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Impacts of Fairtrade on Small-Scale Cotton Producers

A field study in rural India



ABSTRACT The number of Fairtrade labeled products in the stores continues to increase and more and more consumers choose Fairtrade as an alternative to conventional products. Fairtrade seeks to improve the livelihoods of small-scale producers and reduce poverty by implementing several standards for economic, social and environmental development. The aim of this thesis is to investigate the economic impacts of Fairtrade as well as the effects of Fairtrade on farmers' standard of living. 101 farmers from the producer organization Chetna Organic in India were interviewed using a questionnaire. The impacts of Fairtrade are estimated through regression analysis, where positive statistically significant effects of Fairtrade on land productivity, credit use and perceived influence in cooperative are shown, while Fairtrade negatively affects food shortage. The farmers claimed to be satisfied with Fairtrade in spite of their limited knowledge of it, which makes it difficult to determine if Fairtrade is the actual cause of their satisfaction.

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THANK YOU

to all *farmers* in Odisha and Telangana, India,
for taking your valuable time to answer our questions,
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ABBREVIATIONS

CAPC	Commission for Agricultural Costs and Prices
CCI	Cotton Corporation of India Ltd.
COAPCL	Chetna Organic Agriculture Producer Company Ltd.
COFA	Chetna Organic Farmers Association
EUR	Euro
FAO	Food and Agriculture Organization of the United Nations
FLO	Fairtrade Labelling Organizations International
GDP	Gross Domestic Product
GOI	Government of India
ICAC	International Cotton Advisory Committee
INR	Indian Rupee
OECD	Organisation for Economic Co-operation and Development
MSP	Minimum Support Price
UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar
USDA	United States Department of Agriculture
WWF	World Wide Fund For Nature

CONVERSIONS

1 EUR = 72,3761 INR (June, 2017)

1 USD = 64,4098 INR (June, 2017)

TABLE OF CONTENTS

1 INTRODUCTION	1
2 COTTON BACKGROUND	4
2.1 Cotton as a commodity	4
2.2 Cotton production in India	4
2.3 Cotton market	4
2.4 Minimum support price as a government initiative	6
3 WHAT IS FAIRTRADE?	6
4 THEORY AND PREVIOUS RESEARCH	8
5 DATA COLLECTION	11
5.1 Description of data collection	11
5.2 Cotton farmer questionnaire	12
5.3 Semi-structured interviews	13
6 THE PRODUCER ORGANIZATION CHETNA ORGANIC	14
6.1 About Chetna Organic	14
6.2 Structure and operational area of the cooperatives	15
6.3 Sales process	15
6.3.1 Price and procurement of raw cotton	15
6.3.2 Price of lint cotton	16
6.3.3 Fairtrade income and expenditures of COAPCL	16
7 DESCRIPTIVE STATISTICS	17
8 METHODOLOGY	21
9 REGRESSION ANALYSIS	25
9.1 Econometric estimations of Fairtrade on profit and land productivity	25
9.2 Econometric estimation of Fairtrade on standard of living	30

10 DESCRIPTIVE ANALYSIS	34
11 CONCLUSION	36
12 REFERENCES	38
APPENDIX 1	42
Farmer questionnaire	42
APPENDIX 2	48
Correlation matrix for independent variables	48
APPENDIX 3	49
Correlations between dependent variables and their respective independent variables	49

1 INTRODUCTION

During the past decades, the market price of cotton in real terms has fallen and is today only half of the price fifty years ago (World Bank, 2017a). Cotton is produced both in developed and developing countries, although the greatest cotton producer is India (USDA, 2017), where almost 6 million farmers are directly dependent on cotton cultivation (GOI, n.d.). Even though India is a fast growing economy, with a dramatically increased GDP per capita over the past forty years, the country still suffers from widespread poverty. According to the most recent poverty measure in 2011, 21.23 per cent of the Indian population still live in extreme poverty with less than 1.90 USD spent each day (World Bank, 2017b). The majority of the poor in India live in rural areas, where agriculture is the main source of income (World Bank, 2016b).

Several initiatives have been established with the aim to make cotton cultivation more sustainable for poor producers and one of these initiatives is Fairtrade. The Fairtrade Labelling Organizations International (FLO) started with standards for coffee production, with the purpose to reduce poverty among small-scale farmers facing tough trading conditions and improve their livelihoods (FLO, 2017). Fairtrade is a growing movement and the number of producer organizations working with Fairtrade continues to increase (FLO, 2016). Nowadays it is possible to find numerous different Fairtrade certified products in the stores.

The amount of Fairtrade cotton sold has increased over the past years (FLO, 2015a). The increased Fairtrade cotton sales indicate a higher demand for Fairtrade cotton and a willingness among the consumers to improve the lives of poor. According to FLO (2016), cotton and sugar producers suffered the most from tough trading conditions in 2015, when the market price reached low levels.

The aim of this thesis is to examine to what extent Fairtrade can support cotton producers and cooperatives in India by implementing the Fairtrade measures, including minimum prices, social premiums, rights for the producers as well as environmental standards (FLO, 2017). The two research questions outlined in the thesis are the following:

Are certified farmers better off economically compared to conventional farmers?

How does the standard of living for small-scale cotton producers improve when the Fairtrade measures are implemented?

Most of the previous research on the impacts of Fairtrade has focused on coffee. This thesis will contribute to the research within the field by instead investigating the commodity cotton, as the impacts of Fairtrade may differ between different commodities. Volatile prices and strong dependence on weather conditions in rainfed cotton areas make the farmers vulnerable. Agrarian suicides committed due to indebtedness have been a problem in India during the past two decades (Sadanandan, 2014). This thesis will expand the existing research on Fairtrade in order to determine if Fairtrade can contribute to improve the lives of poor cotton farmers.

The data used to investigate the impacts of Fairtrade on cotton farmers was collected during a field study in India from April to May 2017. Interviews were held with a total of 101 cotton producers belonging to the producer organization Chetna Organic. The sample consists of both conventional and Fairtrade and Organic certified farmers from four different cooperatives. Quantitative data was collected from all farmers as well as descriptive data from farmers with the certification.

To analyze the impacts of Fairtrade, conventional farmers are compared to Fairtrade and Organic certified farmers. To examine if certified farmers are better off economically, regression analysis is used to estimate the effect of Fairtrade on profit and land productivity. Certified farmers do not receive higher prices for their cotton compared to conventional and consequently, Fairtrade does not increase profits directly. However, Fairtrade shows a positive statistically significant impact on land productivity, which is an important determinant of profit, after controlling for acres of land used for cotton cultivation, education and number of children.

To analyze if Fairtrade affects the farmers' standard of living, regression analysis is used to estimate the effect of Fairtrade on food shortage, acres of land used for cotton cultivation, credit use and perceived influence in cooperative. The regression results show a negative statistically significant effect of Fairtrade on food shortage after controlling for gender, education, experience, number of children, land used for cotton cultivation, length of membership in Chetna Organic and geographical factors. There is no statistically significant effect of Fairtrade on acres of land used for cotton cultivation, after controlling for gender, education, experience, length of membership in Chetna Organic and geographical factors. After taking into account the impact of the same control variables on credit use as well as acres of land used for cotton cultivation, Fairtrade shows a positive statistically significant

effect. Moreover, Fairtrade has a positive statistically significant effect on perceived influence in cooperative after controlling for gender, education, experience, length of membership in Chetna Organic and acres of land used for cotton cultivation,

The thesis is structured into 11 different sections. Section 2 provides background information of the commodity cotton, the production process and the market for cotton. A more thorough description of Fairtrade with its standards follows in section 3. The next section presents previous research on the impacts of Fairtrade from an economic point of view. The 5th section provides a detailed description of how the data was collected. The next section provides information about the producer organization Chetna Organic. Thereafter, the descriptive statistics and how certified farmers differ from conventional farmers are presented in section 7, followed by a description of the method used for analyzing the data. The data is analyzed in section 9, where a detailed description of the regression analysis is provided. The farmers' knowledge and perceptions of Fairtrade are presented in a descriptive analysis in section 10, which is followed up by the conclusion in section 11.

2 COTTON BACKGROUND

The upcoming section provides relevant background information for the remainder of the thesis. It starts with a presentation of the commodity cotton, followed by statistics on cotton production in India. The section also describes the world market for cotton with current and historical world market prices. The Indian government is intervening on the cotton market by setting a price floor, which the last part of this section explains further.

2.1 Cotton as a commodity

There are around fifty different sorts of cotton in the world, of which only four is grown on a commercial scale (ICAC, 2017). The different species of cotton have varied staple lengths that are usually divided into short, medium, long or extra-long staple length and ranges from 12.7 millimetres to 39.7 millimetres (Cotton Incorporated, 2013). Cotton can be grown all year around and the cotton season ranges from 180 up to 300 days, depending on the climate and weather conditions. Cotton can be harvested several times during a season (ICAC, 2017).

Once the cotton is harvested, it is processed in a ginning unit where the lint cotton is separated from the cottonseed. Approximately a third of the raw cotton is processed into lint cotton and the rest to cottonseed (ICAC, 2017). Afterwards, the lint cotton is further processed along different stages in the supply chain including spinning mills, the weaving and knitting industry and lastly, the garment manufacturing (WWF-India, 2012). The cottonseed is not used in the garment industry. However, it can be used to produce cottonseed oil, used in for example cooking oils and margarine (ICAC, 2017).

2.2 Cotton production in India

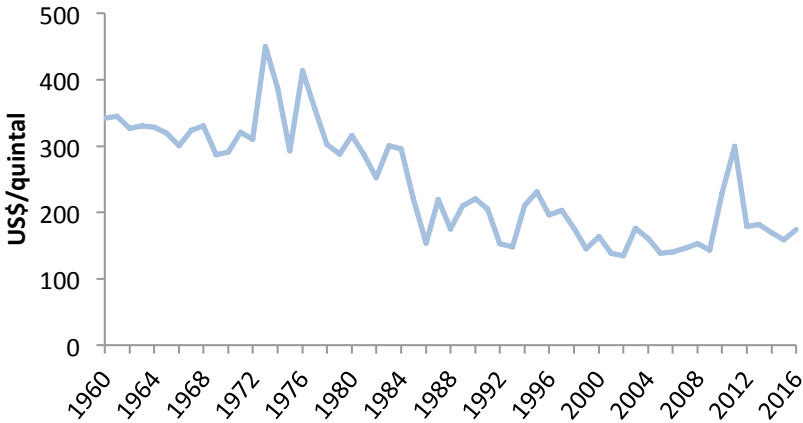
During the agricultural year 2015/2016, India produced cotton on almost 40 per cent of the total world cotton area. India was also the greatest cotton producer during this period, and accounted for nearly 30 per cent of world production (USDA, 2017). In India, more than 5.8 million farmers cultivate cotton and around 40 to 50 million people are, in some way, working in the cotton industry throughout the supply chain (GOI, n.d.).

