numerous problems. These include the unlimited entry of competing products from Taiwan and China, as well as campaigns against firecracker use by the Department of Health and other entities on safety grounds and the decline in consumer demand due to health and safety reasons. The biggest decline occurred in 2000 because of the loss of the Mindanao market resulting from the war in that area.

The market has generally declined compared to previous years, and low buying prices of regular firecrackers are imposed on producers by creditors. The liberalization of imports attendant to globalization, as seen in lower priced but higher quality foreign-made firecrackers in the market, has forced producers to cut down on costs and has made subcontracting even more prevalent in a threatened and underperforming industry. The prices have been declining from P2,500 per box of regular firecrackers in 1998, to P2,000 in 1999, P1,500 in 2000, to as low as P1,200.00 in 2001. The price range in 2004 at producer level was from P1,100 during low season to P1,800 during peak season. The retail price, however, rose to as high as P2,500, indicating that producers with retail outlets could have much higher profit margins.

The industry is characterized by a complex web of big producers employing about 20 regular workers with year-round production and small producers who engage in production using their own capital and hiring seasonal migrant laborers during the peak season (October to December). In these months, bigger producers subcontract production of final or intermediate goods to smaller producers. The multilevel production and subcontracting arrangement, of which there can be as many as four levels, increases the demand for child labor especially during peak season. (UNICEF-PATAMABA-UP-CSWCD 2001).

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2 Interviews conducted in the field indicate that this is an ongoing practice, since producers already set aside part of their produce, the substandard or rejected ones, to give to police who visit.

The bigger producer-distributors could have their own stores, and could at the same time supply wholesalers and other outlets in neighboring towns in Bulacan as well as in Metro Manila and as far as the Visayas and Mindanao. Aside from the big producer-distributors, there are smaller ones with small stores in Sta. Maria and Bocaue. There are bigger subcontractor producers who do not have their own outlets or stores but supply wholesalers and retailers mainly in the towns mentioned. The bigger subcontractor-producers could have as many as 20 permanent workers in their workshops, and could afford to give out folding and fuse attachment jobs to other households during the lean season.

The Community Context: Pulong Buhangin, Sta Maria, Bulacan

Census-based community data obtained on Pulong Buhangin (where the majority of survey respondents reside) support observations that child labor is endemic in communities where there is much poverty, high unemployment, and a large migrant and low-educated population, and where available services are inadequate to address these realities. The population stood at 18,580 in 2002, and the number of families, at 3,097. The population rapidly increased to 25,145 in 2003, perhaps reflecting the fast influx of migrants who now comprise half of the residents, according to Barangay Captain Simplicio Hermogenes.

In terms of occupation, most were involved in pyrotechnics production. A far second in terms of occupational category were the sewers/embroiderers (mostly female), followed by drivers, farmers, laborers, and furniture-makers (mostly male).

Among the pyrotechnics producers in Pulong Buhangin, there are those with sufficient capital, legitimate license to operate, enough regular workers (maximum of around 20), and access to a large land area in which production sheds can be built a good distance away from the nearest house. There are also those with less capital and workers, but with access to land near enough to the actual license holder to claim that their sheds are also part of the operations of the licensed pro-

ducer whose cost of licensing they share. There are also those who operate without license and those who merely provide labor without capital. These producers supply buyers mainly from Bocaue, Bulacan; a few also have markets in Laguna and as far as the Visayas and Mindanao.

In contrast to big producers who use about P50,000 to P100,000 worth of capital, small producers lay out a maximum of P10,000 for raw materials and labor from which they typically gross P15,000. Most of them, however, just borrow their capital from usurers at very high interest, or from raw material suppliers who in turn buy the finished products from them at a very cheap price. When the market is depressed, many small producers earn just enough to pay back their borrowed capital and to buy food.

The Production Process for Five Star

The first stage in the production of Five Star, a popular type of firecracker, is the folding of brown paper into a funnel shape, which will be used to contain the chemical powder. This is done by women and children in their own homes or in the backyard workshops of employers. Workers are paid P6 per 1,000 pieces of paper folded.

Simultaneous with this, the men (and the more experienced women) take charge of the more dangerous task of mixing the chemicals (one kilo each of sulfur, potassium chlorate, and charcoal) for fuse-making. Men and women then take bundles of thread (weighing three kilos) and dip these into starch or paste, after which they roll the thread in the chemical mixture.

The processed thread (the precursor of the fuse) is hung in bunches from bamboo poles and left to dry in the sun for three hours. These are next rolled in bundles for the men (or the more experienced women) to cut into 18-inch long pieces with one blow of a sharp blade, a task that requires skill and strength because the bundles can explode if not cut properly. The lengths of fuse are then covered with multicolored Japanese paper with the use of a starch mixture. A labor-intensive task requiring patience, this task is done mostly by women in their homes or in the backyard workshops.

After being arranged in rows on GI sheets to thoroughly dry in the sun, the paper wrapped 18-inch fuse lengths are again cut into two-inch long bundles by men (or by the more experienced women). The output of this process is enough for 30,000 pieces or three boxes of Five Star firecrackers.

The second stage commences when the men, using big wooden or plastic strainers, mix seven kilos of potassium perchlorate, one kilo of sulfur, one kilo of aluminum, and one-half kilo of devil into a powder that will also be enough to produce three boxes of Five Star firecrackers. The mixture, which is placed in big plastic containers, is then scooped by workers in the backyard workshops into the funnel-shaped brown paper earlier prepared by women and children. Before they fold and seal the container, they insert the fuse so that half of it is outside. After the loading process, the firecrackers are dried under the sun for three to four hours. Then they are brought to the homes of the workers to be labeled and packaged by women and children who are paid from P5 to P6 per 1,000 pieces.

Piece rates have not changed much from the year 2000. Adult women and children typically earn from P5 to P8 for folding 1,000 pieces (*pagtutupi*) of brown paper. They earn P15 to P23 per "kilo bundle" for covering the 18-inch fuse lenghts with Japanese paper (*pagbabalot ng mitsa*). The men earn P25 per kilo of thread for fuse preparation (soaking thread in chemicals for three hours, drying the thread, and cutting the thread first into 18-inch bundles, and then into two-inch bundles). Normally, five kilos of fuse are produced per preparation. Payment for mixing the chemicals is P20 during the lean season and P30 during the peak season. Scooping the chemical mixture into the funnel-shaped paper and attaching the fuse (*pagkakarga*) is paid P15 to P18 per 1,000 pieces. Packaging fetches P5 to P6 per one 1,000 pieces.

Migrant workers, mostly male teenagers and young adults, are paid mostly on a cash advance basis. They come during peak season (some with their families) and are provided board and lodging by their employers. They usually get P500 to P1,000 a week for their daily expenses. They net about P8,000 to P10,000 when they get their final pay, usually in December.

Fashion Accessories

The Philippine fashion accessories industry[3] is well known, both locally and abroad, for its production of fancy jewelry, which includes wooden beads, shell and wooden necklaces, earrings, bracelets, buttons, and other accessories. It has also branched out into shell and wooden wall decor and other home decor. The industry is prevalent in many coastal cities and towns in various parts of the country like Aklan, Bicol, Bohol, Cebu, Davao, and Zamboanga. Since the 1980s, fashion accessories have been exported in bulk to Canada, Hong Kong, Korea, Europe, Japan, and Taiwan. Export overruns are disposed off in the local wholesale and retail market. In between orders for export and for specific employers, the industry also produces for the domestic market.

Unlike the pyrotechnics industry—which easily draws attention not only because of its hazardous classification but also because of the magnitude of its scale of production, use of children, and immediate safety concerns with regard to production and the product itself—the fashion accessories industry has invited very little research. Although also considered hazardous, most children work in the relatively nonhazardous tasks, generally away from hazardous work areas, and the number of accidents that have been reported is minimal. Furthermore, the final products are considered safe. In addition to the fashion accessories industry, some studies have focused on a related industry—shell craft. Both industries have common products such as shell-bead necklaces and bracelets.

The incidence of child labor, especially that of girl child labor, is also allegedly high and more obvious in this industry. Child labor is tolerated because children's tasks in this industry are safer compared to other industries. Moreover, child labor in some tasks is not substitutable. For instance, in the task of stringing small beads on a nylon string (*pagtuhog*), adults tend to have less patience and physical acumen (i.e., clear vision and nimble fingers) to string beads.

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3 A complete discussion of the industry is in Appendix F.

A study done by UNICEF-PATAMABA-UP-CSWCD (2001) showed that the fashion accessories industry in Talisay, Cebu depended mostly on females, regardless of age. Males do only the polishing task, which is considered hazardous. About half of the households were reported to employ females between 5-14 years of age, while a quarter of the females employed were between 15-18 years old. Orense (1992) reported that more girls were employed (53%) than boys (47%) in the Bicol shell craft industries. Remedio (1991) reported that there were twice as many children aged 3-14, with a mode of 13-14 years, than older workers in the shell craft industry in Mandaue and Lapu-Lapu Cities.

As with the pyrotechnics industry, production by subcontracting is the norm. The fashion accessories industry is characterized by a complex supply chain starting with an exporter (also known as buyer and contractor) on top of the chain, followed by a retinue of purchasers, agents, expediters, quality controllers, suppliers (also known as subcontractors and/or job-outers who own the major means of production), and subcontractees (also known as job-outees) who form the base of the multilevel production scheme. Subcontracting is the preferred method of meeting demand at peak season. Big producers subcontract all or part of the finished goods to smaller producers.

The use of subcontracting is intensified by the export nature of the industry. Fluctuating demand, the export-orientation, and the highly competitive market of the industry tend to exacerbate dependence on subcontracting, which in turn exacerbate child labor utilization (UNICEF-PATAMABA-UP-CSWCD 2001). Moreover, a DOLE study (1998) found that the difficulty of maintaining a stable production schedule and intense global competition favors subcontracting. Subcontracting invites more child labor.

Children are generally found in certain steps of the production process. While orders are generally intense from March to December, children are utilized year-round. Children perform tasks such as stringing and threading. Simple stranding and designing are done by younger children, while the more intricate designs are done by older and more experienced children (DOLE 1993). It is the child who looks for work, desiring to have money for school projects or whims, according to a

supplier. Children do not normally want to care for children, so their mothers make them do production work instead.

The Community Context: Laray, Talisay City, Cebu

The respondents surveyed are located in Laray, Talisay City which is adjacent to Cebu City in the Visayas. Cebu City, since the 1980s, has been well known for its production of fancy jewelry and other fashion accessories. During peak season, around March to May, migrant workers (women and their children) from places like Leyte, Negros, Iloilo, and the northern parts of Cebu province, come to Laray and the surrounding communities each year in search of work. The communities in which producers of fashion accessories are situated in areas where a large segment of the population is unemployed or underemployed, and where social services are inadequate and incomplete.

Subcontracting and sub-subcontracting characterize the fashion accessories industry. At the top of the subcontracting chain are the exporters (who may also be the contractors/buyers). These are often factory-based and employ workers to produce as well as pack their products. Their factories often have a warehouse, and an office with employees who take charge of certain vital functions needed in the initial and end processes of production for export, such as 1) quality controllers, 2) purchasers, 3) expediters, and 4) agents. The buyers or agents are the ones who order directly from the suppliers in order to acquire raw materials or finished products. A buyer can have as many as 200 suppliers who hire child labor.

The supplier is the one who gets the purchase orders (PO) for both raw and finished products, from buyers or agents. The buyer does not give materials, only money to buy materials from numerous wholesale and retail stores, like Cebu Hardware, Fashion City, Fashion Island, Modern Fashion, etc. These stores sell glass beads, findings (locks, accents, chains, and balls), nylon thread, etc. One supplier said that in 1992 she had as many as 200-250 POs from the same buyer, which allowed her to build a house; whereas in 2004, orders came in trickles. The supplier can get a cash advance on her PO which

she has to sign for. The hardware store can also advance materials to be deducted later from the PO. The supplier is often the owner of a machine or machines, and one claimed to have about 15 machines. She is very mobile, looked up to in the community, is better off than many in terms of financial status, and has had a relatively long experience dealing with buyers. In 2000, Laray had about eight suppliers of shell and wooden beads requiring cutting, grinding, polishing, drilling and finishing (bleaching, dying, and painting as the case might require), shell/wood wall decor, resin molds, and punched wood. The supplier can either produce the raw materials for an entire PO alone or source part of that order from a subcontractor.

The subcontractor gets orders from the supplier to complete the supplier's PO for raw materials (e.g., buttons, shell/wooden beads, resin items, or wood planks) or to perform a certain operation (e.g., drilling holes in wooden or shell beads) in the process of making the raw material. She is sometimes furnished with materials for her production. She is capable of handling big volumes of such orders and has a track record for doing so. She is usually a woman.

The job-outer is subcontracted by the supplier or the subcontractor. She gets orders and sometimes the materials and executes the finished product. Unlike the subcontractor who furnishes the supplier both raw materials and labor, the job-outer only furnishes labor. To meet her order, the job-outer may subcontract the labor of others in her community, including that of adults and children, usually female.

Children below nine years old are considered irresponsible. Girl child workers who are 11-12 years old are preferred to boys who have a tendency to abandon work to be with their friends. Boys are perceived to have wandering minds, and are less preferred. Girls are preferred to adult females because the latter (who are usually in charge of household chores and child care), cannot sustain continuous production work, which the child worker can. However, once they turn 16, many young girls reportedly lose interest in subcontracted work. They may either try to seek employment elsewhere, as in restaurants, engage in other forms of livelihood, like cooking native cakes, plan on going to high school, or marry.

Children are perceived to be more creative and not just interested

in earning, while adults are considered "without art" and only interested in making money. In the FGDs, the participants were asked to rate children and adults. On a scale with a low of 1 and a high of 10, with regard to how much more creative in making designs the workers are, children scored 7 and adults 5. With regard to who was the faster worker, children aged 10-15 years scored 8, while adults scored 4.

The nature of the community production area, in which homeworkers produce, can be characterized as a locality that could include any part or the entire area of a producing community—the roofed abode, the yard, the inside or the immediate premises of the home, the beach, or the subcontractor's warehouse/workplace nearby. In this sense, the home is not only a locality, but also a unit of hierarchical obligatory kinship, contractual, and political relationship that shares in a mutuality of interests.

The Production Process

Orders for fashion accessories seem to come more often and intensely from March to December. Their production involves varied materials and multiple and changing operations. An exporter/contractor through his/her regular hired personnel (purchaser, agent) will get in touch with a supplier and place an order. The latter (who owns the necessary machines, has some working capital, and can access labor in the community) will hire daily workers to operate the machines if the order so requires. She will also subcontract parts of the order for raw materials to subcontractors, or her order for finished products to job outers.

A certain subcontractor regularly maintains about five households on her "payroll". If she has extra money, she usually stocks up as a technique for saving. On the one hand, when the supply of the materials she stocked up is scarce, she is able to earn more from it. For example, if the stock was bought at P50, she could sell it to a department store like SM for P300, and in Boracay for P350. On the other hand, when orders are low, she can still earn something through selling her stocks. In this way she can maintain her workers and pay them on time. She rolls her extra earnings from stocks by stocking up again.

So many subcontracting levels result in less income for a worker

in the industry. Each level gets a cut from the overall price determined by the importer, based on the end retail price of the product in the importing country. The price of labor is already set by the supplier. If it is P0.35 for a piece of fashion accessory, the job-outer usually gets P0.10 and the worker P0.25. At each level, there are negotiations going on with regard to costs. Thus, it appears that the share that each level gets varies according to fluctuations based on demand for the product; cost of raw materials and transportation; other sociocultural considerations that affect labor negotiations like kinship, patronage, special relationships, political connections, organized labor actions, etc.; and supply of labor based on seasonal, environmental, and other factors like unemployment due to financial crisis.

Chapter 3

Personal and Economic Profile of the Respondents and their Businesses

This chapter presents a summary of the survey results pertaining to the personal and economic profile of the respondents and their businesses. Details and tables for each section are included in the Appendices.

Profile of the Employer-Respondents

(See Appendix A.)

1. *Dominance of Female Respondents*

Three-quarters of the employer-respondents in both pyrotechnics and fashion accessories are female. Women employers are prevalent in the sectors inasmuch as the activities are located in or near the homes of the employers, and inasmuch as children of the employers themselves are usually part of the work team.

2. *Average Age in the Early 40s, Married, Average Household Size of 4 to 5*

The average age of the respondents for both sectors is in the early 40s, with most respondents belonging to the age bracket of 25 to 55. The average respondent is married and has a household size of 4 to 5.

3. *Elementary and High School Educational Attainment*

The highest levels of educational attainment of most respondents in both sectors are elementary or secondary levels of education. The fashion accessories' employer-respondents in Cebu have higher educational attainment than their counterparts in the pyrotechnics sector in Bulacan.

4. *Most Not Members of PATAMABA*

Most of the respondents are not members of PATAMABA, the informal workers' association that helped the project team with the study.

5. *Average Period of 11 to 12 Years in the Industry*

The respondents had been in their particular industry of pyrotechnics or fashion accessories for a long time, with the average period being 11 to 12 years.

6. *Majority of Fashion Accessory Respondents Came from Own Sector, Majority of Pyrotechnics Respondents Came from Other Sectors or from Unemployment*

The majority of the respondents in the fashion accessories sector in Cebu were previously connected to the same industry, while the rest came from outside the sector. The majority of the respondents from the pyrotechnics sector in Bulacan came from outside the sector—either from other industries or from unemployment. The rest came from within the sector.

7. *Dependence on the Child-Employing Sector for Main Source of Income*

More than 90% of the respondents in both sectors declared that the selected sectors employing child labor—pyrotechnics and fashion accessories—are their main source of income. A sizeable minority in both sectors—especially in the more depressed area of Bulacan—have no other sources of income. For the majority with other sources of income, the often mentioned other sources are

tricycle driving and construction for the men, and animal raising and sari-sari stores for both sexes.

8. *Most Respondents in Pyrotechnics Want to Leave; Most Respondents in Fashion Accessories Want to Remain*

Seventy-five percent of the respondents in the pyrotechnics sector claimed they do not want to remain in the sector. Another 13% said they may want to move out depending on whether they have enough means to set up a new business. Only 12% stated categorically that they want to remain in the sector.

This contrasts sharply with respondents from the fashion accessories sector, where 81% of the respondents said they want to remain in the sector. Ten percent said they may move out of the sector depending on whether they have enough means to set up a new business. Only 9% categorically stated they do not want to remain in the sector.

This result may be partly due to the higher profitability of the fashion accessories sector (as discussed below) and the highly negative media image of the pyrotechnics sector where recent accidents and explosions had killed children and adults alike.

Most of those who want to move out in both sectors wish to set up sari-sari stores, groceries, market stalls, or other types of retail ventures. Animal raising is also mentioned as an alternative livelihood, especially in Bulacan.

Those who want to move out in both sectors almost unanimously claim they need capital to set up a new business, and only a few claim they need training or seminars to set up the new business.

Production Arrangements, Revenues, Expenditures and Costs, and Peak Months for Demand

(See Appendix B.)

1. *Prevalence of Subcontracting Arrangements; Fashion Accessories for Export Market*

Subcontracting arrangements abound in the two sectors. The market of the fashion accessories sector in Cebu caters more to the export market while the pyrotechnics sector in Bulacan caters more to the domestic market. Most buyers (apart from the exporters in Cebu) are middlemen, subcontractors, retailers, and wholesalers.

2. *Higher Revenues and Profits in Fashion Accessories*

The fashion accessories sector in Cebu has, on the average, higher revenues and profits—as well as a higher profit-to-revenue ratio—than the pyrotechnics sector in Bulacan.

3. *Cost Structure of Pyrotechnics More Input-Intensive, Fashion Accessories More Labor-Intensive*

In the fashion accessories sector, on the average, labor costs make up a bigger portion (56%) of the total expenditures, while materials make up 34%. On the other hand, in the pyrotechnics sector of Bulacan, materials, on the average, make up a bigger portion (58%) of total expenditures, while labor costs make up 28%. Licenses in Bulacan make up another 7% of total expenditures. Thus, the fashion accessories sector seems to be more labor-intensive and the pyrotechnics sector more input-intensive. This should be qualified by the fact that some processes in the fashion accessories sector (not involving the child labor activities) require machines, which were not included in the above costing. Respondents in the pyrotechnics sector also bewail the high costs of licenses in their operating expenses.

4. *Peak Months: Toward Christmas Time and New Year*

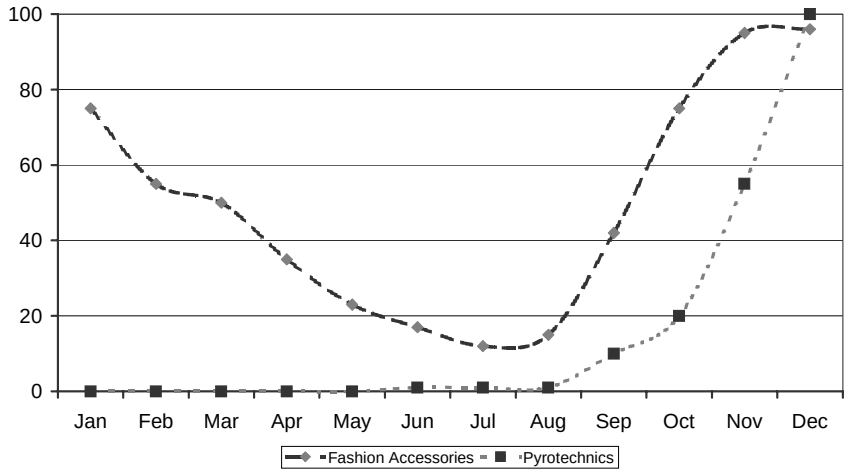
For both sectors, the peak month is December, in time for the

Christmas and New Year holidays. (*See Figure 1.*)

For the pyrotechnics sector in Bulacan, the demand is very seasonal and orders start trickling in around September and goes up quickly starting November, and peaks in December. Orders in January drop to almost nil.

The fashion accessories sector in Cebu has a more cyclical demand pattern with orders never going to nil. Orders begin to increase slowly in August, and then go up fast from September to November, and remain high till December. Orders then start to decline in January and continues to do so until July.

FIGURE 1
Demand Patterns in the Pyrotechnics and Fashion Accesories Sectors



Employment and Child Labor in Selected Processes of the Two Sectors

(See Appendix B.)

1. *Processes Where Child Labor Is Employed Under Adult Supervision*

The respondents were asked which processes employ child labor with adults supervising their activities. For the pyrotechnics sector in Bulacan, the activities where most respondents claim child laborers are present with adult supervision are: the paper folding process (90%), wrapping and labeling of the product (74%), and packing (64%). A minority claim that there are some child labor activities in the more hazardous processes of fuse preparation, connecting fireworks, and powder loading. Due to the difficulties of surveying all these processes, the study team selected the paper folding, fuse preparation, and powder loading processes for detailed study. The paper folding process was selected for its prevalent use of children aged 5 to 14. The other two were chosen because of the use of child labor in these hazardous processes.

In the fashion accessories sector in Cebu, respondents claim child labor exists under adult supervision in the processes of stringing beads on nylon (98%), wiring of beads (89%), and final stringing of necklace and putting of locks (77%). For purposes of detailed study, the study team selected the processes of stringing beads on nylon and wiring of beads.

2. *More Workers in Fashion Accessories*

In the selected processes using child labor, there is a higher average number of workers in the fashion accessories sector than in the pyrotechnics sector. This is consistent with the earlier observation that the cost structure of fashion accessories is more labor-intensive. In the fashion accessories sector, there is an average of 19.6 workers in the wiring process and 20.9 in the nylon stringing process. In the pyrotechnics sector, there is an average of 9.4 workers in the paper folding process, 5.8 in the fuse preparation pro-

cess, and 8.7 in the powder loading process.

3. *Employment in the Selected Processes of the Pyrotechnics Sector in Bulacan*

a. Child and Youth Workers Widely Used in the Non-Hazardous Paper Folding Process
   — Child workers (aged 5 to 14) and youth workers (15-17) are widely used in the non-hazardous process of paper folding, and the respondents admit this. The average number of workers per employer in the paper folding process categorized by age groups are 3.5 for child workers, 3.5 for youth workers, and 3.0 for adult workers.

b. Adult Workers More Dominant than Child and Youth Workers in the Hazardous Processes of Fuse Preparation and Powder Loading
   — Only around a quarter of the respondents admit that child workers are employed in the more hazardous processes of fuse preparation and powder loading. There are also fewer child and youth workers in these processes compared to adult workers. The average numbers of workers per employer in the fuse preparation process are 1.2 for child workers, 2.0 for youth workers, and 3.6 for adult workers. The average numbers of workers per employer in the powder loading process are 1.7 for child workers, 2.5 for youth workers, and 4.5 for adult workers.

c. Non-Hazardous Process More Farmed Out to Other Households; Hazardous Processes Undertaken More in Employers' Households
   — The non-hazardous process of paper folding is more subcontracted out to other households (and there are a bigger number of workers in other households). But there are still child, youth, and adult workers in the employers' household undertaking the paper folding task.
   — The more hazardous processes of fuse preparation and powder loading are more undertaken in the employers' own

households (and there are more workers in the employer's household). But there are also child, youth, and adult workers in these processes in other households. The concentration of activities in the employers' households is understandable since hazardous processes require more intense supervision and monitoring.

d. More Non-Migrant Workers than Migrant Workers
   — Although there are more non-migrant or native workers in both own and other households, there is still a significant number of migrant workers (including children and youths) for all the three processes analyzed.

4. Employment in the Selected Processes of the Fashion Accessories Sector in Cebu

a. Fewer Child Workers than Youth and Adult Workers
   — There are fewer child workers compared to youth and adult workers in the wiring and nylon stringing processes. There were, on average, 4.4 child workers per employer in the wiring process, compared to 6.9 youth workers and 8.2 adult workers. Similarly there were, on average, 6.0 child workers per employer in the stringing process, compared to 7.2 youth workers and 7.7 adult workers.

b. More Non-Migrant Workers
   — There are more non-migrant workers living in other and employers' households for all age brackets. But there is still a significant number of migrant workers (including migrant child workers) engaged in the processes studied.

Average Working Hours and Working Days
(See Appendix B.)

1. Pyrotechnics Sector

a. Shorter Working Hours and Days for Children; Longer Hours for Hazardous Processes Compared to Non-Hazardous Process

— For all three processes in the pyrotechnics sector, child workers work shorter hours per day and fewer days per week than the older workers during the peak season.
— In the paper folding process, child workers average 5.8 hours a day and 5.7 days a week, compared to 8.0 hours a day and 6.1 days a week for youth workers, and 9.0 hours a day and 6.6 days a week for adult workers.
— In the fuse preparation process, child workers average 6.7 hours a day and 5.6 days a week, compared to 8.6 hours a day and 5.7 days a week for youth workers, and 8.7 hours a day and 5.9 days a week for adult workers.
— In the powder loading process, child workers average 7.4 hours a day and 6.1 days a week, compared to 8.7 hours a day and 6.4 days a week for youth workers, and 9.2 hours a day and 6.5 days a week for adult workers.
— It must be noted that the working hours and days for the more hazardous processes of powder loading and fuse preparation are much longer than for the non-hazardous paper folding process for all age brackets.

b. Longer Working Hours for Migrant Child Workers
— Migrant child workers tend to work longer hours than native child workers in all three processes.

c. Longer Working Hours in Other Households for Non-Hazardous Process; Longer Working Hours in Employers' Households for Hazardous Processes
— There is also a tendency for workers of all age brackets in other households to work longer hours than those in employers' households for the non-hazardous paper folding process. On the other hand, there is a tendency for workers of all age brackets in employers' households to work longer hours than in other households. This is consistent with the earlier observation that non-hazardous processes are more farmed out to other households, while the more hazardous processes are undertaken more in the employers' households.

