

Impact of Garments Washing Defects on the Economy of Bangladesh

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Abstract Garment washing is currently a very popular industry in Bangladesh and around the world. Bangladesh has received a lot of orders in various industries because of its enormous popularity. As a result, the long-term viability of these industries must be ensured. The cost of manufacture and lead - times are critical factors in ensuring the long-term viability of these industries. The research team chose 20 factories to collect data from that to address some of the study's questions. The research team devised an eight-question questionnaire to learn more about the current state of these industries, as well as to identify new problems, causes, and solutions to these problems. Their subjects were the general manager of the factory, the production manager, and the technician. Finally, the research team has made some proposals for resolving these issues and ensuring long-term viability.

Keywords RMG, Washing, Economy, Bangladesh

1. Introduction

Normally garments washing means cleaning of dirty garments with soap or detergent. But industrial garments washing is a technology which is used to modify the outlook, appearance, comfortability, and design of the ready-made garments made from solid color dyed or pigment printed fabric is called garment washing. Without proper knowledge of washing, we cannot give proper looking which is asked by the buyers in recent years. Garments washing is a new trend in Bangladesh, but it has 50 years prior history. Now washing includes bringing different shades, dry processes, dyeing and so many process according to the buyer's requirement [1]. Garment wash is done in denim fabrics to produce a color fading effect with or without patchiness, seam puckering, hairiness, crinkles, de-pilling, stabilized dimensions, and soft hand feel. It is one of the most popular processes which is applied in garments to enhance the garments. For the first time, the concept of garments washing technology was developed by Jack Spencer for the brand Lee. Stonewash was first developed by Francois Giraud and the sandblasting process was developed in 1988 by several branded companies in Italy. Primary garment washing is classified into two types, these are- Dry process or Mechanical process and Wet process or chemical process [2].

Garments washing is the process to improve hand feel,

appearance, and better outlook of garments. That's why washing plays a vital role in garments manufacturing. Because of various washing defects, the rejection of garments increases [3]. Garments washing defect 16 types. Some of these defects are the most common. We need to reduce the rate of washing defects/faults at a minimum level. Rejection increases the cost of overall manufacturing. This has a great impact on the economy of Bangladesh. Many defects appeared to us in denim manufacturing sectors in Bangladesh during the washings. The rising of washing defects affects the whole process of denim garments manufacturing. In Bangladesh, denim washing defects increase wastages of raw materials and other equipment's which is related to denim production. Similarly, this defect reduces the production of denim garments, which affects the production cost and price of the final products. As a result, the production cost of the final denim products also increases. As the production cost increased due to denim washing defects. So, the price of the final denim goods will increase automatically. Finally, for this contention, the consumer will give more money for final goods of denim garments, which affects the total financial cycle or system in Bangladesh. If denim washing defects don't be found during denim washing, and then it will help the economic growth of whole production (shown in Figure 1). Whereas, if denim washing defects found during denim washing. Then it will restrict the economic increase of all productions (shown in Figure 1). These defects also affect the international financial cycle like Bangladesh [4].

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1.1. Objectives of This Study

In this study, the research team select 300 Washing factories in different zone of Bangladesh specially Gazipur, saver and Mirpur for investigating this situation. Finally, the research team takes some Snap for showing the real scenario of the factories and prepare the final project as an outcome.

2. Material and Method

2.1. Materials

- Washing Factory (20 from different zone)
- Factory Employ (Labor, Technician, GM)
- Different type of Buyer (H&M, Puma, Zara)
- Washing Machine (Modern and traditional)
- Survey data (Primary and secondary)

2.2. Methodological Framework

At first, the research team analyse and try to find the defects theoretically. The research team has found 16 defects (washing) theoretically. The research team pick 20 factories according to product types. After collecting their feedback, they found 03 (three) new defects according to his comments. In most factories everyone is satisfied with the salary and job. The team analyse graph to show maximum and minimum defect. As a result of washing defect, order loss has occurred. After finding the results and recommendation, some suggestions from the view of the GM, Technician & factory owner, and the buyer finally the research team has recommended the factory owner, buyer the way to sustainability of this sector.



Figure 1. Methodological Framework

3. Results and Discussions

3.1. Question Number 01: Which Kind Impact do You Face Because of Washing Defect?

From this Graph (01), We can see that, Question no (01) lead three factors have given their feedback. From their feedback found different types of defects such order loss, order delay and lead time meet etc. Hence, 20 factories have survived to collect this feedback. From order loss factors, Average value is General manager, Production Manager and Labor has given 69%, 67.15% and 61.85% positive feedback.