2.3 Cotton market

The real market price of cotton has decreased over the past decades. As shown in Figure 1, there was a downward shift in the market price of cotton in the 1980's and the market price is currently lower than it was more than fifty years ago. The market price of cotton fluctuates

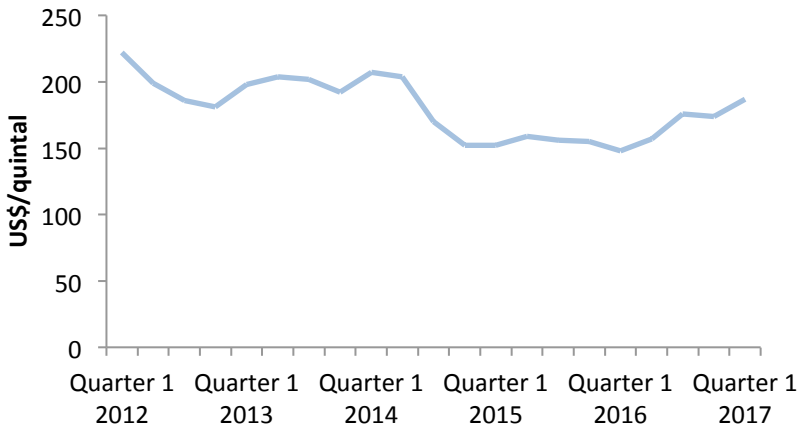
greatly also in the short run, as shown in Figure 2. There was a decline in world market cotton prices in 2015 but currently, the market price is increasing and India Ratings and Research (2017) expects stable future prices in India due to a steady supply and demand.

FIGURE 1. REAL LINT COTTON PRICES, 1960 - 2016



Source: World Bank, 2017a

FIGURE 2. REAL LINT COTTON PRICES, QUARTERLY



Source: World Bank, 2017c, 2016a, 2014, 2013 and 2012

In 2015, there was a great drop in world cotton production. According to OECD/FAO (2016), the main reasons for this decline were bad weather conditions as well as increased competition from synthetic materials, such as polyester. The prices on synthetic fibres are declining and therefore, these materials are increasing their competitiveness towards cotton (OECD/FAO, 2016). India Ratings and Research (2017) predicts a further increased shift from cotton to synthetic fibres in 2018.

Although the share of cotton is expected to decline due to the increased competitiveness, both OECD/FAO (2016) and India Ratings and Research (2017) expect an increased world cotton production. India Ratings and Research (2017) also predicts India's share of the global cotton trade to increase, primarily due to better trade agreements with Europe and the United States, cost and quality competitiveness and a favourable monetary policy with declining interest rates and a stable currency. They have a positive future outlook for India's cotton sector and expect the Indian cotton production to increase as well.

2.4 Minimum support price as a government initiative

The Indian government has initiated different minimum support price (MSP) programmes due to unstable prices of some agricultural goods. Generally, governments set a minimum price to ensure the producers to at least receive that price for their product. If the market price is below the minimum price, the government purchases the good to drive up the market price. To keep the market price on this level, the government has to store or export the product, since the prices will decrease again if they sell on the domestic market (Perloff, 2014). The Indian MSP for a product is declared every season before sowing and is applicable to several agricultural goods, e.g. cotton, rice and wheat. When the Indian government decides on the MSP's, they are analyzing the situation of supply and demand in the country and considering reports conducted by the Commission for Agricultural Costs and Prices (CAPC), who takes several factors into account. The current MSP during the agricultural year 2016/2017 for cotton with medium staple length is 3 860 INR per quintal, defined as 100 kilograms, and 4 160 INR per quintal for long staple length (GOI, 2016).

3 WHAT IS FAIRTRADE?

This section gives a presentation of Fairtrade and the history behind the Fairtrade Labelling Organizations International. The section introduces the aim and vision of Fairtrade as well as a description of the standards with which they intend to achieve these objectives.

The first Fairtrade label was introduced under the name Max Havelaar almost thirty years ago by the Dutch organization Solidaridad. Since then, the same label has been implemented across numerous countries in the world. The Fairtrade Labelling Organizations International (FLO) was founded in 1997 in Germany with the purpose to unite all national Fairtrade organizations and create a common certification with shared standards throughout the world.

The aim of Fairtrade is to reduce poverty in developing countries and empower producers and workers through better and fairer trading conditions (FLO, 2017).

The Fairtrade certification is obtained by the producer organization and not directly by the individual farmer. A product that is Fairtrade certified has to meet several Fairtrade standards regarding economic, social and environmental development. There are standards that buyers have to comply with as well as standards applying to producers (FLO, 2017).

The Fairtrade minimum price is decided by FLO and based on information from producers, traders and external reports regarding the cost of sustainable production. The Fairtrade floor price is the minimum price that must be paid to the producer, but when the market price is higher than this price, the buyer must pay at least that instead. The current Fairtrade minimum price for seed cotton differs depending on the variety and staple length of cotton, but ranges between 34 to 46 INR per kilogram for organic seed cotton in India (FLO, 2017).

Apart from the Fairtrade minimum price, the producer organization also receives an additional amount of money called the Fairtrade premium, which currently is 3.6 INR per kilogram for seed cotton produced in India. The Fairtrade premium should be invested in the local community and the producers decide democratically the exact utilization of it. Examples of how the premium can be used include investments in education, health clinics, infrastructure and training programs (FLO, 2017).

Towards the vision of creating a sustainable livelihood for the farmers, Fairtrade has set up other standards that the small producer organizations have to follow. The organizations should have a democratic structure and the managements should be permeated with transparency. Certain labour conditions have to be followed and child labour is not permitted. The small producer organizations are also obliged to sign binding contracts with their buyers of the Fairtrade produced commodity. As environmental criterias, there are prohibited chemicals and materials that the Fairtrade farmers cannot use and neither are they allowed to cultivate Fairtrade crops using genetically modified seeds (FLO, 2011a).

The first buyer of the Fairtrade product is also required to provide pre-finance to the producer. This enables the small producer organization to purchase the product from their farmers (FLO, 2015b). According to the product specific standards for cotton producers, the Fairtrade

certificate holder can at any time demand a pre-finance of up to 60 per cent of the contract value from the buyer (FLO, 2011b).

To obtain a certificate, the producer organization has to send an application to FLO-CERT; the independent certifier for Fairtrade founded in 2003. FLO-CERT carries out a physical audit at the producer organization and decides whether to certify it or not. After the producer organization has received the certification for its product, the certification body continues to do audits regularly, both announced and unannounced (FLO, 2017). The producer organization has to pay for the application fee, the initial certification cost, an annual certification fee as well as the audits performed by FLO-CERT (FLO-CERT, 2016). FLO-CERT also audits the traders to guarantee that the Fairtrade standards are followed (FLO, 2017).

4 THEORY AND PREVIOUS RESEARCH

This section introduces the economic theory of Fairtrade and presents results from previously conducted studies on impacts of Fairtrade. Formerly found positive effects of Fairtrade are described, as well as criticism towards Fairtrade.

According to Kadow (2011), Fairtrade producers provide the market with a differentiated good by producing economically, socially and environmentally sustainable in line with the Fairtrade standards, which creates a new market segment. Altruistic consumers are willing to pay more for products complying with the Fairtrade criterias. Kadow (2011) examines the welfare effects of Fairtrade in a Ricardian model of North and South trade and concludes that the overall welfare increases with Fairtrade. However, while the inequality between North and South decreases, it does so at the expense of non-certified farmers in the South. Kadow (2011) further suggests that welfare gains will only occur as long as Fairtrade is a niche movement, given limited demand.

The Fairtrade minimum price is set to guarantee the producer a fair price even in times when the market price is low (FLO, 2017). However, when the price floor is higher than the market equilibrium price, supply of the product will exceed its demand (Perloff, 2014). Since the producers are not guaranteed a minimum price for their entire output with Fairtrade, the excess supply will be sold at the lower market price. De Janvry, McIntosh and Sadoulet (2015) get to this conclusion in their study using data from a Central American association of

coffee cooperatives. According to the authors, the excess of Fairtrade certification arrives from the free entry into the Fairtrade market with certification costs as the only barrier. The producers have to pay certification costs for their entire produce, while only a share of it can be sold on the Fairtrade market with additional benefits. As more and more producers enter the Fairtrade market, each farmer can sell a smaller share of his or her produce at the higher price, with a consistent given demand. Producers stop entering the Fairtrade market when marginal cost equals marginal revenue and the expected producer benefits are zero. Also, de Janvry et al. (2015) find evidence for their hypothesis that the net benefit of being Fairtrade certified is negative during times when the market price is higher than the Fairtrade minimum price.

Effects of the Fairtrade minimum price have been investigated in numerous studies. Valkila and Nygren (2010) performed fieldwork in 2005 and 2006 to study the impacts of Fairtrade on coffee farmers and cooperatives in Nicaragua. Since their study was conducted during a time with relatively high market prices, their findings showed modest effects of the minimum price on coffee producers. The farmers got similar prices on the outside market or even higher, if the coffee was sold at the right time. When the market price was low, most of the cooperatives could sell only a small share of their coffee on the Fairtrade market due to the excess supply previously discussed, and the minimum price therefore showed modest effects even in these times. However, some cooperatives succeeded to set up long-term contracts with buyers. These cooperatives were able to sell a significant part of their coffee on the Fairtrade market and benefitted from the minimum price. The premium for social development benefitted the larger producers more relative to the smaller producers, but Valkila and Nygren found it difficult to distinguish between effects of the social premium and effects of other rural development projects. They also concluded that the knowledge of Fairtrade was limited and that the farmers were confused with the different certifications, standards and development projects.

Another Fairtrade impact study was conducted by Ruben, Fort and Zúñiga-Arias (2009), with a sample of 700 coffee and banana producers from two South American countries. Their results show only small impacts of Fairtrade on farmers' net income, explained partly by their increased focus on the Fairtrade production relative to other income generating activities and higher spending on hired labour. Instead, Fairtrade seemed to have more significant positive effects on other factors. Fairtrade farmers spent more on long-term investments and were

more willing to take on risk, had better credit access and higher asset value, which Parvathi and Waibel (2016) moreover claim to be a better measure of wealth in the long run than direct income effects. In addition, Ruben, Fort and Zúñiga-Arias (2009) found positive effects of Fairtrade on the organizational strength, despite the once again proved limited knowledge of Fairtrade among the farmers. Apart from benefitting the participating farmers, Fairtrade also gave rise to positive externalities. Other farmers gained from higher and less volatile prices in areas with widespread Fairtrade production and the Fairtrade premium has potential to benefit whole communities, if used in the right way.

