

Development Projects and Life Satisfaction: An Impact Study on Fair Trade Handicraft Producers

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Abstract Is there a correspondence between subjective and objective wellbeing indicators in development programs? We investigate this question by evaluating the impact of Fair Trade affiliation on the subjective wellbeing of a sample of Peruvian (treatment and control) producers from two different Fair Trade projects in two socioeconomic environments, one relatively poorer (Juliaca) and the other relatively more affluent (Chulucanas). We find a direct and an indirect effect. The direct effect acts positively via affiliation years in the poorer project and via trade diversification in both projects. The indirect effect acts through the reduction of poverty and relative income. Consistently with the concave income-happiness assumption, the variables generating the indirect effect have a much weaker impact for producers living in the relatively better-off socioeconomic environment, net of the lower FT economic impact in this area.

Keywords Life satisfaction · Poverty · Development projects · Fair trade

1 Introduction

Whilst studies on the determinants of subjective wellbeing indicators are flourishing¹ and furnish important new insights for the redesign of development and welfare policies in

¹ The empirical literature on the determinants of life satisfaction is extremely large and has become a fertile field for interdisciplinary studies. Because wellbeing is studied from different perspectives by psychologists, sociologists and economists (see, among others, Veenhoven 1993; Blanchflower and Oswald 2004; Cummins et al. 2007; Di Tella et al. 2003; Easterlin 2004; Helliwell 2003; Rojas 2005; Frey and Stutzer 2002a, b; Graham and Pettinato 2002; Luttmer 2005; Winkelmann and Winkelmann 1998; Oswald and Powdthavee 2008; Van Praag et al. 2000). In support of the reliability of happiness estimates, we point out that (1) they have a longstanding tradition in psychology and sociology and have therefore undergone a process of

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highly industrialised countries, research on the impact on broader concepts of wellbeing and life satisfaction of development projects in poorer countries is still in its infancy. The most likely reason for this is that poverty is largely considered to be a monetary matter for the very poor. However, Herrera et al. (2006), Ravallion and Lokshin (2002, 2005), and Narayan et al. (2000a, b) note that the combination of quantitative and qualitative wellbeing indicators can yield important additional insights also in the case of development projects. Qualitative indicators may provide important information on the appreciation of improvement in quantitative indicators by local populations and also on the real distribution of benefits among different stakeholders. Among the very few studies on the issue, Rojas (2008) investigates the intra-household distribution of health satisfaction, finding evidence of the pooling of family resources, but also of gender inequalities which can be explained by cultural discrimination and bargaining in family arrangements. Herrera et al. (2006) compare Madagascar and Peru, finding that the correlation between subjective wellbeing and income is stronger in poorer environments, and they observe a more positive reaction to income inequality in the country with higher social mobility (Peru). Finally, Becchetti and Castriota (2009) find that exogenous shocks on income, such as the “negative lottery” of the tsunami and the subsequent project to recapitalise microfinance institutions, generate marked changes in the life satisfaction of the borrowers affected which seem stronger than those observed with parallel exogenous shocks in rich countries (Gardner and Oswald 2004; Frijters et al. 2004). To sum up, a feature apparently shared by some of these studies is confirmation of one of the basic tenets of the standard economic theory (a tenet formulated well before the availability of data for empirical testing), namely the Law of Decreasing Marginal Utility.²

The scarcity of studies verifying the effects of development policies on subjective wellbeing, and the correspondence between the latter and standard objective indicators, is a serious problem because investigating the question of happiness is of paramount importance in impact studies, and it can contribute interestingly to the never-ending debate on the definition of the proper performance indicators for development policies.

Within this debate, happiness indicators represent unique, subjective and “non paternalistic” measures of wellbeing which cannot be suspected of being imposed by external experts and should reflect the real desires (driven by individual tastes which may be idiosyncratic or conform to social norms) of those who are the targets of a policy intervention (Sugden 2008). On the other hand, there are those who argue that the shortcoming of subjective measures like life satisfaction is that they are subject to the well-known “happy slave paradox”: individuals may be so deprived of their rights that they are not

Footnote 1 continued

“cultural Darwinian selection” in those disciplines (Alesina et al. 2004); (2) significant and positive links have been found between self-declared happiness and healthy physical reactions such as smiling attitudes (Pavot 1991; Eckman et al. 1990) and heart rate and blood pressure responses to stress (Shedler et al. 1993); (3) neurosciences have identified a nexus between positive feelings and physical measures of brain activity (higher alpha power in the left prefrontal cortex), while measures of hedonic well being, such as self-declared life satisfaction, have been shown to be related to the same activity (Clark 2006); (4) individuals choose to discontinue activities associated with low levels of well-being (Frijters 2000; Shiv and Huber 2000), and (5) happiness scores of the respondent’s friends and family members are significantly correlated with the respondent’s own report (see Diener et al. 1993; Diener and Lucas 2000).

² The law of decreasing marginal utility states that the additional effect in terms of utility generated by an additional unit of a given good (including income) decreases as the number of units already possessed and consumed of the same good increases. It was first formulated by Gossen (1854) and then adopted by the school of marginalist economists (Jevons 1886; Menger 1994).

even able to desire them and therefore may remain satisfied with their marginalized and subjugated condition (Sen 2005).

Our aim in what follows is to analyse the correspondence between subjective and objective wellbeing indicators by referring to a specific case: an impact study of affiliation to Fair Trade in two Peruvian handicraft cooperatives where, besides traditional data, information on life satisfaction and professional self esteem was collected. The additional element of interest in our study is that we compare two economic environments with markedly different standards of living. In the first area, in which the Juliaca cooperative works with Fair Trade, control group producers live at around the one dollar per day PPP subsistence level. In the second area, in which the Chulucanas cooperative operates, the standard of living is much higher and stands at around 12–14 dollars per day in PPP.

The paper is divided into five sections including the introduction and conclusions. The second section outlines our research questions. It discusses the importance of impact analysis of FT affiliation on broader wellbeing indicators and describes the characteristics of the two projects, highlighting the specific features of FT intervention. The third and fourth sections, respectively, present descriptive and econometric analyses of the impact of FT affiliation on the life satisfaction of the project beneficiaries. The final section concludes.

2 Subjective Well Being and Fair Trade: Our Research Questions

Well-established empirical and anecdotal evidence shows that an unlimited supply of labour (Deaton 1999) and the excess market power of local intermediaries and money-lenders often lead marginalized primary agricultural and textile producers to low (below the marginal product value) earnings which prevent rescue from poverty (Ray 2002).

Fair Trade is an initiative promoted by European and North American trade organizations in order to tackle this problem by creating alternative value chains which furnish higher economic value and social benefits to these producers. The Fair Trade “package” includes trade diversification, capacity building, a price premium which compensates producers for their low market power and never falls below a defined “threshold”,³ an anticipated financing scheme intended to break the monopoly of local moneylenders, and an extra premium to finance local public goods (via training courses, health facilities, schooling support) provided by the local producers’ association.⁴

The FT initiative has gained significant momentum in recent years (Moore 2004; Hayes 2004). In the 2003–2007 period, net sales in Europe grew by 40% per year and FT products (sold not only by specialized retailers such as “world shops” but also by most supermarket

³ By way of example, in Ecuador the 2005 conventional market price for 1.14 kilos of bananas was 2.91 US \$ against a FT price of 7.75 US \$. Evidence on the FT premium on prices of coffee beans and cocoa in the last 20 years is also well known, available from the authors upon request and omitted here for reasons of space.