On the other hand, for the factors of order delay, Average value is GM, PM and Labor has given 63.55%, 67.15% and

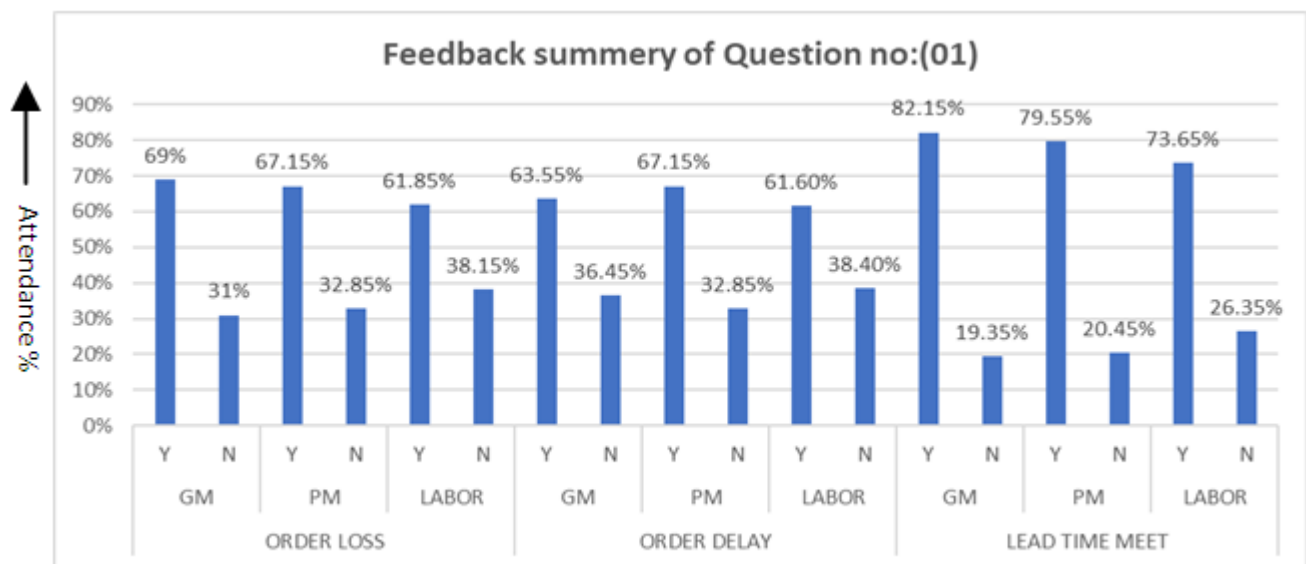
61.60% positive feedback.

On the other hand, for lead time factors, Average value is GM, PM and Labor has given 82.15%, 79.55% and 73.65% positive feedback.

3.2. Question Number 02: What You Think? The Problem Can Effect on the Economy of Bangladesh?

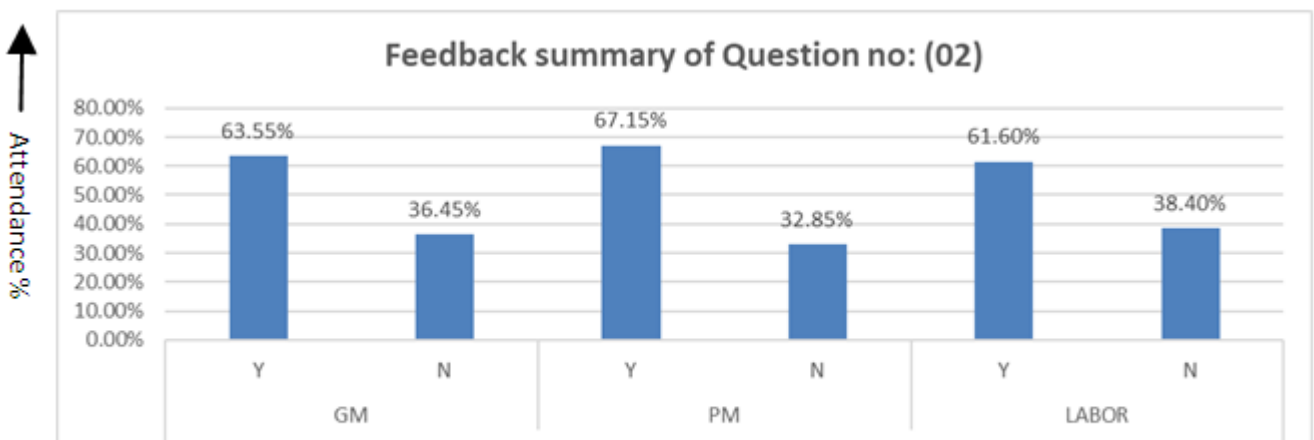
From this Graph (02), We can see that, Question no (02) lead one factors which has given by GM, PM, Labor.

Hence, 20 factories have survived to collect this feedback. The Average value is GM, PM and Labor has given 63.55%, 67.15% and 61.60% positive feedback that can effect on the economy of Bangladesh very strongly.



