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The Impacts of Small Scale Industrial Clusters in Improving Wellbeing of the Poor: The Case of Gulelle Sub-City Textile Firm Clusters

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Abstract
*The concept of industrial cluster is not new. Various literatures described the impacts that clusters have in promoting competitiveness and growth among firms. H*owever, little is known whether the progress made on industrial clusters development has a direct impact on improving poor households' wellbeing, or not. In consequence, losing clear insight about that link can make government's intervention efforts of battling poverty pointless. Moreover, it conceals managerial gaps created with local institutions in making MSE cluster developments endeavors geared towards improving the living standards of the poor. Thus, the study was devoted to investigate the impact of small scale textile clusters in improving the wellbeing of poor households within Gulelle Sub-City. It specifically enquires if cluster development initiatives can have positive impacts that enhance households' economic condition and reduce vulnerability. To meet that objective quasi experimental research design was used, *because, the research intended to compare the condition of households earning daily livelihood from clustered firms with that of dispersed firms.* Qualitative data was used to triangulate quantitative data and explore the impacts of clustering on the livelihood condition of the poor households. The sample size of the research was limited to be 208 operators, of which 104 of them were from clustered firms while the remaining 104 were from dispersed firms. The analysis was made by examining primary and secondary data collected using questionnaires and interview guides. In the process of data analysis descriptive and inferential statistical tools such as Independent sample T-test and Man-Whitney U test were employed. The results of the study indicate that *clustered textile firms in Gullele Sub-City are not in a position to improve economic well beings' of households and reduce vulnerability of clustered producers from income shocks and consumption insecurities. However, it was found out tha*t cluster producers are included more in social activities than dispersed firms.
Keywords: Cluster, economic wellbeing and Vulnerability

1. INTRODUCTION

It is well known that Ethiopia is one of the poorest countries in the world. Consequently, poverty has remained the hallmark of the country for a long period of time. Cognizant of this fact, the government of Ethiopia has successively launched different socio-economic reform programs as a strategy to stop its progress since 1991. One of the key reform areas which has been given due attention, since 2004/2005, was small & micro enterprise (MSE) development program. MSE strategy of the government has the purpose of job creation (reducing unemployment) and the alleviation of abject poverty among impoverished youth and women as well as to help the sector to play its pivotal role as a base to medium and large scale industry growth (Konjit, 2006).

As part of MSE Development agenda, the government of Ethiopia has also formulated a cluster development strategy. The main purpose of the initiative was to resolve problems related with space limitations for production, create markets, facilitate technology transfer and induce network and collaboration among enterprises. The strategy also considered clustering as an engine for poor people's income growth and wellbeing improvement (Merima, 2012). Cascading down the broader reform program at country level, different small scale industrial clusters in the context of small and micro enterprises have been established at Addis Ababa by the city government since 2005 (Konjit, 2006).

Given this fact however, the impact of clustering (such as external economies, joint action and social capital) on poor people's wellbeing which include a multidimensional elements such as material living condition (economic wellbeing) and vulnerability was insufficiently analyzed (Nadvi and Barrientos, 2004; Nadvi, 2010). Instead, the focuses of different researches conducted in Ethiopia or elsewhere in the world were on the ways in which clustering enhances competitiveness and promote growth. Akoten (2007), Das and Kumar (2011) and Edwin (2012), also indicated that there is limited studies conducted whether clustering of small scale enterprises has a direct and explicit impact on wellbeing condition of the poor. In the same way, despite effort was made in creating clusters, there is no evidence that designate available studies conducted on the link between clustering and its implication to the improvements of living standards in Ethiopia(Merima, 2012). In consequence, losing a clear insight about the relationship between industrial cluster and wellbeing can make government's intervention efforts of battling poverty pointless. Moreover, it reduces abilities' of local institutions in ruling-out limitations or challenges faced in making MSE cluster developments endeavors geared towards poor people's life

improvement.

On the whole, the aforesaid descriptions of cluster and wellbeing nexus indicate that there exists an important but neglected research and policy issue needs to be investigated very well. Thus, the study was devoted to addresses the impact that small scale textile clusters have on households' conditions of wellbeing in Gulelle Sub-City. It specifically asks if cluster development initiative can have positive impact that enhances worker's economic well-being and reduce vulnerability.

Objectives of the Study

The general objective of the study was to assess the impact of clustered small scale textile firms in improving wellbeing of the poor in Gullele Sub-City. The specific objectives that guide the research process towards the achievement of the overall purpose were to:

- assess the impacts of textile clusters on economic wellbeing of households;
- examine the impact of textile clusters on households' vulnerability to income and consumption shocks;
- generate recommendations that enhance government's cluster development efforts

2. LITRATURE REVIEW.

2.1. Historical Background of Industrial Cluster

The concept of industrial cluster has been in existence since Alfred Marshal first described the phenomena in his principle of economics in 1890 (Wasim, 2012). He specifically introduced the notion of external economics to refer to gains that goes to enterprises working in the same industry and concentrated in a given locality (Nadvi, 2010). At the end of 1970s, the idea was reappraised as a new model of industrial organization when globalization and liberalization took place in many developing countries (Das and Kumar, 2011). Particularly, at the end of 1990s cluster development become major subject of analysis after Michael Porter popularized it in an increasingly global race where competitiveness and local production factors were the dominant contributors of economic success. Thereafter, there has been a surge of interest in clusters from international economist and researchers because of its contribution to employment generation and economic growth (Marchese and Sakamoto, 2008).

2.2. Benefits of Industrial Clusters

Industrial clusters provide a wide range of advantages that enable enterprises to become competitive and profitable. Industrial clusters typically gain benefits from external economies, joint action and social capital as a result of the concentration of similar enterprises in the same location (Merima, 2012). External economies are advantages enjoyed by cluster participants due to their dense geographical location and inter-related relationship in certain industrial district (Mawardi, Choi and Perera; 2011). The main types of externality benefits that are gained to clustered firms are: access to input and product market, labor market pooling, intermediate input effects and technological spillovers.