2. Fashion Accessories

a. Shorter Hours and Days for Child Workers
   — For both processes of wiring and nylon stringing, child workers work shorter hours and days than the older workers.
   — For wiring, child workers work an average of 6.8 hours a day compared to 8.9 hours a day for youth workers and 9.1 hours a day for adult workers. All of them work an average of 6 days a week.
   — For nylon stringing, child workers work an average of 6.8 hours a day, compared to 8.6 hours for youth workers and 8.9 hours for adult workers. Again all workers tend to work 6 days a week.

b. Longer Hours for Migrant Workers
   — Migrant workers, including the migrant children, work longer hours compared to non-migrants.

3. Full-Time Work for Children

Even if children work shorter hours and days compared to older workers, their work time is still equivalent to full-time work—at least 6 hours a day for around 6 days a week. This raises the question as to whether children have time for school and homework and play activities during the peak season, and whether they are physically affected by long hours of work and school activities.

Average Piece Rates

(See Appendix B.)

1. Lower Average Piece Rates for Children Compared to Older Workers

There is a tendency for child workers to be paid slightly lower piece rates in the paper folding process of the pyrotechnics sector and for the wiring and nylon stringing processes in the fashion accessories sector. Child workers are paid significantly lower piece rates in the hazardous processes of fuse preparation and powder loading. This latter case is most likely due to the fact that the

children participate less especially in the more dangerous phases of the fuse preparation and powder loading processes compared to older workers.

2. *Higher Piece Rates for Migrant Workers*

Except for the paper folding process of the pyrotechnics sector (where migrant children seem to be paid lower than non-migrant children), migrant workers are usually paid higher piece rates than non-migrant workers in both pyrotechnics (i. e., fuse preparation and powder loading) and fashion accessories (wiring and nylon stringing). The higher pay for migrant workers may be partly due to the need to compensate those migrant workers who do not get free food and lodging from their employers. It may also be partly due to the fact that migrant workers are seen as better workers than the natives or non-migrant workers (as will be shown in the next chapter).

Incentives and Benefits Given to Workers

(See Appendix B.)

1. *Pyrotechnics Sector: Free Food for All, Lodging for Migrants*

A majority of employer-respondents in the pyrotechnics sector claim they give free food to the workers in all categories, and free lodging to migrants. A few give clothes and bonuses. Bonuses are given more to migrant adult and youth workers in the hazardous processes of the powder loading and fuse preparation.

2. *Fashion Accessories: Free Food and Lodging to Migrants*

A majority of employer-respondents in the fashion accessories sector claim they give free food and lodging to migrant workers. A minority give free clothes, bonuses, and credit access to the workers. Bonuses are given more to non-migrant (native) workers, while credit access is given more to migrant workers.

Chapter 4

Rating of Workers and Reasons for Child Labor

This chapter presents a summary of the survey results pertaining to the all important questions dealing with the economic motivation of employers to hire child labor.

Ranking of Age Groups and Type of Worker According to Speed and Quality of Work

This section discusses the mean ranking given by the employer-respondents to the various categories of workers. The workers were classified: a) according to age brackets—children (aged 5–14), youths (aged 15–17) and adults (18 and above); and b) according to migrants or non-migrants in employers' or other households. The respondents were asked to rank the workers from best to the worst, with 1 as the best, 2 as the second best, and so on.

Pyrotechnics Sector in Bulacan

1. According to Age Groups, Paper Folding Process: Youths Ranked Best, Adults Second, and Child Workers Last

Understandably, those not employing child labor unanimously ranked child workers last place on both speed and quality of work. The mean rating given to child workers by this group is consistently far worse than that given by those admitting to employing child workers in the paper folding process. *(See Tables 1 and 2.)*

Those employing child labor (comprising 90% of the respondents)

TABLE 1
Pyrotechnics: Mean Ranking According to Speed

Age Bracket	Folding	Fuse Preparation	Powder Loading
No Child Labor			
Age 5 to 14	3.00[b]	2.88[b]	2.83[b]
Age 15 to 17	1.70[a]	1.69[a]	1.75[a]
Age 18 up	1.30[a]	1.25[a]	1.19[a]
With Child Labor			
Age 5 to 14	1.98	2.61[b]	2.79[b]
Age 15 to 17	1.70[b]	1.78[b]	1.61
Age 18 up	1.94	1.43[b]	1.59

Note: 1 = highest rank, 3 = lowest rank
[a] t test significant at 10% level
[b] t test significant at 5% level

TABLE 2
Pyrotechnics: Mean Ranking According to Quality of Work

Age Bracket	Folding	Fuse Preparation	Powder Loading
No Child Labor			
Age 5 to 14	2.88[b]	2.79[b]	2.63[b]
Age 15 to 17	1.30[a]	1.85[b]	1.94[b]
Age 18 up	1.50[a]	1.25[b]	1.29[b]
With Child Labor			
Age 5 to 14	2.23[b]	2.22[b]	2.65[b]
Age 15 to 17	1.81	1.95[a]	1.72[a]
Age 18 up	1.88	1.64[a]	1.56[a]

Note: 1 = highest rank, 3 = lowest rank
[a] t test significant at 10% level
[b] t test significant at 5% level

ranked youth workers first, adult workers next, and child workers last on both speed and quality of work in the paper folding process. The youth workers registered a mean ranking of 1.70 for speed and 1.81 for quality of work, the adult workers 1.94 for speed and 1.88 for quality of work, and child workers 1.98 for speed and 2.23 for quality of work. Note that in terms of speed the child worker was rated by the respondents, on the average, close to the adult workers, but in terms of quality of work, the child laborer ranked a far third. On the other hand, youths rate significantly higher than adults and children in terms of speed, but are only slightly better than adult workers in terms of quality of work.

2. *According to Age Groups, Fuse Preparation and Powder Loading Processes: Adults Ranked Best, Youths Second, and Child Workers Last*

In the fuse preparation and powder loading processes, respondents (both those who do and do not employ children) claimed that adult workers are significantly faster and have significantly higher quality of output compared to youth and child workers. The ranking may reflect their perception that adults are more careful and adept in these two more hazardous processes of pyrotechnics production. Youth workers were ranked second, with mean rankings significantly above child workers in both speed and quality of work. *(See Tables 1 and 2.)*

3. *According to Migrant or Non-Migrants in Employers' or Other Households, For All Processes: Migrant Workers in Own Household Ranked Best, Non-Migrants in Own Household Second, Migrants in Other Households Third, and Non-Migrants in Other Households Last*

For all three processes in the pyrotechnics sector, respondents rated own household workers higher than workers in other households, and within the households (own or others), migrants were rated higher than non-migrants. Thus, the ranking in descending order would be: migrant/own household, non-migrant/own household, migrant/other household, non-migrant/other household. Workers in own household probably rated higher since they would be better monitored and su-

TABLE 3
Pyrotechnics: Mean Ranking of Type of Worker According to Speed

Process	Type of Worker	Mean Rank
Folding	Migrant, Own Household	1.47[b]
	Non-Migrant, Own Household	1.88[b]
	Migrant, Other Household	2.35[b]
	Non-Migrant, Other Household	2.59[b]
Fuse Preparation	Migrant, Own Household	1.33[b]
	Non-Migrant, Own Household	1.64[b]
	Migrant, Other Household	2.38[a]
	Non-Migrant, Other Household	2.89[a]
Powder Loading	Migrant, Own Household	1.32[b]
	Non-Migrant, Own Household	1.78[b]
	Migrant, Other Household	2.49[b]
	Non-Migrant, Other Household	3.34[b]

Note: 1 = highest rank, 3 = lowest rank
[a] t test significant at 10% level
[b] t test significant at 5% level

pervised by the employer herself, a situation particularly ideal for the hazardous processes of fuse preparation and powder loading. This result may also be due to the longer hours put in by workers in own households (compared to workers in other households) for the three processes, as discussed in the previous chapter. As for the preference for migrant workers, this may be due to the longer hours non-child migrant workers put in compared to their non-migrant counterparts, as also discussed in the previous chapter. *(See Table 3.)*

Fashion Accessories Sector in Cebu

1. According to Age Groups, Wiring Process: Adults Ranked Best, Youths Second, and Child Workers Last

Respondents claimed that adult workers significantly turned out the highest speed and quality of work in the wiring process. Youth workers came in second and ranked significantly above the child work-

TABLE 4
Fashion Accessories: Mean Ranking According to Speed

Age Bracket	Wiring	Nylon Stringing
Age 5 to 14	2.63**	1.87*
Age 15 to 17	1.82**	1.65**
Age 18 up	1.41**	1.93

Note: 1 = highest rank, 3 = lowest rank
[a] t test significant at 10% level
[b] t test significant at 5% level

TABLE 5
Fashion Accessories: Mean Ranking According to Quality of Work

Age Bracket	Wiring	Nylon Stringing
Age 5 to 14	2.52**	1.82*
Age 15 to 17	1.84**	1.62*
Age 18 up	1.48**	1.97**

Note: 1 = highest rank, 3 = lowest rank
[a] t test significant at 10% level
[b] t test significant at 5% level

ers who came in last.

2. *According to Age Groups, Nylon Stringing Process: Youths Ranked Best, Child Workers Second, and Adults Last*

In the nylon stringing process, youth workers were ranked first in terms of speed and quality of work, with mean ratings significantly higher than child workers who came in second and adult workers came in last. This is the only process where child workers were not ranked last. The respondents cited the good eyesight required for this activity as the likely reason for this result. *(See Tables 4 and 5.)*

TABLE 6
Fashion Accessories: Mean Ranking of Type of Worker According to Speed

Process	Type of Worker	Mean Rank
Wiring	Migrant, Own HH	1.26**
	Non-Migrant, Own HH	2.48*
	Migrant, Other HH	2.08**
	Non-Migrant, Other HH	2.62*
Stringing Into Nylon	Migrant, Own HH	1.34**
	Non-Migrant, Own HH	2.33*
	Migrant, Other HH	2.06**
	Non-Migrant, Other HH	2.54**

Note: 1 = highest rank, 3 = lowest rank

[a] t test significant at 10% level

[b] t test significant at 5% level

3. According to Migrant or Non-Migrants in Employers' or Other Households: Migrant Workers in Own Household First, Migrants in Other Households Second, Non-Migrants in Own Household Third, Non-Migrants in Other Households Last

Unlike in the pyrotechnics industry, the fashion accessories employers rated migrants ahead of non-migrants regardless of households, and then own household ahead of other households. Thus, the ranking in descending order would be: migrant/own household, migrant/other household, non-migrant/own household, and non-migrant/other households. This may again be explained by the result presented in the previous chapter that migrants work longer hours per day than the non-migrants in both the wiring and nylon stringing processes. Again the higher rating given to own household workers may be because employers can monitor them more easily. *(See Table 6.)*

Comparing the Two Industries

Child Workers Not Rated Well

Adult workers were rated best in terms of speed and quality of work in three of the five selected processes in the two industries: fuse preparation and powder loading in pyrotechnics and wiring in fashion accessories. In the other two, paper folding in pyrotechnics and nylon stringing in fashion accessories, youth workers were rated best in both speed and quality of work.

Child workers were rated worst in terms of speed and quality of work in all but one of the five selected processes. They were rated second on speed and quality of work in the nylon stringing process behind youth workers, the only category where adult workers came in last due supposedly to their inferior eyesight.

Migrant and Own Household Workers Ranked Better

In the pyrotechnics industry, workers in own household were rated better than workers in other households. Within the households, migrant workers were rated better than non-migrant workers. In the fashion accessories industry, migrant workers were rated better than non-migrant workers. Between migrant and non-migrant workers, those working in own households were rated better than those working in other households.

That both industries have a higher number of non-migrant and other household workers indicates that workers are more plentiful in these categories compared to the more highly rated migrant and own household workers.

Higher Ranked Workers Have Longer Working Hours

For both industries, it appears that the better rated workers (either migrant or own household workers, and non-child workers) put in longer hours for all the processes except in the easier and less hazardous paper folding process in the pyrotechnics industry. It also appears that the better rated migrant workers receive higher piece rates than non-migrant workers in both the fashion accessories and pyrotechnics industries. This is also true for the better rated adult workers in the

TABLE 7
Pyrotechnics: Ranking of Reasons for Hiring Child Labor

Reasons	Positive Responses	Mean Ranking
Economic	**1**	**9.0**
Lower pay	0	0
Less benefits	1	9.0
Productivity/Efficiency	**155**	**3.6**
Fast	54	2.4
Higher quality	12	4
Nimble fingers	11	4.4
Sharper eyes	20	4.4
Stronger	58	4.3
Competitiveness to adults	**31**	**5.2**
Attitude/Characteristics	**212**	**4.8**
More creative	9	3.9
More initiative	6	6.5
Have no vice	73	3.6
Learn easily	70	4.9
Does what adults don't	34	6.7
More dependable	20	5.8

(continued on facing page)

fuse preparation and powder loading processes of the pyrotechnics sector and in the wiring process of the fashion accessories sector.

Youths Rated Best Where Child Labor Is Abundant

Youth workers are rated higher than adult workers in the processes where child labor is more abundant. This is the paper folding process in pyrotechnics and the nylon stringing process in fashion accessories. This is consistent with data that the majority of child workers in these two processes are in the age range of 12–15, with characteristics close to those aged 15–17.

TABLE 7
Pyrotechnics: Ranking of Reasons for Hiring Child Labor
(continued from facing page)

Reasons	Positive Responses	Mean Ranking
Availability of Time	**197**	**6.0**
No housework	45	4.3
When no school	66	5.6
Call upon notice	51	7.3
More plentiful	35	7.4
Easier Supervision	**157**	**5.6**
Obedient	78	4.6
Easy to monitor	62	6.3
No union problem	10	7.6
Don't fight employer	7	7.4
Family as Work Team	**87**	**5.0**
Family work as group	18	5.6
To help family	69	4.9
Human Capital Investment	**37**	**6.6**
Long-term investment	21	6.6
Apprenticeship	16	6.6

Reasons for Employing Child Labor

The respondents were asked to rank from 1 to 10 (highest to lowest) the reasons for employing child labor from a preset list. They were also asked to add their own reasons if they had any that were not in the list.

Pyrotechnics in Bulacan

Table 7 presents the results for the pyrotechnics industry in Bulacan. Looking at the reasons individually, in terms of frequency the top six in descending order are: 1) Children are obedient, 2) Children have no

TABLE 8
Fashion Accesories: Ranking of Reasons for Hiring Child Labor

Rank / Reasons	Positive Responses	Mean Ranking
Economic	**4**	**6.5**
Lower pay	2	5.0
Less benefits	2	7.5
Productivity/Efficiency	**298**	**3.9**
Fast	90	2.9
Higher quality	32	3.3
Nimble fingers	32	4.3
Sharper eyes	89	4.0
Stronger	55	5.5
Competitiveness to adults	**30**	**4.0**
Attitude/Characteristics	**239**	**5.5**
More creative	42	5.8
More initiative	16	6.5
Have no vice	84	4.8
Learn easily	66	5.5
Does what adults don't	22	7.4
More dependable	9	4.0

(continued on facing page)

vice, 3) Children learn easily, 4) Children are employed to help their family, 5) Children are easy to put to work outside school time, and 6) Children are easy to monitor. Among these, the first two are also the ones with the best mean ranking (topped by the reason that children have no vice).

For purposes of analysis, the range of reasons were grouped into eight categories. As shown in Table 7, child workers are employed because they represent: 1) lower wages and lower benefits; 2) productivity and efficiency; 3) positive characteristics or attitudes; 4) additional labor and work hours; 5) easier supervision; 6) complementarity of child labor with adults; 7) competition to improve performance; and 8) long term investments.

TABLE 8
Fashion Accesories: Ranking of Reasons for Hiring Child Labor
(continued from facing page)

Rank / Reasons	Positive Responses	Mean Ranking
Availability of Time	**149**	**7.3**
No housework	29	6.7
When no school	63	7.5
Call upon notice	47	7.4
More plentiful	10	7.5
Easier Supervision	**135**	**5.9**
Obedient	73	5.2
Easy to monitor	56	6.6
No union problem	2	10.0
Don't fight employer	4	5.8
Family as Work Team	**74**	**5.4**
Family work as group	22	3.7
To help family	52	6.2
Human Capital Investment	**16**	**6.3**
Long-term investment	7	5.7
Apprenticeship	9	6.8

Of these categories, the four that registered the highest frequency are, in descending order: 1) positive characteristics/attitudes (especially their having no vice and their ability to learn easily); 2) additional labor and work hours (their availability on quick notice, after or outside school time, and in plentiful numbers); 3) easier supervision (their being obedient and easy to monitor), and 4) productivity and efficiency (their being fast and strong workers). Of these four, the the productivity and efficiency category obtained the best mean ranking (3.6), followed by positive characteristics/attitudes (4.8). In addition to easier supervision, there were also a total of 87 responses that pointed out complementarity of child labor with adults in terms of the family helping one another and working as a team.

The top mean ranking of efficiency and productivity appears surprising given that children were rated slower or providing less quality work in the ranking of the workers categorized by age as discussed earlier. But their being identified as fast and strong workers at a significant level may indicate that while they may be slower and provide less quality work compared to youth and adult workers, respondents deem their performance adequate enough for them to be employed.

Fashion Accessories in Cebu

Table 8 presents the results for the fashion accessories industry in Cebu. The top six individual reasons for employing child workers in descending order are: 1) Children are fast workers, 2) Children have sharper eyes, 3) Children have no vice, 4) Children are obedient, 5) Children learn easily, and 6) Children can be called to work after and outside school time. Of these six, the first two also have the best mean ranking.

Of the aggregate categories, the four that registered the highest frequency and mean ranking are, in descending order: 1) productivity and efficiency (their being fast workers, having better eyesight, and being stronger); 2) positive characteristics or attitudes (their having no vice, being easy learners, and being more creative); 3) additional labor and work hours (their availability after or outside school time); and 4) easier supervision (their being obedient and easy to monitor). In addition to easier supervision, there were also a total of 74 responses that pointed out complementarity of child labor with adults pointing to complementarity of the family in terms of helping one another and working as a team.

The top ranking given to efficiency and productivity appears to be principally centered on children being fast workers and possessing better eyesight than adults, which is especially needed in the nylon stringing process.

Relating the Results to the Framework of the Study

Given the framework and methodology of our study, three (not mutually exclusive) hypotheses can be forwarded with regard to the hiring of child labor.

1. Children, Youth, and Adult Workers Are Substitutable

The substitution hypothesis is related to the three categories of reasons for hiring child workers:

a. lower pay and benefits;
b. relatively good productivity and efficiency; and
c. special traits, attitudes, and characteristics..

2. Children Provide Additional Labor and Work Hours in a Labor-Scarce Situation

This may be related to the first hypothesis inasmuch as adults may not want to undertake some types of activities because of their nature or their low compensation. Many key informants claimed that adult men do not like to do paper folding in pyrotechnics and nylon stringing or wiring in fashion accessories because they view it as work for children or women and the pay is low. They also claimed that men do not like multiple income-generating activities, and prefer one main job with a higher income. The women, on the other hand, are saddled with multiple household, rearing, and income earning activities and may not have enough time and attention to do some of the tasks and processes in the subcontracted work. Thus, the impetus for employing child workers.

3. Complementarity among Adult, Child and Youth Workers

The complementarity hypothesis may include the following categories of reasons:

a. easier supervision and monitoring of child workers; and
b. family as a work team and members help one another.

Straddling the first and third hypothesis is the category that child workers provide a competitive atmosphere or spirit to adult workers.

The mixture of principal reasons given by employer respondents for hiring child workers seem to indicate that all the three hypotheses presented above are in effect in the employment of child labor in the two industries being studied. The implications of this are important:

— This explains the existence of child labor even in processes where child workers are rated far behind the adults and youths in terms of speed and quality of work. It is precisely their provision of additional time and additional labor (at short notice) as well as their complementarity with adult labor (being obedient, easy to supervise and monitor, and part of a family team) that may explain the continued existence of child labor in the setting of subcontracted household labor.

— The high frequency of responses citing the special traits of children (being free from vices and being fast learners) also indicate that the children, despite their inferior productivity, may be substituting for older workers who cannot do the activities either because of vices (gambling, alcoholism) or their reluctance to do the activity (and to "learn"). In addition, adult household members (especially women) with full-time work and/or multiple activities may have neither the time nor the energy to do some of the subcontracted work. This paves the way for the employment of children, especially for easy-to-learn tasks, for being free from vices and easy learners, they can devote more attention and concentration to certain tasks compared to many adults.

— The processes where youth workers gained high ratings—paper folding in pyrotechnics and nylon stringing in fashion accessories—are also areas where child workers got either relatively better ratings or did not fall too far behind adults. These are also the processes that have more abundant child workers. Thus, even if the nimble fingers argument were disproved in this study, inasmuch as children are never rated the best among the three age groups in any of the processes, their relative (rather than absolute) efficiency (in terms of how far behind their efficiency is compared to older workers) can be expected to influence the decision on 1) whether or not they are employed and 2) in what numbers if employed. For tasks where their productivity and efficiency does not fall too far

behind older workers, child workers will be more plentiful, especially given that the two other (non-substitution) hypotheses are equally operative.

These implications will be brought to bear in a later chapter where the recommendations of the study are presented.

Employers' Response if Child Workers Are Replaced by Adults

Pyrotechnics in Bulacan

Employers in the pyrotechnics industry were asked what they thought would happen to three aspects of their enterprise—production efficiency, occupational safety, and product pricing—should child workers be replaced by adults. The big majority replied that replacing child workers with adults would not result in faster production (75%), safer processes (85%), nor more expensive products (96%). *(See Table 9a.)*

TABLE 9a
Pyrotechnics: Responses to Questions on Child Workers Being Replaced by Adults, In percent

Question	Yes	No	The Same
Processes will be faster	22.0	6.0	69.0
Processes will become safer	13.0	9.0	76.0
Product will become more expensive	2.0	23.0	73.0

Fashion Accessories in Cebu

Similar results were tallied in the fashion accesories industry where 93% of respondents thought that the processes would not become faster if child workers were replaced by adults (especially since adults

rate worse than children in the nylon stringing process), and 66% felt that products would not become more expensive. However, a significant minority of 34% feels that replacing children with adults would lead to higher product prices due to higher labor costs. This may be because children get paid lower in both the wiring and nylon stringing processes. And given that respondents claim that adults are ranked behind children in speed and quality of work in the nylon stringing process, some employers may feel that the labor costs would increase significantly should adults replace children. *(See Table 9b.)*

TABLE 9b
Fashion Accessories: Responses to Questions on Child Workers Being Replaced by Adults, In percent

Question	Yes	No	The Same
Processes will be faster	7	20	73
Product will become more expensive	34	5	61

Chapter 5

Scale of Production and Employment of Child Labor

This chapter examines the link between scale of production and the number and proportion of child, youth, and adult workers. Tables 10 to 14 (at the end of this chapter) give us two sets of regressions for the three processes in the pyrotechnics sector and the two processes in the fashion accessories sector. The first set of regressions relates the number of child, youth, and adult workers to the total production (production based on orders plus production based on the employers' own initiative and own marketing). The second set of regressions relates the percentage share to total workers of child, youth and adult workers to total production.

- *Paper Folding Process in Pyrotechnics: Higher Production Leads to Smaller Proportion of Adult Workers*

In the paper folding process of the pyrotechnics sector, the regressions relating number of child and youth workers to total production yielded positive relationships, but at insignificant levels. The regression relating number of adult workers to total production yielded a negative relationship, but again at insignificant levels. But the regression relating proportion of adult workers (to the total number of workers) to total production yielded a significant negative relationship. Regressions relating proportion of child and youth workers to total production yielded positive relationships. *(See Table 10.)*

The results seem to indicate that in the paper folding process, increased production brings about a lower proportion of adult workers, and conversely a higher proportion of child and youth workers.

The paper folding process, we must recall, is a process wherein the youth workers are rated best. From key informant discussions, it also seems to be a process which is simple enough for children to do adequately free from hazards, and which male adults do not like to do. Thus it is reasonable that increased production may yield a higher proportion of child and youth workers compared to adult workers.

- *Fuse Preparation Process in Pyrotechnics: Higher Production Yields to Bigger Number of Youth and Adult Workers and Higher Proportion of Youth Workers*

In the fuse preparation process of the pyrotechnics sector, the regressions relating number of youth and adult workers to total production yielded positive relationships, significant at the 1% level. *(See Table 11.)* The constant term for adults in these regressions is 3.0 vs. 1.5 for youths, suggesting a higher starting number of workers for adults compared to youths (and children). The regression relating number of child workers to total production yielded a negative relationship, although at insignificant levels.

The regression relating the proportion of youth workers to total production yielded a significant positive relationship while the regressions with the proportion of child and adult workers yielded negative relationships.

The results suggest that higher production may increase youth and adult labor in the fuse preparation process. Although adult workers are initially more plentiful than youth workers, higher production will tend to increase the proportion of youth workers (i.e., they are hired more as production grows). Total production seems to be negatively related to the number and proportion of child workers.

The negative relationship between total production and child labor is understandable given the bad rating given to children's performance in this activity. What is surprising is the increased proportion of youth workers as production increases. The rating has given the adults (usually male) the best performance in this hazardous activity. The increased proportion of youth workers as production increases may be a reflection of the shortage of adult male labor to undertake this activity.

- *Powder Loading in the Pyrotechnics Sector: Higher Production Increases Number and Proportion of Adult Workers*

The regressions of number of workers to total production yielded a significant positive relationship for adult workers, an insignificant positive relationship for youth workers, and an insignificant negative relationship for child workers. *(See Table 12.)*

The proportion of adult workers is positively related (at close to 10% significance level) to total production while the proportion of child and youth workers yielded negative relationships.

The results suggest that increased production increases adult workers (and most likely youth workers). But the increased labor is concentrated on adults so that the proportion of adult workers increase.

This result is expected since powder loading is a hazardous activity where adults are rated best. It is also an activity that requires physical strength. Thus, increased production would utilize more adults (usually male).

- *Wiring Process in the Fashion Accessories Sector: Increased Production Increases Number and Proportion of Youth and Adult Workers, and Decreases Proportion of Child Workers*

The regressions of number of workers to total production yielded significant positive relationships for youth and adult workers, and an insignificant positive relationship for child workers. *(See Table 13.)*

The proportion of child workers is significantly and negatively related to total production, which conversely means that increased production would yield a higher proportion of youth and adult workers.

Thus, increased production increases youth and adult workers (and most likely child workers, too), but the proportion of youths and adults increase as they are hired more than the children. This is expected since children were rated the worst in this activity.

- *Nylon Stringing Process: Increased Production Increases Number of Child, Youth, and Adult Workers, and Increases Proportion of Youth Workers*

The regressions of number of workers to total production yielded significant positive relationships for workers in all age groups: children, youths, and adults. *(See Table 14.)*

The proportion of youth workers is significantly and positively related to total production, so that increased production increases the proportion of youth workers and decreases the proportion of the children and adults combined, especially children, as the regressions show. These results are consistent with earlier results that rated youths best in the performance of this activity.

Summary

The results show that for most of the processes studied, increased production most likely increases the number of workers in all age brackets. The possible exceptions are in the hazardous processes of fuse preparation and powder loading, where total production is insignificantly and negatively related to the number of child workers. But increased production leads to a reduction in the proportion of child workers in most processes, with the possible exception of the paper folding process in the pyrotechnics sector. The proportion of youth workers increases with increased production in the paper folding and fuse preparation processes of the pyrotechnics sector as well as the wiring and nylon stringing processes of the fashion accessories sector. The proportion of adult workers increases with increased production in the powder loading process of the pyrotechnics sector and the wiring process of the fashion accessories sector.