Decisions regarding the utilization of the Fairtrade premium is taken through a bottom up approach, where the farmers decide which community projects to implement. Such an approach has both advantages and disadvantages. The Fairtrade premium is likely to be invested in projects that meet the farmers' own needs in the best way and the decision-making process also empowers the farmers. Nevertheless, it is not certain that the farmers always have the greatest ability to make those decisions. Shah, Mullainathan and Shafir (2012) suggest that scarcity of some resources affects people's decision-making and impose cognitive load. If the mind is focused on one thing where resources are scarce, less attention is given to other problems and decisions due to the limited cognitive function. These findings suggest that poor farmers, who might put most of their effort into satisfying daily needs, have less ability to make decisions about the future, such as how to invest the Fairtrade premium most efficiently. It is possible that governments and aid agencies, with more experience, education and resources, would be able to decide on projects with a greater impact and which are more beneficial for the community in the long run. This argument is highlighted by Griffiths (2012), who advocates projects carried out by aid agencies because of their economies of scale and ability to reach a larger group of farmers than projects financed by the Fairtrade premium.

Increased trade can contribute to economic development and growth, which in turn can lead to poverty reduction (UNCTAD, 2017). According to the theory of comparative advantages, countries benefit from trade by exporting goods they are relatively good at producing and importing goods that other countries produce better (Weil, 2013). The majority of the international trade is between industrialized countries, and less between developing and developed countries (Feenstra and Taylor, 2014). Fairtrade aims at creating fair trade linkages between producers in developing countries and consumers, mainly in developed countries,

and by those means empower poor farmers and improve their economic situation (FLO, 2017). However, a study by Valkila, Haaparanta and Niemi (2010), investigating the value chain from coffee farmers to final consumers, finds that Fairtrade also benefits and empowers other actors along the path apart from the producer organizations. Their results show that a smaller share of the coffee price paid by the consumers ended up in the producer organization along the Fairtrade value chain, compared to the conventional. This may suggest that the Fairtrade system is not the most efficient way to transfer benefits from wealthy consumers to poor farmers. De Janvry, McIntosh and Sadoulet (2015) get to a similar conclusion in their paper, suggesting other institutions, which directly transfer benefits to the producers or organizations, as better alternatives for consumers wanting to make a contribution.

5 DATA COLLECTION

This section presents a detailed description of the field study. It portrays the interview locations together with a description of the sample and an explanation of the questionnaire. The section also presents the semi-structured interviews as a supplementary method of data collection.

5.1 Description of data collection

The field study is made in cooperation with the producer organization Chetna Organic and it is based on 101 questionnaire interviews with cotton producers working with the organization. The interviews were conducted during the time period April to May 2017 in the two states Telangana and Odisha in India. The interviewed cotton farmers speak different local languages and therefore, field staff from Chetna Organic assisted with translation during the interviews. In addition to the farmer interviews, supplementary information required for the study was gathered at the head office of Chetna Organic in Hyderabad.

Telangana is situated in the south of India with around 35 million inhabitants. The state was formed in 2014 and is therefore the youngest state in India (Government of Telangana, 2017). Cotton is one of the most important crops grown in Telangana (Reddy, n.d.) and is cultivated on approximately 1 778 thousand hectares of land (CCI, n.d.). The neighboring state Odisha is located on the eastern coast of India with a total population of almost 42 million people (Government of Odisha, 2017). Odisha is counted as a low-income state and a third of the population is living below the poverty line (World Bank, 2016b). Cotton cultivation is less

common in this state and approximately 136 thousand hectares of land are used to grow cotton (CCI, n.d.).

In Odisha, a total of 60 interviews were held with cotton producers belonging to three different cooperatives across two different districts and seven villages. The rest of the 41 interviews were held in one cooperative in Telangana with cotton producers from four different villages in the same district. Table 1 presents the characteristics of the four different cooperatives where the interviews were held. The sample consists of 81 farmers from three different Fairtrade certified cooperatives and 20 farmers from one cooperative without the certification. All farmers with the Fairtrade certification are also Organic certified, whereas the conventional farmers are cultivating with organic practices, but have not yet obtained the certification, which requires three years of organic cultivation.

TABLE 1. COOPERATIVE CHARACTERISTICS

Cooperative	Fairtrade certified	Organic certified	Members in cooperative	Male	Female	State	District	Village
<i>Jagruti</i>	No	No	2200	0	2200	Odisha	Rayagada	Badmanjurkupa Gandhichuan
<i>Niyamgiri</i>	Yes, 2011	Yes, 2013	796	424	372	Odisha	Kalahandi	Bachka Talkalsur
<i>Matrubhumi</i>	Yes, 2008	Yes, 2010	1414	978	436	Odisha	Kalahandi	Tentulipada Paria
<i>Pragathi</i>	Yes, 2008	Yes, 2010	3266	1960	1306	Telangana	Adilabad	Bhimdanga Patelguda Peddasakeda Daboli Alliguda

The sample used in this field study might not be completely random. Chetna Organic or cooperative staff usually determined the farmers chosen for the interviews. It is possible that the selected farmers were those who could give answers in the most favourable light of Fairtrade and Chetna Organic and that all farmers therefore did not have the same probability of being chosen for the interviews. In addition, the field staff that assisted with translation during the interviews are not professional interpreters, which may have affected the results.

5.2 Cotton farmer questionnaire

The questionnaire for cotton producers working with Chetna Organic, shown in Appendix 1, is set up to identify differences in the living standard and economic situation of those farmers with Fairtrade certification compared to those farmers without Fairtrade certification. The

survey contains thirty questions based on the Fairtrade standards as well as results from previous studies and is designed to make it possible to distinguish impacts of Fairtrade on the cotton producers. The questionnaire is split up into five different sections, containing background information, information about cotton cultivation, income and expenditures, changes in the standard of living and economic situation as well as services and inputs provided by the cooperative.

The questionnaire is formed in a manner to allow data collection on other factors apart from Fairtrade that could affect the farmers and which are important factors to take into consideration according to previous literature. The questionnaire also consists of recall information, to enable a comparison between the before and after scenario of Fairtrade for the same farmer. However, this comparison is aggravated by the fact that the farmers got certified at different points in time, although the same number of years is used in the questionnaire. The reliability of these answers can also be questioned, since it may be difficult for the farmers to recall the true information.

An additional eleven questions were asked to cotton producers with Fairtrade certification, in order to measure their knowledge about Fairtrade and to get their views on how they think Fairtrade affects them. These questions were modified after first tried in the Niyamgiri cooperative and later required more informative answers. Hence, answers from this cooperative are missing to some extent in the part of the questionnaire directly related to Fairtrade. This makes it more difficult to compare differences, e.g. knowledge about Fairtrade, which could depend on the length of Fairtrade certification. Even though the majority of the other farmers replied to these questions, answers are missing from some of them due to the farmers' or accompanying field staffs' lack of time.

The questionnaire also has some other drawbacks. A few of the questions are formulated in a way leaving room for some interpretation, and the responses are therefore difficult to compare. To avoid the risk of misinterpreting these answers, they are not part of the analysis later on.

5.3 Semi-structured interviews

Apart from the 101 interviews carried out, additional information was gathered through other sources as well, in order to create a better understanding of how the producer organization

operates. The majority of this supplementary information was collected in conversation with Mrunal Lahankar, working as a Certification Manager at the head office of Chetna Organic. The field staff in Odisha and Telangana gave details about the cooperatives. During the time spent in field, visits were performed to two of the eco-centres owned by the cooperatives used for setting up demonstration plots and plant nurseries for different crops, in order to see some results of the Fairtrade premium utilization. Chetna Organic also provided documents containing information about the organizational structure of Chetna Organic, utilization of the Fairtrade premium, cotton price data and cotton procurement details. Finally, to get further perspectives on how the cooperatives work, an in-depth interview was held with the president of one cooperative working with Chetna Organic. The president, however, is not part of any of the four cooperatives previously mentioned, in which the farmers were interviewed.

6 THE PRODUCER ORGANIZATION CHETNA ORGANIC

The following section gives a presentation of the producer organization Chetna Organic and their work with farmers and Fairtrade, together with a description of how the cooperatives are operating as well as how the sales process in the organization functions.

6.1 About Chetna Organic

The project Chetna Organic was established in 2004 by ETC India and Solidaridad, with the aim to reduce poverty and improve the living standard of small and marginal farmers across the states Maharashtra, Odisha and Telangana in India (Solidaridad Network, 2017). Chetna Organic started as a project with 234 farmers and has since the initiation increased its number of members working with sustainable agriculture practices to over 35 000 in 2014. Out of these, over 9 000 farmers are Fairtrade and Organic certified cotton producers (Chetna Organic, 2017a).

Chetna Organic consists of two organizations, Chetna Organic Farmers Association (COFA) and Chetna Organic Agriculture Producer Company Ltd. (COAPCL). COFA is a farmer owned non-profit organization for farmer support and implementation of development projects. COAPCL is a commodity trading company with responsibility for the marketing process with linkages to buyers on the national and international market. COAPCL holds all trading licences and manages the certification of Fairtrade and Organic (Chetna Organic, 2017a).

6.2 Structure and operational area of the cooperatives

A total of ten cooperatives based in the states Maharashtra, Odisha and Telangana are working with Chetna Organic. The highest decision-making authority in each cooperative is the general body meeting, which is an annual meeting where the farmers gather to discuss the past year and decide on a plan for the following year. A board of fifteen members, which are elected on the annual general body meeting every third year, runs each cooperative. There must be a total of at least six female members in each board (Chetna Organic, 2017a).

Each cooperative is responsible for aggregating the raw cotton from its farmers (Chetna Organic, 2017a). Results from the interviews show that the farmers normally store their cotton at home until the harvest is completed. After the harvesting, a local market yard is set up in the village where the farmers deliver their cotton to the cooperative (Chetna Organic, 2017a). The cooperative is also in charge of the distribution of their Fairtrade premium amount. The board of each cooperative submits proposals regarding the utilization of the Fairtrade premium. Thereafter, the final use of the premium is decided by vote during the annual general body meeting. During this meeting, the farmers also have the possibility to present their own proposal regarding the use of the Fairtrade premium (Padhan, Jagujiban, president of Basumata Cooperative, personal interview, 5 May 2017). Furthermore, the cooperative has to provide trainings to the farmers, with support from COAPCL. Trainings are provided by all cooperatives three times a year and cover teaching about agricultural practices as well as Fairtrade and Organic certification (Chetna Organic, 2017a).