Collective efficiency, on the other hand, is the competitive advantage derived from deliberate involvements of cluster participants in joint actions and local economies **(Mawardi, Choi and Perera; 2011)**. Firms that are clustered may also become involved in joint actions, in which they may share machinery, agree to split an order, share the costs of marketing and information, joint production, lobby government, and participate in other collective activities (Wasim, 2012). Joint action could be in the form of horizontal and vertical collaborations (Mccormick, 1999). Vertical cooperation takes place when firms involved in the cluster linked backward with suppliers and forward with buyers (Giuliani et al., 2005). Horizontal joint action occurs between or among competitors individually or collectively (Mccormick, 1999). Social capital, on the other side, in the context of cluster, refers to the common norm influencing the interaction among individuals operating in industrial clusters. Social capital can be expressed in the form of groups and social network, trust and solidarity, cooperation as well as social cohesion and inclusion that facilitate collaboration among individual firms for their mutual advantage (Abdul-Hakim, Abdul-Razak and Ismail, 2010).

2.3. Definitions and Measurements of Wellbeing

There is little agreement among researchers and policy makers on the definition and measurements of wellbeing (Sameti, Dallali and Karnameh, 2012). The difficulty of reaching to a single definition is because of the fact that wellbeing is a multidimensional social phenomenon that can be defined and measured in a multitude of ways (UNDP, 2003). In fact, the variation and the complication of definitions are mainly due to wellbeing never results from the lack/presence of one thing but from many interconnected factors that come together in poor people's life and experiences (Giovanni and Liberati, 2004). However, at the heart of the debate about defining wellbeing, stands the question of whether it is largely about material needs satisfaction or whether it is about a much broader set of needs that permit well-being (quoted in Oshewolanti, 2010). Different literatures use diversified dimensions to define and measure wellbeing. The main ones are economic wellbeing approach

(Ephrem, 2006), and vulnerability approach (Altmann, 2011).

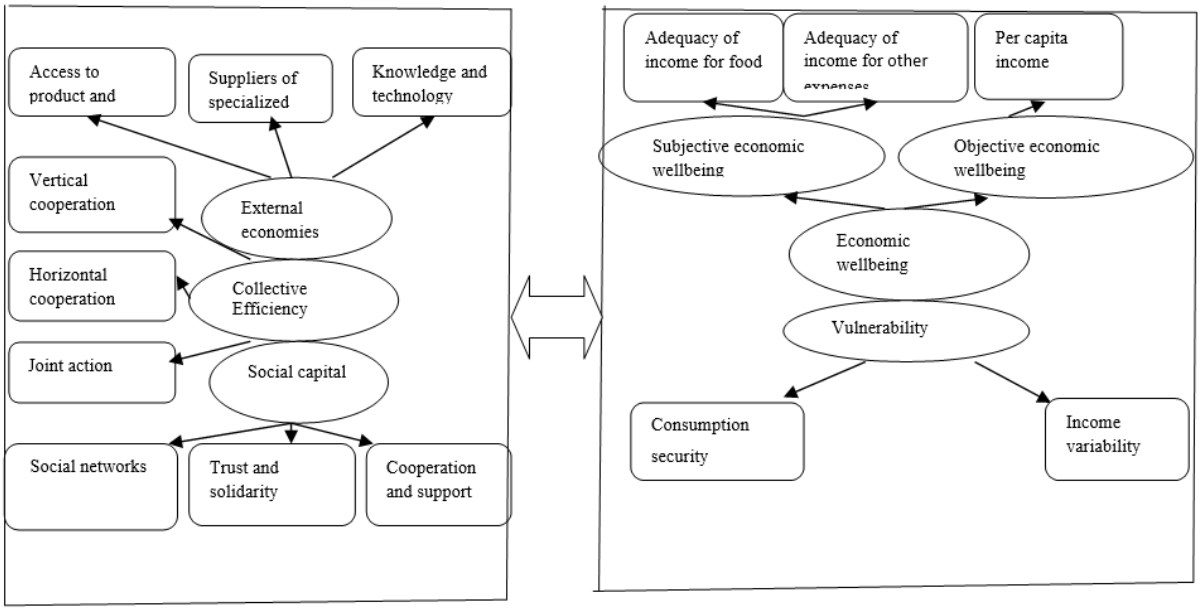
The Economic Wellbeing: The economic wellbeing is the most popular and widely used approach in defining and measuring wellbeing (Wagle, 2002). In view of that, wellbeing is associated with material living condition that is used to mean situation when one is able to meet a reasonable minimum standard of living (UN, 2004). In this regard, wellbeing is defined as ability of an individual or household to access resources required to maintain a socially accepted minimum standard of living in terms of income, consumption or welfare (Thomas and Wint, 2002). The minimum standard of living, however, defines the income or consumption poverty line and all persons whose income are less than this line fall in the category of poor (UNDP, 2003). The monetary or economic measures of wellbeing can also further be defined using objective and subjective measures (Wagle, 2002). In contrast, the subjective approach defines wellbeing by using the same substances through the lenses of subjects of the study (Wagle, 2002). In view of that, the determination of the poor and the noon poor left for the perception of the participants themselves (Saith, 2005).

Vulnerability as a Measure of Wellbeing: Vulnerability can be defined as the probability of being at risk today which leads an individual fall in to a deeper poverty (lower level of wellbeing) in the future (Thobecke, 2005). Vulnerability is an important dimension of wellbeing for two different reasons. First, risk of income variability may constrain an individual to lower investments in productive assets. High risk can also force an individual to diversify his/her income sources, perhaps at expense of lower returns. In fact, vulnerability is difficult to measure directly because it is impossible to measure the probability of an individual falling into poverty in future. However, one can indirectly analyze it by using income and consumption variability as proxies for vulnerabilities. Alternatively, qualitative information can complement the picture by allowing the analysis of important aspects of vulnerability. The most commonly used method is collecting information on the level of people's perceptions of their vulnerability, its determinant and strategies they put in place to reduce their vulnerabilities (Coudouel and eta'l, 2004).