While it may be tempting to suggest that increasing scale of production and mergers of production may reduce the intensity of child labor, this may not be effective since: 1) bigger scale still leads to increased number of child workers in most processes, only in decreasing proportions; 2) the subcontracting arrangement makes it difficult

to eliminate the small producers at the lowest levels of the subcontracting chain; and 3) increased scale seems to increase the number and proportion of youth workers in many activities. In cases where the activity is hazardous, such as in the fuse preparation and powder loading processes of the pyrotechnics sector, the result may still involve child labor issues, inasmuch as hazardous activities for youths aged 15 to 17 is considered by ILO and by many labor standards as a child labor issue.

Tabular analyses of the survey results also show that credit, assets, and land are related to production scale. Increased access to credit is associated with more child labor in the nylon stringing process in fashion accessories and in the paper folding process in pyrotechnics, and with more adult workers for the other activities. Increasing value assets in fashion accessories is correlated also with more child workers in the two selected processes, although its proportion to total labor is lower. Access to more land is linked with more child workers in nylon stringing activities in fashion accessories and in paper folding activities in pyrotechnics.

Table 10a
Regressions of Employment in Paper Folding Process of Pyrotechnics Number of Workers to Total Production

Dependent Variable: Number of child workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0028	.0027	0.301
Constant	2.9250	.3553	0.000

R-squared = 0.0109 | N = 100 | Adj R-squared = 0.0008

Dependent Variable: Number of youth workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0025	.0037	0.498
Constant	3.1649	.4928	0.000

R-squared = 0.0047 | N = 100 | Adj R-squared = – 0.0054

Dependent Variable: Number of adult workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	-.0033	.0032	0.311
Constant	3.1331	.4272	0.000

R-squared = 0.0105 | N = 100 | Adj R-squared = 0.0004

Table 10b
Regressions of Employment in Paper Folding Process of Pyrotechnics Proportion of Workers to Total Production

Dependent Variable: Proportion of child workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0002	.0002	0.325
Constant	.3157	.0230	0.000

R-squared = 0.0099 | N = 100 | Adj R-squared = – 0.0002

Dependent Variable: Proportion of youth workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0002	.0002	0.196
Constant	.3381	.0223	0.000

R-squared = 0.0170 | N = 100 | Adj R-squared = 0.0070

Dependent Variable: Proportion of adult workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	– .0004	.0002	0.034
Constant	.3462	.0002	0.000

R-squared = 0.0451 | N = 100 | Adj R-squared = 0.0354

Table 11a
Regressions of Employment in Fuse Preparation Process of Pyrotechnics Number of Workers to Total Production

Dependent Variable: Number of child workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	– .0007	.0005	0.179
Constant	.3331	.0676	0.000

R-squared = 0.0183 | N = 100 | Adj R-squared = 0.0083

Dependent Variable: Number of youth workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0058	.0015066	0.000
Constant	1.4951	.1997751	0.000

R-squared =0.1302 | N = 100 | Adj R-squared = 0.1213

Dependent Variable: Number of adult workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0066	.0012	0.001
Constant	3.0680	.2631	0.000

R-squared = 0.1026 | N = 100 | Adj R-squared = 0.093

Table 11b
Regressions of Employment in Fuse Preparation Process of Pyrotechnics Proportion of Workers to Total Production

Dependent Variable: Proportion of child workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	– .0001	.0001	0.200
Constant	.0574	.0118	0.000

R-squared = 0.0167 | N = 100 | Adj R-squared = 0.0067

Dependent Variable: Proportion of youth workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0004	.0002	0.049
Constant	.0233	.0233	0.000

R-squared = 0.0390 | N = 100 | Adj R-squared = 0.0292

Dependent Variable: Proportion of adult workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	– .0002	.0002	0.217
Constant	.6667	.0252	0.000

R-squared = 0.0155 | N = 100 | Adj R-squared = 0.0055

Table 12a
Regressions of Employment in Powder Loading Process of Pyrotechnics Number of Workers to Total Production

Dependent Variable: Number of child workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	– .0001	.0010	0.908
Constant	.4890	.1331	0.000

R-squared = 0.0001 | N = 100 | Adj R-squared = – 0.0101

Dependent Variable: Number of youth workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0024	.0022	0.267
Constant	2.3842	.2863	0.000

R-squared =0.0125 | N = 100 | Adj R-squared = 0.0025

Dependent Variable: Number of adult workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0163	.0030	0.000
Constant	4.4125	.3982	0.000

R-squared = 0.2314 | N = 100 | Adj R-squared = 0.2235

Table 12b
Regressions of Employment in Powder Loading Process of Pyrotechnics Proportion of Workers to Total Production

Dependent Variable: Proportion of child workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	– .0001152	.0001048	0.274
Constant	.0710805	.0138934	0.000

R-squared = 0.0122 | N = 100 | Adj R-squared = 0.0021

Dependent Variable: Proportion of youth workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	– .0001885	.0001667	0.261
Constant	.2845119	.0221001	0.000

R-squared = 0.0129 | N = 100 | Adj R-squared = 0.0028

Dependent Variable: Proportion of adult workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0003037	.0001897	0.113
Constant	.6444076	.0251501	0.000

R-squared = 0.0255 | N = 100 | Adj R-squared = 0.0155

Table 13a
Regressions of Employment in Wiring Process of Fashion Accessories Number of Workers to Total Production

Dependent Variable: Number of child workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0000	.0000	0.761
Constant	4.3233	.4170	0.000

R-squared = 0.0010 | N = 100 | Adj R-squared = – 0.0092

Dependent Variable: Number of youth workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0001	.0001	0.017
Constant	5.9956	.5589	0.000

R-squared =0.0567 | N = 100 | Adj R-squared = 0.0471

Dependent Variable: Number of adult workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0002	.0001	0.043
Constant	7.0819	.8153	0.000

R-squared = 0.0411 | N = 100 | Adj R-squared = 0.0313

Table 13b
Regressions of Employment in Wiring Process of Fashion Accessories
Proportion of Workers to Total Production

Dependent Variable: Proportion of child workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	– 3.4000	1.5300	0.029
Constant	.2546	.0159	0.000

R-squared = 0.0479 | N = 100 | Adj R-squared = 0.0382

Dependent Variable: Proportion of youth workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	1.4600	1.5200	0.340
Constant	.3426	.0158	0.000

R-squared = 0.0093 | N = 100 | Adj R-squared = – 0.0008

Dependent Variable: Proportion of adult workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	1.9400	1.9800	0.328
Constant	.4029	.0206	0.000

R-squared = 0.0098 | N = 100 | Adj R-squared = – 0.0003

Table 14a
Regressions of Employment in Nylon Stringing Process of Fashion Accessories Number of Workers to Total Production

Dependent Variable: Number of child workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0001	.0001	0.023
Constant	4.9907	.6425	0.000

R-squared = = 0.0515 | N = 100 | Adj R-squared = 0.0418

Dependent Variable: Number of youth workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0004	.0001	0.000
Constant	4.1424	.7205	0.000

R-squared =0.2877 | N = 100 | Adj R-squared = 0.2804

Dependent Variable: Number of adult workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	.0002	.0001	0.003
Constant	5.9532	.8196	0.000

R-squared = 0.0861 | N = 100 | Adj R-squared = 0.0768

Table 14b
Regressions of Employment in Nylon Stringing Process of Fashion Accessories Proportion of Workers to Total Production

Dependent Variable: Proportion of child workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	– 3.22e-06	1.77e-06	0.072
Constant	.3179523	.0184109	0.000

R-squared = 0.0326 | N = 100 | Adj R-squared = 0.0227

Dependent Variable: Proportion of youth workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	4.10e-06	1.64e-06	0.014
Constant	.3150987	.0170173	0.000

R-squared = 0.0601 | N = 100 | Adj R-squared = 0.0505

Dependent Variable: Proportion of adult workers to total workers

Independent Variable	Coefficient	Standard Error	P>|t|
Total production	– 8.79e-07	2.16e-06	0.684
Constant	.366949	.0224182	0.000

R-squared = 0.0017 | N = 100 | Adj R-squared = – 0.0085

Chapter 6

Other Important Issues

This chapter tackles other important issues associated with child labor in the subject industries. Other issues of secondary importance are presented in Appendix C.

Child Workers and Schooling

1. *Significant Proportion of Child Workers in Pyrotechnics Industry Not in School*

One important area to examine is whether or not child workers go to school. In the pyrotechnics industry in Bulacan, only six of ten child workers are in school. A majority (66.2%) of migrant child workers in other households as well as a significant minority (36.2%) of non-migrant children in other households do not go to school. About forty percent of migrant children in own household and native children in other households also do not go to school. *(See Table 15.)*

2. *Majority of Youth Workers in Pyrotechnics Industry Not in School*

Youth workers in the pyrotechnics industry in Bulacan fare even worse, as about six of ten are out of school. Of migrant youths, two-thirds in employers' households and three-fourths in other households do not go to school. Of native youths, four of ten in own households and half in other households also do not go to school. *(See Table 15.)*

3. *Better School Attendance for Child and Youth Workers in Fashion Accessories Industry*

The schooling situation in the fashion accessories industry in Cebu is much better. Nine in ten child workers are studying. Native children

TABLE 15
Pyrotechnics: Number and Percentage of Child Workers in School

Category	Age	No. studying	No. not studying	Total	% studying	% not studying
Own Household and Migrant	5-14	49	33	82	59.8	40.2
	15-17	50	100	150	33.3	66.7
Own Household and Native	5-14	69	26	95	72.6	27.4
	15-17	95	57	152	62.5	37.5
Other Household and Migrant	5-14	24	47	71	33.8	66.2
	15-17	44	125	169	26.0	74.0
Other Household and Native	5-14	88	50	138	63.8	36.2
	15-17	87	86	173	50.3	49.7
TOTAL		**506**	**524**	**1030**	**49.1**	**50.9**
	5-14	230	156	386	59.6	40.4
	15-17	276	368	644	42.9	57.1
	Migrant	167	305	472	35.4	64.6
	Native	339	219	558	60.8	39.2

tend to go to school less, with 12.1% in own households and 10.4% in other households not in school compared to 5.6% in own households and 5.5% in other households for migrant children. For youth workers, a high majority (84.8%) go to school with native youths tending to be in school more than migrant youths. Of migrant youths, those in other households had the highest out-of-school rate at 22.2%. *(See Table 16.)*

TABLE 16
Fashion Accesories: Number and Percentage of Child Workers in School

Category	Age	No. studying	No. not studying	Total	% studying	% not studying
Own Household and Migrant	5-14	152	9	161	94.4	5.6
	15-17	217	51	268	81.0	19.0
Own Household and Native	5-14	204	28	232	87.9	12.1
	15-17	207	30	237	87.3	12.7
Other Household and Migrant	5-14	137	8	145	94.5	5.5
	15-17	253	72	325	77.9	22.1
Other Household and Native	5-14	294	34	328	89.6	10.4
	15-17	338	29	367	92.1	7.9
TOTAL		**1802**	**261**	**2063**	**87.3**	**12.7**
	5-14	787	79	866	90.9	9.1
	15-17	1015	182	1197	84.8	15.2
	Migrant	759	140	899	84.4	15.6
	Native	1043	121	1164	89.6	10.4

TABLE 17
Percentage of Child Workers Whose Schooling Is Affected by Work

Age	Pyrotechnics			Fashion Accesories		
Number	**Affected**	**Not Affected**	**Total**	**Affected**	**Not Affected**	**Total**
5-14	13	150	163	44	237	281
15-17	18	181	199	56	249	305
Total	**31**	**331**	**362**	**100**	**486**	**586**
Percent	**Affected**	**Not Affected**	**Total**	**Affected**	**Not Affected**	**Total**
5-14	8.0	92.0	100.0	15.7	84.3	100.0
15-17	9.0	91.0	100.0	18.4	81.6	100.0
Total	**8.6**	**91.4**	**100.0**	**17.1**	**82.9**	**100.0**

4. Employment Has Minimal Negative Effect on Schooling of Child and Youth Workers

Answering a direct question, employers claimed that only a minority of child and youth workers find their schooling affected by their work: 8% of child workers and 9% of youth workers in pyrotechnics; 16% of child workers and 18% of youth workers in fashion accessories. *(See Table 17.)*

Who Supervise the Children and How Are They Disciplined

Respondents in the fashion accessories industry claim that child workers are mainly supervised by the employers or representatives of the employers (96%) and the mothers (87%). In the pyrotechnics industry, the answers are more diverse. Children can be supervised by mothers (53%), mothers and fathers together (39%), employers or their representatives (26%), and fathers (25%). *(See Table 18.)*

The diversity of supervisors in pyrotechnics may be due to the

TABLE 18
Who Supervises the Child Workers
In Percent

Person Supervising	Pyrotechnics	Fashion Accesories
Mother	53	87
Father	25	4
Mother and Father	39	4
Elder Sister	5	8
Elder Brother	10	1
Employer / agent of employer	26	96

TABLE 19
Methods of Disciplining Child Workers
In Percent

Specific Method	Pyrotechnics	Fashion Accesories
Curtail sleeping hours	0	5
Limit food intake	0	0
Prohibit from going to school	0	1
Do not buy them toys	9	24
Do not give them money	0	6
Do not give them school allowance	0	13
Talk to the child	7	89
Spank them	0	12
Make their work voluntary	0	11
Do nothing	1	0
Teach proper ways of working	2	0
Promise to buy them toys or other rewards	2	0
Give them easy tasks	1	0

nature of the selected processes. Fathers are involved in the more hazardous processes of fuse preparation and, especially, powder loading (where child labor is less prevalent). Mothers, in turn, are in charge of paper folding where child labor is more prevalent. There are also mostly girls and boys in paper folding, and mostly boys in fuse preparation and powder loading.

In fashion accessories, most child workers are girls and are supervised by the mothers and employers.

In fashion accessories, most respondents (89%) claim that the usual method for disciplining child workers consist of talking or explaining things to the child. A minority (24%) claim that misbehaving children are threatened with non-purchase of toys and even smaller proportions claim that children are threatened with less food to bring to school (13%) and spanking (12%). *(See Table 19.)*

Criteria for Selecting Subcontracted Households

In pyrotechnics, production efficiency is the principal consideration in the choice of which household to subcontract: 1) Subcontracted household members are fast workers (71%); 2) They have experience in the work (62%); 3) They turn out quality output (48%); and 4) They have available time to do the work (39%). A minority gave family relations (31%) or neighbors (25%) as additional criteria. *(See Table 20.)*

In fashion accessories, there was an even bigger stress on efficiency: 1) They are fast workers (93%); 2) They have experience in the work (73%); 3) They have available time to do the work (68%); and 4) They turn out quality output (54%). More respondents also cited family relations (50%) and neighbors (43%) as additional criteria. *(See Table 20.)*

TABLE 20
Reasons for Giving Work to a Household
(Multiple Responses Allowed)

Reason	Pyrotechnics	Fashion Accesories
Makes quality products	48	54
Works fast	71	93
Close to the family	31	50
Relative	16	49
Godparents of children	4	19
Neighbor	25	43
Has time	39	68
Owes me money	4	4
Has many children	12	17
Has experience	62	73
Has no other employment opportunities	17	21
Reliable	–	1
Friend	–	1
Takes care of deliveries	1	–
Godmother in wedding	1	–
Knows how to follow orders; unemployed	1	–
TOTAL	**332**	**493**

TABLE 21
Is There an Advantage in Hiring Migrant Workers Compared to Hiring Workers from the Community Itself?

Response	Pyrotechnics	Fashion Accesories
Yes	89	85
No	10	11
TOTAL	99	96
Reasons		
More industrious and focused on the work	88	81
More reliable and consistent in work	75	82
Can rely on continuity of work in the next few years	50	52
Cannot get other native workers during peak season	50	42
Their wages are lower	4	5
They can stay within the household	1	2

Benefits in Hiring Migrant Workers

The large majority of respondents (89% in pyrotechnics; 85% in fashion accessories) claim that it is beneficial to hire migrant workers. The main benefits cited were: 1) They are industrious and are concentrated in their work; 2) They are dependable and work continuously; 3) They commit their labor in the long term; and 4) They provide additional labor and work hours and provide available time when none can be found. *(See Table 21.)*

TABLE 22
Pyrotechnics Sector: Rejects Traced to Processes

Process	Number
No	14
Mixing	11
Paper Folding	17
Fuse Preparation	19
Powder Loading	19
Stringing	0
Packaging	2
Wrapping	2
Got wet	5
Inadequate quantity	1
Torn package	1

Rejects Traced to the Processes

The study also looked into the extent of product rejects and whether such could actually be traced to specific processes. In pyrotechnics, the majority of respondents did not admit to rejected orders. Of the minority who admitted to rejects, there more who claimed that the rejects were not traceable to any process. Those who traced the rejects to particular processes attributed them almost equally to the three selected processes of paper folding, fuse preparation, and powder loading. It should be noted that two of these processes involve few and the other abundant child workers. *(See Table 22.)*

TABLE 23
Fashion Accessories: Rejects Traced to Processes

Process	Number
No	1
Stringing shell beads into wire	75
Stringing shell beads into nylon	71
Stringing shell beads into necklace and putting lock	49
Packing in plastic	4
Raw materials	62
Design	42
Defective work of specific employee	8
Undersized/Wrong size	17
Color; dyeing	8
Punching hole	6
Other	4

In fashion accessories, a large majority of the respondents traced rejects to the wiring process and the nylon stringing process. To a lesser extent, rejects were traced to the final stringing of beads into necklaces and the attachment of locks. *(See Table 23.)*

In the main, child labor is prevalent in the processes prone to rejects. Combined with the earlier results that child workers were rated quite low in terms of quality of work, it is reasonable to deduce that at least some rejects may be traced to the work of child laborers.

The response of respondents to rejects vary. In pyrotechnics, they would either return the rejects to the makers so that they could mix such deficient products with good ones or they simply throw them away. In fashion accesories, they ask the maker to fix the rejects, sell them at lower prices, or deduct the associated cost from the earnings of the maker.

Chapter 7

Summary of Findings and Recommendations

Key Findings

The analysis of the survey results together with follow up focus group discussions has yielded the following key findings:

1. Child labor is used in both the pyrotechnics and fashion accessories industries even in hazardous processes. In the pyrotechnics industry in Bulacan, the fuse preparation and powder loading processes expose child workers to the risk of explosion and fire. In the fashion accessories industry in Cebu, exposure to dust may be harmful to the children's health. In both industries, however, adult workers outnumber child workers.
2. Scale of production seems to affect the different processes of the two industries in a variety of ways:
   - In the paper folding process, increased production brings about a lower proportion of adult workers, and conversely a higher proportion of child and youth workers. It is a process wherein youth workers are rated best, is simple enough for child workers to do adequately and free from hazards, and which male adults do not like to do.
   - Higher production increases youth and adult labor in the fuse preparation process while total production seems to be negatively related to the number and proportion of child workers. Despite the fact that adults have the highest rating in this process, the proportion of youth workers still goes up as produc-

tion increases which could indicate a shortage of adult male labor to undertake this activity.

- In powder loading, higher production increases adult labor as this process is a hazardous activity where adults are also rated the best. It is also an activity that requires physical strength and thus increased production would require more adults (usually male).
- In the wiring process of the fashion accessories sector, increased production increases youth and adult workers (and most likely child workers, too), but the proportion of youths and adults also increase as they are hired more than children. This is expected since children were rated the worst in this activity.
- In the nylon stringing process, the proportion of youth workers is significantly and positively related to total production, so that higher production increases the proportion of youth workers and decreases the proportion of the children and adults combined, especially children.

3. Employment of child labor is generally higher among the natives (non-migrants) in both own (employer's) and other households.
4. Children in both industries work practically full time during the peak season. Thus, they may not have enough time and energy to do their school work and to play during this period.
5. There is a tendency for child workers to be paid slightly lower piece rates in the paper folding process of the pyrotechnics sector and for the wiring and nylon stringing processes in the fashion accessories sector. Child workers are paid significantly lower piece rates in the hazardous processes of fuse preparation and powder loading, but this may be due to the children doing less tasks than the older workers.
6. Child workers are rated last in terms of speed and quality of work in all the processes of the pyrotechnics industry. In fashion accessories, children perform better than adults in speed and quality of work in the nylon stringing process because of their better eyesight compared to adults. But youth workers are still rated better than child workers in this process.
7. Given that the child workers are usually rated worse in perfor-

mance in most of the processes compared to the youth and/or adult workers, lower pay for children vis-à-vis their productivity cannot be the main reason for hiring children. This is corroborated by the employers' response where hardly any of them claimed lower pay as the reason for employing children.

8. Except for the paper folding process of the pyrotechnics sector (where migrant children seem to be paid lower than non-migrant children), migrant workers are usually paid higher piece rates than non-migrant workers in the other processes of both pyrotechnics (i.e., fuse preparation and powder loading) and fashion accessories (wiring and nylon stringing). This is because some migrant workers who do not get free food and lodging must be compensated for these, and also migrant workers are rated more productive than native workers.
9. Respondents gave a mixture of reasons for employing child workers, mainly involving the positive traits of children, their efficient and productive work, their time availability and flexibility, their easier supervision, and their contribution to the family as a work team. In pyrotechnics the reasons cited tend more toward the better traits of children (no vices and learn easily), availability of time to work, and easier supervision; in fashion accessories these lean more toward the efficiency and productivity of children (fast and sharper eyes) and their positive traits (no vices, easy learners, and more creative). The ecological questions confirm these findings.
10. The majority of the respondents in both industries feel that the processes will not change in terms of speed and safety if child workers are replaced by adults and feel that product prices will not become more expensive.
11. A significant proportion of children and youths (especially migrant workers) in the pyrotechnics industry of Bulacan do not go to school as they are undertaking income-generating work. This especially affects migrant children and youths. However, as expected, the employers in general do not report that the schooling of the children is indeed affected by work.

    Overall, it appears that the findings support the initial hypothesis

of this study: that the rationale for hiring children in the two industries under study is multidimensional. Child workers are hired: 1) to substitute for adult labor (together with the youth workers, they have better eyesight for nylon stringing, are more reliable, and have no vices), 2) to provide additional labor and work hours (they have the available time and flexibility to meet peak season and sudden increases in demand and to undertake activities adults may neither have time nor desire to do, and 3) to complement adult labor (they are obedient, easily monitored and supervised by the adults, and helpful in the family work team). It is also clear that child labor exists in the industries we analyzed because the tasks they perform are low-skilled, can be easily learned, and can be done outside school time.

Given the above, it is easy to see the importance of the finding that in the processes where child labor is viewed as not so behind older workers in terms of productivity and efficiency, the prevalence of child workers is higher. The policy implications of this are the desirability of finding technologies which either replace children (but do not displace adult workers) or enhance adult productivity. The two processes where children have relative (rather than absolute) efficiency (i.e., where they are rated as not so far behind the older workers) are in the paper folding process in the pyrotechnics industry and the nylon stringing process in the fashion accessories industry. These are both labor-intensive processes. The study team is unsure whether there are technologies and machines that can replace the current practices in these processes. In addition, should such technologies exist they would have to be suited to home or near-home work (and not factory-based) to forestall unwarranted displacements in subcontractual arrangements that would reduce the income of subcontracted households.

One simple (but not clearly effective) solution in fashion accessories is to provide farsighted glasses for adults doing the nylon stringing process where young people's eyesights are believed to yield higher speed and quality. Reading glasses of the ready-to-wear type are relatively cheap but still cost more than P100 per pair. Moreover, in pyrotechnics a simple paper-folding device made of light wood or cardboard may also increase productivity and income while reducing the level of child labor in this process. The study team also recommends a

policy of giving subsidies or financing access to prevent and correct work-related disabilities of workers and the agency that can best respond to this is the Occupational Safety and Health Center of the Department of Labor and Employment (DOLE).

The next thing to consider are the processes where children are still employed although their performance is not rated highly. This is where the other reasons for hiring child workers that elicited a high frequency of responses come in. The special traits of children in terms of having no vice and being fast learners (and therefore more dependable and concentrated on the work) seem to compensate for adults who may not be able to do the required tasks because of "vices" or lack of available time. The children have also been cited as obedient, easier to supervise, form part of a productive team, etc. and thus complement and enhance the output of older workers. In addition, children also provide additional work hours and additional labor to tasks which adults do not want or may not find time to do.

A possible approach to this situation is to encourage higher levels of migrant workers, since they are rated highly, have positive traits, and are seen to provide available time and additional work hours. But employing more migrant workers would bring about new problems inasmuch as the study found high levels of non-attendance of school among migrant children. Attracting adult migrant labor (without migrant child labor) would also bring about other problems such as the breakup and separation of the migrants' families and the reduction of skilled labor in their areas of origin.

In this respect, the seemingly unrelated task of eradicating vices, such as alcoholism and gambling in the communities, may have positive economic effects in releasing adult (most likely male) employment to replace child labor, especially where their productivity is higher than children. Of course such programs may still be difficult to implement because there are biases (especially by men) on work that is stereotyped as female or child activities.

Finally, since the two industries under study bring about negative environment and health externalities (apart from child labor), which affect both adults and children, it would also be an important policy direction to steer the employers (most of whom are small-scale fe-

male employers) to other livelihoods and businesses that have no negative externalities and do not attract child labor. This applies in particular to the pyrotechnics industry, which involves some especially dangerous processes. Using ILO standards, the youth workers aged 15 to 17 in the pyrotechnics industry become a child labor issue because of the hazards posed by such processes.

Proceeding from the foregoing findings, the following are some general considerations and recommendations to curb the demand for child labor in the two industries under study. These unavoidably includes some that address supply-side factors as the complexity of the child labor issue necessitates an overall approach that considers both demand and supply factors, apart from the practical impossibility of separating demand from supply elements in many instances.

Working at the Macro Level

The study team recommends that a bigger study be undertaken at the macro level, with emphasis on the informal economy and subcontracting arrangements in industries similarly affected by the domestic and international market, toward a more comprehensive and strategic analysis of employment behavior and patterns. Such a study should yield important insights on child labor which is predominant in the informal sector.

There have to be national, regional, provincial, and municipal plans and strategies on key sectors and areas on how to tackle child labor—partly through giving economic incentives to employ adult labor versus child labor via technological and productivity changes and partly through improving and changing the livelihoods of the employers from child-labor intensive, hazardous and environmentally damaging activities to more adult-labor intensive, healthier and more environmentally-friendly activities (see below).

Working within the Two Industries

Addressing the Substitution Factors

1. Explore technologies or innovations in the production processes that may replace child workers (but not displace adult workers nor adversely affect the income of subcontracted households) or enhance the efficiency of adult workers, particularly in the paper folding process of the pyrotechnics industry and the nylon stringing process of the fashion accessories industry. In the latter process, the feasibility of providing adults with eyeglasses at very low and reasonable cost to enhance their speed and efficiency should be studied. Tying this to special services of the Department of Health and Department of Labor and Employment should be explored.

Addressing the Availability of Adult Labor and Time

2. Release adult labor to undertake the work currently being done by children. Eliminating alcoholism and gambling may yield higher adult male employment to replace the child workers in the community, especially in economic activities where their productivity is higher than the children. Values and awareness programs for the males should complement these activities so that unemployed and underemployed males will be more open to do activities typically "reserved" for women and children. Such values and awareness programs would benefit from gender sensitivity training in the communities and among employers. The unusually high response of employers in the survey citing children as having no vices as one of their main reasons for hiring children indicate that such programs may indeed help reduce the incidence of child labor.
3. Another way to release adult labor to undertake children's work is to address the multiple burden of women, i.e., their involvement in multiple economic activities in addition to household and rearing activities. This will inevitably allow women to concentrate and work on some of the work that children are currently doing. Gen-

der sensitivity again plays a crucial role here since a more equitable sharing of domestic tasks can free the women to engage in more productive work, thereby lessening the incidence of child labor. Complementary to this effort should be the provision of child care, kindergarten, and other services at the community level that help reduce the household burden of women.