⁴ IFAT (the main federation of producers and fair trading organizations) defines the following Fair Trade criteria: (1) Creating opportunities for economically disadvantaged producers; (2) Transparency and accountability; (3) Capacity building; (4) Promoting Fair Trade; (5) Payment of a fair price; (6) Gender Equity; (7) Working conditions (*healthy working environment for producers. The participation of children (if any) does not adversely affect their well-being, security, educational requirements and need for play and conforms to the UN Convention on the Rights of the Child as well as the law and norms in the local context*); (8) The environment; (9) Trade Relations (*Fair Trade Organizations trade with concern for the social, economic and environmental well-being of marginalized small producers and do not maximise profit at their expense. They maintain long-term relationships based on solidarity, trust and mutual respect that contribute to the promotion and growth of Fair Trade. Whenever possible producers are assisted with access to pre-harvest or pre-production advance payment*).

chains)⁵ have conquered significant market shares (49% of bananas in Switzerland, around 20 and 3.3% of ground coffee in the US and in the UK, respectively, according to the FT importers' association). On 3 September 2008, Ebay launched a dedicated platform (WorldOfGood.com) for Fair Trade e-commerce. It calculated that the US market for such goods was \$209 billion in 2005, and forecast that it should rise to \$420 billion in 2010.

This concise presentation of the main issues clearly demonstrates that the Fair Trade debate urgently requires empirical evidence, which can be obtained by means of impact analyses of the effects of FT affiliation on local producers.

In this regard, the literature is meager and consists solely of a few well-structured case studies (Bacon 2005; Pariente 2000; Castro 2001; Nelson and Galvez 2000; Ronchi 2002; Yanchus and de Vanssay 2003).⁶ The only exceptions are the econometric analyses conducted by Ronchi (2002) and by Becchetti and Costantino (2008). The latter study shows that, after controlling for selection bias, Fair Trade affiliation has a significant impact on several wellbeing indicators, although it does not seem significantly to improve human capital investment in FT/Meru Herbs producers in Kenya.⁷

None of these empirical studies (with exception of Becchetti and Costantino 2008) has examined both objective and subjective wellbeing indicators, and the same applies more generally to the impact study literature in developing countries. The aim of this paper is to fill this gap.

In light of these considerations emphasizing the importance of impact studies from an institutional point of view, we interpret the urgent need to evaluate FT impact in the “broader sense” suggested by the EU Commission (EU Commission 2009) as also including analysis of life satisfaction indicators more general than those considered by previous impact studies.

As a consequence, our research questions are the following: (1) does fair trade significantly affect producers' broad wellbeing indicators (such as happiness or perceived standard of living) net of all other relevant controls? (2) if the answer to question (1) is positive, what are the direct and indirect modalities of fair trade effects on wellbeing? (3) is the effect the same or different in relatively poorer and richer economic environments?

2.1 The Juliaca Project

The first project concerns Peruvian farmers in the Juliaca area, who have a long-term relationship with a second-level producer association called Minka,⁸ which, in turn,

⁵ One of the most remarkable features of the Fair Trade phenomenon is of its effect big players in the production and distribution industry (in October 2005 Nestlé introduced a Fair Trade product in its product range; Coop UK has launched its own Fair Trade product line; Starbucks has rapidly become the main seller of FT coffee in recent years). In 2008 Tesco and Sainsbury announced their decision to sell 100% Fair Trade bananas, increasing the UK market share for this product to 25%. The increasing importance of Fair Trade has been acknowledged by the EU Commission, which, in a communication to the European Parliament on May 2009, declared that “*Fair Trade has played a pioneering role in illuminating issues of responsibility and solidarity, which has impacted other operators and prompted the emergence of other sustainability regimes. Trade-related private sustainability initiatives use various social or environmental auditing standards, which have grown in number and market share*” (European Commission 2009).

⁶ For a comparative view of such studies see Ruben (2008).

⁷ These studies are also of practical importance, because publication of the paper's results induced the Meru Herbs organization to promote a system of scholarships for affiliates' children in order to improve its human capital performance.

⁸ The word “Minka” in the quechua language can be translated as “reciprocal help”, meaning social cohesion within a village or among a group of people.

operates with Fair Trade organizations. Minka buys products from 61 (first level) groups of producers in different areas of the country (Piura, Lima, Ayacucho, Puno, etc.). The two largest groups are located in Lima and in the District of Juliaca (Department of Puno) around Lake Titicaca.

All Minka producers are “comunidades campesinas”, that is, local communities of small native quechua farmers. These “comunidades” are formally acknowledged by the Peruvian government, but are economically marginalized. The main activity of Minka and Fair Trade affiliates is related to handicrafts production, which producers in Juliaca have added to their original activity (agriculture) to protect themselves against extremely low returns and the high risk of the latter due to the local atmospheric conditions (drought in summer and frost in winter). Minka’s mission is to create stable employment conditions for local handicraft producers by enhancing their skills and access to international markets.

Minka declares that it adopts the following key operating principles in order to fulfil its mission: (1) payment to producers of prices higher than those paid by traditional local intermediaries, without exploitation of the information asymmetries of producers with respect to market prices, demand conditions and final consumer tastes; (2) commitment to purchasing the highest quality wool for producers; (3) prefinancing up to 50% of production by the first-level groups with which it stipulates contracts; (4) use of some of its earnings according to the needs manifested by producers’ groups, and generally to finance training courses and local public goods (for instance restoration of local council buildings, construction of sanitation facilities, building of piers on Taquile Island). Finally, Minka has recently promoted a “socially responsible tourism” scheme⁹ which helps local producers to obtain prices even higher than those paid by FT intermediaries and to reinforce their self esteem with a tangible and direct demonstration of the final consumer’s appreciation of their culture and products.

The foregoing description shows that Minka fulfills fair trade criteria (endnote 4) and why it has been selected as an FT partner. The most distinctive features of its action in terms of fair trade principles are the clear identification of a group of marginalized producers (the communities of small native quechua farmers) which generally lack market power with intermediaries, and its practice of capital investment for product/process innovation. Capacity building for these producers can be developed and strengthened via stronger partnerships with importers and interactions with final consumers. In regard to the first point, Minka has created an alternative mechanism whereby it buys products from the groups, reports on profits, asks the assemblies of local producers for proposals on how to distribute such profits, and then takes the final decision in agreement with them. On the second point, the responsible tourism initiative has been launched in order to create more frequent interactions with final consumers which may boost producers’ self-esteem and increase their knowledge about consumer tastes.

⁹ Ethical and responsible tourism is a worldwide initiative which aims at organising tourist activities especially concerned with the environmental and social sustainability of travellers’ impact on the visited countries and fosters social-cultural exchange with the people met. The socially responsible aspect generally implies that a higher share of the value generated by this kind of tourism goes to the local population. Prices in responsible tourism are higher than those paid to local producer by FT importers because producers sell directly the final product to responsible consumers willing to pay for the intangible FT content of the product and all other actors of the value chain (importers, retailers, etc.) and their margins do not apply in such case. As a consequence, the final producer price, even though the product is sold in Peru, is definitely higher than the price paid to the importer. In addition to it the direct relationship between local producers and socially responsible consumers may increase the willingness to pay of consumers.

2.2 The Chulucanas Project

The second project concerns a survey conducted in another area of Peru, located in the Department of Piura, and specifically in a village called Chulucanas. This is a small village which leads fine ceramics production in northern Peru. Its economy is based mainly on pottery production, with artisans organized into small-medium sized workshops with an average of 15 employees. A specific feature of production in this area is the development of a type of ceramic pottery based on ancient techniques of “negative painting”.¹⁰

The survey collected information on producers in the area affiliated with a trading company called ALLPA,¹¹ which works both with Fair Trade organizations and private companies, as well as market importers, department stores and distributors in Europe, North America, Mexico and Australia.¹² ALLPA’s market share is 2% of total handicraft exports by Peru in 2006 (Prompex 2007). The company has craftsmen distributed under a subcontracting system among 20 communities and 100 handicraft workshops in different areas of Peru (Lima, Cusco, Huancavelica, Chulucanas, Junín, Pucallpa, Puno, Ayacucho). The production consists of five main lines: pottery (Chulucanas), jewelry, knitwear, wooden furniture, and painted glass.¹³

ALLPA was originally a Trading Project initiated by the Peruvian Institute of Research and Development (IPID) in 1981. Its main objective is to improve the economic situation of Peruvian craftsmen by helping them sell their products in the market. In 1986 ALLPA became a private company owned by IPID with other individual partners. ALLPA’s objective is to enhance the market accessibility of low-income handicrafts producers, enabling them to improve their standard of living through pursuit of a customer-oriented vision.