2.4. Conclusion: Towards Conceptual Link between Industrial Cluster and Welbieng

Theoretically industrial clusters are correlated with wellbeing in terms of external economies, joint action and social capital. Cluster dynamics implies upgrading and differentiation (Nadvi and Barrientos, 2004). In line with that, the researcher has developed conceptual (theoretical) model that will guide him to classify relevant facts and analyze research findings after examining extensive literatures related to the study objectives. Accordingly, the subsequent sections represent the discussion of elements indicated in the framework

Figure 2.6 Relationship between industrial cluster and poverty



Source: Developed by the Researcher

External economies that arise from agglomeration provide opportunities for clustered firms accessible to input and product markets, specialized skills, services, credit, and information within clusters that would not be feasible if they operated alone. Such benefits could lower cost of productions and marketing in such a way that small firms and poor workers survive and grow (Das and Kumar, 2011). This can raise income for those who work in clusters, provide employment for the poor and marginalized group of people in the society and reduce their vulnerability to market shocks (Nadvi and Barrientos, 2004).

Cooperative joint action among individual firms and through cluster institutions can strengthen the ability of

clustered actors to compete in markets, by sharing costs and by engaging in joint tasks such as shared marketing and distribution (Nadvi and Barrientos, 2004). Such cooperation may also assist such producers and workers to confront vulnerabilities arising from volatilities, risks and shocks in markets as well as globalization. Thus, joint action can help clustered firms acquire the skills, the technical abilities to reduce their vulnerability to the exigencies of globalization, thereby enhancing the well-being of workers and producers than individuals engaged in dispersed firms (Nadvi, 2010).

Social capitals take the form of shared norms and common identities. This can, potentially, help reduce vulnerability, help flows of knowledge within the cluster, provide the basis to strengthen local institutions, and help firms upgrade. Social capital within the cluster thus provides the basis for shared social provisioning of key resources, from credit to knowledge, as well as providing socially based support mechanisms. This can raise incomes for those who work in clusters, raise their assets and capabilities and have a significant impact improving wellbeing of the poor (Das and Kumar Das, 2011)

2.5. Empirical Literature Review

Clusters and Economic wellbeing: There are several evidences from all over the world that indicates the existence of small firm clusters which eventually improved economic wellbeing of the poor. For example, Visser (1999) identified that worker in small scale clustered clothing industry of Lima receive 30% higher wage than elsewhere in the city. However, it was noted that the variation might be attributed to longer working day which was not controlled in the survey. Marina and Peerlings (2009) identified that clustered micro enterprises in handloom sectors of Ethiopia on average acquire 85% more profit than dispersed firms. According to Bair and Gereffi (2001) while women consists of almost 50 per cent in Torreon jeans cluster, men tended to take on the more skilled and higher paid functions. In the same way, Tirippur and Singh (2003) reported that daily wages for male workers in the cluster exceeds female workers from 42-50%. In general, evidences obtained from different cluster literatures indicate positive relationship with income of the poor. .

Clusters and Vulnerability: There are also evidences from cluster literatures indicating how industrial clusters help small producers and poor workers reduce vulnerabilities to external shocks. For example, a study conducted by Weijland (1999) on rural clusters in Indonesia shows that clustering significantly reduced the transaction costs of acquiring inputs, marketing outputs, simplified information flows as well as facilitated order-sharing, labor sharing and subcontracting**.** That of course created abilities for local clustered producers to survive and compete as well as to reduce vulnerabilities to different shocks. According to Nadvi and Barrientos (2004), study conducted on Agra shoe clusters shows that in areas where increased joint action through the local trade association was observed, local producers were able to face new competitive challenges from both export and domestic markets. Cooperation through local institutions reduced the vulnerabilities of clustered producers in Sialkot, Pakistan.

2.6. Gap in the Literature

The theoretical literatures reviewed in the aforementioned sections indicate the potential linkage between small scale industrial clusters and wellbeing. In the same way, the empirical evidences extracted from different growth and competitiveness focused cluster literatures illustrate rising levels of employment and incomes, with improving conditions and standards for labor engaged in clustered MSEs. Given this fact however, The impact that clustering such as external economies, joint action, social capital have on wellbeing condition of households which include a multidimensional elements such as economic wellbeing and increased vulnerability was insufficiently explored (Nadvi and Barrientos, 2004; Nadvi, 2010,). Akoten (2007), Das and Kumar (2011) and Edwin (2012), also indicated that there is little or no studies conducted whether clustering of small scale enterprises has a direct and explicit impact on wellbeing improvement. Like other countries in the world, industrial clusters for micro and small enterprises also exist in Ethiopia. Consequently, the government of Ethiopia as part of the MSE development strategy considers clusters as the main engine of income growth and poverty reduction (Merima, 201. Despite effort was made in creating clusters, there is no evidence that indicate available studies conducted on the link between clustering and its implication to wellbeing improvement. The aforesaid description of cluster and wellbeing nexus indicate the existence of an important but neglected research and policy issue needs to be investigated very well.

3. RESEARCH METHODOLOGY

3.1. Research Design

Quasi experimental research design was employed to deal with quantitative aspects of the research. According to Jackson (2009), quasi experiment is used when the researcher is interested in comparing groups of participants that are created naturally or occurred through intervention by other agents. To address the research objectives set at the outset and deal with the problem of lack of randomization and see the impacts of cluster on wellbeing, quasi experimental research was found out as the most appropriate design. The basic reasons were participants

have already been assigned to clusters (treatment) by the city government. Moreover, there is no sign that shows whether the city government established the treatment group and selected participants randomly. This indicates the impossibility of random assignments of participants to treatment and controlling group. Thus, to deal with the problem of lack of randomization and see the impacts of cluster on wellbeing, quasi experimental research was found as the most appropriate design. To triangulate quantitative data, exploratory research design has also been used as part of the qualitative approach.