Other Initiatives

4. Strengthen community-based initiatives such as those undertaken by Barangay Councils for the protection of children to address child labor with the involvement of employers, NGOs, people's organizations, and other stakeholders. There is a need for a dialogue among key stakeholders toward policy coherence, e.g., encouraging or not encouraging the pyrotechnics industry in Bulacan.
5. Economic incentives must be given to employers who will substitute adult for child labor. For example, access to credit or new technologies by small and micro-enterprises may be made contingent on the use of only adult labor in all their production processes.
6. Conduct an information and education campaign among the micro, small, and medium enterprises involved in the two industries on the different kinds of occupational hazards present in their operation (especially in pyrotechnics) and promote technologies and practices to avoid them. The use of masks, gloves, benches with back rests, etc. can be easily propagated. Community-based environmental education, especially in Cebu where manufacturing dust permeates the air, needs to be emphasized as well.
7. Employers should be encouraged to enroll in formal and informal social protection schemes—Social Security System, Philhealth, Red Cross, Damayan, etc.—to cover accidents, illness, death and other risks for themselves, their workers, and their family members. This can be an especially important safeguard against the hazardous activities in pyrotechnics.
8. Improve the access to and quality of education at the primary and

secondary levels especially in areas where industries employing child labor abound. This would raise the opportunity cost of the children being employed in the area. There is also a need to educate both children and parents on children's and women's rights, occupational safety and health, and other related issues. The right of children to an education needs to be emphasized, and ways of guaranteeing/realizing this should be discussed toward more creative strategies—distance learning, non-formal education, vocational training, etc. It will also be useful to integrate programs that will sustain the children's attendance in schools—e.g., scholarships and health and nutrition programs.

9. Monitoring and regulation should focus on health and safety issues and regulations, not on penalizing violators. Peer monitoring can also be encouraged through the establishment of codes of conduct among business associations in the two industries. Smooth coordination among the local government, labor department, police, NGOs, community groups, and other important players in facilitating the implementation of these regulations should be encouraged. Women's and children's desks at police stations should ideally be the ones involved in workplace "visitations" and a program to sensitize them to child labor and gender issues should be instituted to prepare themselves for this work.

Working Away from the Two Industries

1. The state through the local governments must be able to provide information and training on alternative livelihoods for small entrepreneurs. Promoting viable and stable alternative sources of income, such as rice trading, trading of other products, animal raising, vegetable growing, tricycle and jeepney driving, handicrafts—which were mentioned as other sources of income in the survey—may shift employers' businesses away from child-labor employment. Such training should be complemented by microfinance services to supplement capital requirements and, where applicable, marketing and technical assistance. This is es-

pecially true in Bulacan where many of the employers interviewed had expressed their desire to shift to other profit earning endeavors that are less hazardous and more profitable than the pyrotechnics business. In Cebu, diversification of livelihood activities would smoothen incomes of small and micro-enterprises as the fashion accessories industry is particularly vulnerable to fluctuations in the global market.

2. Economic incentives (e.g., access to credit, training and marketing assistance, or new technologies) must be given to employers who will shift away from industries that employ child labor to alternative enterprise activities. This will encourage them to try new kinds of businesses that are also financially rewarding but do not utilize child work. Economic alternatives, however, should be sustainable and viable, so that those who choose to explore them do not go back to their sector during peak seasons (as has happened in the past in pyrotechnics). Thorough feasibility studies and capability building programs need to be implemented to ensure success.
3. Strengthen multi-agency bodies such as the Task Force to Eliminate Child Labor in the two industries/areas to implement comprehensive strategies which also address the demand side, and to lobby for coherent policies to confront persistent industry issues and ensure the survival of both employers and workers through industry development or a shift to alternative industries. Also a community- and area-based approach involving all stakeholders (GOs, NGOs, community-based organizations, informal workers' organizations, church-based groups, civic groups, etc.) is essential to provide comprehensive support services for working children, their parents, and their families toward the elimination of child labor.

Areas for Future Research

This study provides fertile ground for future research studies:

1. As mentioned earlier, a study of the various sectors employing

child labor (pyrotechnics, fashion accessories, and other industrial sectors) at the national, regional, and provincial levels should prove beneficial in generating insights into and more coordinated strategies and policies to address child labor, particularly from the demand side.

2. In analyzing the compensation and productivity factors in sectors employing children, it may be beneficial to identify and study sectors wherein different technologies and industrial organizations determine whether or not child labor is used. This requires identification of sectors that have a set of firms or producers employing only adult labor and another set of firms or producers employing both adult and child labor.
3. As noted earlier, one interesting finding of this study is that although the productivity of child workers mostly lag behind that of adult and youth workers, in those tasks where their productivity is not so far behind child labor is abundant. This, as discussed previously, is due to the dual factors of the complementary nature of child and adult labor and the shortage of adult labor. Thus, it would be interesting to conduct a more technical study that analyzes and measures the actual productivity of adults and children working individually, and adults and children working as a team. This should yield additional insights into the multidimensional factors contributing to why employers utilize child labor in their economic activities.

Appendix A

Profile of the Employer-Respondents

Appendix A provides a detailed discussion of the profile of the employer-respondents.

Age, Gender, Civil Status, Household Size, PATAMABA Membership, and Educational Attainment

1. Dominance of Female Employers in Near-Home Activities

In the purposive sampling of the study, three-fourths of the respondents in both areas—the pyrotechnics industry in Bulacan and the fashion accessories industry in Cebu—were female. (See Table A1.) The prevalence of female employers in the two sectors may be explained as follows:

a. The economic activities are either home-based or located near the homes of the workers engaged in the activities. Women are suited to manage such activities since they need to be in or near their homes most of the day due to their household and rearing chores.
b. The men, on the other hand, tend to work away from the homes.
c. The sexual division of family and housework would allot to the women the role of supervising and monitoring the children. In these sectors where part of the economic activities involve child workers employed in or near their homes, the women are seen as better managers of such activities.

2. *Average Age in the Early Forties, Married, Household Size of 4 to 5*

The average age of the respondents in both sectors is in the early 40s. Most respondents in both sectors fall in the age bracket of 26 to 55 years. There were more respondents over 45 years of age in the pyrotechnics sector in Bulacan than in the fashion accessories sector in Cebu, i.e., the Bulacan respondents are a slightly older group than the Cebu respondents. (See Table A1.)

TABLE A1
Age & Gender of Employers/Respondents

	Pyrotechnics		Fashion Accessories	
Age	**Female**	**Male**	**Female**	**Male**
< 25	4	1	1	2
26-35	22	7	18	5
36-45	25	8	44	9
46-55	19	2	10	7
> 56	4	5	3	1
Total	**74**	**23**	**76**	**24**
Average Age	**40.7**	**42.9**	**40.2**	**40.4**

Most respondents are married with an average household size of around 4 to 5. (See Tables A2 and A3.)

TABLE A2
Civil Status of Employers/Respondents, by Gender

	Pyrotechnics		Fashion Accessories	
Civil Status	**Female**	**Male**	**Female**	**Male**
Unmarried	5	2	1	1
Married	59	19	67	21
Widow(er)	6	1	1	1
Separated	2	0	1	0
Live-in	3	2	6	1
Total	**24**	**75**	**24**	**76**

TABLE A3
Size of Employer's/Respondent's Household, by Age and Gender

	Pyrotechnics		Fashion Accessories	
Age/Gender	**Female**	**Male**	**Female**	**Male**
< 25	3.5	4.0	2.0	3.0
26-35	4.1	4.1	4.7	4.4
36-45	4.6	4.1	5.3	5.3
46-55	4.6	6.5	4.5	4.9
> 56	5.0	4.6	3.0	5.0
All ages	**4.4**	**4.5**	**4.9**	**4.8**
All by area	**4.4**		**4.9**	

3. *Most Are Not Members of PATAMABA*

Most respondents were not members of PATAMABA, the organization of informal workers that assisted the researchers in accessing the survey sites and respondents, and in conducting the survey.[1] (See Table A4.)

TABLE A4
Membership in PATAMABA of Employers/Respondents

	Pyrotechnics	Fashion Accessories
Member	24	7
Non-member	69	86
No Response	7	7
Total	**100**	**100**

4. *Elementary or High School Levels of Educational Attainment*

Most respondents do not have a high level of educational attainment. In the pyrotechnics sector in Bulacan, more than 50% of the respondents had reached only elementary schooling (whether finished or not). Less than 40% had reached high school (whether finished or not), and a few female respondents (less than 10% of them) had reached college. In comparison, respondents in the fashion accessories sector in Cebu had higher educational attainments. Around 40% of them had reached elementary levels, slightly less than 40% had reached high school levels, and 14% had reached college levels. (See Table A5.)

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1 In the pyrotechnic sector in Bulacan, there was a bigger proportion of respondents who were PATAMABA members compared to the fashion accessories sector in Cebu (about 25% of the respondents in the pyrotechnics sector versus less than 10% in the fashion accessories sector).

TABLE A5
Schooling of Employers/Respondents, by Gender

Schooling	Pyrotechnics		Fashion Accessories	
	Female	Male	Female	Male
No schooling	0	0	0	1
Did not finish elementary	5	17	3	10
Finished elementary	10	23	6	28
Did not finish high school	4	17	4	12
Finished high school	5	13	8	14
Did not finish college	0	2	1	9
Finished college	0	3	2	2
Total	**24**	**75**	**24**	**76**

Years in the Industry and Previous Occupation

1. Average of More Than 10 Years in the Industry

In both industries, the respondents' average experience in the industry was around 11 to 12 years. In the pyrotechnics sector 64% of respondents had been working for 10 years or less, another 26% had been in the business between 11 to 20 years, and 10% more than 20 years (with three being in the business for more than 30 years). In the fashion accessories sector 45% of respondents had been working for 10 years or less, 45% had been in the business between 11 to 20 years, and 10% more than 20 years. Thus, in general, respondents in the fashion accessories industry had been in the sector longer than those in the pyrotechnics sector, even if the pyrotechnics industry had been in existence in Bulacan for a longer period than the fashion accessories industry in Cebu. (See Table A6.)

TABLE A6
Number of Years in the Industry

Number of Years	Pyrotechnics	Fashion Accessories
<5	21	18
6-10	43	27
11-15	17	33
16-20	9	12
21-25	6	5
26-30	1	5
>31	3	0
Total	**100**	**100**
Average number of years	**11.5**	**12.2**
Range		
Shortest	1	2
Longest	50	3

2. Previous Occupation

a. Pyrotechnics: Majority came from other sectors or were unemployed

In the pyrotechnics sector in Bulacan, 40% of the employer-respondents claimed they worked in pyrotechnics before they became employers. Of these, 34% were ordinary workers and the other 6% were either retailers or wholesalers. Another 40% of the employer-respondents claimed they worked in other sectors before becoming employers. The remaining 20% claimed they were unemployed before they became employers. (See Table A7.)

b. Fashion Accessories: Majority came from the same sector

In the fashion accessories sector in Cebu, 65% of employer-respondents claimed they worked in fashion accessories before they

became employers. Of these, 47% were ordinary workers and the other 18% were either retailers, raw material suppliers, or middlemen. Another 28% of the employer-respondents claimed they were working in other sectors before becoming employers in fashion accessories. The remaining 7% claimed they were unemployed before becoming employers. (See Table A7.)

It is clear that there is a stronger tendency for those engaged in fashion accessories to become employers within the sector itself through some sort of mechanism of upward mobility, while in pyrotechnics there is a stronger tendency for employers to come from outside the sector. Bulacan appears to be a more depressed area, and more employer-respondents were unemployed before they entered the pyrotechnics sector as employers.

TABLE A7
Previous Occupation of Employers/Respondents

Previous Occupation	Pyrotechnics	Fashion Accessories
Unemployed	20	7
Work in other industry	40	28
Ordinary worker	34	59
Retailer	4	8
Middleman	0	2
Wholesaler	2	0
Raw material supplier	0	8
Supplier of unfinished inputs	0	6
Saleslady/salesman	0	3
Others	0	2
Employee in Furniture shop	0	1
Underground Lottery employee	1	0
Manufacturer in given industry	1	0
Total	**102**	**124**

Sources of Income of the Respondents' Households

1. Dependence on the Economic Activities Involving Child Labor

The employers' households are quite dependent on the income from participation in their respective industries: 91% of respondents in pyrotechnics and 94% in fashion accessories claimed industry participation is the main source of their household income. (See Table A8a.)

Furthermore, 36% of respondents in pyrotechnics and 21% in fashion accessories claimed their households have no other sources of income. (See Table A9.)

TABLE A8a
Is Industry Activity Your Household's Main Source of Income?

Answer	Pyrotechnics	Fashion Accessories
No	5	9
Yes	94	91
Total	**99**	**100**

TABLE A8b
Household Member with Other Sources of Income

Household Member	Pyrotechnics	Fashion Accessories
Employer himself	15	50
Spouse	50	47
Father	4	7
Mother	1	2
Son	4	8
Daughter	2	4
Sibling	0	5
Uncle	0	1
Others	1	1

TABLE A9
Other Sources of Income

Other Sources of Income	Pyrotechnics	Fashion Accessories
Tricycle driver	17	17
Construction	16	5
Piggery/Livestock	11	34
Jeepney driver	7	4
Vegetable farming	5	5
Sari-sari store	4	11
Handicraft	0	8
Remittance from a relative	0	5
Weaving	2	4
Loan Shark	1	0
Supplier of chemicals	0	1
Retailer of industry products	0	2
Agent of industry products	1	4
Honorarium in local government	0	1
Rental income from housing	0	2
Food vending	1	2
Others	9	17
Households with other income	**64**	**79**

2. *Other Sources of Income: Tricycle Driving, Animal Raising, Construction, and Sari-sari Stores*

While 64% of the respondents in pyrotechnics claimed that their households have other sources of income, only 15% claimed that they themselves have alternative sources of income. Half of the respondents said they have spouses who have alternative sources of income. (See Table A8b.)

In fashion accessories, 79% of the respondents claimed that their households have other sources of income: 50% said they themselves have other sources of income and 47% said their spouses have alternative sources of income. (See Table A8b.)

The top three other sources of income for household members of the respondents in pyrotechnics are tricycle driving, construction work, and animal raising, while in fashion accessories, these are animal raising, tricycle driving, and sari-sari stores. (See Tables A9.)

It is clear from Tables A8 to A9 that the respondents in fashion accessories have a more varied range of alternative sources of income and more of their household members have other sources of income, compared to those in pyrotechnics.

3. *Most Respondents in Pyrotechnics Want to Transfer Out of the Sector; Most Respondents in Fashion Accessories Want to Remain in the Sector*

In the pyrotechnics sector, 75% of the respondents claimed they do not want to remain in the sector and another 13% of them might want to move out depending on whether they would have enough means to set up a new business. Only 12% stated categorically that they want to remain in the sector. (See Table A10.)

This contrasts sharply with the fashion accessories sector, where 81% of the respondents said they want to remain in the sector. Only 9% categorically stated they do not want to remain in the sector and another 10% said they might move out depending on whether they would have enough means to set up a new business. (See Table A11.)

This result may be partly due to the higher profitability of the fashion accessories sector (as discussed in a later section) and the highly negative media image of the fireworks sector where recent accidents and explosions had killed children and adults alike.

Of those who want to move out in both sectors, most want to set up sari-sari stores, groceries, market stalls, or other type of stores. Animal raising is also mentioned as an alternative livelihood, especially in Bulacan. (See Tables A10 and A11.)

In both sectors, those who want to move out almost unanimously claimed they need capital to set up a new business. A few said they

needed training or seminars to set up a new business. (See Tables A10 and A11.)

TABLE A10
If There Is a Choice, Will You Remain in This Business?
In Pyrotechnics Industry in Bulacan

Answers	**Number**
Yes	75
No	12
Depends	13
Total	**100**
Business you want to move to	**Number**
Vending, grocery, sari-sari store, market stall,	41
Piggery, hog-raising, poultry, animal husbandry	28
Buy & sell, buy & sell of vehicles, buy & sell of rice	6
Farming, gardening, agriculture	5
Junk shop, automotive spare parts and supply,	3
Canteen/mini-restaurant	2
Different enterprises	2
Big retail fireworks store	1
Bakery	1
Machine Shop	1
Dress shop	1
Microfinance, lending	1
Selling clothes	1
Total	**93**
Needed to move to new business	
Capital	88
Training on alternative livelihood	14
Presence of markets	10
Market stalls/stores	3
Total	**115**

TABLE A11
If There Is a Choice, Will You Remain in This Business?
In Fashion Accessories Industry in Cebu

Answers	**Number**
Yes	81
No	9
Depends	9
Total	**99**
Business you want to move to	**Number**
Sari-sari store	3
Grocery	2
Vending	1
Selling fashion accessories	1
Piggery	1
Hog raising	1
Rice farming	1
Different types of business	1
Total	**11**
Needed to move to new business	**Number**
Capital	15
Training	3
Stall	1
Total	**19**

Appendix B

Economic and Employment Variables

Appendix B presents a detailed discussion of the economic and employment variables in the pyrotechnics and fashion accessories industries.

Production and Marketing Arrangements

1. Subcontracting and Job-Outing Arrangements

In the fashion accessories industry, the majority of respondents were both subcontractors and job-outers/assemblers (58%), followed by subcontractors only (23%) and job-outers/assemblers only (19%). Job-outers/assemblers contract labor and provide raw materials and other production inputs, while subcontractors only provide the money for production of a specified amount of orders without providing raw materials and inputs. (See Table B1.)

TABLE B1
Types of Firms in Fashion Accessories Industry in Cebu

Type of Firms	Percent
Subcontractor/job-outer/assembler	58
Subcontractor only	23
Job-outer/assembler only	15
Household producer only (subcontractee/job-outee)	4
Total	**100**

In the pyrotechnics industry, there are no cases of job-outers where raw materials and inputs are not provided by the employers. Thus, the arrangements are all subcontractual in nature.

2. Buyers of the Products

- **Fashion Accessories: Export-Oriented**

The fashion accessories industry is highly export-oriented. A large majority of buyers who place orders from employers are exporters (77% of the respondents), followed by suppliers (49%), retailers/store distributors (39%), and other subcontractors (30%). (See Table B2.)

TABLE B2
Major Buyers Who Place Orders from Employers in Fashion Accessories Industry in Cebu

Types of major buyers (Multiple responses allowed)	**Percent**
Exporters	77
Suppliers	49
Retailers/store distributors	39
Subcontractors	30
Agents/middlemen	29
Wholesale distributors	28
Local final consumers	17
Foreign final consumers	5
Others	0

Apart from filling orders from subcontractors, wholesalers, or middlemen, almost nine of 10 respondents also produce fashion accessory products and market these on their own. The dominant buyers of such products, include local final consumers (52%), retailers/store distributors (42%), exporters (37%), agents/middlemen (31%), and foreign final consumers (26%). (See Table B3.)

TABLE B3
Major Buyers of Own Production of Employers in Fashion Accessories Industry in Cebu

Types of major buyers (Multiple responses allowed)	Percent
Local final consumers	52
Retailers/store distributors	42
Exporters	37
Agents/middlemen	31
Foreign final consumers	26
Suppliers	25
Subcontractors	21
Wholesale distributors	13
Others	2

- **Pyrotechnics: Domestic-oriented**

Buyers who order from the respondents in the pyrotechnics sector are mostly retailers and distribution stores (67% of the respondents), final consumers (53%), wholesale distributors (39%), and agents or middlemen (38%). The products are sold in the domestic market and compete with imports from China and other countries. (See Table B4.)

Similar to fashion accessories, almost nine out of 10 respondents also produce additional firecrackers beyond those on order and also market these on their own. The top buyers include final consumers (59%), retailers/store distributors (59%), and agents/middlemen (42%). (See Table B5.)

TABLE B4
Major Buyers Who Order from Employers in Pyrotechnics Industry in Bulacan

Types of major buyers (Multiple responses allowed)	**Percent**
Retailers/store distributors	67
Local final consumers	53
Wholesale distributors	39
Agents/middlemen	38
Subcontractors	15
Suppliers	3
Exporters	0
Foreign final consumers	0
Others	2

TABLE B5
Major Buyers of Own Production by Employers in Pyrotechnics Industry in Bulacan

Types of major buyers (Multiple responses allowed)	**Percent**
Local final consumers	59
Retailers/store distributors	59
Agents/middlemen	42
Wholesale distributors	25
Subcontractors	2
Suppliers	2
Exporters	0
Foreign final consumers	0
Others	9

Average Revenues, Expenditures and Profits, and Peak Months

1. Higher Revenues and Profits in the Fashion Accessories Sector Than in the Pyrotechnics Sector

TABLE B6
Average Revenues and Expenditures

	Pyrotechnics		Fashion Accessories	
	Pesos	Percent	Pesos	Percent
Revenue				
From orders	59,874	67.5	78,020	74.4
From own initiative	28,778	32.5	26,853	25.6
Total	88,652	100.0	104,873	100.0
Expenditures				
Raw materials	34,184	54.6	20,108	32.4
Labor	16,814	26.8	33,261	53.6
Electricity	1,262	2.0	1,903	3.1
Transportation	681	1.1	999	1.6
Rent	1,833	2.9	528	0.9
Licences	4,187	6.7	402	0.6
Others	3,694	5.9	4,894	7.9
Total	62,655	100.0	62,095	100.0
Profit	25,997	29.3	42,778	40.8

Respondents in the fashion accessories sector make an average of about P105,000 in revenues and incur average expenditures of around P62,000, for an average profit of around P43,000. In comparison, respondents in the pyrotechnics sector make an average of about P89,000 in revenues and incur average expenditures of around

P63,000, for an average profit of around P26,000. Thus, the respondents in fashion accessories have higher average revenues than those in pyrotechnics, but incur on the average almost the same level of expenditures. This makes the average profit, as well as profit-to-revenue ratio, higher in the fashion accessories sector than in the pyrotechnics sector. (See Table B6.)

2. *Cost Structure: Bigger Share of Raw Materials and Licenses in Pyrotechnics, Bigger Share of Labor in Fashion Accessories*

Of total expenditures in the fashion accessories sector, labor costs make up, on the average, 54%; raw materials and inputs make up 34%. The opposite holds true for the pyrotechnics sector. Raw materials and inputs make up, on the average, 58% of total expenditures, while labor costs make up 28%. Respondents in the pyrotechnics sector have the additional burden of paying licenses for their operations, which make up around 7% of total expenditures. (See Table B6.)

3. *Bigger Share of Revenues from Orders, Supplementary Revenue, Initiative Production*

For both sectors, between two-thirds to three-fourths of revenues are from orders from subcontractors or middlemen and the rest come from own marketing of own initiative production. (See Table B6.)

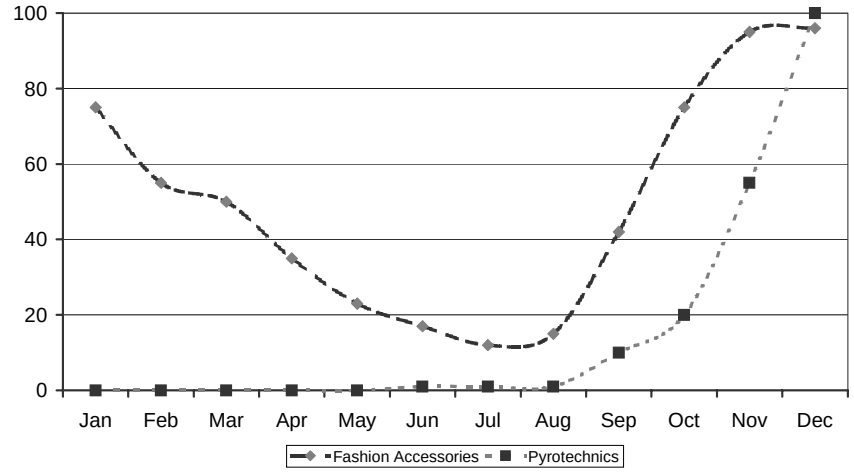
4. *Peak Months: Towards Christmas Time and New Year*

For both sectors, the peak month is December in time for the Christmas and New Year holidays.

For the pyrotechnics sector the demand is very seasonal: orders start trickling in around September, goes up quickly starting November, and peaks in December. Orders in January drop to almost nil.

The fashion accessories sector has a more cyclical demand pattern with orders never going to nil. Orders begin to increase slowly in August, then go up fast from September to November, and remain high till December. Orders then start to decline continuously from January to August. (See Figure A1.)

FIGURE B1
Demand Patterns in the Pyrotechnics and Fashion Accessories Industry



Processes Where Child Labor Is Employed

1. Processes Where Child Labor Is Employed Under Adult Supervision

The respondents were asked which processes employ child labor with adults supervising their activities. In the pyrotechnics sector, the activities where most respondents claimed child laborers are present with adult supervision are the paper folding process (90%), wrapping and labeling of the product (74%), and packing (64%). A minority claim that there are some child labor activities in the more hazardous processes of fuse preparation, connecting fireworks, and powder loading. Due to the difficulties of surveying all these processes, the study team selected the paper folding, fuse preparation, and powder loading processes for detailed study. The paper folding process was selected for its prevalent use of children aged 5 to 14. The other two were chosen because of the use of child labor in these hazardous processes.

In the fashion accessories sector, the top processes were stringing beads into nylon (98%), wiring of beads (89%), and final stringing of

necklace and putting locks (77%). For purposes of detailed study in the survey, the study team selected the processes of stringing beads into nylon and wiring of beads. (See Table B7.)

TABLE B7
Processes Where Children Are Employed Together with Adults

Pyrotechnics		Fashion Accessories	
Folding paper	90	Stringing shell beads into wire	89
Fuse preparation	23	Transferring shell beads to nylon	98
Power loading	13	Stringing shell beads into necklace and putting a lock	77
Packing	64	Packaging of necklace in plastic	7
Stringing	17	Putting holes	3
Wrapping and putting brands	74	Drilling	1
		Cutting of shell	2
		Designing	7

2. Pyrotechnics: Widespread Child Labor in Less Hazardous Activities, a Few Child Laborers in Hazardous Activities

Of the 100 employers surveyed in the pyrotechnics industry in Bulacan, 90 reported employing child labor in the paper folding process. Only 24 reported employing child labor in the fuse preparation process, and 28 in the powder loading process. (See Table B8.)

It should be noted that at the time this study was being undertaken the pyrotechnics industry had been in the limelight of media, as accidents in the industry had resulted in the death of several children. Given that paper folding is a relatively safe process compared to the more hazardous processes of fuse preparation and powder loading where there is danger of accidental explosions, the above results may be interpreted as follows: either 1) the employers generally use children in the less hazardous process of paper folding, and many of them

do not employ children in the more hazardous fuse preparation and powder loading processes; or 2) employment of children in the fuse preparation, powder loading, and even the paper folding processes, may have been under-reported.

3. *Fashion Accessories : Widespread Use of Child Labor in the Wiring and Nylon Stringing Processes*

Of the 100 employers surveyed in the fashion accessories industry in Cebu, practically all reported employing child labor in the wiring and nylon stringing processes. (See Table B8.)