ALLPA’s mission is to create stable employment conditions for local handicraft producers by enhancing their skills and access to international markets. Its strategic values, consistent with FT goals, are honesty, respect (to create optimal working environments), responsibility (in agreement with stakeholders), innovation and leadership.

The organisation seeks to behave responsibly towards its employees, the artisans who work in the handicraft workshops, and their customers. It gives importance to ensuring that all workshops are able to produce high-quality handicrafts, furnishing workplace protections (health, hygiene and safety) and complying with Peru’s labor law.

Consistently with fair-trade rules, ALLPA adopts a price decomposition which transfers to producers a premium above the market price, and it invests extra sums in producer social benefits and capacity building. One of the main actions undertaken in this regard consists in creating social benefits such as health insurance and paid leave for employees and artisans.

¹⁰ Chulucanas pottery can be considered a true inheritance from the Precolombian art of the Vicus, not only because of its quality but also because its artists have revived the techniques that were developed more than 2,000 years ago in the northern coasts of Peru. The negative-positive technique has been refined and its renewed use has now evolved into a wide variety of shades ranging from light to a dark, almost black, ocher. The color is obtained by selecting diverse fuels, such as tender or ripe (fresh or dry) leaves from banana and mango trees.

¹¹ Allpa in the quechua-ayacuchan language means “earth” (soil), and this name has been chosen because it symbolizes the raw material used for all their handicraft products: clay, metal, wood, stones, cotton and alpaca.

¹² The main market is Europe (60% of total exports), and the Fair Trade share in exports is 60–70%.

¹³ ALLPA, “Plan de negocios 2007–2011”.

To achieve its goals of efficiency and competitiveness, ALLPA endeavors to enhance orders and to support technological innovation and investments for all the workshops, so as to increase productivity and improve quality, thereby easing the artisans' access to the market. ALLPA usually finances up to 50% of production by workshops in advance; it manages training courses for artisans and employees; it provides loans; and it furnishes technical support and supervision.

In the Chulucanas project, ALLPA has greatly improved productivity by introducing electric lathes in place of the traditional "paddle-made" method, and it has also promoted research on oven performance refinement.¹⁴ Moreover, from the social point of view, ALLPA has implemented legal assistance in Chulucanas in order to enhance social benefits for the workers, and health insurance has been introduced for full-time workers.

3 Descriptive Findings

Our analysis is based on a survey carried out in August 2007 on randomly selected control and treatment samples in the two above-described areas. The survey¹⁵ was conducted according to the following timetable: (1) 28 July–2 August 2007: Lima—Allpa and Minka offices: research start-up; (2) 5–17 August 2007: Juliaca—community analysis and interviews; (3) 20–28 August 2007: Chulucanas—community analysis and interviews; (4) 29 August–10 September 2007: Lima—Allpa and Minka offices: organizations analysis and research conclusion.

The producers interviewed were distributed into three groups: (1) from Juliaca, affiliated with Minka (80 producers); (2) from Chulucanas, affiliated with Allpa (80 producers); (3) from Juliaca and Chulucanas (40 from each project) not affiliated with the two Fair Trade organizations (control sample).

Both projects were concerned with marginalized producers living in the same country with three qualifying differences: (1) different products (pottery in Chulucanas and apparel in Juliaca); (2) more recent FT affiliation by Chulucanas than Juliaca producers; (3) a far higher standard of living among Chulucanas compared with Juliaca producers, who lived at around the subsistence level. Our research may therefore be particularly useful in studying how FT impacts on producers' life satisfaction changes at different affiliation years and living standards. For further details on the survey design and related issues see Appendix A.

The main characteristics of our sample and the principal differences between the two projects are shown in Tables 1 and 2. In synthesis, total sample averages (illustrated in Table 1) conceal huge differences between the Chulucanas and Juliaca producers (see Table 2 where 95% confidence intervals in square brackets document whether group means are significantly different from each other).¹⁶

The latter have much lower living standards (income from the main activity being 199 and 50 soles in the Juliaca case, against 663.8 and 599.6 soles in the Chulucanas case for

¹⁴ New electric ovens were introduced to improve baking capacity (up to 80 pieces at time).

¹⁵ The questionnaire is available upon request.

¹⁶ Note that the difference in subgroup means in the Chulucanas project in terms of life satisfaction and food consumption expenditure (in Table 2), not in favour of the treatment group, is not statistically significant (the 95% confidence intervals do not overlap). Econometric estimates presented in Sect. 4 will, however, show that FT affiliation indeed affects positively happiness also in Chulucanas (mainly via the number of trading channels variable) after controlling for the impact of other concurring factors.

Table 1 Economic and socio-demographic characteristics

Variable	Obs.	Mean	SD	Min	Max
Age	241	35.07	12.02	10	82
Schooling years	241	7.78	3.63	0	20
FT affiliation years	240	5.92	8.94	0	40
Land size	241	1.54	3.92	0	40
No. of children	241	2.47	2.31	0	10
No. of trading channels	241	1.12	1.05	0	3
Wage first activity	241	396.69	481.79	0	4,500
Food consumption	241	81.78	43.18	10	300
Home owner	241	0.64	0.48	0	1
Consumption share	240	0.73	0.14	0.13	1
Savings last year	241	0.54	0.68	0	3
Happiness	241	2.11	0.75	0	3
Perceived living standard	241	1.85	0.83	0	4
Professional self esteem	241	7.75	0.12	1	10

Age, producer's age; *Schooling years*, number of producer's schooling years; *FT affiliation years*, number of affiliation years to Fair Trade; *Land size*, land size in hectares; *No. of children*, number of producer's children; *No. of trading channels*, number of trading channels; *Wage first activity*, producer's monthly income from the main activity; *Home owner*, dummy taking value 1 if the responder owns his home and zero otherwise; *Consumption share*, food consumption expenditure share; *Savings last year*, number of producers who saved something in the last year; *Happiness*, self declared life satisfaction (discrete variable ranging from 0 to 3); *Perceived Living standard*, perceived standard of living with respect to the average standard of living in the area (discrete variable ranging from 0 to 4); *Professional Self-esteem*, perceived professional self-esteem (discrete variable ranging from 1 to 10)

treatment and control sample, respectively) and, as a consequence, higher food consumption shares (96.1 in Juliaca against 49.6% in Chulucanas for affiliated farmers). The Juliaca producers have also been affiliated to fair trade for more years (around 15 against 3), and they are older and lower educated: the Chulucanas producers (more than 8 years in the control and more than 9 in the treatment sample) have on average around 2 years more education than Juliaca producers (around 6 years). In Juliaca self esteem,¹⁷ happiness and self perceived relative standard of living are significantly higher in the treatment versus the control group, while in Chulucanas this is the case only for self esteem.