3.2. Population and Sampling Design

All households currently generating their daily livelihood from clustered textile firms operating in Gulelle sub-city have been considered as target population of the study. The total numbers of people who were engaged in these enterprises were 1262, of which 764 of them were identified as eligible members (see sampling technique for the eligibility criteria) to participate in the research process. However, the total numbers of participants for this research was limited to be 208 individual, of which 104 of them were from clustered firms while others 104 were from dispersed firms.

3.3. Methods of Data Collection

In order to gather first hand information, combinations of different data gathering tools were developed and utilized. Quantitative data was collected from operators by using a set of questionnaires composed of both open and close ended questions. The questions were directly asked and filled by enumerators. The major reason was that the researcher expected that some respondents might not be able to read and write. To triangulate and supplement responses provided through questionnaires as well as to provide answer for the how part of the research question, qualitative data was gathered from the aforesaid individuals plus government officials via interview and observation.

3.4. Matching Treatment and Control Groups

To reduce the impacts of covariates on the outcome of the study, an attempt was made in this research to match clustered and dispersed textile firms on observable characteristics except for being clustered. Eventually, both groups (treatment and control) were manually matched on several variables, which could be thought to have potential capabilities to distort the final outcome of the study, in the designing phase. While, others confounding variables were statistically controlled in the stage of data analysis. Variables which served as a basis to much clustered and dispersed textile firms at the designing phase were: types of product being produced, technology being used, location of firms, experiences of operators, employment condition and ownership status of the respondents.

3.5. Sampling Technique and Techniques of Data Anlysis

The required sample were drawn by using purposive followed by simple random sampling techniques from clustered participants and accidental sampling method from dispersed firms. Accordingly, first, all textile enterprises which naturally belongs to clustered (treatment group) and meet the eligibility criteria (operators having 4 years minimum experience in the cluster, owners, produce the same type of product and using the same type of technology) were identified. Then, 41 enterprises out of 75 (which were established before 2010) were selected purposively. That was done for the purpose of excluding operators having less than 4 years of experience as they are not believed to have experience to state the conditions of clusters. Moreover, if individuals recently enrolled in the cluster are taken in to account, it was felt that the difference between the treatment and control group is invisible. Following that potential participants that met the inclusion criteria indicated were separated. Then, proportional numbers of individual operators (i.e. about 13% of individuals) were selected from each enterprise using simple random sampling techniques. Second, equivalent numbers of individuals who are currently doing textile business, operating alone and satisfied the inclusion criteria stated in the previous section were chosen using accidental sampling techniques. They were accidentally contacted as they appeared to sell their products to whole sellers and retailers at “Merkato”, “Shiro Meda” and Addisu Gebaya textile markets. In addition, Woreda MSE development office heads have been selected purposively for interview purpose because by the virtue of their position they are highly exposed to information related to textile clusters.

Quantitative data collected from primary and secondary sources was processed and analyzed using Statistical Packages for the Social Sciences (SPSS) version 18.0. Descriptive statistics such as average, standard deviation, percentage, ratio, tables and bar graphs have been used. Inferential statistics such as Mann-Whitney U test, Independent Sample T- test, and Spearman Correlation and Pearson correlation was used in the study. The researcher also used various meanings identified to develop an overall description of the phenomenon as people typically experience it to analyze and interpret qualitative data. Finally, the impact clustering on wellbeing is estimated by comparing the average outcomes of a matched treatment and controlled groups.

4. DATE ANALYSIS, INTERPRETATION AND DISCUSSION

4.1. Personal Characteristics of Respondent

Table 4.1 explicitly shows that, most of the education levels of respondents who are engaged in dispersed textile firms have concentrated around no education and primary education (1-4 the grade). Out of 104 respondents about 26% of them have never attended schools (illiterate) while 25% had the possibilities to attain primary level educations. The remaining 18% and 23% of the respondents attended formal education up to the level of 7-8 and above 8 years of schooling respectively. On the other hand, most of the respondent's from clustered firms are relatively well educated. They have attained educational level Junior school (26%) and higher education (25%). At 5% and 1% significance level, the difference between the clustered and isolated producers is significant in terms of level of education they have achieved. However, it is observed that there is weak association-represented by coefficient of correlation 0.120-between household income and education levels of respondents. It means in other words that as the level of education increases the probability of the household to earn higher income is insignificant

Table 4.2.1 Personality Characteristics of Respondents'

Variables	Response category	Location of operators' firms				Results of Man-Whitney test statistics at 5% significant level
		Clustered firm		Dispersed firm		
		Count	percent	Count	percent	
Education levels of the respondents	No education	14	13.5	27	26	U=3404,df=206,p<0.05
	Primary school	12	11.5	26	25	
	Junior school	28	26.9	19	18.3	
	Secondary school	38	36.5	24	23.1	
	TVT graduate	12	11.5	8	7.7	
Sex of the respondents	Male	99	95.2	103	99.0	U=5044,df=206,p>0.05
	Female	5	4.8	1	1.0	
Role of the respondent in the family	Sole breadwinner	70	67.3	74	71.2	U=5008,df=206,p>0.05
	Major breadwinner	34	32.7	21	20.2	
	Passive	0	0	9	8.7	

As it is stated in table 4.2.1 above, out of the total of 208 respondents in the sample, about 95% of respondents from both the treatment group (cluster) and the control group (dispersed) firms are male. Statistical analysis made on this account further reveals that at 5% significance level the difference between clustered and dispersed firms are insignificant. From this view point the impacts of extraneous variables on the independent variable (i.e. wellbeing) seems to be reduced as it is a common characteristic of each comparison groups. When the role of respondents within their own family is taken in to account out of the total (104) respondents from clustered textile firms, 67 %(70) of them were head of the household and the only source of income for the family. On the other side, from equivalent numbers of the whole respondents selected from dispersed firms, 71 %(74) were the only source of household income. At 95% confidence level the P-vale for the Mann-Whitney U indicates that the difference in terms of roles respondents among the two groups was not significant.