6.3 Sales process

6.3.1 Price and procurement of raw cotton

Once the Fairtrade and Organic certified cotton has been controlled by the cooperative at the market yard it is sold to COAPCL. When COAPCL buys the raw cotton from the cooperatives, they are paying the MSP plus an additional Organic premium of around five to ten per cent of the MSP. If the market price for raw cotton is higher than this price, COAPCL pays the market price instead. The prices paid by COAPCL to the farmers differ due to an increasing market price throughout the agricultural year 2016/2017. The price paid to farmers for their long staple cotton in the end of this period was 5 100 INR per quintal, while the farmers who sold their cotton earlier received a lower price accordingly to the market price at that time, starting from 4 600 INR per quintal (Lahankar, Mrunal, personal communication, April and May 2017).

The farmers can choose to either sell their cotton produce through the cooperative or directly to other buyers. It is only the cotton produced by farmers with Fairtrade certification, Organic certification or Fairtrade and Organic certification that can be sold by the cooperative to COAPCL. Farmers in the first and second year with organic cultivation are not allowed to sell their cotton produce as Organic, but they can sell it as Fairtrade as soon as their cooperative becomes Fairtrade certified (Lahankar, Mrunal, personal communication, April and May 2017). The cooperative does not sell all the cotton produced by their farmers to COAPCL, even though it is both Fairtrade and Organic certified. The majority of the cotton the cooperative procures is sold on the conventional market to their own buyers, without receiving any additional benefits from the two certifications. During the agricultural year 2016/2017, COAPCL procured between 20 to 60 per cent of the total cotton produced by each cooperative (Chetna Organic, 2017b).

6.3.2 Price of lint cotton

After procuring the raw cotton from the cooperatives, COAPCL transports it to a ginning unit where the lint cotton is separated from the cottonseed. The lint cotton is thereafter sold to different spinning mills, which are also given the cottonseed at no cost (Lahankar, Mrunal, personal communication, April and May 2017). During the past agricultural year, the Fairtrade and Organic lint cotton was sold at prices between 11 700 INR and 14 100 INR per quintal. The Fairtrade and Organic lint cotton sold only as Organic, due to a lack of market demand for Fairtrade cotton, was sold at prices between 11 700 INR and 13 600 INR per quintal. The lint cotton was sold to four spinners and garmenting factories, which are the main lint cotton buyers of COAPCL (Chetna Organic, 2017c). These four spinners and garmenting factories in turn get orders from around 40 companies and retailers associated with the supply chain of Chetna Organic (Chetna Organic, 2017a).

Even though COAPCL only procured around 20 to 60 per cent of the total cotton produced by each cooperative, they were still not able to sell all of this on the Fairtrade market. This clearly shows the excess supply of the Fairtrade product, highlighted in previous studies (de Janvry, McIntosh and Sadoulet, 2015; Valkila and Nygren, 2010).

6.3.3 Fairtrade income and expenditure of COAPCL

The Fairtrade premium is distributed proportionally between the cooperatives, depending on how much certified cotton produce COAPCL procures from each cooperative. The Fairtrade

premium is not allocated to the cooperatives every year, since the amount is usually too small to set up a project that can benefit a whole community. Instead, COAPCL saves the Fairtrade premium and uses it as bank collateral to get loans. After collecting the Fairtrade premium for a few years, it is paid out to the cooperatives that use it together with other funds to start community projects (Lahankar, Mrunal, personal communication, April and May 2017).

The total Fairtrade premium earned by the three certified cooperatives in the agricultural year 2016/2017 was approximately 2 million INR (Chetna Organic, 2017b). The average Fairtrade certification cost for each farmer, including the application fee, the initial certification cost, the annual certification fee and audit fees, is between 125 to 150 INR (Lahankar, Mrunal, personal communication, April and May 2017). Hence, the total annual certification cost for the three certified cooperatives is between 684 500 to 821 400 INR.

The Fairtrade premium, together with other funds, has been used for several different projects in the cooperatives. However, the Niyamgiri cooperative has only used the Fairtrade premium to purchase cotton seeds and offer seed loans to the farmers. More projects have been carried out in the Matrubhumi and Pragathi cooperatives where they, in addition to providing seed loans, purchased land where eco-centres were constructed (Lahankar, Mrunal, personal communication, April and May 2017). Additionally, the Pragathi cooperative used the Fairtrade premium to finance cooperative meetings and the aggregation of cotton (Chetna Organic, 2017d).

7 DESCRIPTIVE STATISTICS

This section presents descriptive statistics from the interviewed farmers and differences between conventional and Fairtrade and Organic certified farmers.

Table 2 describes the variables. It presents definitions of the variables as well as a description of how the variables are calculated. The average price is used because it is not possible to separate the prices paid by COAPCL from the prices paid by other buyers correctly. The majority of the farmers stated that they sold their entire cotton produce to COAPCL, while Chetna Organic later declared that they procured only around 20 to 60 per cent of the certified farmers' total cotton harvest. It is likely that the farmers were confusing who bought their cotton since most of them sold all their cotton to the cooperative, which in turn sold it to either COAPCL or other buyers. Therefore, the farmers cannot separate how much cotton was

sold to COAPCL and how much was sold to other buyers through the cooperative, if they did not directly sell to another buyer themselves.

The total cost of cotton production includes expenses of seeds, fertilizers, pesticides, labour and transportation of cotton inputs to the field. Most of the farmers use their own material from the farm to make fertilizers and pesticides, and therefore these costs are low or zero. The farmers pay a one-time membership fee to the cooperative of 50 INR when they join, but they have no costs related to Fairtrade certification, since this is financed by COAPCL.

TABLE 2. DEFINITION OF VARIABLES

VARIABLES	DESCRIPTION
<i>Age</i>	Age of the farmer in years
<i>Male dummy</i>	If the farmer is a male (yes = 1 and no = 0)
<i>Education</i>	The number of years the farmer has attended school
<i>Experience</i>	The number of years the farmer has experience in cotton production
<i>Household members</i>	The number of members in the farmer's household
<i>Adults</i>	The number of adults in the farmer's household
<i>Children</i>	The number of children in the farmer's household
<i>Years with Chetna Organic</i>	The number of years the farmer has been a member of Chetna Organic
<i>Land</i>	The total acreage of land the farmer uses for cotton cultivation
<i>Harvest</i>	The number of cotton quintals (defined as 100kg) the farmer harvested in 2016/2017
<i>Family workers</i>	The number of family members working in the farmer's cotton production
<i>Hired workers</i>	The number of hired labour working in the farmer's cotton production
<i>Income share from cotton</i>	The share of the farmer's total income that arrives from cotton production
<i>Trainings</i>	The number of agricultural trainings the farmer has received
<i>Land productivity</i>	The number of cotton quintals the farmer produced per acre of land in 2016/2017
<i>Price</i>	The weighted mean of the average price the farmer received from COAPCL and the average price from other buyers in INR in 2016/2017
<i>Livestock</i>	The total number of livestock the farmer owns
<i>Food shortage dummy</i>	If the farmer has experienced a shortage of food during the past year (yes =1 and no = 0)
<i>Consumption dummy</i>	If the farmer has increased his/her consumption during the past five years (yes = 1 and no = 0)
<i>Credit dummy</i>	If the farmer has received credit for cotton production during the past year (yes = 1 and no = 0)
<i>Investment dummy</i>	If the farmer has made any long-term investments during the past three years (yes = 1 and no = 0)
<i>Investment in land dummy</i>	If the farmer has made any improvements in land used for cotton cultivation during the past three years (yes = 1 and no = 0)
<i>Influence</i>	The farmer's perceived influence in the cooperative on a scale from 0 to 5
<i>Improved economic situation dummy</i>	If the farmer thinks his/her economic situation improved during the past five years (yes = 1 and no = 0)

Table 3 presents the descriptive statistics to check the balance of the sample. It is divided into conventional and Fairtrade and Organic certified farmers. The table presents the mean

differences between the two groups and at which level the mean differences are significant. The mean differences between conventional and Fairtrade and Organic certified farmers are statistically significant for many of the variables.

As shown in Table 3, all of the interviewed conventional farmers are females while the vast majority of the certified farmers are males. Fairtrade and Organic certified farmers have more years of education and experience in cotton production. On average, conventional farmers have attended school for 1.1 years, while certified farmers have 5.4 years of education. Conventional and Fairtrade and Organic certified farmers have on average 2.5 and 17.8 years of experience in cotton cultivation, respectively. While the households of conventional farmers consist of more children, the households of certified farmers consist of slightly more adults.

Conventional farmers belong to a cooperative formed relatively recently, and they have therefore worked with Chetna Organic for a shorter period, as shown in Table 3. Certified farmers own on average 1.6 more acres of land used for cotton cultivation, and they produced an average of 10.7 more quintals of cotton during the agricultural year 2016/2017, compared to conventional. Additionally, Fairtrade and Organic certified farmers use more hired labour for their cotton cultivation and their land productivity is higher. Certified farmers have received more agricultural trainings from Chetna Organic and are more dependent on cotton cultivation economically, compared to conventional farmers. This conveys the possibility that results from this thesis might look slightly different if all income-generating activities were investigated at once, instead of only cotton cultivation.

Table 3 shows that certified farmers earned a higher profit compared to conventional farmers in the agricultural year 2016/2017. The profit was on average 17 631 INR for conventional farmers and 62 763 INR for certified. The total cost of cotton production is higher among farmers with the certification. However, the prices did not differ between conventional and Fairtrade and Organic certified farmers. The Fairtrade minimum price has not impacted the certified farmers since it is lower than the MSP set by the Indian government, and has been since the agricultural year 2012/2013. This is in line with the study by Valkila and Nygren (2010), where conventional and certified farmers received similar prices during a time with high market prices.

As shown in Table 3, a substantially higher percentage of the conventional farmers experienced a shortage of food during the past year. Out of the conventional farmers, 85 per cent experienced a shortage of food during this period, while only 5 per cent of the certified farmers did. Despite this, an equal percentage of conventional and certified farmers stated that their economic situation improved over the past five years. In addition, there is no statistically significant difference between the two groups of farmers regarding how many of them increased their consumption over the past five years, or made any kind of long-term investment during the past three years. None of the conventional farmers made an investment in land, while 12 per cent of the certified farmers did.