As a standard of living benchmark with which to understand these differences, consider that if we take into account the purchasing power parity with the dollar at the time of the survey (1.61 soles for one dollar), our figures imply that the control group of Juliaca producers living in the Lake Titicaca area has a daily income of 1.04 in PPP, while FT affiliates in the same area earned slightly above 4 dollars per day in PPP. By contrast,

¹⁷ We consider professional self-esteem to be one of the most interesting and least explored dimensions of subjective wellbeing. In our opinion, the results on the "emerged part of the iceberg" (productivity, income) are crucially influenced by the invisible part, which includes all those immaterial factors such as dignity, self esteem, social recognition which are values *per se* but also essential preliminary conditions for productive effort. Consider as well that the fair trade movement considers the growth of producers' self esteem to be one of its targets, and expected consequences from the long-run partnership with importers and consumers, as part of its policy of enhanced market access for producers. Among the few economic studies on the determinants of self esteem see Checchi and Pravettoni (2003) and Plotnick et al. (2002).

Table 2 Summary characteristics of the four farmer groups

Variable	Juliaica treatm.	Juliaica control	Chulucanas treatm.	Chulucanas control
Age	40.26 [37.73, 42.80]	38.70 [34.14, 43.26]	28.59 [26.65, 30.52]	34.02 [30.70, 37.35]
Schooling years	6.48 [5.69, 7.26]	6.33 [5.03, 7.62]	9.46 [8.92, 10.00]	8.46 [7.23, 9.70]
FT affiliation years	14.94 [12.64, 17.23]	0	3.01 [2.24, 3.79]	0
FT affiliation years (median)	13.12	0	3.53	0
FT affiliation years (25th percentile)	4.21	0	1.52	0
FT affiliation years (75th percentile)	22.63	0	4.21	0
FT affiliation years (90th percentile)	29.91	0	7.35	0
Land size	3.09 [2.08, 4.10]	1.16 [0.77, 1.54]	0.94 [0.11, 1.94]	0.12 [-0.02, 0.27]
No. of children	3.53 [2.98, 4.07]	3.22 [2.36, 4.09]	1.23 [0.89, 1.56]	2.12 [1.61, 2.63]
No. of trading channels	2.19 [2.07, 2.30]	1.02 [0.97, 1.07]	2.37 [2.75, 2.99]	1.62 [1.25, 1.98]
Wage first activity	199.00 [178.21, 219.79]	50.00 [41.27, 58.73]	663.78 [519.26, 808.29]	599.51 [73.76, 725.27]
Food consumption	81.78 [76.30, 87.26]	50.37 [42.57, 58.18]	91.42 [81.56, 101.31]	95.62 [83.88, 107.34]
Home owner	0.74 [0.64, 0.84]	0.50 [0.34, 0.66]	0.54 [0.42, 0.65]	0.78 [0.65, 0.91]
Consumption share	96.12 [94.02, 98.22]	99.45 [97.85, 101.05]	49.63 [45.61, 53.65]	61.36 [55.53, 67.20]
Savings last year	0.45 [0.31, 0.56]	0.30 [0.15, 0.45]	0.78 [0.62, 0.96]	.46. [0.24, 0.69]
Happiness	2.30 [2.16, 2.4]	1.33 [1.09, 1.56]	2.18 [2.03, 2.32]	2.39 [2.16, 2.62]
Perceived living standard	2.19 [2.05, 2.32]	0.75 [0.47, 1.03]	2.09 [1.94, 2.23]	1.83 [1.66, 2.00]
Professional self esteem	8.31 [7.96, 8.66]	5.45 [4.83, 6.06]	8.42 [8.11, 8.73]	7.58 [7.11, 8.056]

economic conditions in the Chulucanas area were much better because the control group earned slightly less than 13.8 dollars and the treatment group more than 12.5 dollars per day in PPP.

Note that, with regard to the exact absolute poverty line threshold, the value of 1.08 \$ fixed by the World Bank in 1993 is equivalent to 1.537 \$ in 2007. By contrast, the absolute poverty line is 1.25 \$ per day if we consider the last World Bank revision in 2008 (1 year after our survey). In both cases the control group in Juliaca is below it.

Finally, note that in both projects treatment groups have a significantly higher number of trading channels than the control group. This variable reflects the once-for-all trade diversification effect of fair trade, since, in general, before fair trade, producers have only one or two channels (direct sales on the local market or sales to local intermediaries) with sales to fair trade representing a new additional channel. Such variable is also likely to proxy other once-for-all FT risk reduction effects such as availability of prefinancing schemes and commitment not to reduce by more 20% import demand with respect to the previous year.

4 Econometric Findings: Single Regression Estimates

We evaluate the effect of the impact of the FT development project on a subjective indicator like self-declared life satisfaction in three steps:

1. individual estimates of the impact of affiliation years on standard objective (food consumption and food consumption share) and subjective indicators, such as self-declared relative standard of living and professional self-esteem. These last two variables are measured by asking participants to answer the following questions, “How do you consider your standard of living compared to that of other people living in this village?” (on a 0–4 rank scale) and “Do you consider yourself a good worker?”, on a (1–10 rank scale);
2. evaluation of the potential impact of selection bias on our findings;
3. simultaneous estimation of direct and indirect effects of affiliation years on happiness. The variable ‘happiness’ is measured by asking participants the following standard question: “Generally speaking, do you consider yourself very happy, happy, quite happy, not happy at all), and to rank their level of satisfaction from 0 (not happy at all) to 3 (very happy).

In this respect we replicate the typical question which can be found in the World Value Survey with an approach which is very similar to that of other large databases used for happiness studies (German Socioeconomic Panel and British Household Survey Panel). By evaluating our approach in the Veenhoven (2009) taxonomy which identifies three main theories of happiness (set point, cognitive/comparison and affect theory)¹⁸ we are in the field of the affect theory and also, in part, in that of the comparison/cognitive theory when we test and find significant the effect on happiness of the subjectively perceived standard of living vis-à-vis the average one in the area where respondents live.

¹⁸ According to Veenhoven (2009) the ‘Set-point’ theory establishes that, after a shock, individuals revert to a given level of happiness for which they are mentally programmed. This implies that any policy aimed at increasing happiness is not effective in the long run. The comparison theory establishes that our happiness depends on comparisons we make with other people’s standard of living. The ‘Affect’ theory that happiness answers are produced by a reflection on how individuals feel generally and depend on the gratification of needs.

In our analysis we find that FT affiliation has a positive and significant effect on weekly food expenditure. We observe that this is the case in the overall sample and (weakly) in the Juliaca, but not (as expected) the Chulucanas, case (Table 3). This is reasonable in light of Engel's law, given the position below the absolute poverty line of Juliaca producers and the relatively higher wellbeing of the Chulucanas ones, who can expand their non-food expenditure with additional income. From a quantitative point of view, the 10-year effect of FT affiliation on expenditure is just 20 soles in the Juliaca case. Note as well that the quadratic specification of the impact of affiliation years works in the overall estimates but not in the project-specific ones.