TABLE B8
Extent of Child Labor in Selected Processes in the Pyrotechnics and Fashion Accessories Industries

	Child Labor	No Child Labor	Total
Pyrotechnics Industry in Bulacan			
Process 1: Folding	90	10	100
Process 2: Fuse preparation	24	76	100
Process 3: Loading	28	72	100
Fashion Accessories Industry in Cebu			
Process 1: Wiring	99	1	100
Process 2: Nylon stringing	100	0	100

Average Number of Laborers by Age, Migrant/Non-migrant Status and Living in Employers' or Other Households in Selected Processes

Pyrotechnics Industry

1. More Child Workers in the Less Hazardous Activity; Fewer in the More Hazardous Activities

Consistent with the results in the previous section, the number of child workers in the pyrotechnics sector is higher in the paper folding process, and much smaller in the hazardous processes of fuse preparation and powder loading. For those reporting child labor, there is an average of 3.5 child laborers per employer in the paper folding process, compared to 1.2 in the fuse preparation process and 1.7 in the powder loading process. With this it should be recalled that only around one-fourth of respondents claimed to have child labor in the last two processes, compared to 90% for the paper folding process. (See Tables B9a, B9b, and B9c.)[2]

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2 Tables B9a, B9b, and B9c show the distribution and average numbers of child, youth, and adult laborers per employer according to type of worker and age group. It shows, for each process, the number n reporting child labor and the number reporting no child labor. Out of this n, a percentage reporting positive employment in a particular cell of the table is given. For example, in the folding process, 30% of the 10 respondents claiming no child labor (i.e., three of them) report employing migrants in own (employers') household aged 15 to 17 years old. Furthermore, the average number of the workers for those reporting employment in the particular cell is given. Thus, in the example just given, the three reporting no child labor in the folding process and employing in the migrant/own household category has an average of 1.7 migrant workers/own household in the 15 to 17 age group. Finally, the last row in each category gives the average number of workers based on the total n. In our example there are 0.5 average number of migrant/own household workers aged 15-17 among those reporting no child labor in the folding process (10 respondents).

In the fuse preparation and powder loading process, even for those reporting child labor, the number of child workers is significantly less than the number of youth and adult workers (with the statistical tests significant), which is not the case for the number of child workers in the paper folding process. For those reporting child labor in the fuse preparation process (around one-fourth of the respondents), the average number of child workers is 1.2, the average number of youth workers is 2.0, and the average number of adult workers is 3.6. For those reporting child labor in the powder loading process (less than 30% of the respondents), the average number of child workers is 1.7, the average number of youth workers is 2.5, and the average number of adult workers is 4.5. These contrast with the paper folding process, where those who reported employing child labor (90% of the respondents) gave an average number of 3.5 child workers, 3.5 youth workers, and 3.0 adult workers.

2. Paper Folding Process

a. Higher Percentage Reporting Employing Child and Youth Labor Compared to Adult Labor

In the paper folding process, among the 90 respondents using child labor, there was a higher percentage of employer-respondents that reported employing child and youth workers compared to adult workers in their own households or other households. This explains the lower average number of adult workers per employer compared to the child and youth workers presented earlier. (See Table B9a.)

b. More Child and Youth Labor in Other Households Than in Employers' Own Household

Most respondents (73.3%) reported having child and youth workers in the non-migrant/other (not employer's) household category. There is also, to a lesser extent, employment of child and youth labor in non-migrant/own households, migrant/own households and non-migrant/other households. For the respondents that reported child labor in the paper folding process, there are more workers of all ages in other households compared to the workers in the employers' own households. (See Table B9a.)

TABLE B9a
Average Number of Workers by Type and Age, Paper Folding Process in Pyrotechnics Industry in Bulacan

Type/Age	No Child Labor: n=10				With Child Labor: n=90			
	5-14	15-17	18+	All	5-14	15-17	18+	All
Migrant, Own HH								
% of n reporting	–	30.0	30.0		38.9	33.3	37.8	
Average for those reporting	–	1.7	1.7		1.9	1.5	1.8	
Average for n	–	0.5	0.5	1.0	0.7	0.5	0.7	1.9
Non-Migrant, Own HH								
% of n reporting	–	40.0	30.0		46.7	36.7	36.7	
Average for those reporting	–	1.3	1.7		1.6	1.6	1.7	
Average for n	–	0.5	0.5	1.0	0.7	0.6	0.6	1.9
Migrant, Other HH								
% of n reporting	–	20.0	10.0		32.2	41.1	30.0	
Average for those reporting	–	1.0	3.0	1.7	2.3	2.7	3.3	2.8
Average for n	–	0.2	0.3	0.5	0.8	1.1	1.0	2.9
Non-Migrant, Other HH								
% of n reporting	–	40.0	40.0		73.3	66.7	37.8	
Average for those reporting	–	1.8	1.5		1.7	2.0	1.9	
Average for n	–	0.7	0.6	1.3	1.3	1.3	0.7	3.3
Total Average Workers for n	–	1.9	1.9	3.8	3.5	3.5	3.0	10.0

Note: [a] Significant at 5% level; [b] Significant at 10% level.

c. Those Reporting No Child Labor Have Fewer Total Number of Workers

The respondents reporting no child labor in the paper folding process (only 10% of the respondents) had an average total of only 3.8 workers (evenly halved between workers aged 15-17 and those 18 and above), compared to an average of 10 workers for those reporting child labor. This may indicate that those not using child labor in the paper folding process are those whose operation is smaller in scale. (See Table B9a.)

TABLE B9b
Average Number of Workers by Type and Age, Fuse Preparation Process in Pyrotechnics Industry in Bulacan

Type/Age	No Child Labor: n=76				With Child Labor: n=24			
	5-14	15-17	18+	All	5-14	15-17	18+	All
Migrant, Own HH								
% of n reporting	–	32.9	59.2		25.0	33.3	75.0	
Average for those reporting	–	1.5	2.0		1.0	1.5	1.8	
Average for n	–	0.5	1.2	1.7	0.3[b]	0.5	1.3	2.1
Non-Migrant, Own HH								
% of n reporting	–	36.8	56.6		58.3	54.2	62.5	
Average for those reporting	–	1.3	1.7		1.6	1.6	1.7	
Average for n	–	0.5	0.5	1.0	0.7	0.6	0.6	1.9
Migrant, Other HH								
% of n reporting	–	35.5	46.1		8.3	20.8	41.7	
Average for those reporting	–	1.4	1.9		1.0	1.0	1.5	
Average for n	–	0.5	0.9	1.4	0.1[b]	0.2	0.6	0.9
Non-Migrant, Other HH								
% of n reporting	–	28.9	38.2		25.0	50.0	37.5	
Average for those reporting	–	1.8	1.5		1.7	2.0	1.9	
Average for n	–	0.7	0.6	1.3	1.3	1.3	0.7	3.3
Total Average Workers for n	–	1.9	3.6	5.5	1.2[b]	2.0	3.6	6.8

Note: [a] Significant at 5% level; [b] Significant at 10% level.

2. Fuse Preparation

a. Minority That Use Child Labor Seem to Be Those with Higher Number of Workers

In the fuse preparation process, where more than three-fourths of the respondents claim not to use child labor, the minority that use child labor, again, seem to have a larger number of workers—6.8 average workers for those with child labor compared to 5.5 average workers for those without child labor. (See Table B9b.)

TABLE B9c
Average Number of Workers by Type and Age, Powder Loading Process in Pyrotechnics Industry in Bulacan

Type/Age	No Child Labor: n=72				With Child Labor: n=28			
	5-14	15-17	18+	All	5-14	15-17	18+	All
Migrant, Own HH								
% of n reporting	–	48.6	87.5		35.7	50.0	67.9	
Average for those reporting	–	1.6	3.0		1.2	1.6	2.4	
Average for n	–	0.8	2.7	3.4	0.4[b]	0.8	1.6	2.8
Non-Migrant, Own HH								
% of n reporting	–	54.2	73.6		42.9	50.0	64.3	
Average for those reporting	–	1.5	1.9		1.2	1.2	1.7	
Average for n	–	0.8	1.4	2.2	0.5[a]	0.6	1.1	2.2
Migrant, Other HH								
% of n reporting	–	38.9	50.0		17.9	28.6	42.9	
Average for those reporting	–	1.4	2.4		1.4	1.6	2.4	
Average for n	–	0.5	1.2	1.8	0.3[a]	0.5	1.0	1.8
Non-Migrant, Other HH								
% of n reporting	–	29.2	43.1		42.9	42.9	42.9	
Average for those reporting	–	1.6	1.9		1.3	1.6	1.8	
Average for n	–	0.5	0.8	1.3	0.5	0.7	0.8	2.0
Total Average Workers for n	–	2.6	6.1	8.7	1.7[b]	2.5	4.5	8.8

Note: [a] Significant at 5% level; [b] Significant at 10% level.

b. Labor of All Categories Used More in Employers' Own Household

There are more workers in all age categories in the employers' own household compared to other households. Given the hazards of the process, it is reasonable that more workers in this process would be located in the employers' own households. This is in contrast with the less hazardous process of paper folding, which is farmed out more to other households, as described above.

3. *Powder Loading*

a. Minority That Use Child Labor Not From Higher Scale Production

In the powder loading process, the average total number of workers is practically the same for those reporting child labor and for those reporting no child labor, unlike the situation in the folding and fuse preparation processes. (See Table B9c.)

b. More Workers in Employers' Own Households

As in the fuse preparation process, there are more workers in the employers' own households than in other households due to the hazards of the process. (See Table B9c.)

Fashion Accessories Industry

1. *Fewer Child Workers Compared to Youth and Adult Workers*

It is worth noting that for the two selected processes with child labor—wiring and nylon stringing—the largest average numbers are for adult workers (8.2 and 7.7, respectively), followed by youth workers (6.9 and 7.2, respectively). The average numbers of child workers (4.4 for wiring, 6.0 for nylon stringing) are smaller than the average numbers of youth and adult workers and the difference is statistically significant. (See Table B10.)

2. *More Non-Migrant Workers for All Age Brackets*

There is a high percentage (three-fourths and more) of respondents reporting employment at all ages in the non-migrant/other household category, and in the non-migrant/own household categories. (See Table B10.) The non-migrant/other household also has the highest average number of workers and thus yields the biggest average number of workers for all age brackets. The non-migrant/own household has a smaller average number of workers despite the high frequency reporting employment in this category and thus yields a smaller number of workers. It must be noted, however, that there is significant

TABLE B10
Average Number of Workers by Type and Age, Wiring and Nylon Stringing Process in Fashion Accessories Industry in Cebu

Type/Age	Wiring Process 5-14	15-17	18+	All	Nylon Stringing Process 5-14	15-17	18+	All
Migrant, Own HH								
% reporting	38	72	63		55	68	57	
Avg. for those reporting	1.9	2.3	3.1		2.2	2.4	3.1	
Avg. for n=100	0.7[b]	1.7	2.0	4.3	1.2[a]	1.6	1.8	4.6
Non-migrant, Own HH								
% reporting	74	75	83		74	72	79	
Avg. for those reporting	1.8	1.9	2.5		1.8	1.8	2.3	
Avg. for n=100	1.4[b]	1.5	2.1	4.9	1.3	1.3	1.8	4.4
Migrant, Other HH								
% reporting	32	63	55		49	66	44	
Avg. for those reporting	1.7	2.5	2.7		2.1	2.9	3.6	
Avg. for n=100	0.6[b]	1.6	1.5	3.6	1.0[b]	1.9	1.6	4.5
Non-migrant, Other HH								
% reporting	77	86	86		85	86	85	
Avg. for those reporting	2.3	2.6	3.1		2.9	2.8	2.9	
Avg. for n=100	1.8[b]	2.2	2.7	6.7	2.4	2.4	2.5	7.3
Total Avg. for n=100	4.4[b]	6.9	8.2	19.6	6.0[b]	7.2	7.7	20.9

Note: [a] Significant at 5% level; [b] Significant at 10% level.

employment in the other categories (migrant/own household and migrant/other household), especially for adult and youth laborers.

The Two Industries

1. More Workers in Fashion Accessories

The total average number of workers in the selected processes of fashion accessories industry is in general more than that in the selected processes of the pyrotechnics industry, consistent with the earlier observation that the cost structure of fashion accessories is more

labor intensive. There are an average of 19.6 workers in the wiring process and 20.9 in the nylon stringing process, compared with around 9.4 in the paper folding process, 5.8 in the fuse preparation process, and 8.7 in the powder loading process.

2. Smaller Number of Child Workers Compared to Older Workers

Both industries have fewer child workers, on the average, than adult and youth workers, with the notable exception of the paper folding process in pyrotechnics. The fashion accessories industry employs child workers in the wiring and nylon stringing processes chosen for this study, while employers in the pyrotechnics industry claim child labor to be mainly used in the paper folding process and much less in the more hazardous processes of fuse preparation and powder loading.

3. More Non-Migrant Workers, and More Workers in Other Households Except for Dangerous Activities

Employment of workers is spread across migrant and non-migrant, own and other households. Employment of child labor is generally higher in the non-migrant/other household and non-migrant/own household categories.

For most of the processes there are more workers of all age brackets in other households. The biggest exceptions are the dangerous processes of fuse preparation and powder loading in the pyrotechnics sector. Overall, the subcontracting processes in the pyrotechnics industry in Bulacan and in the fashion accessories industry in Cebu have generated child labor in employers' as well as other households and among migrant and non-migrant children.

Average Working Hours and Working Days in the Peak Month

Pyrotechnics Industry: Children Work Shorter Hours

In general, adults work the longest hours, followed by youths and then children. The powder loading process has the longest average hours, followed by fuse preparation and paper folding.

TABLE B11a
Average Working Hours per Day by Type of Worker and Age Bracket, Paper Folding Process in Pyrotechnics Industry in Bulacan

Type of Worker/Age	5-14	15-17	18+	All
Migrant, Own HH	5.2[b]	7.9	7.9	7.1
Non-migrant, Own HH	5.3[b]	7.5	8.7	7.1
Migrant, Other HH	6.2[b]	8.5	9.3	8.0
Non-migrant, Other HH	6.1[b]	8.0	10.1	7.7
All	**5.8[b]**	**8.0**	**9.0**	**7.5**

Note: [a] Significant at 5% level; [b] Significant at 10% level.

TABLE B12a
Average Working Days per Week by Type of Worker and Age Bracket, Paper Folding Process in Pyrotechnics Industry in Bulacan

Type of Worker/Age	5-14	15-17	18+	All
Migrant, Own HH	6.0	6.1	6.6	6.2
Non-migrant, Own HH	5.6[b]	6.0	6.5	6.0
Migrant, Other HH	5.7[b]	6.2	6.6	6.2
Non-migrant, Other HH	5.5[b]	6.1	6.5	6.0
All	**5.7[b]**	**6.1**	**6.6**	**6.1**

Note: [a] Significant at 5% level; [b] Significant at 10% level.

1. Paper Folding Process

a. Shorter Working Hours and Days for Children

Child workers in the paper folding process work on the average 5.8 hours, compared to 8.0 hours for youth workers and 9.0 hours for adult workers. The difference between children's working hours compared to that of youths and adults is statistically significant. (See Table B11a.)

Child workers in the paper folding process also work fewer days compared to the older workers. Child workers work, on the average, 5.7 days a week, compared to 6.1 days for the youth workers and 6.6 days for the adult workers. Migrant child workers in the employers' own households seem to work more days than the other child workers as they work an average of 6.0 days compared to an overall average of 5.7 days for all child workers. (See Table B12a)

b. Longer Hours for Workers in Other Households

Workers of all age brackets in other households work much longer than workers in the employers' household, whether they are migrant or non-migrant. Adult workers in other households work on the average from 9.3 to 10.1 hours. Child workers in other households work on the average 6.1 to 6.2 hours, compared to 5.2 to 5.3 hours in employers' own households. (See Table B11a.)

The longer hours spent by workers in other households in the folding process compared to workers in own households may be, as brought out earlier, because the easier and less hazardous process of paper folding is subcontracted more to other households, while the harder and more hazardous processes are more likely done in the employers' household where supervision and monitoring would be easier.

2. Fuse Preparation and Powder Loading Processes

a. Shorter Working Hours and Days for Children

In the fuse preparation process, child workers work on average 6.7 hours (longer than in the paper folding process), compared to 8.6 hours for youth workers and 8.7 hours for adult workers. The difference between children's working hours compared to that of youths and adults is statistically significant. (See Table B11b.)

As mentioned earlier, workers in the powder loading process put in the longest working hours. Child workers work on average 7.4 hours (longer than in the two other processes), compared to 8.7 hours for youth workers and 9.2 hours for adult workers. Again, the difference between children's working hours compared to that of youths and adults is statistically significant. (See Table B11c).

Child workers seem to work slightly fewer days in a week in the

TABLE B11b
Average Working Hours per Day by Type of Worker and Age Bracket, Fuse Preparation Process in Pyrotechnics Industry in Bulacan

Type of Worker/Age	5-14	15-17	18+	All
Migrant, Own HH	7.2	8.8	8.5	8.5
Non-migrant, Own HH	7.1[b]	9.4	9.5	9.2
Migrant, Other HH	6.5	8.0	8.4	8.2
Non-migrant, Other HH	5.3[b]	8.1	8.1	7.9
All	**6.7[b]**	**8.6**	**8.7**	**8.5**

Note: [a] Significant at 5% level; [b] Significant at 10% level.

TABLE B12b
Average WorkingDays per Week by Type of Worker and Age Bracket, Fuse Preparation Process in Pyrotechnics Industry in Bulacan

Type of Worker/Age	5-14	15-17	18+	All
Migrant, Own HH	4.8	5.6	5.9	5.8
Non-migrant, Own HH	5.6	5.9	6.1	6.0
Migrant, Other HH	7.0	5.7	5.6	5.7
Non-migrant, Other HH	5.7	5.7	5.9	5.8
All	**5.6**	**5.7**	**5.9**	**5.8**

Note: [a] Significant at 5% level; [b] Significant at 10% level.

fuse preparation process, especially migrant children in the employers' own households, though the differences are not statistically significant. Child workers work an average of 5.6 days in a week, compared to 5.7 days for youth workers and 5.9 days for adult workers. (See Table B12b.)

They also work slightly fewer days in the powder loading process, especially child workers in other households, and the differences are statistically significant. Child workers work on the average 6.1 days a

TABLE B11c
Average Working Hours per Day by Type of Worker and Age Bracket, Powder Loading Process in Pyrotechnics Industry in Bulacan

Type of Worker/Age	5-14	15-17	18+	All
Migrant, Own HH	8.0	9.3	9.6	9.4
Non-migrant, Own HH	7.9[a]	9.0	9.7	9.3
Migrant, Other HH	7.2	8.2	8.6	8.3
Non-migrant, Other HH	6.6[b]	7.7	8.3	7.9
All	**7.4[b]**	**8.7**	**9.2**	**8.9**

Note: [a] Significant at 5% level; [b] Significant at 10% level.

TABLE B12c
Average Working Days per Week by Type of Worker and Age Bracket, Powder Loading Process in Pyrotechnics Industry in Bulacan

Type of Worker/Age	5-14	15-17	18+	All
Migrant, Own HH	6.1	6.4	6.4	6.4
Non-migrant, Own HH	6.3	6.4	6.5	6.5
Migrant, Other HH	6.0	6.4	6.5	6.4
Non-migrant, Other HH	5.8[b]	6.6	6.5	6.4
All	**6.1[b]**	**6.4**	**6.5**	**6.4**

Note: [a] Significant at 5% level; [b] Significant at 10% level.

week, compared to 6.4 days for youth workers and 6.5 days for adult workers. (See Table B12c.)

b. Longer Hours for Workers in Employers' Own Households

In the fuse preparation and powder loading processes, workers in the employers' own households work longer hours compared to workers in other households in all age categories, whether they are migrants on non-migrants. Children in the fuse preparation process work

around 7.1 to 7.2 hours in employers' own households compared to 5.3 to 6.5 hours in other households. Children in the powder loading process work 7.9 to 8.0 hours in the employers' own households compared to 6.6 to 7.2 hours in other households. (See Tables B11b and B11c).

In contrast with the paper folding process, these results seem to bolster the contention that the more hazardous processes of fuse preparation and powder loading are more intensively done in the employers' own households, while the paper folding process is more subcontracted to other households.

c. Longer Hours for Migrant Children Compared to Non-Migrant Children in Other Households

There is also a tendency for migrant children in other households to work significantly longer hours than their non-migrant counterparts. In fuse preparation, migrant child workers in other households work 6.5 hours a day compared to 5.3 hours for non-migrant children. In the powder loading process, migrant child workers in other households work 7.2 hours compared to 6.6 hours for non-migrant children.

Fashion Accessories Industry: Shorter Hours for Child Workers and Non-Migrant Workers

Child workers work less hours than older workers in the fashion accessories industry and the differences are statistically significant. Children work an average of 6.8 hours a day in the wiring process, compared to 8.9 hours for youth workers and 9.1 hours for adult workers. In the nylon stringing process, children work on the average 6.8 hours a day, compared to 8.6 hours for youth workers and 8.9 hours for adult workers. (See Table B13.)

Migrant workers in all age categories average longer work hours than their non-migrant counterparts whether in the employers' or in other households. Migrant child workers work on the average 7.2 to 7.3 hours a day in the wiring process, compared to 6.5 to 6.7 hours for non-migrant children. Migrant child workers work only slightly longer in the nylon stringing process, 6.9 hours to 7.1 hours compared to 6.7

TABLE B13
Average Working Hours per Day by Type of Worker and Age Bracket, Wiring and Nylon Stringing Process in Fashion Accessories Industry in Cebu

Type of Worker/Age	Wiring Process 5-14	15-17	18+	All	Nylon Stringing Process 5-14	15-17	18+	All
Migrant, Own HH	7.2[b]	9.3	9.3	8.8	7.1[b]	8.9	9.0	8.4
Non-migrant, Own HH	6.7[b]	8.8	8.9	8.2	6.8[b]	8.6	8.7	8.1
Migrant, Other HH	7.3[b]	9.2	9.4	8.9	6.9[b]	8.8	9.2	8.3
Non-migrant, Other HH	6.5[b]	8.6	9.1	8.1	6.7[b]	8.3	8.7	7.9
All	**6.8[b]**	**8.9**	**9.1**	**8.4**	**6.8[b]**	**8.6**	**8.9**	**8.1**

Note: [a] Significant at 5% level; [b] Significant at 10% level.

TABLE B14
Average Working Days Per Week by Type of Worker and Age Bracket, Wiring and Nylon Stringing Process in Fashion Accessories Industry in Cebu

Type of Worker/Age	Wiring Process 5-14	15-17	18+	All	Nylon Stringing Process 5-14	15-17	18+	All
Migrant, Own HH	6.1	6.1	6.0	6.1	6.0	6.0	6.0	6.0
Non-migrant, Own HH	5.9	5.9	6.0	5.9	5.8[b]	5.9	6.0	5.9
Migrant, Other HH	6.1	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Non-migrant, Other HH	5.9	6.0	6.0	6.0	5.9[b]	6.0	6.0	6.0
All	**6.0**	**6.0**	**6.0**	**6.0**	**5.9[b]**	**6.0**	**6.0**	**6.0**

Note: [a] Significant at 5% level; [b] Significant at 10% level.

to 6.8 hours for non-migrant children.

In terms of average working days in a week, all categories of workers for both the wiring and nylon stringing processes seem to work around 6 days a week. For the nylon stringing process, there is a tendency for non-migrant children to work just slightly less—around 5.8 to 5.9 days a week—but this difference is still statistically significant. (See Table B14.)

The Two Industries: Child Work Is Full-Time Work During the Peak Season

Even if they tend to work shorter hours than the older workers, the child laborers employed in the paper folding, fuse preparation and powder loading processes of the pyrotechnics industry, and the wiring and nylon stringing processes of the fashion accessories industry, work, on the average, 6 hours or more in a day (more than 7 hours for the powder loading processes of the firework industry) and around 6 days a week during the peak months. This is practically full time work during the peak season. The children may not have enough time and energy to do their school work and to play during the peak season. The situation seems to be worse for migrant children. Migrant children in Cebu (fashion accessories) and migrant children not living in employers' households in Bulacan (pyrotechnics) tend to work longer hours and days than their non-migrant counterparts. (Tables B13 and B14)

The Average Piece Rates of the Workers

Pyrotechnics Industry

1. Paper Folding Process

a. Adults Paid Slightly Higher

For the paper folding process, the piece rates range from P5.50 to P6.60 per thousand. In general, adult workers have slightly higher piece rates on the average than the youth workers and child workers. Adults get paid on the average around P6.20 per thousand, child and youth workers get paid an average of P5.90 to P6.00 per thousand. (See Table B15a).

b. Piece Rates Higher for Workers in Own Household

On the average, piece rates paid to non-migrant (P6.40) and migrant workers (P6.00) in the employers' own households seem to be higher than those paid to workers (P5.90) in other households. (See Table B15a.)

TABLE B15a
Average Piece Rates by Type of Worker and Age Bracket, Paper Folding Process in Pyrotechnics Industry in Bulacan in Pesos per Thousand

Type of Worker/Age	5-14	15-17	18+	All
Migrant, Own HH	5.70	5.50	6.60	6.00
Non-migrant, Own HH	6.50	6.30	6.40	6.40
Migrant, Other HH	5.50	6.00	6.30	5.90
Non-migrant, Other HH	6.10	5.80	5.70	5.90
All	**6.00**	**5.90**	**6.20**	**6.00**

Note: [a] Significant at 5% level; [b] Significant at 10% level.

c. Migrant Children Paid Lower than Non-Migrant Children

Migrant children tend to have lower piece rates than their non-migrant counterparts. Non-migrant children are paid P6.10 to P6.50 per thousand, while migrant children are paid only P5.50 to P5.70 per thousand. (See Table B15a.)

2. Fuse Preparation Process

Lower Pay for Children and Non-Migrant Workers

For the fuse preparation process, the piece rates range from P15.40 to P23.50 per kilo. It appears that the child workers are paid much lower than their older counterparts. Child workers are paid an average of P15.70 per kilo, compared to P20.50 to P21.20 for older workers. Also migrant workers tend to get paid higher than their non-migrant counterparts. Migrant workers get paid on the average close to P22.00 per kilo, while non-migrant workers get paid from P17.60 to P21.00 per kilo. (See Table B15b.)

The lower pay for children and non-migrants in the fuse preparation process may be because they do fewer (and less hazardous) tasks. Also, some of the migrant workers who do not get free food and lodging are compensated for their living expenses.

TABLE B15b
Average Piece Rates by Type of Worker and Age Bracket, Fuse Preparation Process in Pyrotechnics Industry in Bulacan in Pesos per Kilo

Type of Worker/Age	5-14	15-17	18+	All
Migrant, Own HH	15.60	23.50	21.30	21.70
Non-migrant, Own HH	15.40	18.10	17.80	17.60
Migrant, Other HH	20.90	22.90	21.60	22.10
Non-migrant, Other HH	14.80	21.00	22.10	21.00
All	**15.70[a]**	**21.20**	**20.50**	**20.40**

Note: [a] Significant at 5% level; [b] Significant at 10% level.

TABLE B15c
Average Piece Rates by Type of Worker and Age Bracket, Powder Loading Process in Pyrotechnics Industry in Bulacan in Pesos per Thousand

Type of Worker/Age	5-14	15-17	18+	All
Migrant, Own HH	15.60	17.80	17.50	17.50
Non-migrant, Own HH	17.70	16.80	17.20	17.10
Migrant, Other HH	12.00[b]	18.50	18.30	18.00
Non-migrant, Other HH	15.20	17.00	18.20	17.30
All	**15.60[b]**	**17.50**	**17.70**	**17.40**

Note: [a] Significant at 5% level; [b] Significant at 10% level.