Table 4.2.2 illustrates that the mean age of the respondents from clustered textile firms is 34.85 years with standard deviation of 7.55. In the same manner, the mean age of respondents from dispersed firm is 35.46 years with 7.65 years variation bellow and above the average. The maximum age of the respondents from both groups found to be 62 years while the minimum age was 22 years. At 5% significance level there is no significance difference between the mean age of respondents from both the treatment group and controlling group. In the same way, the average work experiences of participants from clustered textile firms is 16.4 years while that of operators from dispersed firm is 17.08 years. Similarly, at 95% confidence level, the difference means between the two groups is insignificant.

Table 4.2.2 Age, Family Members and Work Experiences of the Respondents

Variables	location of operators' firm	N	Mean	Std. Deviation	The result of Independent Sample T-test statistics at 5% significance level
Age of the respondent	Clustered firm	104	34.85	7.549	t=0.103,df=206, P>0.05
	Dispersed firm	104	35.46	7.654	
Number of family members	Clustered firm	104	3.65	1.467	t=5.34,df=206,p<0.05
	Dispersed firm	104	5.01	2.007	
Number of dependents within the household	Clustered firm	104	3.02	0.892	t=5.34,df=203,p<0.05
	Dispersed firm	104	3.39	1.153	
total work experience	Clustered firm	102	16.40	6.968	t=0.22,df=205 p> 0.05
	Dispersed firm	104	17.08	5.830	

Source: Compiled from primary data collected through questionnaire

In this study, the average family size of the sample respondents drawn from small scale clustered textiles firms was 3.65 persons, of which 3.02 of them were dependents within the household with standard deviation of 0.892. In contract, it seems that the family size of participants from dispersed firms is fairly large. The average number of families from dispersed enterprise was 5.01, while the average number of dependents was 3.39. The computed t-value (that is used to compares two different groups) reveals that the difference between the two groups is significant at 1% and 5% level of significance. This would indicate that this variable might be a confounding variable that can potentially affect the dependent variable or significantly explain the dependent variable. Thus an attempt made to rule out the impacts of small scale industrial clustering on wellbeing might be significantly affected due the existence of this variable. To eliminate the impacts of family size on wellbeing and to associate the conditions of wellbeing to the effect of clustering or not, the researcher has determined to control this variable. To this end, equivalent mean family size was assumed to smooth out its effect on poverty. That is to mean the average family size of the whole respondent from both groups was used to compute income of the household.

4.2. Impacts of Textile Clusters on Economic Wellbeing

It is a widely held notion that poverty is correlated with economic wellbeing which is used to denote situation when one is unable to satisfy a reasonable minimum standard of living **(**UN, 2004). Regarding this, wellbeing means the ability of an individual or household to acquire resources vital to maintain socially accepted minimum standard of living in terms of income or consumption (Thomas and Wint, 2002). The minimum standard of living, however, defines the income or consumption poverty line and all persons whose income are less than this poverty line fall in the category of poor (UNDP, 2003). Knowledge about the wellbeing condition of a household can be captured by objective and subjective measures of economic wellbeing (Wagle, 2002).

Objective Approach to Wellbeing Analysis: According to Wagle (2002), to employ objective measures of wellbeing, poverty line needs to be determined either in absolute or relative terms. Absolute poverty signifies lack of minimum subsistence required for survival and is measured as the total income/consumption proxy either by means of expenditure or income. To determine the threshold, a poverty line is calculated by putting monetary value on a minimum amount of food and non food items an individual needs to survive. When an individual's total income falls below that line, then the family or individual is considered poor (Sameti, Dallali and Karnameh, 2012). For the purpose of this study, MOFED (2012) defined absolute poverty line had been employed for the purpose. According to this source, absolute poverty lines for 2010/11 are determined to be Birr 3781.

Table 4.3.2 Poverty incidences of households engaged in clustered and dispersed textile firms

Poverty Indices	Clustered firm		Dispersed firm		Test statistics at 5% confidence level	
	count	%	count	Percent	value	Types of test
Headcount Poverty Index	89	85.6	76	73.1%	U=3382,df 206, p> 0.05	Man-Whitney U test
Poverty Gap Index	89	21.36	76	26.76%	t=1.78,df=163, p>0.05	Independent sample T-test

Source: Compiled from primary data sources

According to the information provided in table 4.3.2 the proportion of poor people (poverty head count index) working in clustered textile firms is estimated to be 89 (85.6 %). In contrast, the proportion of

respondents below the poverty line is found to be 76 (73.1 %) among dispersed firms. According to qualitative information collected from the respondents and interview held with Worda officials, the main reasons that can be stated for the explanation of the cause are: first, except that clustered producers are allowed to get working premises, mode of operations, marketing condition and everything is the same with producers found dispersed over the city. In other words different business support service (such as training, marketing linkage, consultancy services etc) are nonexistent. Second, because cluster participants do produce in most of the cases at normal working time (from 8:00 Am to 12:00 Pm), they can't make use of extra time available at night. Moreover, they waste time that could be used for production purposes while they travel to the working site. As a result, the total amount of output they produce and hence income received is by far less than that of dispersed firms. Third, cluster participants don't have the possibility to get support from the family members as it is not allowed to do so. Despite this, the statistical test conducted in relation to headcount poverty index reveals that the mean difference between the population of both the treatment and control group is statistically insignificant at 5% and 10% confidence significance level.

In the same way, the poverty gab index of households belongs to the treatment group (clustered firms) is estimated to be 21.36% while it is 26.76% for individuals engaged in dispersed firms. Here, it is evident that clustered groups have exhibited a high poverty incidence but low poverty gap, while dispersed groups have a low poverty incidence but a high poverty gap. This indicates that the depth of poverty is higher for the households who depend on dispersed textile firms than those who are engaged in clustered firms. However, the calculated test statistics (P> 0.079) reveals the population means difference of poverty gab between clustered and dispersed textile firm is statistically insignificant.

Subjective Approach: In subjective approach wellbeing is measured through the lenses of subjects of the study (Wagle, 2002). In view of that, the determination of the poor and the noon poor left for the perception of the participants themselves. This approach places vital importance on the subjective evaluation or perception of people about their level of wellbeing (Saith, 2005). Table 4.3.2 shows that on average as many as 39 (57.4%) respondents from clustered and 43 (74.1%) participants from isolated firms think that income they receive is sufficient to cover expenditure requirements of basic food items.