Feedback according to defect →

Graph 1. Feedback summary of Question number 01



Feedback according to sample →

Graph 2. Feedback summary of Question number 02

3.3. Question Number 03: Is It Possible to Solve All These Problems by Our Exiting Manpower?

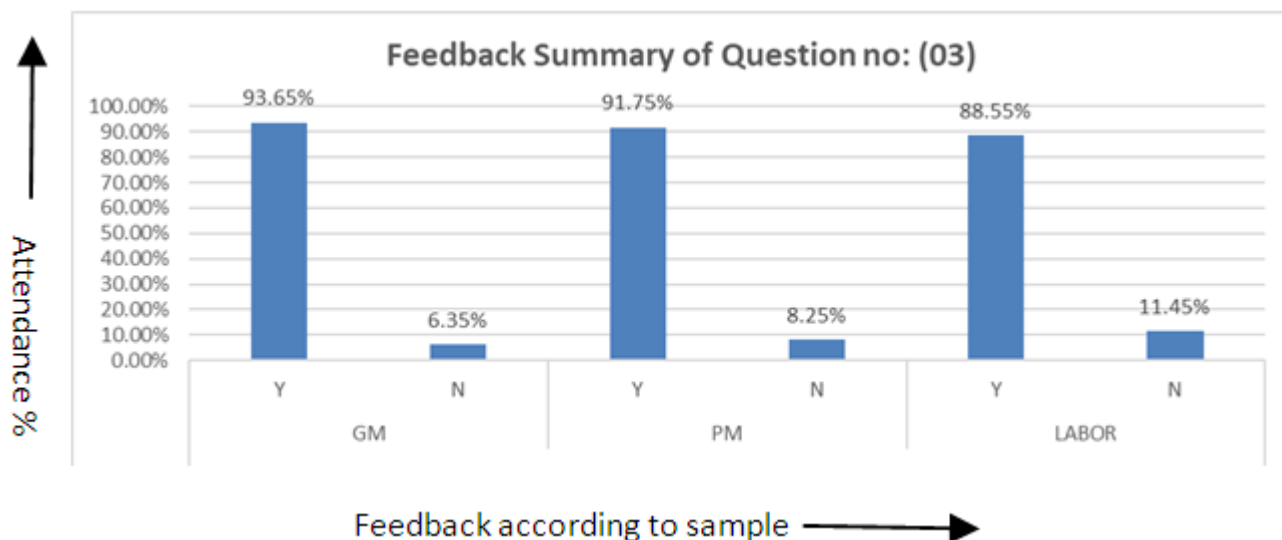
From this Graph (03), We can see that, Question no (03) lead one factors that these types of problem can be possible to solve all these problems by our exiting manpower.

Average value is GM, PM and Labor has given 93.65%, 91.75% and 88.55% positive feedback to solve all these problems by our exiting manpower factors.

3.4. Question Number 04: In Garments Washing. Which Type of Defects You Commonly Seen?

From this Graph (04), We can see that, Question no (04) lead fifteen 15 types of defects such garments washing defects you commonly seen. After getting their feedback, the team has found three new types of defects that are not included theoretically.

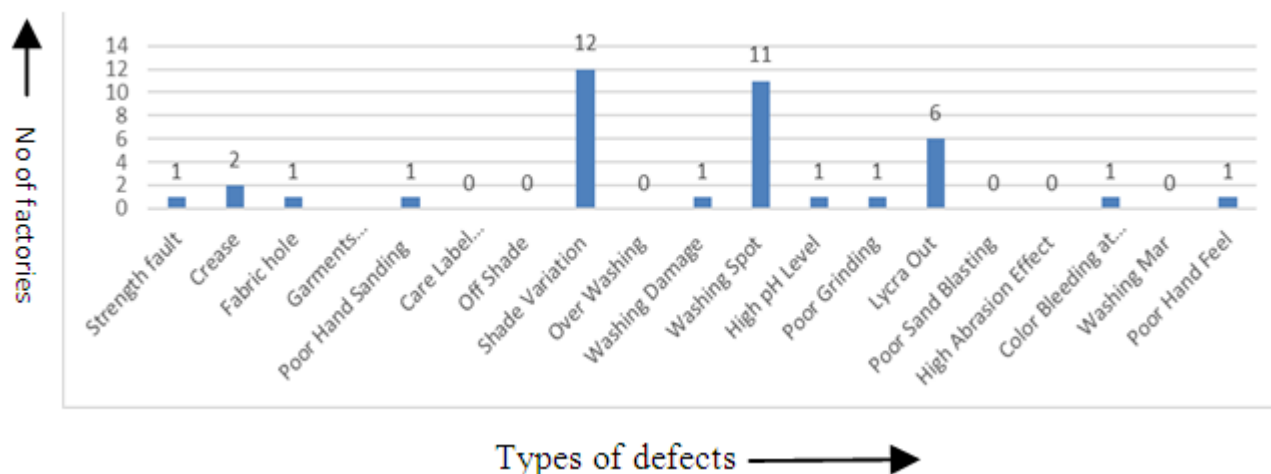
From 20 factories PM and Labor has given Negative feedback.