3. Powder Loading Process

Lower Pay for Children and Non-Migrant Workers

For the powder loading process, the average piece rates range from around P15.00 to P18.50 per thousand pieces. Child workers again in general seem to be paid lower piece rates than older laborers. Child workers are paid on the average P15.60 per thousand, compared to P17.50 for youth workers and P17.70 for adult workers. In turn, youth

TABLE B16
Average Piece Rates by Type of Worker and Age Bracket, Wiring and Nylon Stringing Process in Fashion Accessories Industry in Cebu in Pesos per Piece

Type of Worker/Age	Wiring Process				Nylon Stringing Process			
	5-14	15-17	18+	All	5-14	15-17	18+	All
Migrant, Own HH	2.70	2.60	2.60	2.60	1.10	1.00	1.20	1.10
Non-migrant, Own HH	2.20	2.50	2.60	2.50	0.80	1.10	1.10	1.00
Migrant, Other HH	2.50	2.60	2.40	2.50	1.60	1.40	1.60	1.50
Non-migrant, Other HH	2.20	2.30	2.50	2.30	0.80	0.90	1.40	1.10
All	**2.30**	**2.50**	**2.50**	**2.40**	**1.00**	**1.10**	**1.30**	**1.10**

and adult migrant workers seem to be paid slightly higher than their non-migrant counterparts. Again the higher pay for older and migrant workers may be related to employing them for a bigger number of more hazardous tasks in the powder loading process and for compensating some of the migrant workers for their living expenses. (See Table B15c.)

Fashion Accessories

Slightly Lower Pay for Children in Both Processes, Higher Pay for Migrant Workers in Other Households for Nylon Stringing

For the wiring process, the average piece rate ranges in a narrow band: P2.20 to P2.70 per piece. Piece rates for child workers appear to have a slightly lower average (P2.30 per piece) than those for older laborers (P2.50 per piece). (See Table B16.)

For the nylon stringing process, the average piece rate ranges from P0.80 to P1.60. Child workers get an average piece rate of P1.00 per piece, while youth workers get an average of P1.10 per piece and adult workers P1.30 per piece. Migrant workers in other households are on average paid higher (P1.50 per piece) than the other workers (P1.00 to P1.10 per piece). (See Table B16.)

The Two Industries: Slightly Lower Pay for Children and for Non-Migrants

The two industries seem to exhibit limited variability in the piece rates for the various processes. There is some indication that child workers are paid slightly lower piece rates than their older counterparts in both industries. Migrant workers are in general paid higher than their non-migrant counterparts—except for the non-migrant children in the paper folding and powder loading processes in the pyrotechnics industry, and the non-migrant workers in the employers' household in the paper folding process.

Incentives and Benefits to the Workers

Pyrotechnics

This section looks at the economic incentives or benefits given by the employers to the workers in the selected processes under study. Tables B17a, B17b and B17c show that significant free food is given to workers of all categories (migrant or non-migrant, own household or other household, all age brackets) for all three processes. But there is also a significant minority of employers who do not give free food to the workers. Many employers claim that migrant workers in own and other households are given free lodging. But a significant minority claim that the migrant workers are not given free lodging (i.e., they pay rent). A minority give clothes and bonuses as positive incentives. For the minority giving bonuses, more give to migrant adult and youth workers in own household in the powder loading and fuse preparation processes.

TABLE B17a
Frequency of Responses on Incentives Given, Paper Folding Process in Pyrotechnics Industry in Bulacan

Incentive / Age Bracket	Response	Migrant, Own HH	Non-Migrant, Own HH	Migrant, Other HH	Non-Migrant, Other HH
Food					
Age 5-14	No	12	15	8	21
	Yes	17	21	15	31
Age 15-17	No	9	11	10	21
	Yes	19	22	24	30
Age 18 and above	No	7	16	7	9
	Yes	28	17	17	22
Free Board					
Age 5-14	No	17	24	13	35
	Yes	12	12	10	17
Age 15-17	No	14	23	15	35
	Yes	14	10	19	16
Age 18 and above	No	17	25	10	23
	Yes	18	8	14	8
Clothes					
Age 5-14	No	21	30	21	41
	Yes	8	6	2	11
Age 15-17	No	23	25	28	45
	Yes	5	8	6	6
Age 18 and above	No	25	24	20	27
	Yes	10	9	4	4
Bonus					
Age 5-14	No	24	28	19	42
	Yes	5	8	4	10
Age 15-17	No	23	28	30	41
	Yes	5	5	4	10
Age 18 and above	No	28	25	18	26
	Yes	7	8	6	5

TABLE B17b
Frequency of Responses on Incentives Given, Fuse Preparation Process in Pyrotechnics Industry in Bulacan

Incentive / Age Bracket	Response	Migrant, Own HH	Non-Migrant, Own HH	Migrant, Other HH	Non-Migrant, Other HH
Food					
Age 5-14	No	6	4	1	3
	Yes	4	8	4	9
Age 15-17	No	19	19	16	13
	Yes	26	26	16	18
Age 18 and above	No	29	25	21	19
	Yes	47	35	21	19
Free Board					
Age 5-14	No	6	11	2	10
	Yes	4	1	3	2
Age 15-17	No	19	30	18	19
	Yes	26	15	14	12
Age 18 and above	No	33	36	24	24
	Yes	43	24	18	14
Clothes					
Age 5-14	No	9	11	5	11
	Yes	1	1	0	1
Age 15-17	No	37	36	26	22
	Yes	8	9	6	9
Age 18 and above	No	59	45	33	28
	Yes	17	15	9	10
Bonus					
Age 5-14	No	6	7	4	10
	Yes	4	5	1	2
Age 15-17	No	28	31	20	22
	Yes	17	14	12	9
Age 18 and above	No	48	44	25	26
	Yes	28	16	17	12

TABLE B17c
Frequency of Responses on Incentives Given, Powder Loading Process in Pyrotechnics Industry in Bulacan

Incentive / Age Bracket	Response	Migrant, Own HH	Non-Migrant, Own HH	Migrant, Other HH	Non-Migrant, Other HH
Food					
Age 5-14	No	3	6	0	1
	Yes	2	8	2	5
Age 15-17	No	13	9	10	10
	Yes	17	28	15	21
Age 18 and above	No	23	19	12	16
	Yes	35	30	25	16
Free Board					
Age 5-14	No	3	9	2	5
	Yes	2	5	0	1
Age 15-17	No	14	20	12	20
	Yes	16	17	13	11
Age 18 and above	No	29	32	16	22
	Yes	29	18	21	10
Clothes					
Age 5-14	No	2	10	1	3
	Yes	3	4	1	3
Age 15-17	No	23	26	19	19
	Yes	7	11	6	12
Age 18 and above	No	41	35	26	22
	Yes	17	15	11	10
Bonus					
Age 5-14	No	3	11	2	5
	Yes	2	3	0	1
Age 15-17	No	19	31	16	26
	Yes	11	6	9	5
Age 18 and above	No	39	39	29	23
	Yes	19	11	8	9

TABLE B18a
Frequency of Responses on Incentives Given, Wiring Process in Fashion Accessories Industry in Cebu

Incentive / Age Bracket	Response	Migrant, Own HH	Non-Migrant, Own HH	Migrant, Other HH	Non-Migrant, Other HH
Food					
Age 5-14	No	3	64	4	67
	Yes	32	6	27	6
Age 15-17	No	7	66	5	73
	Yes	64	7	57	10
Age 18 and above	No	7	70	6	72
	Yes	55	12	48	10
Free Board					
Age 5-14	No	5	67	5	72
	Yes	30	3	26	1
Age 15-17	No	10	70	8	81
	Yes	61	3	54	2
Age 18 and above	No	11	78	10	80
	Yes	51	4	44	2

Fashion Accessories

The majority of employers claim that free food and lodging are given to migrant workers in own and other households. Other incentives are given by a significant minority of employers in terms of free clothes, bonuses, and access to credit. It appears that bonuses are given more to non-migrant workers in own and other households whereas access to credit is given more to migrant workers in general, especially in own households, and to adult non-migrant workers in other households. It must be pointed out that access to credit is a strong positive incentive given in the fashion accessories industry in Cebu, which is not present in the pyrotechnics industry of Bulacan. (See Tables B18a and B18b.)

TABLE B18a (continued)
Frequency of Responses on Incentives Given, Wiring Process in Fashion Accessories Industry in Cebu

Incentive / Age Bracket	Response	Migrant, Own HH	Non-Migrant, Own HH	Migrant, Other HH	Non-Migrant, Other HH
Clothes					
Age 5-14	No	20	39	17	35
	Yes	15	31	14	38
Age 15-17	No	41	38	37	45
	Yes	30	35	25	38
Age 18 and above	No	39	49	32	49
	Yes	23	33	22	33
Bonus					
Age 5-14	No	25	35	19	43
	Yes	10	35	12	30
Age 15-17	No	51	40	41	49
	Yes	20	33	21	34
Age 18 and above	No	41	43	40	44
	Yes	21	39	14	38
Access to Credit					
Age 5-14	No	19	69	20	66
	Yes	16	1	11	7
Age 15-17	No	37	70	34	60
	Yes	34	3	28	23
Age 18 and above	No	31	78	27	52
	Yes	31	4	27	30

TABLE B18b
Frequency of Responses on Incentives Given, Nylon Stringing Process in Fashion Accessories Industry in Cebu

Incentive / Age Bracket	Response	Migrant, Own HH	Non-Migrant, Own HH	Migrant, Other HH	Non-Migrant, Other HH
Food					
Age 5-14	No	4	66	6	76
	Yes	48	4	39	6
Age 15-17	No	8	67	6	75
	Yes	59	3	58	7
Age 18 and above	No	8	66	6	71
	Yes	48	9	36	9
Free Board					
Age 5-14	No	5	69	7	80
Yes	47	1	38	2	
Age 15-17	No	10	69	8	80
	Yes	57	1	56	2
Age 18 and above	No	11	74	10	78
	Yes	45	1	32	2
Clothes					
Age 5-14	No	24	41	28	38
	Yes	27	29	17	44
Age 15-17	No	33	38	37	41
	Yes	33	32	26	41
Age 18 and above	No	30	49	23	44
	Yes	25	26	18	36

TABLE B18b (continued)
Frequency of Responses on Incentives Given, Nylon Stringing Process in Fashion Accessories Industry in Cebu

Incentive / Age Bracket	Response	Migrant, Own HH	Non-Migrant, Own HH	Migrant, Other HH	Non-Migrant, Other HH
Bonus					
Age 5-14	No	39	36	29	49
	Yes	13	34	16	33
Age 15-17	No	48	35	44	47
	Yes	19	35	20	35
Age 18 and above	No	40	37	31	45
	Yes	16	38	11	35
Access to Credit					
Age 5-14	No	25	67	25	70
	Yes	27	3	20	12
Age 15-17	No	31	67	35	60
	Yes	36	3	29	22
Age 18 and above	No	27	72	21	47
	Yes	29	3	21	33

Appendix C

Other Issues

Appendix C presents other data the study team deems important to the overall study of child labor in the two selected industries.

Training

Table C1 shows the frequency and distribution of training in both industries. It can be noted that there is more training for both child and adult workers in fashion accessories than in pyrotechnics, supports the view that the former is more skill intensive than the latter.

TABLE C1
Frequency and Distribution of Child and Adult Training in the Pyrotechnics and Fashion Accessories Industries

	Pyrotechnics		Fashion Accessories	
Response	Frequency	Distribution (%)	Frequency	Distribution (%)
Child Training				
Yes	66	69.5	94	94.0
No	29	30.5	6	6.0
N	95	100.0	100	100.0
Adult Training				
Yes	70	72.2	80	80.0
No	27	27.8	20	20.0
N	97	100.0	100	100.0

This, however, does not mean that firms in fashion accessories spend more training their workers than those in pyrotechnics. Table C2 shows the frequency and distribution of training days in both industries. One can observe that roughly 41% of the employers in pyrotechnics reported that the child training was more than one week, compared to only 1% in fashion accessories. This is perhaps due to the hazardous nature of pyrotechnics, requiring employers to continually guide their workers, especially the adults. Note also that children are not trained as much as adults. Children are generally hired for the more unskilled type of activities.

TABLE C2
Frequency and Distribution of Child and Adult Days of Training in the Pyrotechnics and Fashion Accessories Industries

	Pyrotechnics		Fashion Accessories	
Number of Days	**Frequency**	**Distribution (%)**	**Frequency**	**Distribution (%)**
Child Training				
Less than 1 day	0	0.0	5	5.3
1 day	15	22.7	65	69.2
Less than 1 week	24	36.4	23	24.5
1 week and more	27	40.9	1	1.0
N	66	100.0	94	100.0
Adult Training				
Less than 1 day	4	5.0	0	0.0
1 day	61	76.3	17	24.3
Less than 1 week	14	17.5	22	31.4
1 week and more	1	1.2	31	44.3
N	80	100.0	70	100.0

Absenteeism

Absenteeism is not a major problem in the two industries. In pyrotechnics, most respondents (56-64%) claimed that workers of all age brackets were rarely absent from work. Only 8.2% of the respondents claimed that child workers are absent often. But child workers seem to be more prone to absenteeism compared to the older workers. (See Table C3.)

TABLE C3
Absenteeism in the Pyrotechnics Industry in Bulacan, by Age Bracket

Frequency	5-14		15-17		18+	
	No.	% to Total	No.	% to Total	No.	% to Total
Never	0	0.0	0	0.0	2	2.0
Rarely	48	56.5	64	64.0	63	63.0
Sometimes	30	35.3	35	35.0	35	35.0
Often	7	8.2	1	1.0	0	0.0
Total	**85**	**100.0**	**100**	**100.0**	**100**	**100.0**

In the case of Cebu, workers in all age brackets are rarely absent. (See Table C4.)

TABLE C4
Absenteeism in the Fashion Accessories Industry in Cebu, by Age Bracket

Frequency	5-14		15-17		18+	
	No.	% to Total	No.	% to Total	No.	% to Total
Never	0	0.0	1	1.0	1	1.0
Rarely	8	100.0	98	98.0	98	98.0
Sometimes	0	0.0	1	1.0	1	1.0
Often	0	0.0	0	0.0	0	0.0
Total	**8**	**100.00**	**100**	**100.0**	**100**	**100.0**

Table C5
Absenteeism in the Pyrotechnics Industry in Bulacan, by Type of Household and Worker

	Migrant, Own HH		Non-Migrant, Own HH		Migrant, Other HH		Non-Migrant, Other HH	
Frequency	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Never	5	5.4	1	1.0	4	4.5	1	1.0
Rarely	56	60.9	52	53.6	54	60.7	63	65.6
Sometimes	31	33.7	42	43.3	31	34.8	31	32.4
Often	0	0.0	2	2.1	0	0.0	1	1.0
Total	**92**	**100.0**	**97**	**100.0**	**89**	**100.0**	**96**	**100.0**

Table C6
Absenteeism in the Fashion Accessories Industry in Cebu, by Type of Household and Worker

	Migrant, Own HH		Non-Migrant, Own HH		Migrant, Other HH		Non-Migrant, Other HH	
Frequency	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Never	2	14.3	0	0.0	10	10.2	0	0.0
Rarely	12	85.7	98	100.0	88	89.8	99	100.0
Sometimes	0	0.0	0	0.0	0	0.0	0	0.0
Often	0	0.0	0	0.0	0	0.0	0	0.0
Total	**14**	**100.0**	**98**	**100.0**	**98**	**100.0**	**99**	**100.0**

It has also been said that employers prefer migrant workers because they are more reliable than native workers. In pyrotechnics, migrant workers staying in the employers' own households seem to be less prone to absenteeism than natives. (See Table C5.)

In fashion accessories, while absenteeism seems to be rare, the migrant workers in both the employer's households and the subcontracted ones are very reliable in terms of attendance. (See Table C6.)

Reasons for absenteeism

Absenteeism of children in pyrotechnics is mainly due to sickness (63.3%) or schooling (33.1%). (See Table C7.)

In fashion accessories, aside from being sick (34.7%) and studying (37.2%), going back to one's province is also an important reason (17.1%). (See Table C8.)

In terms of adult workers in pyrotechnics, the main factors for being absent include sickness (55.4%) and household related reasons—work at home (22.6%), nurturing a baby (6.9%), or nurturing the sick (4.4%). However, tiredness and sleepiness accounts for 5.0% of the reasons. (See Table C9.)

In Cebu, the top five reasons for adult absenteeism are sickness (31.8%), household work (27.27%), going back to the province (13.3%), taking care of the baby (8.7%) or tending the sick (8.3%). (See Table C10.)

Table C7
Reasons for Absenteeism of Child Workers in the Pyrotechnics Industry in Bulacan

Reasons for Absenteeism	Number	% to Total
Sickness	88	63.3
Studies	46	33.1
Household work	4	2.9
Tiredness	1	0.7
Others	0	0.0
Total	**139**	**100.0**

Table C8
Reasons for Absenteeism of Child Workers in the Fashion Accessories Industry in Cebu

Reasons for Absenteeism	Number	% to Total
Sickness	69	34.7
Studies	74	37.2
Household work	5	2.5
Tiredness/Sleepiness/Boredom	6	3.0
Going back home/to province	34	17.1
Playing	4	2.0
Urgent concerns/Accidents	4	2.0
Others	3	1.5
Total	**199**	**100.0**

Table C9
Reasons for Absenteeism of Adult Workers in the Pyrotechnics Industry in Bulacan

Reasons for Absenteeism	Number	% to Total
Sickness	88	55.3
Household work	36	22.6
Mother has to take care of new baby	11	6.9
Mother gave birth	4	2.5
Tend to the sick	7	4.4
Extra work in another firm	1	0.6
Urgent concerns	4	2.5
Tiredness/sleepiness/hangover	8	5.0
Others	0	0.0
Total	**159**	**100.0**

Table C10
Reasons for Absenteeism of Adult Workers in the Fashion Accessories Industry in Cebu

Reasons for Absenteeism	Number	% to Total
Sickness	84	31.8
Household work	72	27.3
Mother has to take care of new baby	23	8.7
Mother gave birth	10	3.8
Tend to the sick	22	8.3
Going back to province	35	13.3
Urgent Concerns	9	3.4
Tiredness/sleepiness/hangover	6	2.3
Others	3	1.1
Total	**264**	**100.0**

Responsible Parties and Accidents

When accidents happen, most of the time it is the employer who takes care of the expenses. In fashion accessories, it is almost entirely the employer who shoulders the associated expenses while in pyrotechnics there are cases when the workers pay on their own.

TABLE C11
Responsible Party for Accident Expenditures

	Pyrotechnics		Fashion Accessories	
Responsible Party	**Number**	**Percent**	**Number**	**Percent**
Employer	96	92.3	99	99.0
Worker	7	6.7	1	1.0
Social Security	0	0.0	0	0.0
Others	1	1.0	0	0.0
Total	104	100.0	100	100.0

Incidence and Response to Peak Orders

The study team also wanted to determine whether the firms were subject to unpredictable demand. The survey showed that the firms in both pyrotechnics and fashion accessories indeed experienced sudden peaks in orders although these were not often.

The top responses to such events include: asking other family members to work, hiring migrant workers, buying from other firms or subcontracting to fill the increased orders. The top response in both industries is relying on family labor for these unexpected events. This most likely leads to child labor because children's labor is readily available in the households especially outside and after school time.

TABLE C12
Incidence of Sudden Peaks in Orders

Incidence	Pyrotechnics	Fashion accessories
None	16	1
Yes but not often	84	97
Yes and often	0	2
Total	**100**	**100**

TABLE C13
Responses to Sudden Orders

Responses	Pyrotechnics	Fashion accessories
Ask other family members to work	64	93
Get migrant workers	50	79
Subcontract or job-out	26	78
Buy from other firms	28	29
None	4	1
Overtime	3	0
Inventory stock-up	1	2

Responses to Rejects

The response of respondents to rejects vary. In pyrotechnics, they would either return the rejects to the makers so that they could mix such deficient products with good ones or simply throw them away. In fashion accessories, they ask the maker to fix the rejects, sell them at lower prices, or deduct the associated cost from the earnings of the maker.

TABLE C14
Responses to Rejects

Responses	Pyrotechnics	Fashion accessories
Return to maker to fix	4	87
Sell at lower price	6	34
Return to maker and deduct from his pay	1	30
Throw away	10	26
Change the design	0	11
Return to maker to mix with good products	19	1
Have maker do product again on own account	1	5
Do nothing	2	0
Own consumption	3	0
Others	1	2
Stock	0	3

Appendix D

Ecological Questions on the Use and Reasons for Use of Child Labor

To verify whether responses to controversial questions—particularly on the use of child labor—are relatively accurate, ecological questions were utilized. The results are presented in this appendix.

The Pyrotechnics Industry in Bulacan

In the pyrotechnics industry, respondents claimed that child labor is utilized in the relatively less hazardous processes like paper folding (78%), wrapping and labeling (61%), and packing (48%), confirming what employers replied to direct questions on child labor. As expected, the more hazardous processes had lower response frequencies—fuse preparation (32%) and powder loading (21%). (See Table D1.)

TABLE D1
Ecological: Processes with Child Labor in the Pyrotechnics Industry in Bulacan

Process	Percentage
Folding	78
Wrapping and Labelling	61
Packing	48
Fuse Preparation	32
Powder Loading	21

Note: Multiple responses allowed

Reasons for Hiring Child Labor

In terms of frequency the top five particular reasons for hiring child labor in the pyrotechnics industry in descending order are: 1) children have no vice; 2) they learn easily; 3) they are obedient; 4) they are easy to monitor; and 5) they are relatively fast. These correspond also to the top reasons given by employers when the question was posed directly to them. (See Table D2.)

TABLE D2
Ecological: Reasons for Hiring Child Labor in the Pyrotechnics Industry in Bulacan

Reasons	Valid Responses	Mean Ranking
Economic	4	8.5
Lower pay	0	0.0
Less benefits	4	8.5
Productivity/Efficiency	155	3.2
Fast	58	2.1
Higher quality	14	4.3
Nimble fingers	9	4.2
Sharper eyes	26	4.2
Stronger	48	3.5
Competitiveness to adults	30	4.3
Complementarity with Adult Labor	70	5.2
Family work as group	15	5.5
To help family	55	5.2
Attitude/Characteristics	224	4.9
More creative	10	5.8
More initiative	4	5.5
Have no vice	80	3.7
Learn easily	71	4.8
Does what adults don't	37	6.0
More dependable	22	7.1

TABLE D2 (continued)
Ecological: Reasons for Hiring Child Labor in the Pyrotechnics Industry in Bulacan

Reasons	Valid Responses	Mean Ranking
Availability of Time	186	6.3
No housework	46	4.3
When no school	56	5.3
Call upon notice	54	7.7
More plentiful	30	8.5
Easier Supervision	141	5.5
Obedient	66	4.3
Easy to monitor	62	6.1
No union problem	7	7.7
Don't fight employer	6	7.7
Human Capital Investment	31	7.7
Long-term investment	14	8.4
Apprenticeship	17	7.1
Others	2	3.0

In terms of categorized reasons for hiring child labor in the pyrotechnics industry, the following are the top four according to frequency of response in descending order: 1) positive attitude and characteristics of children; 2) their time availability; 3) their productivity and efficiency; and 4) their easier supervision. These virtually match the order of the responses given by employers when the question was posed directly to them as there is only a reversal in the third and fourth places. (See Table D3.)

TABLE D3
Ecological: Reasons for Hiring Child Labor by Category in the Pyrotechnics Industry in Bulacan

Reasons by Category	Frequency	Mean Ranking
Attitude/Characteristics	224	4.9
Availability of Time	186	6.3
Productivity/efficiency of child	155	3.2
Easier supervision	141	5.4
Complementarity	70	5.2
Human capital investment	31	7.7
Competitiveness to Adults	30	4.3
Lower economic costs	4	8.5

The Fashion Accessories Industry in Cebu

In the fashion accessories industry, child labor is evenly used in key processes like stringing shell beads on wire (52%), transferring shell beads to nylon strings (41%), and stringing shell beads into a necklace and putting locks (40%). (See Table D4.)

TABLE D4
Ecological: Processes with Child Labor in the Fashion Accessories Industry in Cebu

Process	Percentage
Stringing shell beads into wire	52
Transferring shell beads to nylon	41
Stringing shell beads into necklace and putting locks	40
Packaging of necklace into plastic	10
Designing	5
Dip shells in chemical	1

Note: Multiple responses allowed

In terms of frequency the top five particular reasons for hiring child labor in the fashion accessories industry in descending order are: 1) children are fast; 2) they have no vice; 3) they have sharper eyes; 4) they are obedient; 5) they are readily available outside school hours. Again all these are similar to the top reasons given by employers when the question was posed directly to them. (See Table D5.)

TABLE D5
Ecological: Reasons for Hiring Child Labor in the Fashion Accessories Industry in Cebu

Reasons	Valid Responses	Mean Ranking
Economic	7	4.6
Lower pay	4	4.00
Less benefits	3	6.00
Productivity/Efficiency	294	4.1
Fast	92	2.9
Higher quality	33	3.3
Nimble fingers	35	4.9
Sharper eyes	79	4.2
Stronger	55	5.7
Competitiveness to adults	28	4.6
Complementarity with Adult Labor	83	6.8
Family work as group	32	4.4
To help family	51	6.6

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TABLE D5 (continued)
Ecological: Reasons for Hiring Child Labor in the Fashion Accessories Industry in Cebu

Reasons	Valid Responses	Mean Ranking
Attitude/Characteristics	234	5.5
More creative	41	6.1
More initiative	19	6.5
Have no vice	85	4.8
Learn easily	61	5.5
Does what adults don't	22	6.6
More dependable	6	6.2
Availability of Time 156 6.87		
No housework	24	6.3
When no school	69	6.8
Call upon notice	55	7.3
More plentiful	8	6.3
Easier Supervision	148	5.6
Obedient	72	5.4
Easy to monitor	63	5.8
No union problem	3	6.0
Don't fight employer	6	5.3
Easily frightened	2	5.0
Acquiescent	2	5.0
Human Capital Investment	22	7.9
Long-term investment	6	5.5
Apprenticeship	16	8.8

In terms of categorized reasons for hiring child labor in the fashion accessories industry, the following are the top four according to frequency of response in descending order: 1) efficiency of child workers; 2) their positive characteristics; 3) their time availability; and 4) their easier supervision. Again, these confirm the respondents' reply when the question was posed directly to them.

TABLE D6
Ecological: Reasons for Hiring Child Labor by Category in the Fashion Accessories Industry in Cebu

Reasons by Category	Frequency	Mean Ranking
Productivity/efficiency of child	294	4.1
Attitude/Characteristics	234	5.5
Availability of Time	156	6.9
Easier supervision	148	5.6
Complementarity	83	6.8
Competitiveness	28	4.6
Human capital investment	22	7.9
Lower economic costs	9	4.9

Overall, the answers to the ecological questions show a replication of the answers of the employer-respondents to direct questions in the aggregate as well as in the individual level. While this shows that the respondents are consistent in their answers relating to their behavior and the behavior of other employers, it must be noted that such consistency may partly be a reflection of the cooperative (rather than rival) relationships among the employers inasmuch as the bigger employers may be subcontractors of the respondents themselves, and they are all members of the same community with personal ties.

Appendix E

Child Labor in the Pyrotechnics Industry in Bulacan

A General Profile of the Pyrotechnics Industry in Bulacan

The Philippine pyrotechnics industry started as a very lucrative, informal, micro, and household-based enterprise catering to the traditional needs of Filipinos during times of festivity. This century-old industry is concentrated mainly in the province of Bulacan in Central Luzon, particularly in the towns of Baliwag, Bocaue, San Rafael, and Sta. Maria. At its peak, the industry was estimated to be worth P400 million, involved 368 licensed manufacturers and dealers, provided livelihood to more than 100,000 people, and contributed about one percent of total provincial gross revenue in Bulacan. (Florendo 2000).