These findings induce us to measure directly the effect of FT affiliation on the consumption share as a proxy for poverty. Since we do not capture the phenomenon of self-production and self-consumption or of non market exchanges (barter) which can contribute significantly to the standard of living of the poor beyond reported household income, we think that the information on how much of the income is consumed in food is a better measure of poverty than just income (for instance, a very high level of self-production, self-consumption and non market exchanges may be a relief from poverty in spite

Table 3 The impact of Fair Trade on food consumption expenditure

	All sample	Juliaca	Chulucanas
FT affiliation years	2.834*** (2.96)	2.675* (1.88)	0.808 (0.31)
[FT affiliation years] ²	-0.077** (-2.31)	-0.073 (-1.53)	0.096 (0.48)
Age	0.403 (1.17)	-0.027 (-0.06)	1.311* (1.71)
Land size	-0.117 (-0.16)	-0.257 (-0.19)	0.329 (0.33)
Female	14.417* (1.66)	20.173 (1.21)	8.841 (0.78)
Self production	-0.252 (-0.18)	0.569 (0.33)	-2.881 (-1.06)
No. of trading channels	11.034*** (3.09)	11.549 (1.54)	9.521* (1.84)
Other income	-7.557 (-0.80)	-21.58 (-1.21)	-2.916 (-0.24)
Only one activity	9.092 (1.38)	7.929 (0.81)	7.913 (0.8)
Married	4.690 (0.71)	3.105 (0.32)	4.358 (0.44)
Divorced	22.131 (0.78)	6.091 (0.14)	23.028 (0.56)
Separated	-8.070 (-0.45)	-9.896 (-0.41)	-15.613 (-0.53)
Schooling years	0.090 (0.10)	-1.189 (-0.88)	1.391 (0.99)
No. of children	2.221 (1.20)	2.793 (1.26)	-1.378 (-0.32)
Juliaca	-59.394*** (-5.17)		
Constant	58.068*** (3.47)	14.030 (0.4)	31.653 (1.15)
Number of observation	238	119	119
R ²	0.250	0.224	0.222
F (overall goodness of fit)	4.92	2.15	2.12

Self production, dummy variable taking value 1 if the producer has self production activities; *other income*, dummy variable taking value 1 if the producer has more than one source of income and zero otherwise; *only one activity*, dummy variable taking value 1 if the producer has no other productive activities besides the main one; *married*, dummy variable taking value 1 if the producer is married and zero otherwise; *divorced*, dummy variable taking value 1 if the producer is divorced and zero otherwise; *separated*, dummy variable taking value 1 if the producer is separated and zero otherwise; *Juliaca*, dummy variable taking value 1 for treatment and control group individuals in the Juliaca sample. For the legend of the remaining variables see Table 1

* p -value < 0.1, ** p -value < 0.05, *** p -value < 0.01

of a very low monetary income and in such case the share of monetary income not used for food will be higher).

The effect of FT affiliation on the consumption share is negative, significant and linear (and larger in the Juliaca case) (Table 4). Other significant variables are gender and the absence of a second working activity (presumably inversely related to specialization) in the Chulucanas case, and self production¹⁹ and number of trading channels in the Juliaca case. The latter effect is also attributable to Fair Trade, because affiliation automatically creates an additional trading channel.

To check whether the results from the quantitative variables are confirmed by those from the qualitative ones, we measure the impact of FT affiliation on professional self-esteem (Table 5, columns 1–3) and self-declared “relative” standard of living compared to the average one in the area (Table 5, columns 4–6).

In the two cases we find a significant and positive effect of FT affiliation both in the overall sample and in the project specific estimates. From a quantitative point of view, the magnitude of our coefficients implies that 5 years of affiliation produce a positive change in the perceived relative standard of living which corresponds to one cross-sectional standard deviation of the same variable.

The effect of FT affiliation on professional self esteem is concave, exactly like the impact on income from the first activity and weekly consumption expenditure. In the Juliaca case we also find that the number of trading channels is significantly and positively related to professional self-esteem.

Note that the differences in the magnitude of coefficients in Table 5 cannot lead to the conclusion that the effects (of affiliation on relative income and self esteem, respectively) are stronger in the Chulucanas with respect to the Juliaca project. First of all, the confidence intervals of the two coefficients overlap and therefore the coefficients do not statistically differ from each other. This kind of evidence is, however, not conclusive. The conclusive evidence comes from estimating a unique model with slope dummies for the affiliation effect to see whether the effect is significantly different in one area with respect to the other. We performed the test and the hypothesis of a significant difference is rejected.²⁰

4.1 The Selection Bias Problem

A first best impact analysis should contrast the observed effects of the project implementation (also called the treatment) with the counterfactual situation (that is, it should compare the effect generated on a given individual by the treatment with the “scenario without project” or the situation that would have occurred for the same individual without the treatment) (Heckman 1979). Unfortunately this is not possible in our case, and a second best approach is that of building control samples (consisting of individuals not affected by the project) which were as homogeneous as possible with respect to the treatment ones (that is, individuals so similar to those affected by the treatment as to simulate the counterfactual situation). We do this by using as the control sample *eligible* producers (producers possessing the requisites for affiliation) working in the same field of activity and living in the same area as FT affiliates (see Appendix A). Another good practice would have been to use a difference-in-difference approach and therefore consider target

¹⁹ As well known, in poor areas self production and self consumption are important “invisible” non-market components which increase the visible standard of living based on monetary income.

²⁰ Estimates are omitted for reasons of space and available upon request.

Table 4 The impact of Fair Trade on food consumption share

	All sample	Juliaca	Chulucanas	All sample	Juliaca	Chulucanas
FT affiliation years	-0.100*** (-3.89)	-0.092** (-1.99)	-0.025 (-1.63)	-1.697*** (-4.35)	-3.840*** (-3.35)	-0.222** (-2.02)
FTdummy				0.042* (1.75)	0.052 (1.31)	-0.015 (-1.48)
Age	0.053** (2.19)	0.062 (1.53)	-0.014 (-1.37)	-0.005 (-0.11)	-0.009 (-0.10)	0.013 (1.01)
Land size	0.016 (0.32)	0.067 (0.62)	0.013 (1.01)	0.739 (1.24)	1.321 (0.88)	0.240* (1.66)
Female	0.566 (0.94)	1.103 (0.69)	0.246* (1.69)	0.193** (2.07)	0.292* (1.87)	0.041 (1.19)
Self production	0.228** (2.40)	0.303* (1.86)	0.052 (1.49)	-0.736*** (-3.06)	-0.128 (-0.16)	0.007 (0.10)
No. of trading channels	-0.676*** (-2.74)	-1.497** (-2.26)	0.038 (0.56)	0.572 (0.87)	1.619 (0.99)	-0.125 (-0.81)
Other income	0.434 (0.66)	1.197 (0.70)	-0.113 (-0.72)	0.420 (0.92)	0.618 (0.69)	0.325*** (2.59)
Only one activity	0.512 (1.11)	0.602 (0.65)	0.341*** (2.71)	-0.054 (-0.12)	-0.232 (-0.27)	-0.197 (-1.53)
Married	-0.022 (-0.05)	0.074 (0.08)	-0.212* (-1.64)	0.207 (0.11)	0.567 (0.15)	-0.555 (-1.05)
Divorced	-0.242 (-0.12)	-1.181 (-0.30)	-0.499 (-0.94)	-1.982 (-1.59)	-3.149 (-1.4)	0.084 (0.22)
Separated	-1.872 (-1.49)	-2.933 (-1.26)	0.056 (0.15)	-0.074 (-1.18)	-0.150 (-1.22)	-0.011 (-0.58)
Schooling years	-0.990 (-1.56)	-0.175 (-1.35)	-0.013 (-0.70)	-0.086 (-0.67)	-0.080 (-0.39)	0.055 (0.98)
No. of children	-0.042 (-0.32)	-0.116 (-0.55)	0.057 (1.00)	2.080*** (2.61)		
Juliaca	2.515*** (3.14)			1.012 (0.85)	2.426 (0.75)	1.109*** (3.05)
Constant	-0.203 (-0.18)	2.928 (0.88)	0.960*** (2.70)	239	120	119
Number of observation	238	119	119	0.322	0.283	0.211
R ²	0.313	0.237	0.200	7.59	3.21	2.15
F (overall goodness of fit)	7.26	2.51	2.02			

FTdummy, dummy variable taking value 1 if the producers is affiliated to FT and zero otherwise. For the legend of the remaining variables see Tables 1 and 2
 * p-value < 0.1, ** p-value < 0.05, *** p-value < 0.01

Table 5 The impact of Fair Trade on professional self esteem and perceived relative standard of living