A larger share of the Fairtrade and Organic certified farmers received credit for cotton production during the agricultural year 2016/2017, as shown in Table 3. 15 per cent of the conventional farmers received credit and 77 per cent of the certified. The farmers also differ regarding their perceived influence in their cooperative. On a scale from 0 to 5, conventional farmers have a perceived influence of 2.95 on average, while the influence among certified farmers is perceived to be 4.22.

TABLE 3. DESCRIPTIVE STATISTICS

VARIABLES	CONVENTIONAL					FAIRTRADE AND ORGANIC					Difference (Std. Err)
	<i>N</i>	Mean	Std. Dev.	Min	Max	<i>N</i>	Mean	Std. Dev.	Min	Max	
<i>Age</i>	20	41.400	9.093	23	55	81	44.284	11.014	23	65	-2.884 (2.665)
<i>Male dummy</i>	20	0	0	0	0	81	0.877	0.331	0	1	-0.877*** (0.074)
<i>Education</i>	20	1.100	2.882	0	12	81	5.407	4.764	0	17	-4.307*** (1.115)
<i>Experience</i>	20	2.500	0.688	1	3	81	17.827	9.062	3	45	-15.327*** (2.035)
<i>Household members</i>	20	6.000	2.224	2	10	81	5.506	1.740	2	10	0.494 (0.460)
<i>Adult</i>	20	3.200	1.281	2	6	81	3.914	1.526	2	9	-0.714* (0.370)
<i>Children</i>	20	2.800	1.881	0	6	81	1.593	1.340	0	5	1.207*** (0.364)
<i>Years with Chetna Organic</i>	20	3.800	1.795	2	6	81	9.185	2.491	2	13	-5.385*** (0.592)
<i>Land</i>	20	1.550	0.626	1	3	81	3.191	1.288	1	9	-1.641*** (0.297)
<i>Harvest</i>	20	3.975	2.473	1	11	81	14.645	7.475	2	40	-10.670*** (1.699)
<i>Family workers</i>	20	2.750	1.293	1	6	81	3.198	1.470	0	8	-0.448 (0.359)
<i>Hired workers</i>	20	2.100	1.861	0	5	81	4.457	3.863	0	30	-3.357*** (0.891)

<i>Income share from cotton</i>	20	0.480	0.137	0.3	0.8	81	0.693	0.175	0.2	1	-0.213*** (0.042)
<i>Trainings</i>	20	5.750	1.585	2	9	81	8.988	0.111	8	9	0.175*** (0.175)
<i>Land productivity</i>	20	2.553	1.170	1	5	81	4.640	1.535	1	9	-2.087*** (0.368)
<i>Price</i>	20	4977	390	4000	5500	81	4993	205	4444	5600	-16 (63)
<i>Total cost</i>	20	2174	1815	225	5500	81	10661	11041	1140	70000	-8487*** (2486)
<i>Profit</i>	20	17631	11474	3000	49500	81	62763	33223	8000	142000	-45132*** (7562)
<i>Livestock</i>	20	9.200	4.618	0	18	81	11.629	13.629	0	82	-2.170 (3.101)
<i>Food shortage dummy</i>	20	0.850	0.366	0	1	81	0.049	0.218	0	1	0.801*** (0.063)
<i>Consumption dummy</i>	20	0.900	0.308	0	1	81	0.914	0.283	0	1	-0.014 (0.072)
<i>Credit dummy</i>	20	0.150	0.366	0	1	81	0.765	0.426	0	1	-0.615*** (0.104)
<i>Investment dummy</i>	20	0.450	0.510	0	1	81	0.605	0.492	0	1	-0.155 (0.124)
<i>Investment in land dummy</i>	20	0	0	0	0	81	0.123	0.331	0	1	-0.123* (0.074)
<i>Influence</i>	20	2.950	0.945	2	5	81	4.222	1.013	1	5	-1.272*** (0.250)
<i>Improved economic situation dummy</i>	20	0.750	0.444	0	1	81	0.840	0.369	0	1	-0.090 (0.096)

Note: Standard errors in parentheses. ***, ** and * significance at 1%, 5% and 10%, respectively.

8 METHODOLOGY

This section presents the econometric models and hypotheses used to analyze the data. The section also motivates the dependent and independent variables used in the regression models.

The aim of this thesis is to investigate if Fairtrade certified farmers are better off economically compared to farmers without the certification and if the Fairtrade measures can improve the standard of living for small-scale cotton producers. To assess the impacts of Fairtrade on cotton producers, conventional farmers are compared to Fairtrade and Organic certified farmers. As shown in section 7, farmers in these two groups differ from each other. With regression analysis, it is possible to control for variables other than Fairtrade where the farmers differ from each other and which also affect the outcome. Therefore, regression analysis is used to estimate the effect of Fairtrade on small-scale cotton producers.

To measure if Fairtrade certified farmers are better off economically compared to conventional farmers, profit and land productivity are used as dependent variables in the regression models. Profit is used as a dependent variable since one of the main objectives with Fairtrade is to reduce poverty by establishing price floors. Profit is used instead of income, to take into consideration that Fairtrade might affect the cost of production as well. Land productivity is chosen as a dependent variable since Fairtrade requires the farmer to transform the production method to some extent. The control variables included in the models are the relevant variables with a statistically significant different mean between the two comparison groups.

The control variables in the regression models with profit as the dependent variable contain information about basic household characteristics, such as gender, education, experience and length of membership in Chetna Organic. The models also include variables specific to cotton cultivation, such as acres of land used for cotton cultivation, labour, land productivity, trainings and economic dependence on cotton. Other control variables are credit use and investments in land as well as geographical factors.

In the regression models with land productivity as the dependent variable, control variables with information about basic household characteristics are included as well, now also containing the number of children. In addition, acres of land used for cotton cultivation, labour, trainings and economic dependence on cotton are included as control variables, together with credit use, investment in land and geographical factors.

In addition to measuring the economic impacts of Fairtrade, regression analysis is used to measure the effect of Fairtrade on the farmers' wealth and standard of living. The dependent variables chosen are food shortage, acres of land used for cotton cultivation, credit use and level of perceived influence in cooperative, since these variables differ between conventional and certified farmers according to Table 3. The food shortage dummy is chosen as a dependent variable since it measures to what extent the basic needs are satisfied and if the farmers' livelihoods are sustainable. Land is included as a dependent variable to measure the asset value and wealth of the farmers. The credit dummy is used as a dependent variable since poor farmers often lack access to credit and Fairtrade encourages the Fairtrade traders to provide the producers with credit. Influence is used as a dependent variable since Fairtrade demands actions for democracy. Poverty can be measured in other ways than income, and

influence is therefore regarded as an indicator of the farmers' standard of living, in line with Amartya Sen's capability approach (Deaton, 2006). The control variables included in the models are the relevant variables with a statistically significant different mean between the two comparison groups.

In the regression model with food shortage as the dependent variable, basic household characteristics are included as control variables together with acres of land used for cotton cultivation and geographical factors. Basic household characteristics and geographical factors are the control variables used in the regression model with acres of land used for cotton cultivation as the dependent variable. Variables that are considered to have an effect on credit use are basic household characteristics, acres of land used for cotton cultivation and geographical factors, and these are therefore the included control variables. Finally, the same control variables are included in the regression model with perceived influence in cooperative as the dependent variable, except for geographical factors.

The estimated linear regression models are as follows:

$$Profit = \beta_0 + \beta_1 Fairtrade + \beta_2 X + \varepsilon \quad (1)$$

$$Land\ productivity = \beta_0 + \beta_1 Fairtrade + \beta_2 X + \varepsilon \quad (2)$$

$$Food\ shortage\ dummy = \beta_0 + \beta_1 Fairtrade + \beta_2 X + \varepsilon \quad (3)$$

$$Land = \beta_0 + \beta_1 Fairtrade + \beta_2 X + \varepsilon \quad (4)$$

$$Credit\ dummy = \beta_0 + \beta_1 Fairtrade + \beta_2 X + \varepsilon \quad (5)$$

$$Influence = \beta_0 + \beta_1 Fairtrade + \beta_2 X + \varepsilon \quad (6)$$

where β_0 is the intercept, β_1 is the estimated effect of Fairtrade, β_2 is the estimated effect of the control variables and ε is the error term.

Although the selection of farmers into Fairtrade has been a source of potential bias in previous studies, it should not be a significant problem in this study. It is possible that farmers with higher ability, more motivation and a higher initial wealth choose to join Fairtrade, factors that would show up in the error term. These unobservable factors should be similar for farmers in this study since farmers in the control group belong to a cooperative that has applied to become Fairtrade certified. However, an audit has not yet been performed by Fairtrade and therefore, they have not obtained the certification so far. The fact that the

cooperative will be certified in the future facilitates the comparison between the two groups. In addition, all interviewed farmers in this thesis are part of the same project, Chetna Organic, and they are given similar benefits. This contributes to a fairer comparison between the farmers in terms of their standard of living, since other things apart from Fairtrade are likely to affect it as well.

A problem with the comparison groups, however, is that the group of certified farmers consists of 71 males and only 10 females, while the entire group of conventional farmers consists of solely female farmers. Due to social norms, women usually face more constraints in agriculture. Females normally have less access to land, education and financial services such as savings and credit (FAO, 2011). Therefore, it is important to control for gender in the regression analysis, since differences in the economic situation and living standard between the comparison groups may appear to be due to Fairtrade, but is actually due to the gender gap in agriculture.

A two-tailed hypothesis test is used to determine whether Fairtrade has an impact on the dependent variables in the way suggested by the regression estimates. A null hypothesis and an alternative hypothesis are formulated. The null hypothesis states that Fairtrade does not have an impact on the dependent variable, while the alternative hypothesis states that it does. The two hypotheses are expressed as follows:

$$H_0: \beta_1 = 0$$

$$H_1: \beta_1 \neq 0$$

A two-sided *t*-test is used to test the null hypothesis. Whether to reject the null hypothesis is decided by comparing the p-value to the significance level of the test, which is the allowed probability of rejecting the null hypothesis when it is actually true. If the null hypothesis is inconsistent with evidence from the sample, i.e. if the p-value is lower than the significance level, it can be rejected. If the null hypothesis is rejected, there is enough evidence to conclude that Fairtrade has an effect on the dependent variable in question. If the null hypothesis is consistent with evidence from the sample, i.e. if the p-value is higher than the significance level, it cannot be rejected. If the null hypothesis cannot be rejected, there is not enough evidence to conclude that Fairtrade has an effect on the investigated dependent variable.