The Bulacan Pyrotechnics Association worked for the legalization of pyrotechnics production to avoid police harassment and to improve safety conditions aimed at reducing accidents.[3] At that time, police would just make surprise raids, "confiscate" the firecrackers,

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3 Even so, accidents in pyrotechnics firms are not rare. In September 2004, two young children died while sleeping in their home in Pulong Buhangin, the site of the research. Information gathered from the field revealed that the fire originated from a fuse-cutting mishap, which spread to the house where firecrackers ready for collection by buyers were stored. This underscores the fact that many small producers do not use proper storage facilities that are supposed to be a good distance from their domestic quarters.

sometimes making the workers scamper away while trying to hide production materials, leading to disastrous explosions. The industry was legalized in 1992 with the passage of Republic Act 7183, which regulated the manufacture and distribution of pyrotechnics devices. With legalization, police would still come and just grab their "share" but not as often as before.[4]

Membership in the Bulacan Pyrotechnics Association dwindled from about 800 in the 1980s to about 160 in 2000, and further decreased to 70 because of numerous problems. These include the unlimited entry of competing products from Taiwan and China, as well as campaigns against firecracker use by the Department of Health and other entities on safety grounds and the decline in consumer demand due to health and safety reasons. The biggest decline occurred in 2000 because of the loss of the Mindanao market resulting from the war in that area.

Under the law, production of a limited variety of pyrotechnics devices is allowed and an expensive license (the acquisition of which can cost from P15,000 to P20,000) is needed to operate such a business, renewable annually. In 1995, it was reported that the number of licenses issued had gone down to 314. In 2001, the Philippine National Police (PNP), the government body authorized to grant licenses, reported only 69 renewals of which 53 were located in Bulacan and the rest in other pyrotechnics-producing provinces. Licensing requirements are tedious and graft-ridden, draining the scarce capital of small producers. It is also believed that the data above compared to the number of licenses given by PNP indicate that a number of associa-

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The latest accident, which was not production-related, occurred on December 29, 2004 just before New Year, destroying a row of stalls selling pyrotechnics in Bocaue together with a large number of homes located behind them. Seven people, mostly children, died in the fire. Newspaper reports said a customer was testing a powerful firecracker called "higad" when sparks flew and ignited surrounding pyrotechnics products.

4 Interviews conducted in the field indicate that this is an ongoing practice and producers set aside part of their produce, particularly the substandard or rejects, to give to police who visit.

tion members are either operating without a valid license or are "sharing" licenses, as has been the practice of many small enterprises.

The market has generally declined compared to previous years, and low buying prices of regular firecrackers are imposed on producers by creditors. The liberalization of imports attendant to globalization, as seen in lower priced but higher quality foreign-made firecrackers in the market, has forced producers to cut down on costs and has made subcontracting even more prevalent in a threatened and underperforming industry. The prices have been declining from P2,500 per box of regular firecrackers in 1998, to P2,000 in 1999, P1,500 in 2000, to as low as P1,200 in 2001. The price range in 2004 at producer level was from P1,100 during low season to P1,800 during peak season. The retail price, however, rose to as high as P2,500, indicating that producers with retail outlets could have much higher profit margins.

The industry is characterized by a complex web of big producers employing about 20 regular workers with year-round production and small producers who engage in production using their own capital and hiring seasonal migrant laborers during the peak season (October to December). In these months, bigger producers subcontract production of final or intermediate goods to smaller producers. The multilevel production and subcontracting arrangement, of which there can be as many as four levels, increases the demand for child labor especially during peak season. (UNICEF-PATAMABA-UP-CSWCD 2001).

The industry employs children as young as 7 years, and includes mostly males (Remedio et al. 2004). Philippine laws peg the legal work age for this industry, considered to be hazardous, at 18. The total number of child laborers in the industry has not been accurately determined. UNICEF estimated it at around 7,600 (Ano 2002). Edralin (2002) put it at about 2,000 in Bulacan alone during peak months. Tiotuico and Umali (1994) who studied small-scale pyrotechnics enterprises in Bocaue found that many children, mostly males between 7 to 17 years, worked although employers were quick to deny the existence of child laborers and insisted that children worked as apprentices or were not formally employed. Some studies recorded that children native to the town of production were not enough during peak seasons. These studies and a study by the Occupational Safety and

Health Center (1995) recorded the existence of migrant children who were given free board and lodging in Bulacan during peak season production.

According to a survey done in 2003 by CO-Multiversity , an NGO active in Bulacan, there were 749 child workers in Sta. Maria, 878 in Bocaue, and 300 in Baliwag. Sex-disaggregated data show a preponderance of boys among the child workers. Out-of-school children and youth typically become full-time workers, while those in school work part-time. During peak season, children in school are forced to absent themselves so that their parents can meet their deadlines. Children do not usually get their payments directly since these are considered to be part of family-based earnings.

According to the CO-Multiversity study, children are drawn into the industry because of poverty, their parents' unemployment or underemployment, inadequate income, and low educational attainment and skills level. Child labor is accepted because it is part of the family tradition and technology is easily transferred from one generation to the next. Children are also eager to earn (sometimes refusing to go back to school once they experience having money) and to help their parents augment their incomes. The tasks that children do are simple, repetitive, and easy to learn. Knowledge about the hazards posed by the industry to children and ways to prevent them is still inadequately disseminated despite the much publicized accidents and their tragic consequences. During peak season, there is a big need for a large pool of workers including children to meet the increased demand.

The Community Context: Pulong Buhangin, Sta Maria, Bulacan

Census-based community data obtained in 1999 on Pulong Buhangin (where majority of respondents in the survey reside) support observations that child labor is endemic in communities where there is much poverty, high unemployment, large migrant and low-educated population, and where available services are inadequate to address these realities.

There were then almost 15,500 residents belonging to 3,213 house-

holds. Of these households, one-fourth lived below the subsistence threshold. Employed heads of families numbered 2,048 compared to 1,011 unemployed. About one-third of the population were migrants, originating from places outside the municipality of Sta. Maria. Recent data obtained from the barangay office showed that the population stood at 18,580 in 2002, and the number of families, at 3,097. This rapidly increased to 25,145 in 2003, perhaps indicating the fast influx of migrants, who now comprise half of the residents, according to Barangay Captain Simplicio Hermogenes.

In terms of occupation, most were involved in pyrotechnics production (half male, half female). A far second in terms of occupational category were the sewers/embroiderers (mostly female), followed by drivers, farmers, laborers, and furniture-makers (mostly male).

Among the pyrotechnics producers in Pulong Buhangin, there are those with sufficient capital, legitimate license to operate, enough regular workers (maximum of around 20), and access to a large land area in which production sheds can be built a good distance away from the nearest house. There are also those with less capital and workers, but with access to land near enough to the actual license holder to claim that their sheds are also part of the operations of the licensed producer whose cost of licensing they merely share. Then there are those who operate without a license and those who merely provide labor without capital. These producers supply buyers mainly from Bocaue, Bulacan; a few also have markets in Laguna and as far as the Visayas and Mindanao.

In contrast to big producers who use about P50,000 to P100,000 worth of capital, small producers lay out a maximum of P10,000 for raw materials and labor from which they typically gross P15,000. Most of them, however, just borrow their capital from usurers at very high interest, or from raw material suppliers who in turn buy the finished products from them at a very cheap price. When the market is depressed, many small producers earn just enough to pay back their borrowed capital and to buy food.

Most employers in pyrotechnics production (especially at the subcontractor level) are women, although there are also some men, and there are many women who would claim that they jointly manage their

enterprise with their husbands.

Women who participated in a focus group discussion in connection with the research say they find it easier to play a management role since production is home-based.[5] It is their responsibility not only to supervise family members (including children) who are into folding, packaging, and wicking, but also to provide food, housing, soap, and other basic necessities to migrant stay-in workers. They engage various types of workers, make sure the latter are paid, provide care when they get sick, and foot the bill when they are injured. They borrow capital for production, they look for buyers, they purchase the raw materials. All these require patience, resourcefulness, and "people skills," which women seem to possess more than the men. Women are also more flexible in terms of being able to do multiple tasks, and to shift from one kind of work to another, be these production tasks or domestic chores.

Men who are employers have the same tasks as the women employers. According to the women, however, men in general are not flexible enough to do multi-tasking and prefer to just take care of specific tasks such as mixing the chemicals and cutting the fuse. Thus, husbands of women subcontractors tend to let their wives do the management roles.

The Subcontracting Chains

The bigger producer-distributors could have their own stores, and could at the same time supply wholesalers and other outlets in neighboring towns in Bulacan as well as in Metro Manila and as far as the Visayas

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5 Fourteen women employers, a mixture of PATAMABA and non-PATAMABA members, attended a focus group discussion in the afternoon of January 14. Of these women, five have spent 22-30 years in the pyrotechnics industry; two, 10-15 years; four, 4-5 years; and one, just one year. All of them are small subcontractors "sharing" the licenses of bigger producers. Four have other sources of family income as tricycle operators, sari-sari store owner, and livestock and poultry raiser. Ten other women, also a mixture of PATAMABA and non-PATAMABA members, attended a follow-up focus group discussion on February 18.

and Mindanao. Among these are Alba Mendoza, S.R. Castillo, Triple J Five Star, and Anastacio Mendoza. (See Box E1).

Aside from the big producer-distributors, there are smaller ones with small stores in Sta. Maria and Bocaue. Among them are Olive Fireworks, Everlasting Fireworks, Lucky 13 Store, 5M Fireworks, Sure Fireworks, Galvez Store, Lily's Store, Uni-Star Store, Rosie Store, JBC, BT Navarro Fireworks, etc. There are bigger subcontractor producers who do not have their own outlets or stores but supply wholesalers and retailers mainly in Sta. Maria and Bocaue. These include Serlits Fireworks, St. Michael's Fireworks, Antonia's Fireworks, Marietta Fireworks.

The bigger subcontractor-producers such as Lita (who owns Serlits Fireworks) could have as many as 20 permanent workers in her workshop, and afford to give out folding and fuse attachment jobs to other households during the lean season. During peak season, she farms out orders to three other households headed by members of her family and other relatives, who in turn buy finished products from other households. One such household is that of Erlinda Celestino. (See Box E2.)

The Production Process for Five Star: Who Does What and For How Much

The first stage in the production of Five Star, a popular type of firecracker, is the folding of brown paper into a funnel shape, which will be used to contain the chemical powder. This is done by women and children in their own homes or in the backyard workshops of employers. Workers are paid P6 per 1,000 pieces of paper folded.

According to women who participated in a focus group discussion, a majority of young girls are into folding because they are more patient in doing this usually indoor work. The young boys are considered too playful and too footloose for this task. The folding process may also be contracted out to entire families who could be neighbors or migrants. In this case, the labor of all members of the family irrespective of age or gender is engaged in the folding process, and payments are made not on an individual basis but on a family basis.

Simultaneous with this, the men (and the more experienced

BOX E1

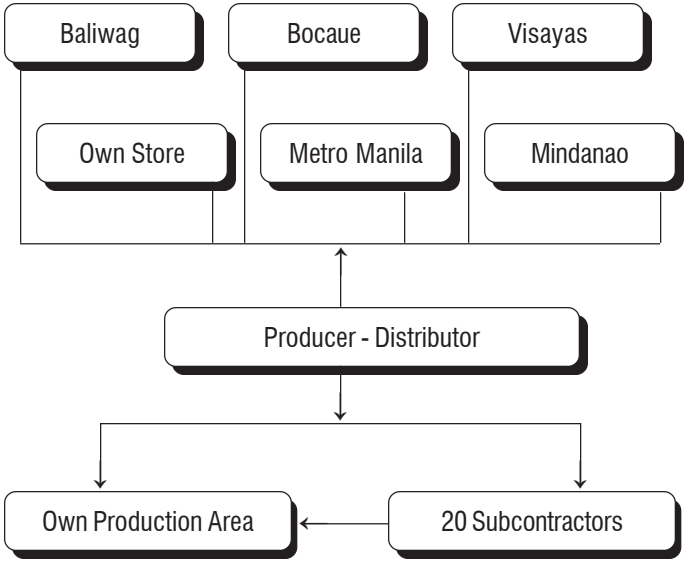
Anastacio Mendoza: Successful Producer-Distributor

Mang Tacio who has been in the business for two decades, was just encouraged by his friends to engage in pyrotechnics production. He used to earn a living by farming, driving a jeepney, plying horse-drawn carts (**pagkukutsero)** and animal-raising. He had agricultural land and a thriving piggery (300 heads) business from which he obtained his capital (P20,000) in pyrotechnics. In the span of a year, he earned P100,000 from this initial investment. On the second year of operation, he was caught by police for producing without license, for which he paid a fine of P60,000. After this experience, he applied for license and continued production with his children working and four migrant workers. Having finished only Grade 6, he relied on a friend to teach him how to use a calculator for his financial computations and recording.

Gradually, his business expanded and he now has 80 workers during peak season and 20 stay-in workers all year round. He subcontracts work to about 20 families in the community to stock up during lean months and then sell his inventory during peak season. He has a big pyrotechnics store located near the church of Pulong Buhangin. He also sells chemicals for pyrotechnics production in his house. Instead of lending small producers some money for their venture (for every P5,000 peso loan, he would collect three boxes or 30,000 pieces of five star), he now lends them chemicals and they would pay him back in the form of finished products. He sells firecrackers at wholesale prices to about 10 small retail outlets in Bocaue, a nearby town. And he also supplies stores and distributors in the Visayas and Mindanao. Mang Tacio also sells imported firecrackers from China in his store. He claims though that local products are of inferior quality and cannot be exported. See Figure 1.

Mang Tacio is an active member of the Bulacan Pyrotechnics Association. He attends seminars convened by provincial authorities, by the PNP and others. He has also been to other countries to attend seminars on product development and safety. Nine of his ten children were able to finish college from the proceeds of his pyrotechnics and other businesses. The tenth is still in school. He was also able to buy a three-hectare lot worth P1.5 million.

FIGURE E1
The Markets of Anastacio Mendoza



BOX E2
Erlinda Celestino: A Typical Subcontractor

From being a stay-in worker in a small factory, Erlinda Celestino worked up enough courage to borrow money to start a family-based micro-enterprise producing firecrackers during peak season with her husband, her three children and two nephews (migrants from Hagonoy). Erlinda, born and raised in Hagonoy, Bulacan went to Pulong Buhangin in 1986 to join her brother as a stay-in worker in a firecracker factory. After the production season, they were able to bring home about P3,000 which at that time was quite substantial. Her initiation into pyrotechnics started with the folding process, later progressing to chemical filling. When the demand was high and orders were piling up, she helped in packaging and labeling.

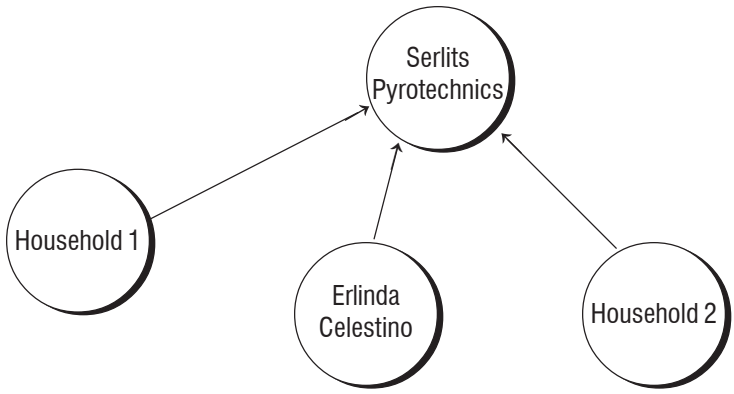
Erlinda married Alfredo, the factory owner's son. Alfredo had alternative work as a baker when firecracker making was not in demand. His earnings were just enough to buy milk for their young children. There was no income to provide for the family's other needs. Erlinda sought to provide these needs by borrowing P10,000 from a certain Ka Mely to finance a firecracker business. Alfredo, who was first reluctant, finally became supportive. Both worked together with Erlinda's nephews. At the end of the season, Erlinda's investment earned P26,000 which they spent to build their own home on a land owned by Alfredo's family. Since then, Erlinda has been mainly responsible for raising capital every time the family went into firecracker production. The entire family was usually involved in the process, including their three children (even when they were still young). Erlinda's nephews together with Alfredo were in charge of mixing the chemicals and filling various containers with the mixture. Erlinda and Alfredo Jr. would prepare the fuse and be helped by her daughters in folding and packaging. Delivery was not a problem because customers got the firecrackers directly from them.

Business boomed in 1997-98. Then, the P5,000 capital gave a return amounting to as much as P50,000. The year 2000 however did not yield as much when she only broke-even. This was attributed to the war in Mindanao where

firecrackers and other similar explosives were totally banned. Hence, prospective customers from Davao and the rest of Mindanao did not order as expected. Moreover, prices of raw materials like paper and chemical powder increased during that time. Today, Erlinda's children have grown and are now in high school but they still work with her in the pyrotechnics business. Her capital remains low (around P8,000 to 10,000) because of her additional rental and medication expenses for an ailing daughter, so her earnings also have suffered even if the selling price has risen (in December 2004) to as high as P1,800 per box.

Erlinda is also active in community-based organizations such as PATAMABA, where she is the president of the Sta. Maria chapter which has about 20 active members. Aside from PATAMABA, Erlinda is also a member of the Samahan ng mga Magulang sa Perez, a parents' organization founded by the NGO CO-Multiversity.

FIGURE E2
Subcontracting Chain of Erlinda Celestino



women)[6] take charge of the more dangerous task of mixing the chemicals (one kilo each of sulfur, potassium chlorate, and charcoal) for fuse-making. Men and women then take bundles of thread (weighing three kilos) and dip these into starch or paste, after which they roll the thread in the chemical mixture.

The processed thread (the precursor of the fuse) is hung in bunches from bamboo poles and left to dry in the sun for three hours. These are next rolled in bundles for the men (or the more experienced women) to cut into 18-inch long pieces with one blow of a sharp blade, a task that requires skill and strength because the bundles can explode if not cut properly. The lengths of fuse are then covered with multicolored Japanese paper with the use of a starch mixture. A labor-intensive task requiring patience, this task is done mostly by women in their homes or in the backyard workshops.

After being arranged in rows on GI sheets to thoroughly dry in the sun, the paper wrapped 18-inch fuse lengths are again cut into two-inch long bundles by men (or by the more experienced women). The output of this process is enough for 30,000 pieces or three boxes of Five Star firecrackers.

The second stage commences when the men, using big wooden or plastic strainers, mix seven kilos of potassium perchlorate, one kilo of sulfur, one kilo of aluminum, and one-half kilo of devil into a powder that will also be enough to produce three boxes of Five Star

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6 Many of the women employers claim that they can do most of the tasks that their husbands are usually assigned to do—mixing the chemicals for fuse-making, cutting the fuse bundles into 18-inch lengths and then into two-inch bundles, and mixing the powder for loading. They can take over when their men are drunk or have a hangover. The women employers frown on male alcoholism because it is costly and causes trouble within the family and household. It also prevents men from spending their time productively, and puts more burden on the women who have to do more work while still being saddled with domestic chores. Child workers during the focus group discussions validated what their mothers—the women employers—were saying. They claimed that mothers had a lot more work than their fathers since the former, aside from engaging in firecracker production, also had to work in their homes and take care of the children.

firecrackers. The mixture, which is placed in big plastic containers, is then scooped by workers in the backyard workshops into the funnel-shaped brown paper earlier prepared by women and children. Before they fold and seal the container, they insert the fuse so that half of it is outside.

Majority of those doing the powder loading are teenage boys or young male adults, usually migrants, because they are considered stronger, faster, and more focused. According to the women employers, the legal age for doing this is 18 years but younger persons from about 14 up are allowed to do this rather dangerous task. If the police arrive to inspect, these younger workers stop loading or claim that they are already 18. The employers prefer migrant, male, unmarried teenagers from depressed areas in Bicol and Pangasinan, because they really work very hard so they can earn money to help their families in their provinces. Since they are unmarried, they also do not need large earnings that married men require to support wives and children. Although teenage girls from the community can also do powder loading, this is not preferred. In fact, they are considered distractions to the teenage boys and young male adults who tend to court them. Teenage girls who come as migrant workers during peak season are a rarity because parents would tend not to allow them, given the dangers associated with the industry.

After the loading process, the firecrackers are dried under the sun for three to four hours. Then they are brought to the homes of the workers to be labeled and packaged by women and children who are paid from P5 to P6 per 1,000 pieces.

According to women employers during a focus group discussion, there are in general more boys than girls working in the industry because girls have more tasks in their homes, such as taking care of their siblings and helping with the house work.

Piece rates have not changed much from the year 2000. Adult women and children typically earn from P5 to P8 for folding 1,000 pieces (*pagtutupi*) of brown paper. They earn P15 to P23 per "kilo bundle" for covering the 18-inch fuse lengths with Japanese paper (*pagbabalot ng mitsa*). The men earn P25 per kilo of thread for fuse preparation (soaking thread in chemicals for three hours, drying the

thread, and cutting the thread first into 18-inch bundles, and then into two-inch bundles). Normally, five kilos of fuse are produced per preparation. Payment for mixing the chemicals is P20 during the lean season and P30 during the peak season. Scooping the chemical mixture into the funnel-shaped paper and attaching the fuse (*pagkakarga*) is paid P15 to P18 per 1,000 pieces. Packaging fetches P5 to P6 per one 1,000 pieces.

Migrant workers, mostly male teenagers and young adults, are paid mostly on a cash advance basis. They come during peak season (some with their families) and are provided board and lodging by their employers. They usually get P500 to P1,000 a week for their daily expenses. They net about P8,000 to P10,000 when they get their final pay, usually in December.

According to women employers during a focus group discussion, payments for adults and children are generally the same since parents will not allow their children to be exploited. The child workers in the focus group discussion validated this by saying that even if older workers work faster and produce better quality output, their pay is the same as that of younger workers. The assumption here is that the same employer is the source of payment.

Variability in payments is explained more by the season, by residential status (stay-in migrant or not), and by employer characteristics. Payment for paper folding, for example, can be pegged at P5 per 1,000 pieces from January to August; by December, it can reach P9, according to the child workers. The piece rate can also vary according to the type of the paper to be folded and the size of the finished container. For covering the fuse with Japanese paper, the pay during the lean season is P10 per kilo bundle, which increases to P20 during peak season, according to the women employers. Mixing chemicals, too, can range from P20 per kilo during lean season to P30 during peak season. Migrant stay-ins (who get free board and lodging) get P10 per 1,000 pieces for powder loading, while the stay-out receives P15. Those who stay out can be migrants or non-migrants. Some employers, particularly the organized ones, are also known for their kind-heartedness because they pay a little more.

Child Labor and Community Initiatives in Pulong Buhangin

Information on the schooling of children in the community obtained from the office of Barangay Pulong Buhangin are summarized in Table E1.

TABLE E1
Children and their Education in Barangay Pulong Buhangin, 2002

Children	0-4	5-9	10-14	15-18	Total
Population	3,069	1,833	2,308	1,937	10,147
Out of school	—	1	13	22	36
Child Workers	—	76	219	86	381

Both out of school and working children seem to be on the increase. In 2001, there were only 14 out of school, versus 36 in 2002. Child workers numbered 77 in 2001, but were recorded at 381 in 2002.

According to women employers during the January 14 focus group discussion, children work full-time or even overtime during peak season, especially when they are already off school for the Christmas break. Children of these employers, when they have classes, generally work only after school or during weekends, and mostly from their own volition. They work mainly to help their parents. As the child workers in the January 15 focus group discussion[7] claim:

7 Ten child workers, aged 8 to 15 years, working mostly for their parents, participated in a focus group discussion on January 15. Two of the older children, aged 14-15 years, were engaged in powder loading and other tasks for employers who were not their parents; five, aged 13 to 15 years, were into wicking; and almost all were into bundling and packaging. These children are all from the community. Five migrant children from Mindoro (aged 10, 11, 15, and 16 years) participated in a follow-up group interview on February 18 highlighting their specific conditions.

> We are not forced to work. We just want to do it. Our studies are not affected because we finish our assignments first before working. Our parents do not allow us to skip classes even during peak season. We only work during weekends and holidays. We sometimes work overnight during Saturdays.

However, some employers allow their children to work rather than study if the latter have no interest in studying, according to the women during the January 14 focus group discussion. Sometimes, children lose interest in studying because they enjoy getting money from the work they do in pyrotechnics production.

There are other reasons, though, for children to drop out of school. According to the women employers, some have to take care of their younger siblings; others have no money for their everyday expenses in school; and a few are really not motivated enough to study due to peer pressure or laziness.

Children of migrant families also tend not to be in school, especially during peak season. They may be able to attend just for a few months (June to August), but during the months ending in "ber", pressure of work forces them to be absent. Of the five migrant children interviewed, only one goes to school and tends to be frequently absent.

According to the child workers who participated in the focus group discussion, they usually fold 3,000-5,000 pieces of paper containers a day, which translate to P15-P25 in earnings during low season. They cover 4-6 kilos of fuse bundles with Japanese paper daily, which can fetch P40-P60.

Whether payments go directly to the child workers or not depend on whom they work for. According to two participants (14-15 years old) who worked for employers other than their parents in powder loading and other tasks, their payments were given directly to them. These they used to buy clothes and to support their schooling. In contrast, those who are working for their parents do not receive any fixed payments. They claim they are just helping their parents and are content with small amounts to buy clothes and other needs. Children who form part of families to whom folding and other tasks are subcon-

tracted are not paid individually; payment is provided for the entire family output.

The more detailed gathering of quantitative data on child labor in Pulong Buhangin seems to be the result of the work of the Barangay Council for the Protection of Children (BCPC) founded in March 2001 with the impetus provided by NGOs, particularly CO-Multiversity which by then had begun organizing families of child workers. The Council is led by no less than the barangay captain (Simplicio Hermogenes) and has barangay councilors and NGO representatives as members. Its main project is the continuing education program benefiting 780 children of low-income families, providing them tuition fees, school fees, supplies, and uniforms mainly through the financial support of World Vision. The aim of the program is to keep the children in school and reduce the number of dropouts. Nevertheless, 40 children dropped out in 2004 (compared to 17 in 2003), which could be due to pressure from their families during peak season for pyrotechnics production, or their own desire to earn money.

In terms of actual local initiatives to address the problem of child labor in the pyrotechnics industry, the strategies so far are multipronged. The Pulong Buhangin BCPC is linked to the Task Force to Eliminate Child Labor spearheaded by International Labor Organization-International Program on the Elimination of Child Labor (ILO-IPEC) through the Region III office of the Department of Labor and Employment (DOLE) which was formed in February 2004 after a seminar workshop held in Baguio City. Involved in their strategies are the Department of Education, Culture and Sports (DECS), which is monitoring the schooling of child workers and attempting to provide more accessible educational opportunities for them. The Philippine National Police (PNP) has been tasked with implementing licensing and safety regulations in the industry, as well as rescuing child workers in prostitution. The municipal and barangay officials have been engaged in awareness-raising campaigns.

NGOs such as World Vision are providing scholarships and other forms of assistance. Institutions such as the Sarmiento Foundation are funding livelihood activities. CO-Multiversity has been organizing in Sta. Maria for a long time, succeeding in the formation of a parents'

association (Samahan ng mga Magulang sa Perez) composed mainly of those with working children, a neighborhood association (Samahan ng Magkakapitbahay), a youth organization (Association of Concerned Youth and Students), and other groups which now function under a network called KATUGON. The child workers themselves have their own groups, and have performed in plays highlighting their issues. PATAMABA, which has been organizing informal workers in the area since 2000 and has recently formed a youth group, is intervening in terms of research participation, skills training for alternative livelihood, and limited micro-finance.

The Task Force has collected proposals from its members for submission to ILO-IPEC to initiate pilot projects in areas where child labor is concentrated.