Table 4.3.2 Perceptions of operators on poverty status of the households

Variables	Response category	Clustered firm		Dispersed firm		Test statistics at 95% confidence level	
		Count	Percentage	Count	percentage	P-Value	Types of test statistics
Food poverty status	Non-poor	39	57.4%	43	74.1%	0.051	Mann-Whitney U
	Poor	29	42.6%	15	25.9%		
None food poverty status	Non-poor	13	19.1%	13	22.4%	0.650	Mann-Whitney U
	Poor	55	80.9%	45	77.6%		
Total poverty status (food plus non-food)	Non-poor	13	19.1%	13	22.4%	0.108	Mann-Whitney U
	Relatively poor	26	38.2%	30	51.7%		
	Poor	29	42.6%	15	25.9%		

Source: Compiled from primary data collected through questionnaire

The remaining 29 (42.6%) of the former and 15 (25.9%) of the latter groups feel that the income they received from textile business fail to meet expenditure requirements of their households food needs. According to qualitative information gathered from these respondents, it has happened because of the fact that the cost of input is rising from time to time while the corresponding prices of the final product is falling. As a result, they sometimes are forced to sell what they have produced at loss which eventually led them to face problem on their level of economic wellbeing. The test statistics from this view point indicates that at 5 % level of significance the difference between treatment and controlling groups is insignificant

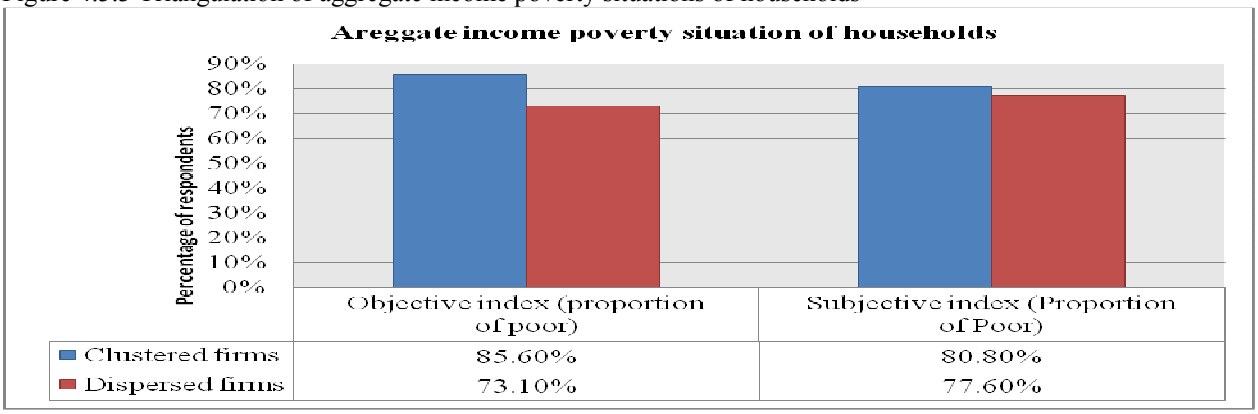
In the same way, on average about 13 (19.1%) of participant from clustered firms and 13 (22.4%) of respondents belongs to dispersed firms reported that their income is adequate to meet basic needs excluding food. In contrast, other 55 (80.9%) of the former and 45 (77.6) of the latter argued that they are incapable to satisfy the expenditure requirements of none food items. However, the computed test statistics (P-Value= 0.650) shows that the difference between the population rank mean of the treatment and the controlling group is insignificant.

In addition, table 4.3.2 unambiguously shows that 13 (19.1%) of respondents from clustered and 13 (22.4%) of participant from dispersed firms escaped out of aggregate poverty (are non-poor). This means in other words, they are free from threats of fy. The other 26(38.2%) and 30(51.7%) of participants of the same category are relatively poor. This means again, they are capable of satisfying their basic food needs but fail to do so for the non-food needs. The status of the remaining 29 (42.6%) and 15 (25.9%) of respondents' make known that they are living with both food and non food poverty. When the proportions of relatively poor and absolutely

poor respondents are added up together, 55(80.8%) of participants from the treatment and 45 (77.6%) from the control group failed under the category of poor. The test statistics (P-Value=0.108) also reveals that there is no much difference in terms of mean rank between population of the treatment and controlling group regarding the overall poverty status.

Triangulation of Objective and Subjective Measures: To capture the impacts of textile cluster on wellbeing, various dimensions of economic wellbeing indicators must be converted to indices in a way that reflect the overall effects. Moreover, triangulation of responses from different ground seems to be mandatory to provide convincing generalization statements on the outcome of the study. In view of that, results obtained via objective and subjective measures of are triangulated as follows. The triangulation function rests on comparing headcount index which indicates the proportion of the poor and subjective poverty index that has done the same.