9 REGRESSION ANALYSIS

This section presents the econometric estimations and is split up into two parts. The first part analyzes the economic effects of Fairtrade using regressions with profit and land productivity as dependent variables, while the second part uses regressions to analyze the effects of Fairtrade on the farmers' standard of living by using food shortage, acres of land used for cotton cultivation, credit use and perceived influence in cooperative as dependent variables.

9.1 Econometric estimations of Fairtrade on profit and land productivity

Table 4 shows the regression results where profit is used as the dependent variable and Table 5 shows the regression results with land productivity as the dependent variable. The control variables included in the different models are the relevant variables for profit or land productivity with a statistically significant different mean between the comparison groups, according to Table 3. These control variables are included in the regression models since other factors apart from Fairtrade can affect profit and land productivity. Some variables are not included in the regression models since they either have no effect on the dependent variable or they are strongly correlated with it.

Column 1 in Table 4 presents a linear regression model with only the Fairtrade dummy as an independent variable. Without controlling for other factors that might have an effect on profit, the regression result shows a positive statistically significant effect of Fairtrade on profit. The model shows that Fairtrade certified farmers get a higher profit compared to conventional farmers.

The model in column 2 uses more independent variables to control for other factors apart from Fairtrade that might also have an impact on profit. These are control variables with a statistically significant mean difference between the comparison groups. The regression result shows that the Fairtrade dummy does no longer have a statistically significant effect on profit. To see why, a correlation matrix is created, as shown in Appendix 2. According to the correlation matrix, the Fairtrade dummy is no longer significant since more independent variables that are correlated with the Fairtrade dummy are included in the model. These additional independent variables create multicollinearity and pick up some of the effect of the Fairtrade dummy, which makes it insignificant. The only control variable with a statistically significant effect on profit in the regression model in column 2 is acres of land used for cotton cultivation, where the relationship with profit is positive.

When removing all control variables in the previous model without a statistically significant effect on profit, the Fairtrade dummy has a positive statistically significant effect on profit again, as shown in column 3. However, this positive effect is now smaller than in column 1 since land is included as a control variable, too. If the result is interpreted as a causal effect, the model shows that farmers with more acres of land used for cotton cultivation receive a higher profit. If the farmer is Fairtrade certified, the profit is further increased.

According to column 2 and 3 in Table 4 as well as Appendix 3, land seems to be an important determinant of profit. However, the cooperative with the most acres of land used for cotton cultivation on average is also the least productive. Appendix 3 shows that land and land productivity have the highest correlation with profit out of all the independent variables used in the regression model in column 2. Therefore, land productivity is also included as an independent variable in column 4. When this variable is included in the model, there is a negative statistically significant impact of Fairtrade on profit, while the variables land and land productivity show a positive statistically significant effect. One interpretation of this result is that profit is positively affected by higher land productivity and more acres of land used for cotton cultivation, while Fairtrade negatively affects it. Consequently, Fairtrade has a significant effect on profit and the null hypothesis $H_0: \beta_1 = 0$ can be rejected at a 1 per cent significance level. If the farmer is Fairtrade and Organic certified, the profit decreases by 11 483 INR. Nevertheless, including land productivity as an independent variable might be problematic, since the fact that a farmer is Fairtrade certified might have an effect on land productivity and the variable is likely endogenous. Therefore, land productivity will be used as the dependent variable in the following regressions, to investigate if Fairtrade can affect it.

TABLE 4. THE ECONOMETRIC ESTIMATION OF FAIRTRADE ON PROFIT

VARIABLES	(1) Profit	(2) Profit	(3) Profit	(4) Profit
<i>Fairtrade dummy</i>	45131*** (4485)	-593 (8924)	14631*** 3666	-11483*** (3484)
<i>Male dummy</i>		-1571 (8247)		
<i>Land</i>		16728*** (2256)	18583*** (1862)	19656*** (1675)
<i>Education</i>		284 (585)		
<i>Experience</i>		-85 (390)		

<i>Years with Chetna Organic</i>		688 (1309)		
<i>Hired workers</i>		1015 (731)		
<i>Trainings</i>		514 (1356)		
<i>Income share from cotton</i>		17057 (19172)		
<i>Odisha dummy</i>		-5159 (6849)		
<i>Credit dummy</i>		7079 (5990)		
<i>Investment in land dummy</i>		2769 (6321)		
<i>Land productivity</i>				11668*** (1002)
<i>Constant</i>	17631*** (2526)	-20185 (17243)	-11172*** (3472)	-42629*** (4479)
<i>R-squared</i>	0.2646	0.6889	0.6568	0.8921
<i>Observations</i>	101	101	101	101

Note: Robust standard errors in parentheses. ***, ** and * significance at 1%, 5% and 10%, respectively.

Column 5 in Table 5 presents a regression model with land productivity as the dependent variable and with only the Fairtrade dummy as an independent variable. This model shows a positive statistically significant relationship between Fairtrade and land productivity. If this result is interpreted as a causal effect, the model shows that Fairtrade certified farmers have a higher land productivity compared to conventional farmers.

In column 6, when more control variables that also could have an effect on land productivity are included in the model, the Fairtrade dummy is no longer statistically significant. According to the correlation matrix in Appendix 2, the Fairtrade dummy is no longer significant since more independent variables that are correlated with the Fairtrade dummy are included in the model. These added control variables pick up some of the effect that the Fairtrade dummy previously had on land productivity in the model shown in column 5 and again creates multicollinearity. The variables that have a positive statistically significant effect on land productivity in this model are education, hired workers, trainings and income

share from cotton. The variables that have a negative statistically significant impact on land productivity are acres of land used for cotton cultivation and number of children.

In column 7, the variables without a statistically significant effect on land productivity from the model in column 6 are removed. The Fairtrade dummy is still not statistically significant. The Fairtrade dummy is insignificant since some of the independent variables that it is correlated with are included in this model too, as they are considered to be important determinants of land productivity. Without a statistically significant Fairtrade dummy, it is not possible to conclude that land productivity differ between Fairtrade certified farmers and conventional. However, Fairtrade could affect some of the other variables included in the model. The number of trainings received has a positive statistically significant effect on land productivity. This variable is likely endogenous and affected by Fairtrade, since the producer organization has to provide trainings to the farmers according to the Fairtrade standards.

The number of hired workers is a variable that also could be endogenous and affected by Fairtrade, if Fairtrade has led to a higher and more stable income over time for the certified farmers which enables them to afford more hired workers. If Fairtrade has led to an improved credit access for the farmers, it is also possible that certified farmers have more hired workers because it is easier for them to receive credit for their agricultural production that they can use to pay wages to their labour.

The share of total income that arrives from cotton is also a factor that could be endogenous and affected by Fairtrade. According to Ruben, Fort and Zúñiga-Arias (2009), there is a substitution effect from other income generating activities to the Fairtrade production. This means that Fairtrade certified farmers could have a higher share of the total income that arrives from cotton due to the fact that they are Fairtrade certified, and therefore depend more on cotton cultivation than conventional farmers do.

In column 8, the three control variables trainings, hired workers and income share from cotton are removed, to avoid the risk of including endogenous variables in the model. When these variables are removed, the Fairtrade dummy shows a positive statistically significant impact on land productivity. Hence, the null hypothesis $H_0: \beta_1 = 0$ can be rejected at a 1 per cent significance level. Other variables with a statistically significant effect on land productivity in this model are acres of land used for cotton cultivation and number of children, which show

negative relationships with land productivity, and education, which has a positive impact on land productivity. Holding all other independent variables fixed, the regression result shows that switching from conventional to Fairtrade cotton cultivation increases land productivity by 1.63 quintals per acre of land.

TABLE 5. THE ECONOMETRIC ESTIMATION OF FAIRTRADE ON LAND PRODUCTIVITY

VARIABLES	(5) Land productivity	(6) Land productivity	(7) Land productivity	(8) Land productivity
<i>Fairtrade dummy</i>	2.087*** (0.309)	-0.164 (0.685)	0.071 (0.387)	1.630*** (0.352)
<i>Male dummy</i>		-0.102 (0.610)		
<i>Land</i>		-0.222* (0.123)	-0.250*** (0.096)	-0.180* (0.094)
<i>Education</i>		0.071* (0.036)	0.090*** (0.032)	0.085** (0.034)
<i>Experience</i>		0.005 (0.024)		
<i>Years with Chetna Organic</i>		0.057 (0.085)		
<i>Children</i>		-0.246*** (0.079)	-0.266*** (0.076)	-0.321*** (0.079)
<i>Hired workers</i>		0.120*** (0.039)	0.142*** (0.026)	
<i>Trainings</i>		0.228** (0.090)	0.270*** (0.074)	
<i>Income share from cotton</i>		1.893* (1.062)	1.717* (0.979)	
<i>Odisha dummy</i>		0.380 (0.401)		
<i>Credit dummy</i>		0.516 (0.358)		
<i>Investment in land dummy</i>		0.371 (0.387)		
<i>Constant</i>	2.553*** (0.258)	0.350 (1.038)	0.913 (0.711)	3.636*** (0.331)
<i>R-squared</i>	0.2456	0.5280	0.4999	0.3556
<i>Observations</i>	101	101	101	101

Note: Robust standard errors in parentheses. ***, ** and * significance at 1%, 5% and 10%, respectively.

In summary, Fairtrade does not contribute to higher profits directly through higher prices, since prices between conventional and certified farmers do not differ significantly, as shown in section 7. However, Fairtrade has a positive impact on land productivity, which is an important determinant of profit. It is therefore possible to conclude that Fairtrade certified farmers are better off economically, since their productivity increases with the certification.

9.2 Econometric estimation of Fairtrade on standard of living

Table 6 presents the regression results where food shortage and acres of land used for cotton cultivation are used as dependent variables, whereas Table 7 shows the regression results where credit use and perceived influence in cooperative are used as dependent variables. The explanatory variables that are likely to be endogenous, as explained in section 9.1, are not included as control variables in these regression models.

Column 9 in Table 6 presents a regression model with food shortage as the dependent variable and with only the Fairtrade dummy as an independent variable. The Fairtrade dummy has a negative statistically significant effect on food shortage. The causal interpretation of this result is that Fairtrade certified farmers are less exposed to food shortages, compared to conventional farmers.

In column 10, more control variables that are also likely to affect the variable food shortage are included. The male dummy picks up much of the effect that the Fairtrade dummy previously had on food shortage in column 9, since there is a strong correlation between these variables as shown in Appendix 2. Another statistically significant variable, which has a positive effect on food shortage, is number of children. The Fairtrade dummy is still statistically significant in the regression model in column 10, but shows a less negative effect on food shortage. Hence, the null hypothesis $H_0: \beta_1 = 0$ can be rejected at a 10 per cent significance level and it is possible to conclude that Fairtrade certified farmers are less exposed to food shortages compared to conventional farmers. The regression result shows that switching from conventional to Fairtrade cotton cultivation reduces the probability of experiencing food shortage by 0.364, *ceteris paribus*. Another factor that is likely to affect the variable food shortage is savings, but information about the farmers' savings could not be collected during the interviews and is therefore not included in the model.