	All sample	Juliaca	Chulucanas
Professional self esteem (ordered probit estimate)			
FT affiliation years	0.128*** (4.78)	0.249*** (3.54)	0.271** (2.32)
[FT affiliation years] ²	-0.002*** (-2.79)	-0.006*** (-2.58)	-0.018** (-2.06)
Age	-0.012 (-1.34)	-0.012 (-0.64)	0.011 (0.31)
Land size	0.000 (0.01)	0.000 (0.01)	-0.036 (-0.95)
Female	0.279 (1.17)	-0.142 (-0.19)	0.867 (1.59)
Self production	0.017 (0.45)	-0.031 (-0.4)	0.212* (1.74)
No. of trading channels	0.190* (1.94)	0.845** (2.36)	-0.080 (-0.35)
Other income	0.112 (0.43)	1.061 (1.02)	-0.469 (-0.84)
Only one activity	0.334* (1.87)	0.849* (1.75)	0.553 (1.23)
Married	0.086 (0.48)	0.419 (0.91)	0.197 (0.45)
Divorced	-0.008 (-0.01)	0.485 (0.3)	0.59364 (0.38)
Separated	-0.189 (-0.40)	0.258 (0.2)	-0.372 (-0.27)
Schooling years	0.035 (1.42)	0.082 (1.34)	0.055 (0.89)
No. of children	0.016 (0.32)	0.018 (0.17)	-0.149 (-0.74)
Juliaca	-1.136*** (-3.59)		
Number of observation	238	119	119
Pseudo R^2	0.018	0.138	0.036
Log likelihood	-406.383	-194.391	-192.85
Perceived relative standard of living (ordered probit estimate)			
FT affiliation years	0.131*** (4.32)	0.268*** (3.32)	0.499*** (3.07)
[FT affiliation years] ²	-0.003*** (-2.66)	-0.006** (-2.2)	-0.029** (-2.41)
Age	-0.025** (-2.38)	-0.014 (-0.61)	-0.046 (-1.01)
Land size	-0.004 (-0.16)	-0.014 (-0.19)	-0.029 (-0.46)
Female	-0.050 (-0.19)	0.691 (0.73)	-0.507 (-0.69)
Self production	-0.008 (-0.20)	0.020 (0.23)	0.152 (0.92)
No. of trading channels	0.374*** (3.41)	0.626 (1.51)	1.183*** (3.7)
Other income	0.047 (0.16)	1.019 (0.99)	-0.722 (-1.01)
Only one activity	0.073 (0.37)	0.757 (1.48)	-0.170 (-0.29)
Married	0.203 (1.03)	1.031* (1.93)	-0.023 (-0.04)
Divorced	0.496 (0.56)	3.791 (1.63)	0.311 (0.11)
Separated	-0.285 (-0.51)	-1.716 (-1.15)	2.759 (1.57)
Schooling years	0.008 (0.30)	0.183** (2.36)	-0.179** (-2.22)
No. of children	0.010 (0.19)	0.064 (0.57)	-0.526 (-2.09)
Juliaca	-1.088*** (-3.15)		
Number of observation	238	119	119
Pseudo R^2	0.142	0.207	0.175
Log likelihood	-222.303	-115.69	-85.15

Ordered Probit intercept cuts are omitted and available upon request. For variable legend see Tables 1 and 2

* p -value < 0.1, ** p -value < 0.05, *** p -value < 0.01

indicators in differences and not in levels. Unfortunately this is extremely time-consuming and resource-costly in the case of development studies (not to mention attrition problems) because it requires the administration of surveys at two distinct moments in time on the same individuals.

Adopting an alternative approach, we sought to avoid spurious effects by looking at the impact of treatment length (affiliation years) on the group of FT farmers. Our advantage, in fact, is that we have a gradual (number of affiliation years) and not a “yes/no” dichotomous treatment which would have precluded any analysis on its gradual application.

However, a major problem remains despite this advantage. Suppose we find a positive effect of the treatment (affiliation). How can we determine whether it depends on fair trade (treatment effect) or on the ex ante superior qualities of the farmers selected for affiliation (selection effect)? More explicitly, the outperformance of treatment with respect to the control individuals may simply depend on the fact that the former had ex ante higher skills or, more generically, on a third unobserved factor correlated with both affiliation and good performance.

In this second case the merit of the result was not due to the treatment (Heckman 1990; Abbring and Heckman 2007). Selection could be explicit (in the rules of the organizations which selected the fittest or the more promising farmers) or implicit (the high productivity, most enterprising types were more likely to affiliate).

The selection bias effect is almost inevitable, for instance, in microfinance studies in the presence of a proper screening activity by the financial intermediary (which, to perform its role efficiently, is required to select the best projects or those with lower probability of default).²¹ The risk is less severe in FT impact studies if access to the producers' association affiliated to FT is not based on excessively severe quality standards inevitably discriminating between selected and non-selected (explicit selection), or if it is proved that not only the most enterprising producers enter it (implicit selection).²²

We control for implicit and explicit selection with a three-step approach. First, we introduced into our survey a question on whether affiliated producers found it difficult to associate. Second we estimate a logit equation in which the dependent variable takes value 1 if the response is ‘yes’ and regress it on a set of controls. Third, we use significant controls as regressors in the selection equation in a treatment regression model in which affiliation to the association working with FT is controlled for. The introduction of the selection equation helps discriminate between the treatment and the selection effect. When the performance and the selection equation are estimated together in a system (as in Table 7), the effect of the treatment in the performance equation is already purged of the effect of the selection, which is captured by the joint estimate of the selection equation (Maddala 1983; Greene 2007). What the selection equation brings into our picture is the inclusion in the first estimate of a regressor which sums up the characteristics of affiliated producers (technically speaking the predicted value of the second equation). If the FT variable is still significant in the first estimate after this inclusion, this meant that it is so net of the selection bias effect captured by the above-described additional regressor.

Consider also that, since we do not have panel data, we can not use techniques such as propensity score matching or tests on significant breaks between preformation and

²¹ Among the main studies addressing the issue see Hulme and Mosley (1996), Pitt and Khandker (1998) and Coleman (1999).

²² Becchetti and Costantino (2008), in their impact analysis of FT affiliated farmers belonging to the Meru Herbs association in Kenya, find anecdotal evidence of an implicit selection, and they control their findings for this effect.

postformation performance trends. We therefore use the treatment regression approach, which can also be applied to cross-sectional data.

The second step in our selection bias approach reveals that the presence of an additional source of income positively affects the probability of affiliation, while age, marriage and the number of children affect it negatively (Table 6).²³ The estimate is obviously run only on the respondents belonging to the two treatment groups. Separate estimates for the two groups confirm these findings. We therefore introduced these four variables into the selection equation. In estimating the model we verify that the two conditions necessary for the validity of treatment regression models are fulfilled. First, the four selection regressors are not factors directly affecting the performance variable in the first equation (see Table 7, columns 1–3, respectively). Second, we omit them from the first equation.

The treatment regression model is estimated on the overall sample by introducing slope dummies for affiliation years, education and age. However, the estimate results reject the hypothesis that the factors identified in Table 6 are significant in determining access to the producers' association. Indeed, we find that only the intercept is significant in the treatment equation. This implies that factors affecting selection exist but are unknown and captured by the constant term.

Our estimates also confirm the significant nonlinear effect of FT affiliation and the linear effect of the number of trading channels on food consumption expenditure (for Juliaca producers only) as well as the linear one on professional self-esteem (Table 7).

The magnitude of the additional food consumption expenditure generated by FT affiliation for Juliaca producers is 2.26 soles in 1 year and 15 soles in 10 years.