Figure 4.3.3 Triangulation of aggregate income poverty situations of households



Source: Compiled from the questionnaire

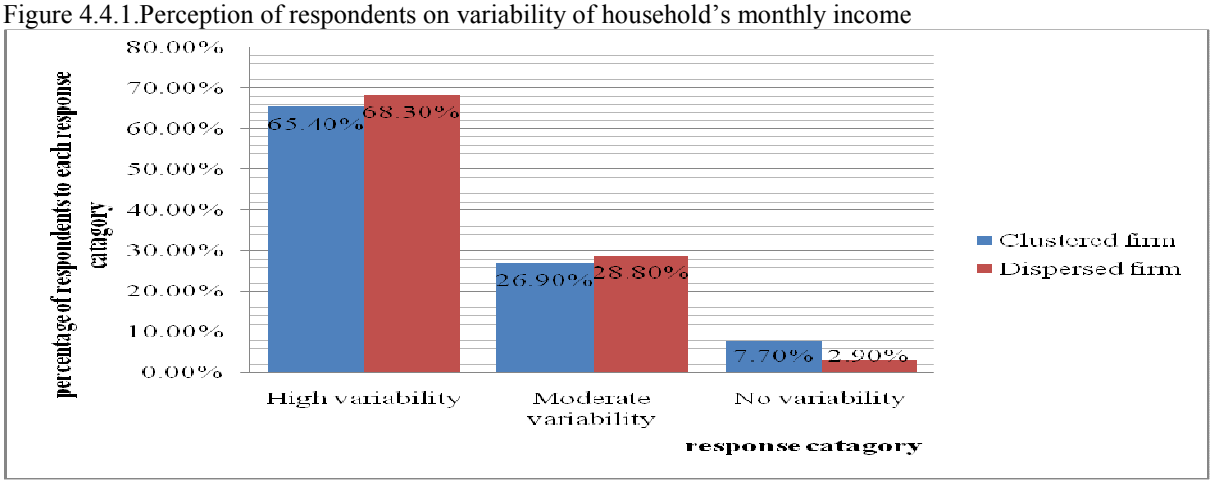
As it has been shown in figure 4.3.3, the incidence of poverty is relatively high in clustered firms than it is in dispersed firms even though the figure is not exactly the same. In both measures (subjective and objective) it is conformed that, almost more than 80% of respondents from clustered firms fall under the category of poor. As it is also assured by the test statistics of the corresponding measures the actual difference between clustered population and that of dispersed one is insignificant.

4.3. Impacts of Textile Clusters on Vulnerability

To capture the real impacts that clustering has on wellbeing, it is very proper to analyze households' vulnerability conditions to income shock and consumption insecurity. The assumption was that, vulnerability increases the future probabilities of the household to remain poor or live below the threshold of absolute poverty (low level of wellbeing). According to (Coudouel, Jesko, and Quentin, 2004), however, vulnerability is difficult to measure directly because it is impossible to measure the likelihood of a household falling into poverty some times in future. It must indirectly be analyzed by using income variability and consumption security as proxies for vulnerabilities using qualitative approach

Income Variability: Figure 4.4.1explicitly specified that out of 104 respondents from clustered textile firms closely 65% of them think that their level of income highly fluctuates from time to time. Others about 26% of participants from the same category stated that they usually face moderate level of income fluctuation. In the same way, some 68% of people from dispersed textile firms reported that they usually face high income fluctuation from time to times. All in all as it can be clearly seen from the descriptive statistics, majority (more than 90 %) of both the treatment and the controlling group are vulnerable to income fluctuations. According to qualitative information obtained from these sources, the major reasons for the cause were several. First, there are always fluctuations in input and output prices. This is due to the fact that product buyers and input suppliers are more powerful than producers in dictating condition of the market. They are capable of manipulating the price as they wish to happen than producers do. Sometimes, producers face rise in input price while the corresponding prices of final product is getting reduced and eventually they end up at loss. Second, lack of capital and asset to resist the effect of income fluctuation to their condition of living. According to these respondents had they have the capital, they can store their product until the market is getting better. Unfortunately they don't have that capacity, as they produce only for subsistence and lack of credit facilities. Third, the seasonality effect of the market made the household occasionally vulnerable to income shocks. The textile business is only attractive during holidays, wedding period and at harvesting season of the rural people while in off seasons all producers face shortage of income to survive..

Figure 4.4.1.Perception of respondents on variability of household's monthly income

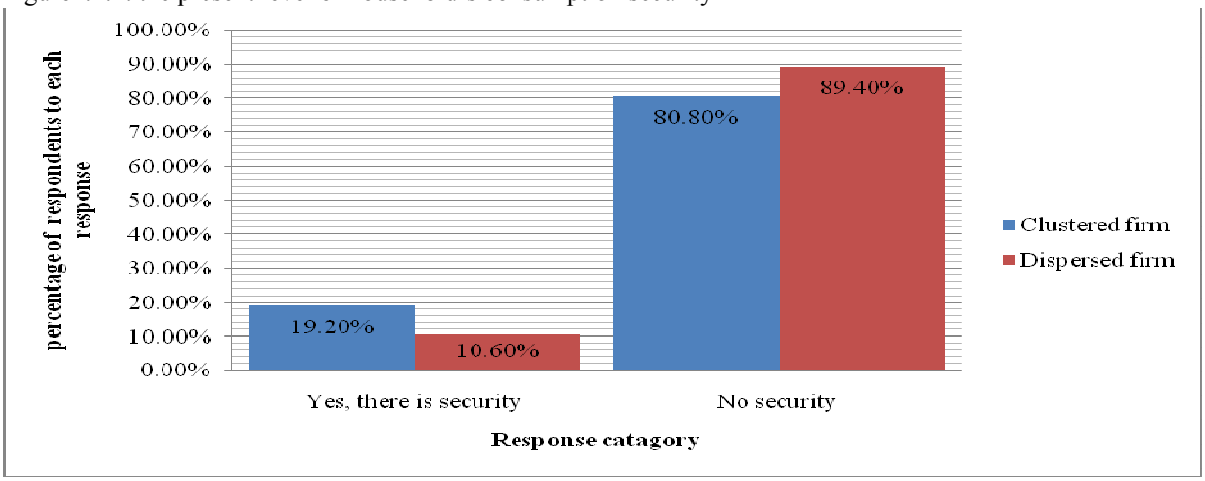


Source: Compiled from primary data collected through questionnaire

When the result of Mann-Whitney U test statistics is concerned at 1% and 5% and 10 % significance level the (P=0.513) the null hypothesis is rejected and it is accepted that there is no significant difference between the treatment (cluster) and the control (dispersed firms) with respect to vulnerability to income shocks. This would indicate that clustered textile enterprises do not have advantage over dispersed firms engaged in the same type of business.