Issues That Need to Be Addressed

Health and Safety Issues

The Bulacan Pyrotechnics Regulatory Board is supposed to be undertaking consultations, training, information campaigns, and standardization and enforcing licensing and labeling through a multi-agency body involving the Department of Science and Technology, Department of Trade and Industry, Technical Education and Skills Development Authority, and the pyrotechnics industry associations. The PNP is also tasked with inspecting production sites for compliance with existing laws and regulations. However, as the field research has shown, many pyrotechnics producers are just "sharing" the license of the bigger producers who are the only ones who undergo the training in safety standards. These producers do not necessarily echo the training to their co-producers and their workers.

Two major accidents landed in the newspapers in late 2004. In September, two young children died while sleeping in their home in Pulong Buhangin, when a fire spread to the house where firecrackers ready for collection by buyers were stored. This underscores the fact that many small producers do not use proper storage facilities that are supposed to be a good distance from their domestic quarters. The latest accident, which was not production-related, occurred on De-

cember 29, just before New Year, destroying a row of stalls selling pyrotechnics in Bocaue.

The latter incident dramatizes the problem of continued sale of unsafe products which prematurely explode or which contain more than the required 0.2 gram of explosive. It also highlights one reason why cigarette-sized imports from China, Taiwan and Hong Kong are deemed not only to be cheaper but also safer, since they do not cause injury even when they explode. These products are also strung together so they can be lighted from one end and produce the sound of machine gun ammunition when they explode. Local producers are therefore faced with the twin challenge of increasing competition from these imports, and the need to improve the safety and quality of local products while lowering costs.

Working conditions also leave much to be desired. Workers complain of backaches that could easily be relieved by chairs with backrests. They report that their respiratory systems get irritated by the chemicals they inhale while working that could be relieved through the use of masks. Their fingers get blistered and cut by the materials they handle, and they would welcome the use of gloves. Yet these simple solutions are not made available.

During the focus group discussion conducted in connection with this research, the child workers said they did not attend any seminar about the work they do. They only learned through observing and as they started to work their parents gave them pointers.

They are conscious of the dangers in fireworks production. They know that the chemicals should not be placed directly under the sun, and that these should be kept away from the house or any source of fire. Nevertheless, they confess that "sometimes we store firecrackers in our houses, under our beds."

The older children who load the powder say their hands get blistered and itchy. To prevent this, they put tape on their fingers. They also experience backaches. When the mixture gets disturbed by wind, they find it hard to breathe.

Gender Issues

There is a distinct gender division of labor privileging males in

both production and domestic work in the pyrotechnics industry in Bulacan. Males are in charge of the more dangerous but more lucrative tasks: mixing the chemicals, placing the chemicals into various forms of containers, and cutting the fuse (*mitsa*) bundles. While the more experienced women report that they are also able to do these tasks just as well, these tasks still remain identified with the males. The women and small children (mostly girls), on the other hand, are in charge of the simple, monotonous, and more poorly paid task of folding paper into triangle containers, which they can do at home, or wrapping the fuse with multicolored Japanese paper, which they can do in their backyards.

The women confirmed that they do much of the domestic work at home (along with their daughters), although one or two say that their husbands also cook and do the laundry. Most of them also have to attend to the management side of pyrotechnics production. Thus, females feel more overworked and multi-burdened, compared to the men who do only production work and not so intensively in terms of time. Even girls say they feel disadvantaged compared to their brothers, who still have time to play, while they have to both work to earn and work to help their mothers. The women say that most of their men, who are carpenters and construction hands, are unemployed. Male alcoholism, especially among the unemployed or just occasionally employed, is a problem articulated not only by women but also by children. This is usually a prelude to violence in the home. Women report that some men batter their wives and throw plates and other things around, frightening the children.

Policy Issues

There seems to be a lack of policy coherence with regard to the future of the pyrotechnics industry. At the level of the Bulacan provincial government, the policy is to develop the industry, upgrade and standardize production, and thereby make it safer. At the level of the Sta. Maria municipal government, an interview with Mayor Jesus "Ato" Mateo conducted in his office on January 14 reveals his inclination to phase out the industry because it has already caused many deaths and injuries. However, his current concern is peace and order in the mu-

nicipality, and he has no programs yet to address child labor or to develop alternative livelihoods for pyrotechnics producers since resources for these are not yet available. At the level of the Pulong Buhangin barangay, the barangay captain is of the opinion that the pyrotechnics industry is not really lucrative but people have no choice but to engage in it for a living. In the mean time, the Barangay Council for the Protection of Children is focusing on getting children out of pyrotechnics production through its educational assistance program, but with limited success since economic alternatives for these children's parents have not yet been developed.

At the national level, there is no thorough study on the pyrotechnics industry which fully describes its magnitude, its geographical spread, its workers, its total revenues, its markets, and the connections of multiple layers of producers in various types of production chains. Trends over the years have not been tracked. Directions for the future have not been set. Will the industry be encouraged or not, given its poor safety record? Is regulation the answer, or is it phase-out? Will the industry be able to withstand the growing competition from cheaper and better imports? These questions need to be answered at the national level to enable local governments at various levels to craft coherent and not contradictory policies.

Sustainability Issues

Questions of sustainability have to do both with the sustainability of producing pyrotechnics, especially at the lower and less profitable levels of the subcontracting chain, and with initiatives to get children as well as their parents out of this hazardous and declining industry. Efforts at creating other economic alternatives have not been of sufficient scale and have not had adequate and concerted support to make a significant impact. Skills training is hardly effective if not accompanied by entrepreneurship development, market assistance, and enough capital for borrower/producers to break out of the poverty cycle. If economic alternatives bring in just marginal returns, the tendency will remain to go back to pyrotechnics production during peak season in order to earn a relatively large amount in a relatively short period of time.

The barangay captain of Pulong Buhangin, for example, has led in providing alternative livelihood opportunities by making idle lands available for vegetable raising. He knows, however, that these efforts pale in comparison to the level of the people's needs. A major problem is the continuing influx of migrants. Even if efforts to remove the bulk of native residents from work in pyrotechnics were to succeed, migrants would continue to comprise a pool of ready labor for the bigger producers who might still find it lucrative to engage in the industry.

During a focus group discussion, women employers noted that the pyrotechnics industry was in a sorry state. The materials, they said, were more expensive while the selling price at producer level remained the same. According to them, it was only the big operators who were getting rich and who therefore had the means to employ more labor, including child labor. They said many of them were seeking alternative employment but found it difficult due to lack of capital, land, and other assets. There were some though who had gotten into livestock raising with some support from the local government, and there were possibilities for the group to go into meat processing and marketing of these processed products through others who own tricycles.

More concretely, 15 PATAMABA members wish to go into a rice-trading cooperative enterprise (Coop-Bigasan) since they see rice as a basic necessity in the community and there are no outlets that could pose serious competition. However, they feel the need to undergo training in basic business management, bookkeeping, and other skills to ensure success.

Another option the group is trying to explore is raising 45-day poultry because of its market potential and the possibility of branching out into the production of chicken ham, chicken hotdog, and other processed meats.

However, as usual, the group's problem is access to sufficient credit. For the Coop-Bigasan, they estimate they would need P100,000 to make it sustainable. To raise this amount, they need external assistance, possibly from microfinance institutions, local government authorities, international development agencies, and/or even employers' groups committed to the elimination of child labor. Research in-

stitutions may also help by conducting feasibility studies on rice trading and other alternative business ventures that pyrotechnics producers who wish to get out of the industry feel have a potential to succeed.

Appendix F

Child Labor in the Fashion Accessories Industry in Cebu

A General Profile of the Fashion Accessories Industry in Cebu

The Philippine fashion accessories industry is well known, both locally and abroad, for its production of fancy jewelry, which includes wooden beads, shell and wooden necklaces, earrings, bracelets, buttons, and other accessories. It has also branched out into shell and wooden wall decor and other home decor. The industry is prevalent in many coastal cities and towns in various parts of the country like Aklan, Bicol, Bohol, Cebu, Davao, and Zamboanga. Since the 1980s, fashion accessories have been exported in bulk to Canada, Hong Kong, Korea, Europe, Japan, and Taiwan. Export overruns are disposed off in the local wholesale and retail market. In between orders for export and for specific employers, the industry also produces for the domestic market.

Unlike the pyrotechnics industry—which easily draws attention not only because of its hazardous classification but also because of the magnitude of its scale of production, use of children, and immediate safety concerns with regard to production and the product itself—the fashion accessories industry has invited very little research. Although also considered hazardous, most children work in the relatively nonhazardous tasks, generally away from hazardous work areas, and the number of accidents that have been reported is minimal. Furthermore, the final products are considered safe. In addition to the fashion accessories industry, some studies have focused on a related

industry—shell craft. Both industries have common products such as shell-bead necklaces and bracelets.

The incidence of child labor, especially that of girl child labor, is also allegedly high and more obvious in this industry. Child labor is tolerated because children's tasks in this industry are safer compared to other industries. Moreover, child labor in some tasks is not substitutable. For instance, in the task of stringing small beads on a nylon string (*pagtuhog*), adults tend to have less patience and physical acumen (i.e., clear vision and nimble fingers) to string beads.

Female children are more prominent than males. A study done by UNICEF-PATAMABA-UP-CSWCD (2001) showed that the fashion accessories industry in Talisay, Cebu depended mostly on females, regardless of age. Males do only the polishing task, which is considered hazardous. About half of the households were reported to employ females between 5-14 years of age, while a quarter of the females employed were between 15-18 years old. Orense (1992) reported that more girls were employed (53%) than boys (47%) in the Bicol shell craft industries. Remedio (1991) reported that there were twice as many children aged 3-14, with a mode of 13-14 years, than older workers in the shell craft industry in Mandaue and Lapu-Lapu Cities.

As with the pyrotechnics industry, production by subcontracting is the norm. The fashion accessories industry is characterized by a complex supply chain starting with an exporter (also known as buyer and contractor) on top of the chain, followed by a retinue of purchasers, agents, expediters, quality controllers, suppliers (also known as subcontractors and/or job-outers who own the major means of production), and subcontractees (also known as job-outees) who form the base of the multilevel production scheme. Subcontracting is the preferred method of meeting demand at peak season. Big producers subcontract all or part of the finished goods to smaller producers.

The subcontractee is typically a woman. She is contracted to produce a certain product (e.g., buttons, shell/wooden beads, resin items, or wood planks) or to perform a certain task (e.g., drilling holes in wooden or shell beads). To meet sudden large demands, which are not uncommon, she can further subcontract people in her community to

help her work on the orders. These second level subcontractees (also called job outees/assemblers) utilize both male and female adult and child home laborers.

The use of subcontracting is intensified by the export nature of the industry. Fluctuating demand, the export-orientation, and the highly competitive market of the industry tend to exacerbate dependence on subcontracting, which in turn exacerbate child labor utilization (UNICEF-PATAMABA-UP-CSWCD 2001). Moreover, a DOLE study (1998) found that the difficulty of maintaining a stable production schedule and intense global competition favors subcontracting. Subcontracting invites more child labor.

Children are generally found in certain steps of the production process. While orders are generally intense from March to December, children are utilized year-round. Children perform tasks such as stringing and threading. Simple stranding and designing are done by younger children, while the more intricate designs are done by older and more experienced children (DOLE 1993). It is the child who looks for work, desiring to have money for school projects or whims, according to a supplier. Children do not normally want to care for children, so their mothers make them do production work instead.

The Community Context: Laray, Talisay City, Cebu

The respondents surveyed are located in Laray, Talisay City which is adjacent to Cebu City in the Visayas. Cebu City, since the 1980s, has been well known for its production of fancy jewelry and other fashion accessories. During peak season, around March to May, migrant workers (women and their children) from places like Leyte, Negros, Iloilo, and the northern parts of Cebu province, come to Laray and the surrounding communities each year in search of work. The communities in which producers of fashion accessories are situated in areas where a large segment of the population is unemployed or underemployed, and where social services are inadequate and incomplete.

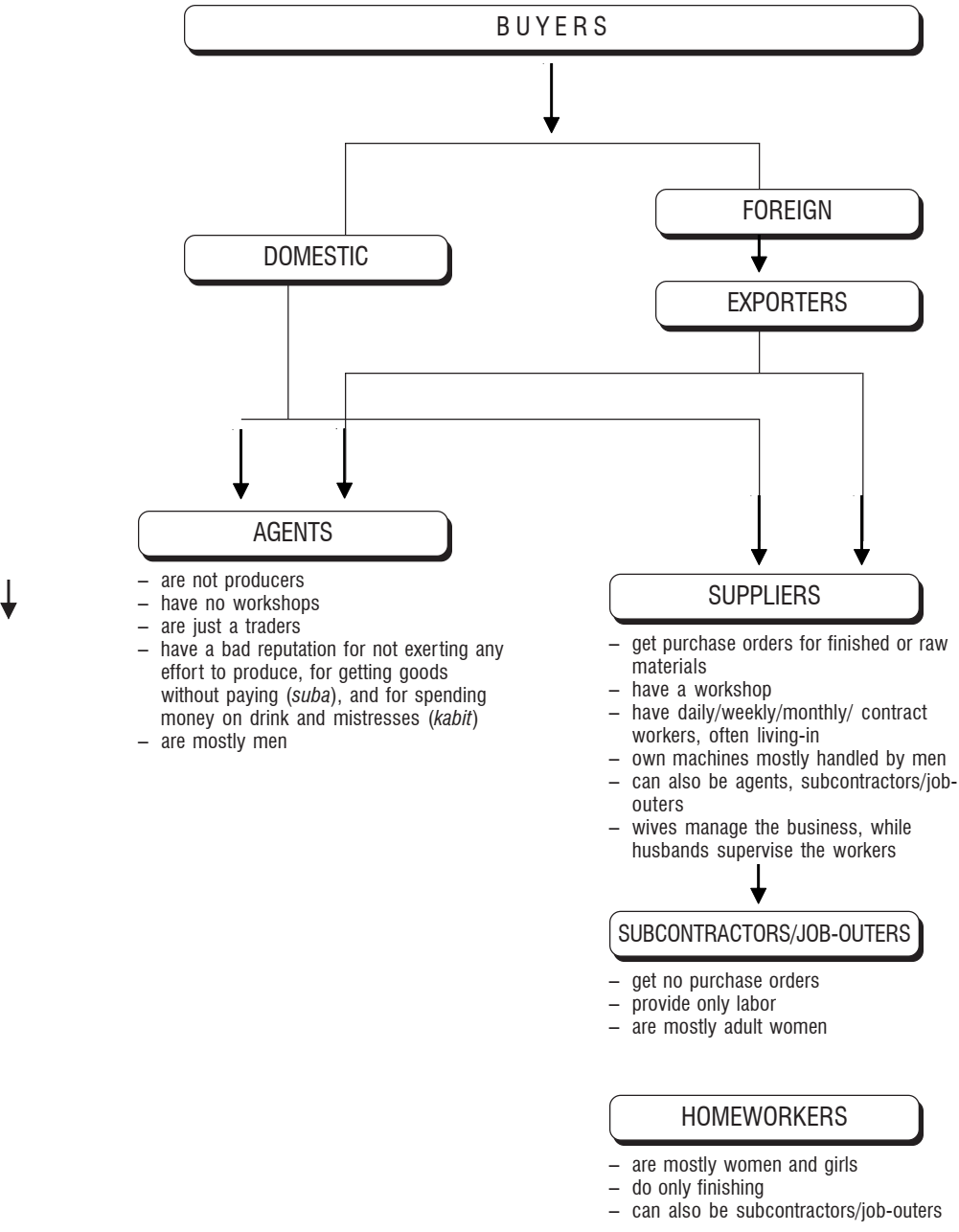
Subcontracting and sub-subcontracting characterize the fashion accessories industry. At the top of the subcontracting chain are the exporters (who may also be the contractors/buyers). These are often factory-based and employ workers to produce as well as pack their products. Their factories often have a warehouse, and an office with employees who take charge of certain vital functions needed in the initial and end processes of production for export, such as 1) quality controllers, 2) purchasers, 3) expediters, and 4) agents. The buyers or agents are the ones who order directly from the suppliers in order to acquire raw materials or finished products. A buyer can have as many as 200 suppliers who hire child labor. (See Figure F1.)

The supplier is the one who gets the purchase orders (PO) for both raw and finished products, from buyers or agents. The buyer does not give materials, only money to buy materials from numerous wholesale and retail stores, like Cebu Hardware, Fashion City, Fashion Island, Modern Fashion, etc. These stores sell glass beads, findings (locks, accents, chains, and balls), nylon thread, etc. One supplier said that in 1992 she had as many as 200-250 POs from the same buyer, which allowed her to build a house; whereas in 2004, orders came in trickles. The supplier can get a cash advance on her PO which she has to sign for. The hardware store can also advance materials to be deducted later from the PO. The supplier is often the owner of a machine or machines, and one claimed to have about 15 machines. She is very mobile, looked up to in the community, is better off than many in terms of financial status, and has had a relatively long experience dealing with buyers.

In 2000, Laray had about eight suppliers of shell and wooden beads requiring cutting, grinding, polishing, drilling and finishing (bleaching, dying, and painting as the case might require), shell/wood wall decor, resin molds, and punched wood. The supplier can either produce the raw materials for an entire PO alone or source part of that order from a subcontractor.

The subcontractor gets orders from the supplier to complete the supplier's PO for raw materials (e.g., buttons, shell/wooden beads,

FIGURE F1
Subcontracting Chain in the Fashion Accessories Industry in Cebu



resin items, or wood planks) or to perform a certain operation (e.g., drilling holes in wooden or shell beads) in the process of making the raw material. She is sometimes furnished with materials for her production. She is capable of handling big volumes of such orders and has a track record for doing so. She is usually a woman.

The job-outer is subcontracted by the supplier or the subcontractor. She gets orders and sometimes the materials and executes the finished product. Unlike the subcontractor who furnishes the supplier both raw materials and labor, the job-outer only furnishes labor. To meet her order, the job-outer may subcontract the labor of others in her community, including that of adults and children, usually female.

Children below nine years old are considered irresponsible. Girl child workers who are 11-12 years old are preferred to boys who have a tendency to abandon work to be with their friends. Boys are perceived to have wandering minds, and are less preferred. Girls are preferred to adult females because the latter (who are usually in charge of household chores and child care), cannot sustain continuous production work, which the child worker can. However, once they turn 16, many young girls reportedly lose interest in subcontracted work. They may either try to seek employment elsewhere, as in restaurants, engage in other forms of livelihood, like cooking native cakes, plan on going to high school, or marry.

Children are perceived to be more creative and not just interested in earning, while adults are considered "without art" and only interested in making money. On a scale with a low of 1 and a high of 10, with regard to how much more creative in making designs the workers are, children scored 7 and adults 5. With regard to who was the faster worker, children aged 10-15 years scored 8, while adults scored 4.

The nature of the community production area, in which homeworkers produce, can be characterized as a locality that could include any part or the entire area of a producing community—the roofed abode, the yard, the inside or the immediate premises of the home, the beach, or the subcontractor's warehouse/workplace nearby. In this sense, the home is not only a locality, but also a unit of hierarchical obligatory kinship, contractual, and political relationship that shares in a mutuality of interests.

Production Process and Payment/Wages

Orders for fashion accessories seem to come more often and intensely from March to December. Their production involves varied materials and multiple and changing operations. An exporter/contractor through his/her regular hired personnel (purchaser, agent) will get in touch with a supplier and place an order. The latter (who owns the necessary machines, has some working capital, and can access labor in the community) will hire daily workers to operate the machines if the order so requires. She will also subcontract parts of the order for raw materials to subcontractors, or her order for finished products to job-outers.

A certain subcontractor, for instance, regularly maintains about five households on her "payroll". If she has extra money, she usually stocks up as a technique for saving. On the one hand, when the supply of the materials she stocked up is scarce, she is able to earn more from it. For example, if the stock was bought at P50, she could sell it to a department store like SM for P300, and in Boracay for P350. On the other hand, when orders are low, she can still earn something through selling her stocks. In this way she can maintain her workers and pay them on time. She rolls her extra earnings from stocks by stocking up again.

So many subcontracting levels result in less income for a worker in the industry. Each level gets a cut from the overall price determined by the importer, based on the end retail price of the product in the importing country. The price of labor is already set by the supplier. If it is P0.35 for a piece of fashion accessory, the job-outer usually gets P0.10 and the worker P0.25. At each level, there are negotiations going on with regard to costs. Thus, it appears that the share that each level gets varies according to fluctuations based on: demand for the product; cost of raw materials and transportation; other sociocultural considerations that affect labor negotiations like kinship, patronage, special relationships, political connections, organized labor actions, etc.; and supply of labor based on seasonal, environmental, and other factors like unemployment due to financial crisis.

The determination of daily/weekly/monthly income for workers who are paid per piece is open-ended and varies with the workman-

ship required and the specific product or part of the product to be produced. Fashion accessories are complex products involving multiple, varied, and changing operations and raw materials. It is hard to determine the prices and costs of a variety of fashion accessories at every stage of the chain. To illustrate, a specific example in terms of one product is shown in Table F1.

TABLE F1
Sample Prices and Costs of One Strand of Shell Beads

1. Retail price abroad	$ 3.00 – $ 6.00[a]
2. Local retail price	P75.00 – P150.00
Overhead	
Store Owner's Fee	
Overhead	
3. Cost Price	P24.00
Cost of Production:	
Profit	P10.00
Raw Materials	1.65
Overhead	3.60
Labor (stringing, locking)	7.20
Polishing	0.75
Grinding	0.60
Drilling	0.20
Total	P24.00

[a] Around P165.00 – P335.00 (circa year 2000)

Regular workers sometimes get other benefits such as money, sardines, or rice on New Year's Eve. Part-time workers just get a T-shirt. Godchildren of subcontractors are also given some gifts or tokens.

Conditions of work

The production work typically begins with a written purchase order (PO) issued by big suppliers to their subcontractors/suppliers. Though written, a subcontractor reports that POs can sometimes be

cancelled by the mere excuse of lack of quality control without any compensation. Between the subcontractors/suppliers and their job-outers there is no written contract, but relationships in the community are such that a verbal agreement is usually upheld because breaking it would mean not being able to get workers to do orders for you or not being given a job order again in the future. Household workers are the most vulnerable to quality control considerations and the whims of the buyers and big suppliers as well as subcontractors and other job-outers who give them orders. This is most disturbing given that most households rely heavily on the income earned from home-based work.

Although piece rates are generally stable, terms of employment are subject to skill, age, and gender considerations. Older and male workers tend to be more skilled in the use of machines and on the average tend to earn more than females. Most machines, except for those that pierce the beads, are operated only by older males 18 years old and above. Payment for child labor below 10 years old is usually made through the mother; those for children 10 years old and above is usually made directly to the child worker.

It is hard to establish a one to one correspondence between sub-contracted work and health of the worker. However, it appears that the stresses the workers suffer—especially children and women who do multiple work, i.e., earning an income, performing household chores, rearing children, studying, and meeting various family obligations—combine with a polluted environment (especially in the areas where shell and wood are cut, ground, and polished filling the air with fine powder-dust) to negatively impact on the health of workers. Subcontracted work also wreaks havoc in the home, and pollutes and cramps the already small and crowded home. The cutting of shells into tiny pieces to be made into beads can injure fingers; so too can the piercing of shell and wood beads by machines.

Hired workers who handle machines for piercing and grinding shell and wood beads have flexible but more regular hours of work than piece rate homeworkers. They sit and operate the machine throughout the day unlike homeworkers whose schedules depend on a mix of other activities. Hired workers processing wood often stay at or near the subcontractor's home.

Machines used in the manufacture of fashion accessories are patently dangerous and could harm adult and child workers whose fingers could be cut, pierced, or sliced at the slightest lapse of attention. However, workers handling the machines denied having had any accidents and being affected by the dust in the air. As a rule, neither cutters and grinders/polishers of shells and beads nor those who handle the chemicals involved in shell bead making wear masks.

As a whole, families in the community place a high priority on education and think it is the key to a better future for their children. However, except for the children of subcontractors, most residents have little education and skills other than driving tricycles for men and making fashion accessories and cooking for women. And when children are forced to stop schooling because of economic difficulties, the daughters are the first to suffer.

While all the women are saddled with domestic duties aside from their home-based work, all of them say that without their income from subcontracting their family situation would be more critically difficult. It seems clear that their income generating activities, be they for export or for local distribution, have afforded them a modicum of control over their lives. Home-based work provides these females with the opportunity to earn cash incomes to augment the income of the principal breadwinner and to combine income generating work with their traditional role of looking after the children and attending to the household.

Women indeed feel glad to have subcontracted work, but they get even more burdened, especially during times of economic difficulties when they need to work more and strive more and cut down even on the most basic expenditures to stretch the family budget. Many have male spouses who are unemployed or are employed only in low-skill, low-paying jobs. While men are involved in producing fashion accessories, there are very few of them compared to women and children. And when it comes to domestic work, women home-based workers rely more on their daughters than their sons and husbands.

Production Process: The Basic Shell Bead Necklace

Raw shells come by the ton from Pasil in Cebu City, Masbate, Negros, Bohol and Mindanao. They cost from P3 to P28 per kilo.

First process—making of the beads

The raw shells are mixed with water and cut by a machine into smaller pieces of the desired size. This activity is done by an adult worker who is paid P10 per kilo. The rough beads are then pierced through the center, for which a worker gets P20 to P30 per kilo. These are next strung along a metal wire by a worker, usually a child 6 years of age or older, who is paid P2.50 per line of 36 inches. Then the rough beads are ground, smoothened, and strung on nylon string—usually by a girl 16 years of age and older). They are next transferred to nylon strings by workers 6-60 years old for a pay of P0.25 per line of 36 inches. Then together with chlorine these are put into a spinning ball-shaped machine (*tambulan*). Later, muriatic acid is added, which is made to slowly trickle down to the shells to erode them further, making them easier to round and polish during the spinning. When they attain the desired shape, the beads are soaked in large basins of water, after which they are soaked in sulphuric acid until they become white and shiny. Then they are soaked in water for a day or two, to rinse off the chemicals. Finally, the beads are finished with a lacquer spray.

Second process—transforming beads into shell necklaces

The strings of finished shell beads are delivered to job-outers for conversion into necklaces. This involves two activities: the stringing of beads to a length of 16 inches using finer nylon string, and the attachment of locks and other accessories as the design requires to the ends of the strung beads. The cost of this entire process is P5 per necklace. Depending on the kind, a string of shell beads with a lock can be sold for about P20 to P75, and without a lock, for about P18. The nylon string costs P0.05.

Production Process: The Basic Wooden Necklace

The cutting of wood requires a license which the buyer-supplier obtains for her supplier of wood. One such wood supplier who hails from Argao Town takes charge of cutting the wood into small pieces and delivering them to the buyer-supplier. A big saw mill, which cuts the wood into small pieces of the desired size, would cost about P50,000. A grinder, which cuts the wood into beads, would cost P2, 500. A beading machine with a rotating sander, which rounds the small pieces of wood and sands them progressively to the required degree of fineness, would cost about P5,000. A Bean's Drill is used to pierce the beads in the center.

The process for making wooden necklaces is much the same as for shell beads. The wood is cut, rounded, and pierced by machines. However, unlike the shell bead rounding the wood does not require the use of chemicals as the wood is softer. Furthermore, after the wooden beads are rounded and pierced, they may later be varnished or painted, depending on the order, in which case, these are additional steps. The rest of the process to make the wooden necklace is like that of making shell necklaces. The child worker gets P0.50 per strand for stringing the wooden beads along a 16-inch nylon thread. These are then placed in plastic bags in tens by the supplier, who delivers the entire order to the bigger supplier.

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