The regression model in column 11 has acres of land used for cotton cultivation as the dependent variable and the Fairtrade dummy as the only independent variable. The Fairtrade dummy shows a positive statistically significant effect on land. If this result is interpreted as a causal effect, the model shows that Fairtrade certified farmers own more acres of land used for cotton cultivation compared to conventional farmers.

When more independent variables are included in the model in column 12, the Fairtrade dummy does no longer have a statistically significant effect on acres of land used for cotton cultivation. Instead, the male dummy is statistically significant and picks up most of the effect previously explained by the Fairtrade dummy, which could be due to the gender inequality in access to land (FAO, 2011). The regression result shows that male farmers own 1.063 more acres of land compared to female farmers. Education also has a positive statistically significant effect on land in the model, while the Odisha dummy has a negative impact. Consequently, it is not possible to conclude that Fairtrade contributes to a higher asset value in terms of landholdings and the null hypothesis $H_0: \beta_1 = 0$ cannot be rejected, in contrast to the study by Ruben, Fort and Zúñiga-Arias (2009). However, it is not possible to draw any conclusions regarding the farmers' total asset value. It is possible that the total asset value between conventional and Fairtrade and Organic certified farmers would differ if more alternatives were included in the questionnaire apart from only land and livestock.

TABLE 6. THE ECONOMETRIC ESTIMATIONS OF FAIRTRADE ON FOOD SHORTAGE AND LAND

VARIABLES	(9) Food shortage dummy	(10) Food shortage dummy	(11) Land	(12) Land
<i>Fairtrade dummy</i>	-0.800*** (0.084)	-0.364* (0.191)	1.641*** (0.199)	0.431 (0.296)
<i>Male dummy</i>		-0.293* (0.151)		1.063*** (0.334)
<i>Land</i>		-0.020 (0.019)		
<i>Education</i>		-0.007 (0.005)		0.063** (0.027)
<i>Experience</i>		-0.003 (0.002)		-0.023 (0.015)
<i>Years with Chetna Organic</i>		-0.004 (0.010)		-0.013 (0.050)
<i>Children</i>		0.030* (0.017)		

<i>Odisha dummy</i>		0.029 (0.033)		-0.863*** (0.268)
<i>Constant</i>	0.850*** (0.081)	0.800*** (0.148)	1.550*** (0.138)	2.452*** (0.405)
<i>R-squared</i>	0.6181	0.7233	0.2356	0.4308
<i>Observations</i>	101	101	101	101

Note: Robust standard errors in parentheses. ***, ** and * significance at 1%, 5% and 10%, respectively.

Column 13 in Table 7 presents a regression model with the credit dummy as the dependent variable and the Fairtrade dummy as the only independent variable. The Fairtrade dummy shows a positive statistically significant effect on credit use. If this result is interpreted as a causal effect, the model shows that Fairtrade certified farmers received more credit during the agricultural year 2016/2017 compared to conventional farmers.

More independent variables, which also might affect whether the farmers have received credit, are included in the model in column 14. The Fairtrade dummy still has a positive statistically significant effect on credit. The null hypothesis $H_0: \beta_1 = 0$ can be rejected at a 1 per cent significance level and it is possible to conclude that Fairtrade farmers received more credit than conventional farmers, in line with previous research conducted by Ruben, Fort and Zúñiga-Arias (2009). The regression result shows that the probability of receiving credit for cotton cultivation during the agricultural year 2016/2017 increases by 0.599 if the farmer is Fairtrade certified, *ceteris paribus*. However, it is difficult to conclude whether more Fairtrade and Organic certified farmers received credit because their access was better, or because conventional farmers simply did not need as much credit during the agricultural year 2016/2017. In addition, results from the interviews show that none of the farmers received credit from a Fairtrade buyer. Instead, it is possible that Fairtrade contributes to better credit access for the farmers indirectly, if the creditor is seeing the Fairtrade contract as collateral or if Fairtrade has strengthened and empowered the cooperatives to negotiate better loan terms and conditions.

The regression model in column 15 uses perceived influence in cooperative as the dependent variable and only the Fairtrade dummy as an independent variable. The regression result shows a positive statistically significant effect of Fairtrade on influence. If this result is

interpreted as a causal effect, the model shows that Fairtrade certified farmers have a higher perceived influence in their cooperative compared to conventional farmers.

Lastly, column 16 presents a regression model with more independent variables included. In this model, the Fairtrade dummy still has a positive statistically significant effect on influence. In addition to the Fairtrade dummy, the variable acres of land used for cotton cultivation also shows a positive statistically significant effect on influence. If this is interpreted as a causal effect, farmers with more land used for cotton cultivation have a higher perceived level of influence in their cooperative. If the farmer is Fairtrade certified, the level of perceived influence is further increased. Hence, the null hypothesis $H_0: \beta_1 = 0$ can be rejected at a 1 per cent significance level and it is possible to conclude that Fairtrade affects the farmers' perceived level of influence in their cooperative. While holding all other independent variables fixed, a switch from conventional to Fairtrade cotton cultivation increases perceived influence in cooperative by 1.196 units, on a scale from 0 to 5. However, the lower perceived influence among conventional farmers may be due to cognitive load rather than a lack of democracy in the cooperative. As shown in the regression model in column 10 in Table 6, certified farmers have better access to food. If conventional farmers have to focus more on satisfying their daily needs, less attention is given to other problems and decisions, in line with the study by Shah, Mullainathan and Shafir (2012). It is therefore possible that conventional farmers perceive a lower level of influence simply because they are engaging less in the cooperative and putting their effort into other tasks instead.

TABLE 7. THE ECONOMETRIC ESTIMATIONS OF FAIRTRADE ON CREDIT AND INFLUENCE

VARIABLES	(13) Credit dummy	(14) Credit dummy	(15) Influence	(16) Influence
<i>Fairtrade dummy</i>	0.615*** (0.094)	0.599*** (0.164)	1.272*** (0.237)	1.196*** (0.348)
<i>Male dummy</i>		-0.220 (0.175)		-0.612 (0.449)
<i>Land</i>		0.049 (0.038)		0.293** (0.118)
<i>Education</i>		0.010 (0.011)		0.007 (0.025)
<i>Experience</i>		0.0003 (0.007)		0.0004 (0.014)
<i>Years with Chetna Organic</i>		0.012 (0.023)		0.017 (0.051)

<i>Odisha dummy</i>		-0.034 (0.119)		
<i>Constant</i>	0.150* (0.081)	0.052 (0.195)	2.950*** (0.208)	2.421*** (0.374)
<i>R-squared</i>	0.2622	0.2896	0.2078	0.2956
<i>Observations</i>	101	101	101	101

Note: Robust standard errors in parentheses. ***, ** and * significance at 1%, 5% and 10%, respectively.

According to the reviewed indicators in the regression analysis, Fairtrade seems to contribute to an overall higher standard of living among certified farmers compared to conventional. More Fairtrade and Organic certified farmers have better access to the basic need food, which indicates higher wealth and more sustainable livelihoods. Certified farmers also use more credit for cotton cultivation, which offers them security and enables them to invest in agricultural production. Finally, Fairtrade and Organic certified farmers have a greater perceived ability to influence decisions in their cooperative to their own advantage, instead of only allowing decisions in the interest of the board.

10 DESCRIPTIVE ANALYSIS

This section presents a descriptive analysis of the certified farmers' knowledge and perceptions about Fairtrade.

Additional questions regarding Fairtrade were asked to 74 of the certified farmers, of which almost all are aware of their certification. The farmers who have knowledge about Fairtrade mainly mentioned things regarding the standards they should follow and nothing about the benefits they should receive or any of the rights for the farmers. There is also a great confusion among the farmers regarding the several types of standards and certifications. As much as 30 per cent of the interviewed in the Pragathi cooperative answered that Fairtrade is equivalent to organic agriculture. Although Chetna Organic claims to involve certification information in their annual training programs, there is clearly a lack of understanding among the farmers.

The main expectation the farmers had when they became Fairtrade certified was to receive a higher price and increase their income. However, in the Pragathi cooperative, a third of the respondents did not have any expectations at all when they became Fairtrade certified, which

implies that the farmers did not receive enough information about Fairtrade at the time. In addition, none of the farmers could describe the correct meaning of the Fairtrade minimum price and therefore, their expectations to receive a higher price seem to be based on other factors than the floor price. According to previously presented findings, the Fairtrade minimum price did not have any effect on the price received by the farmers during the time of this study.

Seed loans are the main development projects that the farmers claimed to have benefitted from and almost exclusively the only projects they could mention. Some of the farmers mentioned projects that were funded and implemented by other donors, and not by the Fairtrade premium. Even though the Fairtrade standards require decisions regarding the use of the premium to be made at the annual general body meeting and that the outcome of the projects must be reported at the annual general body meeting the following year, the farmers only know little about its utilization. This is in line with the findings by Valkila and Nygren (2009), where they question the priority of transparency in the cooperatives, since only the very active members seem to know how the Fairtrade premium is utilized. It is difficult for the farmers to know what they can expect and demand when they lack knowledge about their rights and promised benefits. The limited knowledge may also reduce their incentive to participate in the decision-making process of the cooperative, which is incompatible with the Fairtrade goals of empowering and strengthening the farmers.

Overall, the farmers claimed to be very satisfied with Fairtrade and almost all of them stated that their standard of living improved since they became certified. However, these results can be misleading due to the limited knowledge of Fairtrade and confusion around the different certifications. Many farmers argued that their standard of living improved since they became Fairtrade certified, but their explanations reveal that these improvements probably are due to organic cultivation. Effects on the standard of living such as an improved health due to healthier food without chemicals and lower production costs due to the use of organic pesticides and fertilizers may rather be impacts of organic cultivation than effects of Fairtrade. The farmers receive benefits from several different sources, which makes it difficult to determine whether the farmers are satisfied with Fairtrade, organic cultivation or Chetna Organic in general.

11 CONCLUSION

The aim of this thesis is to investigate the impacts of Fairtrade on small-scale cotton producers in India and examine if certified farmers are better off economically and if Fairtrade contributes to an improved living standard among the farmers. To measure the impacts of Fairtrade, data was collected during 101 interviews held with conventional and Fairtrade and Organic certified cotton producers working with Chetna Organic in India.