4.2 Happiness

We finally want to evaluate the general effect of FT affiliation on producers' happiness. According to the recent empirical literature, robust evidence has been found on the significant effects of income. More specifically, this variable has positive effects in absolute terms especially when it helps to exit from poverty and, in relative terms (relative income), when it is higher than the average income of peers (Frey and Stutzer 2002a, b; Clark 2006).

Based on this evidence, we assume that FT affiliation (beyond a possible direct effect) indirectly affects life satisfaction via its impact on the food consumption share (a proxy of poverty) and the perceived relative standard of living.

We therefore estimate first a specification testing only the effect of affiliation years and, after it, a second specification including the number of trading channels, self perceived relative standard of living and consumption share.

Our findings (Table 8, columns 1–6) demonstrate that the overall effect is much more significant for the poorer affiliated farmers of Juliaca than for those of Chulucanas. More specifically, in the first specification in which only the impact of affiliation years is considered, the effect of the level affiliation year variable is double in magnitude and the negative one of the squared affiliation years is smaller in magnitude in Juliaca, even though the two coefficients are significant in both areas (columns 2 and 3).

In the second specification in which number of trading channels, relative standard of living and consumption share are added, the trade diversification effect (number of trading channels) captures all the positive FT effect in Chulucanas, while the FT impact in Juliaca is more articulated and passes through all of the five variables (columns 5 and 6).

²³ Robustness checks in the two project subsamples confirmed that our results were robust.

Table 6 Variables affecting difficulties in entering the producers' association

Variable	Coefficient	T-stat
Age	-0.06*	-1.92
Land size	-0.03	-0.48
Female	-0.41	-0.54
Self production	0.02	0.21
No. of trading channels	0.01	0.02
Other income	1.92*	1.82
Only one activity	-0.76	-1.08
Married	-1.16*	-1.66
Schooling years	-0.03	-0.29
No. of children	0.41**	2.34
Constant	1.68	-0.77
Number of observation	86	
Pseudo R ²	0.1062	
Log likelihood	-50.25	

Dependent variable: 1 if the producer declares he had difficulties in entering the producers' association (Minka in the Juliaca and Allpa in the Chulucanas case) and zero otherwise

Ordered Probit intercept cuts are omitted and available upon request. For variable legend see Tables 1 and 2

* *p*-value < 0.1, ** *p*-value < 0.05, *** *p*-value < 0.01

Table 7 The impact of FT affiliation after controlling for selection bias

	Professional self esteem	Food consumption expenditure
Base equation		
Age	-0.012 (-0.57)	0.598* (1.68)
Land size	-0.021 (-0.84)	-0.380 (-0.64)
Female	-0.321 (-1.34)	-10.314* (-1.82)
Self production	-0.006 (-0.17)	-1.732 (-1.35)
No. of trading channels	0.214 (0.254)	4.654* (1.79)
No. of trading channels Jul	0.737** (-2.32)	-3.745 (-1.66)
Only one activity	0.715*** (2.74)	14.241** (2.01)
Divorced	-0.091 (-0.07)	28.782 (0.97)
Separated	-0.171 (-0.34)	-7.012 (-0.34)
Schooling years	0.0518* (1.61)	0.217 (0.24)
FT affiliation years	0.051*** (3.16)	2.312 (0.72)
[FT affiliation years] ²		-0.015 (-1.23)
FT affiliation years Jul	0.011 (1.32)	2.254** (2.21)
[FT affiliation years] ² Jul		-0.049** (-2.14)
FTdummy	1.671 (0.76)	18.620 (0.94)
Constant	5.29*** (3.14)	40.124* (1.62)
Number of observation	238	238
Log likelihood	-598.738	-1,365.052
Selection equation		
Age	-0.008 (-0.61)	-0.007 (-0.57)
Other income	0.335 (1.24)	0.325 (1.36)
Married	0.232 (0.64)	0.59 (0.74)
No. of children	-0.032 (-0.48)	-0.028 (-0.45)
Constant	0.74** (2.09)	0.568** (2.21)

* *p*-value < 0.1, ** *p*-value < 0.05, *** *p*-value < 0.01

Table 8 The direct and indirect effects of FT affiliation (years, number of trading channels, relative standard of living and consumption share) on happiness

	All sample	Juliaica	Chulucanas	All sample	Juliaica	Chulucanas
FT affiliation years	0.046*** (2.71)	0.103*** (5.02)	-0.091** (-2.02)	0.005 (0.30)	0.051** (2.11)	-0.119** (-2.54)
[FT affiliation years] ²	-0.001* (-1.92)	-0.003*** (-3.83)	0.007** (1.93)	-0.000 (-0.08)	-0.002* (-2.06)	0.009* (2.47)
Age	0.001 (0.14)	-0.003 (-0.43)	0.012 (0.93)	-0.001 (-0.21)	-0.003 (-0.44)	-0.000 (-0.02)
Land size	0.008 (0.60)	0.055** (2.55)	-0.004 (-0.26)	0.005 (0.41)	0.030 (1.31)	0.003 (0.18)
Female	-0.002 (-0.01)	-0.109 (-0.39)	0.164 (0.84)	0.087 (0.59)	-0.239 (-0.89)	0.301 (1.53)
Self production	-0.001 (-0.03)	-0.028 (-0.97)	0.032 (0.68)	-0.000 (-0.00)	-0.031 (-1.15)	0.024 (0.53)
Other income	0.270 (1.55)	0.765*** (2.60)	0.148 (0.71)	0.274* (1.71)	0.453 (1.52)	0.133 (0.64)
Only one activity	0.174 (1.44)	0.121 (0.73)	0.126 (0.74)	0.130 (1.16)	0.095 (0.60)	0.138 (0.78)
Married	0.201* (1.66)	0.294* (1.77)	0.179 (1.03)	0.141 (1.26)	0.217 (1.37)	0.097 (0.56)
Divorced	1.281** (2.48)	2.104*** (2.99)	0.735 (1.04)	0.818* (1.70)	1.510** (2.21)	0.318 (0.45)
Separated	-0.228 (-0.69)	-0.231 (-0.56)	-0.330 (-0.65)	-0.184 (-0.60)	-0.014 (-0.03)	-0.144 (-0.28)
Schooling years	0.040** (2.46)	0.056** (2.51)	0.019 (0.80)	0.021 (1.35)	0.031 (1.40)	0.007 (0.29)
No. of children	-0.017 (-0.51)	-0.028 (-0.74)	-0.036 (-0.47)	-0.020 (-0.64)	-0.024 (-0.68)	-0.030 (-0.40)
No. of trading channels				0.264*** (4.20)	0.284** (2.30)	0.230** (2.48)
Consumption share				-0.041* (-2.55)	-0.272 (-0.52)	-0.413 (-1.46)
Perceived living standard				0.151** (2.45)	0.188** (2.41)	0.020 (0.18)
Juliaica	-0.278 (-1.40)			-0.429** (-2.12)		
Constant	1.554*** (5.14)	1.299** (2.20)	1.603*** (3.51)	1.528*** (4.88)	1.388* (1.81)	2.238*** (3.58)
Number of observation	238	119	119	238	119	119
R ²	0.155	0.374	0.101	0.293	0.456	0.178
F (overall goodness of fit)	2.92	4.84	0.91	5.38	5.34	1.38

* p -value < 0.1, ** p -value < 0.05, *** p -value < 0.01

This way of estimating effects of FT on life satisfaction obviously has many limits. Nevertheless, it clearly shows two things. First, quantitative wellbeing indicators (such as the food consumption share) have a much higher effect on happiness when individuals are poorer, consistently with findings in the happiness literature. Second, the overall impact of affiliation years is stronger in Juliaca than in Chulucanas (as already suggested by the different gaps between control and treatment groups in the two areas in descriptive statistics). The combination of the two facts generates a very different impact of FT on subjective wellbeing in the two areas.