Consumption Security: Out of 104 the respondents from isolated textile firms 89.40% reported that they are much worst as far as the security level of their present level of consumption is concerned. On the opposite side, out of similar number of respondents participated from clustered textile firms about 80.80% witnessed that they have never noticed progress and will not expect so on the level of their consumption security. According to qualitative information collected via questionnaire and interviews conducted with Worda officials, the major causes for the problem are multifaceted. One of the many cause is the nature of the business. That means majority of the participants engaged in textile business produces only for subsistence. As of the information collected from these sources they don't have surplus income to save that could be used for smoothing out present level consumptions in case of emergency. If in case they quite productions even for a week, the whole family members in the household will suffer from hunger. What cause them feel insecure is the present non predictable nature of the input and supply market. When the price of goods thy produce fails they don't have enough that help them support life. At this time they tend to switch between jobs or forced to produce more than what they produce at normal capacity

Figure4.4.2. the present level of household's consumption security



Source: Compiled from primary data collected through questionnaire

In general, as far as the net effects of clustering on households vulnerability and particularly consumption security is concerned, the descriptive data analysis has shown that clustered firms seems to have little advantage in increasing the level of household consumption securities and hence vulnerabilities to income shocks than dispersed one. Statistical test (Mann-Whitney U test) shows that at 5% and 1% (P>0.05) confidence level the difference between the two group is insignificant. However at 10% confidence level the difference is significant.

5. CONCLUSION AND RECOMMENDATION

This research has set general objective at the outset to assess impacts of small scale textile firms on poverty conditions of households'. More specifically, the research has sought to address the impacts of clusters on economic wellbeing and vulnerability of households to income/consumption shocks. Regarding the first and second objectives, various cluster literatures evidenced positive relationship between clustering and wellbeing improvement which is measured partly via economic well-being and vulnerability of households to shocks. Being that is the expected outcome; however, this research has made known that clustering of small scale textile firms indeed makes no significant difference in terms of households' economic wellbeing and vulnerability conditions.

The headcount and poverty gab index calculated in this regard demonstrate that the proportion of poor households engaged in clustered firms is not significantly different from those who are earning livelihood from similar firms located elsewhere in the Gullele Sub-City. Moreover, majority of households earning livelihood from clustered textile firms are living under the condition of absolute poverty. Similarly, as far as households' vulnerability condition is concerned, both the clustered and dispersed groups were found to be severely susceptible to income shocks and consumption insecurity likewise. In other words, being operating in clusters doesn't provide special security advantage to engaged households over the dispersed ones. The possible factors attributed to the result could be multifaceted. First, the fact of market fluctuation due to the influence of traders and seasonal effects of product demands. Buyers and input suppliers are more powerful than producers in dictating condition and prices of the market. As a result, households' income rise and fall drastically than expected which eventually lead them vulnerable to income shocks. Second, lack of capital and asset to absorb the effect of income fluctuation to their condition of living. Third, majority of the participants engaged in textile business produces only for subsistence. As a result they don't have saving that could be used for smoothing out present level consumptions at times where market shocks. Forth, clustered firms are not accessing inputs suppliers and product buyers on the spot differently from dispersed firms. As a result, majority of producers spend their time in searching market for their products and inputs.

Fifth, as part of external economies cluster firms should have to better in terms of knowledge and skill transfers among firms than dispersed one. However, that has little or no impacts on income level of clustered firms compared with dispersed firms. That is due to the fact that there is no innovation and product upgrading within clusters which can make knowledge and skill transfer impactful. This shows that there is no special externality benefits created due to establishment of clusters. Sixth, from this research it is found out that collective efficiency in clustered firms is not in a way that improves the ability of producers to participate in local markets, easily overcome constraints, limits the vulnerability in the face of external threats. Particularly, horizontal cooperation among producers is not more than simply sharing some resources like equipment and inputs. Vertical integration with product buyers and input sellers as well as cooperation through local institutions is significantly minimal. In addition, the social capital found in cluster is not strong enough to provide mechanisms for social protection, informal basis to overcome risk and vulnerabilities to income shocks and consumption insecurity

From the overall discussion so far one can conclude that clustered textile firms found in Gullele Sub-City are not in a position to improve economic wellbeing's of households and reduce vulnerability of clustered producers from income shocks and consumption insecurities. In other words, textile clusters of the said Sub-City are not equipped with essential cluster attributes to address wellbeing concerns of the poor. That is because of the fact that wellbeing improving factors such as external economies, collective efficiencies and social capitals are not sufficiently explored as cluster advantages.

5.1. RECOMENDATIONS

- One of the biggest problems that worsen the wellbeing and security level of household engaged in clustered textile firms found in Gullele Sub-City is lack of viable and sustainable market for their products. Troubles that arise from this fact should be resolved using different means. One of this is the Sub-City MSE Bureau together with respective local government offices should give necessary business development services which include provision of linkage with domestic and abroad market, show rooms and credit on long term basis. Moreover, various awareness creation meetings and workshops as well as short term training need to be conducted to build the capacity of producers and institutions giving business development services.
- Local governments and other local institutions should promote collective actions, social capital and external economies to proliferate for the advantage of clustered producers. This can be done, first, by creating associations which are expected to sell inputs to and buy products from textile producers located within clusters. Second, providing appropriate vertical linkage among producers and large scale domestic input manufacturing firms so that producers get input at reasonable price. Third, promote horizontal linkage and joint action among firms through awareness creating training and capacity

building programs. Fourth, exerting efforts towards the development of trust among producers and among different cluster actors (such as buyers, input sellers and producers) to bring cooperation and realize the benefits of joint action. This is important to the cluster sustainability and competitiveness.

- Clustered enterprises should introduce modern technologies so that producers upgrade and differentiate type of product they produce to win the competitive adage in the market. That benefit can be realized through improving the production techniques by adopting or developing new or improved production machines that enhance productivity. This could be possible if tailor made innovation training program could be developed by the academic institutions. Moreover, inviting TVTE institutions to conduct research on how to improve production efficiencies and technologies can also be other viable option to help the clustered firms become more competitive in the market.
- Local micro finance institute (MFI) should promote savings and facilitate grounds so that clustered enterprises create effective and efficient saving and credit associations. Continuous follow-up and training to raise awareness about loan and its subsequent repayment from the MFIs are necessary ingredients for success.

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