The Fairtrade minimum price and premium is two of the most essential components of Fairtrade. Despite this, results from the field study show that certified farmers did not receive a higher price on cotton compared to conventional farmers, and the premium amount was too small to fund any larger community projects on its own. Nevertheless, it is possible that these results would be different if the study was performed in a country without a government price floor on cotton or during a time with a lower market price.

Since the prices do not differ significantly between conventional and certified farmers, Fairtrade does not contribute to higher profits directly through increased prices. However, Fairtrade has a positive statistically significant effect on land productivity after taking into account the impact of acres of land used for cotton cultivation, education and number of children. Land productivity in turn is an important determinant of profit. This is partially in line with previous research on the topic, where modest effects of Fairtrade on net income are often reported, while more indirect benefits of Fairtrade are usually found.

Overall, Fairtrade and Organic certified farmers seem to have a higher standard of living compared to conventional. The regression result shows a negative statistically significant effect of Fairtrade on food shortage, after controlling for basic household characteristics, acres of land used for cotton cultivation and geographical factors. There is a positive statistically significant effect of Fairtrade on credit use, after controlling for the same variables. In addition, Fairtrade has a positive statistically significant impact on perceived influence in cooperative, after taking into account the impacts of acres of land used for cotton cultivation and basic household characteristics.

One limitation of the study is the relatively small control group of which the analysis is based. With a small sample size of conventional farmers, the probability of finding the true effects is lower and it is more difficult to draw conclusions. The statistical power of the tests is reduced

with a small sample and it has less ability to reject a null hypothesis. Hence, it is possible that a larger sample size would have affected the results from the study.

The impacts of Fairtrade shown in this study are not universally applicable, since farmers from solely one producer organization were interviewed. Certified farmers in this study are usually better off compared to conventional in terms of living standard. However, the sample used was chosen by Chetna Organic and might therefore not be completely randomly selected. There is a possibility that the farmers chosen for the interviews were those who have benefitted the most from Fairtrade. By considering these limitations in future research and conducting studies with more randomized samples, the results can be made more reliable. A suggestion for future research on the topic is to further investigate how Fairtrade impacts the farmers' productivity, since increased productivity seems to be the main reason for economic benefits with Fairtrade.

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Farmer questionnaire

UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Number of interview	
Date	
State	
District	
Village	
Cooperative	
Fairtrade-certified	Yes <input type="checkbox"/> No <input type="checkbox"/> Year:
Organic-certified	Yes <input type="checkbox"/> No <input type="checkbox"/> Year:

Foreword

This survey has been set up in order to investigate the standard of living for small-scale cotton producers and to identify possible areas of improvement. The outcomes will be used for a Bachelor thesis at the School of Business, Economics and Law at the University of Gothenburg in Sweden.

Section 1

1. Gender:

Male Female

2. How old are you? _____ years

3. Number of household members: _____ members, of which _____ are adults and _____ are children

4. How many years of education do you have? _____ years

Section 2

5. How much land do you use to cultivate cotton? _____ acres

6. For how many years have you been cultivating cotton? _____ years

7. For how many years have you been working with Chetna Organic? _____ years

8. Does anyone work for you in cotton farming? If yes, how many and how much do they work?

	Occasionally	Permanently
Family		
Friends		
Hired labour		
Other		

9. How much cotton did you harvest during the past agricultural year 2016/2017?
_____ quintals
10. What proportion of your total cotton output did you sell to Chetna Organic during the past agricultural year 2016/2017? _____

Section 3

11. What is your most important source of income? _____
12. What proportion of your total household income arrives from cotton? _____
13. What price did you receive for your cotton harvests during the past agricultural year 2016/2017?

From Chetna Organic _____ INR/quintal
Total amount of cotton sold at this price _____ quintals

From other buyers _____ INR/quintal
Total amount of cotton sold at this price _____ quintals

14. Please specify your production costs during the past agricultural year 2016/2017 for the following factors and inputs to cotton:

	Total cost, INR
Seeds	
Pesticides	
Fertilizers	
Labour	
Certification cost	
Membership fee to cooperative	
Transportation cost	
Other (e.g. rent of land)	

Section 4

15. Have you experienced food shortages in the past
- Week
 Month
 Year

16. Has your access to the following necessities improved over the past five years? *(If yes, check the box)*

- Food
- Water
- Shelter
- Sanitation facilities
- Electricity
- Health care

Did you already have sufficient access to the following necessities five years ago? *(If yes, check the box)*

- Food
- Water
- Shelter
- Sanitation facilities
- Electricity
- Health care

17. Do you own any of the following livestock? If yes, how many?

Buffalo	
Cattle	
Sheep	
Goat	
Pig	
Duck	
Chicken	
Other livestock	

18. Have you increased your consumption over the past five years?

Yes No Not sure

If yes, what kind of goods or services did you consume more of?

19. Have you increased your savings over the past five years?

Yes No Not sure

20. How did you receive credit for cotton production in the past year and at what interest rate did you borrow money?

	Source	Interest rate
	From Chetna Organic	
	From my cooperative	
	From a buyer	
	From a bank	
	From a micro financial institution	
	From my landlord	
	From a local money lender	
	From family or friends	
	From another source	

21. Do you have any debts from previously received credits?

Yes No Not sure

If yes, have you reduced your debts over the past five years?

Yes No Not sure

If no, have you had any debts that you have already fully repaid?

Yes No Not sure

22. Have you been making any of the following long-term investments during the past three years?

- Livestock
- Household durables
- Improvements in land
- Other long-term investment

23. How has your economic situation developed over the past five years?

- It got better
- It stayed the same
- It got worse

What is the main reason that your economic situation either improved, stayed the same or got worse?

Section 5

24. Grade to which extent you are able to influence your cooperative (*0 being the lowest grade, 5 being the highest grade*).

- 0
- 1
- 2

- 3
- 4
- 5

25. Have you received any training from your cooperative?

- Yes No Not sure

26. In which of the following area/areas have you received training?

- Land preparation
- Planting
- Weed management
- Pest and diseases management
- Soil management
- Water management
- Harvesting
- Post-harvesting handling/transportation
- Organic farming practices

27. Has your cooperative provided you with agricultural tools and/or inputs to cotton production?

- Yes No Not sure

28. Has your cooperative provided you with storage facilities for your cotton harvest?

- Yes No Not sure

29. Has the access to education for your children improved over the past five years?

- Yes No Not sure No children in school

30. Have you gained extra access to the market over the past five years?

- Yes No Not sure

Additional questions for Fairtrade-certified cotton producers

31. What kind of projects has your cooperative implemented to improve its members' daily life?

32. Which of these projects have you benefitted from? How?

33. What do you know about Fairtrade-certification?

34. Do you know that you are a Fairtrade-certified cotton producer?

- Yes No Not sure

35. What expectations did you have when you became a Fairtrade-certified cotton producer?

36. Does Fairtrade meet the expectations you had before getting certified?

Yes No Partially Not sure

37. What do you know about the Fairtrade minimum price?

38. Have you benefitted from at least one of the projects that the Fairtrade premium has been used for?

Yes No Not sure

If yes, how?

39. According to you, what are the main benefits with being a Fairtrade-certified cotton producer?

40. Please grade your satisfaction with Fairtrade (*0 being the lowest grade, 5 being the highest grade*).

0

1

2

3

4

5

41. Overall, do you experience an improved standard of living since you became Fairtrade-certified?

Yes No Not sure

If yes, in what way?

APPENDIX 2

CORRELATION MATRIX FOR INDEPENDENT VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1.00													
2	0.76*	1.00												
3	0.49*	0.57*	1.00											
4	0.36*	0.45*	0.38*	1.00										
5	0.60*	0.67*	0.29*	0.19	1.00									
6	0.67*	0.77*	0.42*	0.33*	0.73*	1.00								
7	0.35*	0.18	0.22	0.14	-0.04	0.14	1.00							
8	0.45*	0.27*	0.32*	0.03	0.10	0.22	0.28*	1.00						
9	-0.41*	-0.49*	-0.46*	0.01	-0.41*	-0.46*	0.17	-0.36*	1.00					
10	0.88*	0.67*	0.45*	0.38*	0.55*	0.63*	0.34*	0.39*	-0.37*	1.00				
11	0.51*	0.38*	0.35*	0.27*	0.30*	0.37*	0.28*	0.36*	-0.24	0.51*	1.00			
12	0.16	0.07	0.16	0.23	0.12	0.09	0.24	-0.02	0.21	0.15	-0.10	1.00		
13	0.50*	0.32*	0.18*	0.32*	0.20	0.33*	0.50*	0.36*	0.02	0.52*	0.43*	0.19	1.00	
14	-0.32*	-0.19	-0.17	0.002	-0.12	-0.18	-0.21*	-0.15	0.04	-0.34*	-0.25	-0.03	-0.39*	1.00

Note: 1 = Fairtrade dummy, 2 = male dummy, 3 = land, 4 = education, 5 = experience, 6 = years with Chetna Organic, 7 = hired workers, 8 = income share from cotton, 9 = Odisha dummy, 10 = trainings, 11 = credit dummy, 12 = investment in land dummy, 13 = land productivity, 14 = children. * significance at 1 %.

APPENDIX 3

CORRELATIONS BETWEEN DEPENDENT VARIABLES AND THEIR RESPECTIVE INDEPENDENT VARIABLES

VARIABLES	Profit	Land productivity	Food shortage dummy	Land	Credit dummy	Influence
<i>Fairtrade dummy</i>	0.51*	0.50*	-0.79*	0.49*	0.51*	0.46*
<i>Male dummy</i>	0.52*	0.32*	-0.79*	0.57*	0.38*	0.33*
<i>Children</i>		-0.39*	0.31*			
<i>Land</i>	0.80*	0.18	-0.53*		0.35*	0.45*
<i>Education</i>	0.35*	0.32*	-0.40*	0.38*	0.27*	0.22
<i>Experience</i>	0.28*	0.20*	-0.59*	0.29*	0.30*	0.24
<i>Years with Chetna Organic</i>	0.43*	0.33*	-0.67*	0.42*	0.37*	0.31*
<i>Income share from cotton</i>	0.40*	0.36*				
<i>Hired workers</i>	0.31*	0.50*				
<i>Trainings</i>	0.49*	0.52*				
<i>Credit dummy</i>	0.43*	0.43*				
<i>Investment in land dummy</i>	0.14	0.19				
<i>Odisha dummy</i>	-0.41*	0.03	0.42*	-0.46*	-0.24	
<i>Land productivity</i>	0.63					

Note: * significance at 1 %.