4.3 Comments on the Robustness and Relevance of Our Results

Given the limited number of degrees of freedom in our estimates, one might wonder which results (among those presented) are stronger. One of the strongest and most robust effects is *that of the impact of the number of trading channels on happiness and perceived relative standard of living*. The finding is strong when separately estimated in both projects (Table 8). It reflects an automatic effect of fair trade affiliation: the availability of an additional trading channel which helps producers diversify their trading risks and reduces “search costs” of finding customers for their products. This and other impact analyses (Becchetti and Costantino 2008; Ruben 2008) show that FT-affiliated farmers retain degrees of freedom by maintaining positive shares of products sold through the domestic market and even traditional intermediaries (to a small extent). The fair trade channel, however, becomes the dominant one.

Another strong effect (robust in both project subsamples) is the negative impact of affiliation years on the consumption share in the Juliaca project (Table 4). Since the consumption share is a proxy for poverty (it tends to one for the very poor) this finding is consistent with the hypothesis that years of FT affiliation contribute to poverty reduction (unfortunately, with our data it is impossible to disentangle the relative contribution of different factors comprised in FT, such as capacity building, price insurance mechanisms, stability of exported volumes, etc.). Again, the finding is consistent with the results of Becchetti and Costantino (2008) on Meru Herb producers in Kenya, and of Ruben (2008), and Becchetti et al. (2009) on organic rice producers in Thailand.

The effect is much stronger in the Juliaca than in the Chulucanas project, because the former is the poorer environment, where consumption shares are very high and close to unity.

A final point is that, in the poorer economic environment (Juliaca), the relationship among happiness, self-declared relative standard of living and consumption share is very strong (Table 8), consistently with the hypothesis that the impact of the project on wellbeing (if the project is successful in raising the local standard of living) may be much higher when initial conditions are harsher.

To sum up, a strong and robust finding of the paper is that the correlation between subjective and objective wellbeing indicators is very close among the poor, whilst it becomes looser as individuals grow more affluent. This is measured by the effect of consumption share and perceived relative standard of living in the two areas and occurs independently from the fact that the economic effect of FT is lower in Chulucanas than in Juliaca.

A final important issue raised by our paper is the following: if FT affiliation generates the described advantages why do not all producers in the area enter FT? Since we observe that they do not, there must be some drawbacks to FT, or at least some heterogeneity among producers such that the same criteria are less positive for some than for others.

One of these drawbacks is that affiliated producers must participate in cooperative life and meetings. On the reasonable assumption of heterogeneity in social preferences,

some producers may dislike cooperative practices (such as frequent producer meetings and certain forms of coordination or control) and may prefer to work individually. A second drawback is that producers must comply with FT environmental sustainability rules. This may be an extra cost that some of them do not want to assume. A further discriminating factor is distance from the cooperative center, which can increase the transportation costs of products to the cooperative and transportation costs for producers' meetings.

A final (potential) drawback is that large part of production must be sold through the cooperative. Given the above-mentioned anti-cyclicalities of the price premium, affiliated farmers may be tempted to leave the cooperative when market prices are booming (tiny market premium plus the two drawbacks mentioned above). Less risk-averse farmers may anticipate the problem, set less value on the implicit guarantees offered by fair trade, and decide not to enter.

Finally, there is an obvious upper bound on cooperative participation based on market demand. Although short-term fluctuations may be smoothed by changes in the share sold to the cooperative by affiliated farmers, average expectations on market sales impose constraints on the number of affiliated producers.

5 Conclusions

An open and only partially explored issue in the development literature is that of the correspondence between impacts on objective and subjective wellbeing indicators. The foregoing investigation on the impact of FT on the life satisfaction of apparel and pottery producers in two affiliated organizations which differed markedly in terms of length of FT relationship and producers' standard of living in the area has yielded a rich set of empirical findings.

These findings aid understanding of whether and how FT affects subjective wellbeing in different areas, and they provide important insights for further refinement of these and similar initiatives. Firstly, years of affiliation to FT have an impact on producers' life satisfaction. However, the effect of improved economic conditions is much stronger when producers are around the poverty line than when they are better off. Secondly, in the poorer economic environment (Juliaca), we find that the impact is both direct and indirect (via consumption share and relative standard of living), while in the Chulucanas project mainly the direct risk diversification (additional trading channel) effect operates.

Our findings support (net of the smaller economic effect of FT in the Chulucanas project) the diminishing marginal return income-happiness assumption, and the role of relative income in individual life satisfaction (self-perceived relative standard of living results). They show that, in these two respects, there is substantial homogeneity between developed and developing countries.

In commenting on our results, we are aware that what we have found may be affected by the many differences between products and producers (affiliation years, age, education, standard of living) in the two areas. Consider, however, that we controlled for many of these differences with ad hoc regressors in the equation. We agree, however, that not everything can be captured by such regressors (and especially the difference in product and markets for the two main activities in the two areas). Yet it is difficult to believe that the affiliation year, poverty, self-perceived standard of living, happiness finding can be explained by factors related to product specificity and not to the impact of improvement in economic conditions at two different levels of standard of living.

Overall, our results show that there is substantial homogeneity between the indicators of subjective wellbeing and the objective indicators usually adopted by international institutions to track progress in fighting poverty. At least at this level of standard of living and in the areas observed, an FT scheme which does not remove beneficiaries from their living environment, while trying to increase the productivity of their already-existing activities and improving their access to the market, does not seem to create “frustrated achievement”, but rather consistency between material and psychological wellbeing.

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Appendix

Survey Design

The first step in the research was to create two lists of affiliated (treatment sample) and non-affiliated (control sample) producers with the same working activity. The list included 30% more individuals than our target of participants in each of the two groups in order to allow for random selection and to cope with non-responses. As usually happens, the construction of the control sample turned out to be more difficult, while the list for the treatment sample could be drawn automatically from the list of members usually available from the associations affiliated to Fair Trade (in our case Minka and Allpa producer groups in Juliaca and Chulucanas, respectively). More specifically, we interviewed in Juliaca artisans from the 14 comunidades campesinas closest to Juliaca (Unocolla, Ccota, Cochacuinray, Pucachupa I, Pucachupa II, Rancho Sollata, Tacamani, El Inti, Huayna Roque, Corisuyo, San Pablo, Antipampilla, Cochapata, Ccorpa). As control producers we randomly chose artisans living in the same comunidades but who did not have fair trade relationships. With regard to the Chulucanas (ALLPA) project, all the artisans interviewed (control and target group) worked and lived in the small village of Chulucanas.

Additional information was taken from the cooperative on survivorship in the years of interest and selection criteria (presence of explicit and implicit membership selection rules) before we created our lists. The negligible amount of exits due to misperformance made us confident about survivorship bias. Apart from the work activity there are no other entry selection standards besides reference to maximum quantitative limits of production imposed by market demand and by the two organisations. We control that the control group producers are also eligible (had the minimum quantitative of production required to enter the FT affiliated groups) in order to avoid heterogeneity and selection bias.

Implicit selection bias is partially taken into account with econometric techniques, as shown in Sect. 4.2. Since we do not have observations repeated in time on the same individuals, we can not use techniques such as propensity score matching or tests on significant breaks between preformation and postformation performance trends. We

therefore use the treatment regression approach, which can also be applied to cross-sectional data.

The survey questions were defined on the basis of the World Bank *Living Standard Measurement Studies* (LSMS) (accessed the 1st September 2009 at <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTLSMS/0,contentMDK:21610833~pagePK:64168427~piPK:64168435~theSitePK:3358997,00.html>) and adapted to the circumstances of our research with a specific set of questions on affiliation characteristics, price conditions on different sale channels, and relationship with the affiliated organisations.

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