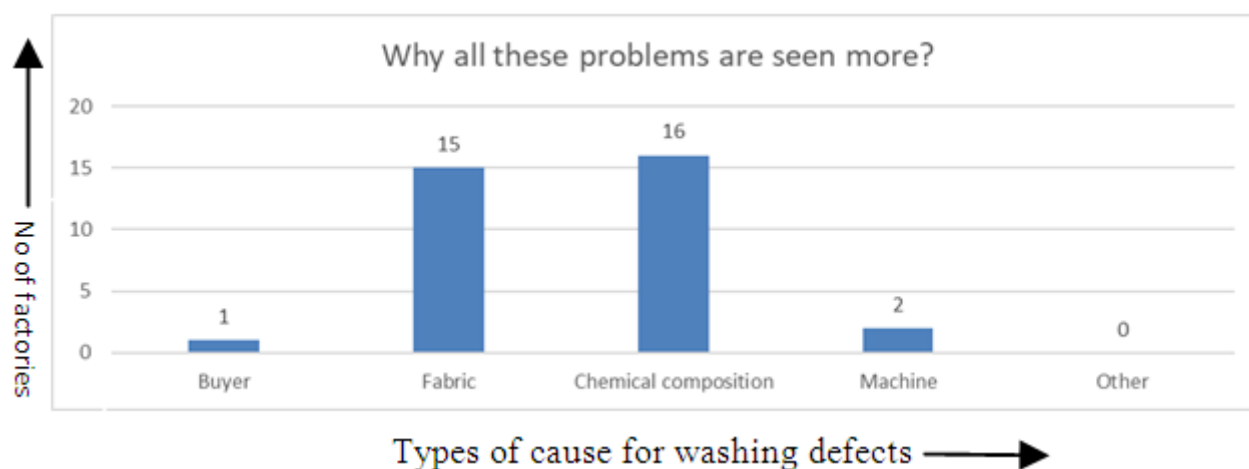
Graph 3. Feedback summary of Question no 03

Table 1. Summary sheet of Question no: (04)

Industry Serial	(1) Garments Discoloration (2) Poor Hand Sanding (3) Care Label Fading/Damage (4) Off Shade (5) Shade Variation (6) Over Washing (7) Washing Damage (8) Washing Spot (9) High pH Level (10) Poor Grinding (11) Lycra Out (12) Poor Sand Blasting (13) High Abrasion Effect (14) Color Bleeding at Pocket Bag and Label (15) Washing Mar (16) Poor Hand Feel Other Defect: -
Factory: -01	Shade Variation, Washing Spot
Factory: -02	Shade Variation, Washing Spot, Lycra Out
Factory: -03	Washing Spot, Shade Variation
Factory: -04	Washing Spot, Lycra Out
Factory: -05	Shade Variation, Washing Spot, Lycra Out
Factory: -06	Shade Variation
Factory: -07	Shade Variation, Washing Spot, Lycra out
Factory: -08	Shade variation, High PH Level, Strength fault
Factory: -09	Por Hand Sanding, Shade Variation, Poor Grinding, Lycra Out, Poor Hand Feel
Factory: -10	Washing Spot
Factory: -11	Washing Damage
Factory: -12	Washing Spot
Factory: -13	Shade Variation
Factory: -14	Washing Spot
Factory: -15	Color Bleeding at Pocket Bag and Label, Shade variation
Factory: -16	Shade Variation
Factory: -17	Crease
Factory: -18	Shade Variation, Washing Spot
Factory: -19	Shade Variation, Washing Spot, Lycra Out
Factory: -20	Crease, Fabric hole



Graph 4. Feedback summary of Question number 04



Graph 5. Feedback summary of Question no 05

3.5. Question Number 05: Why These Types of Problems are Seen More?

Table 2. Feedback summary of Question no: (05)

Industry Serial	(1) Buyer (2) Fabric (3) Chemical composition (4) Machine (5) Other
Factory: -01	Fabric, Chemical composition
Factory: -02	Buyer, Fabric, Chemical composition
Factory: -03	Chemical composition
Factory: -04	Fabric, Machine
Factory: -05	Fabric, Chemical composition
Factory: -06	Fabric
Factory: -07	Fabric, Chemical composition, Machine
Factory: -08	Fabric
Factory: -09	Fabric, Chemical composition
Factory: -10	Fabric
Factory: -11	Fabric, Chemical composition

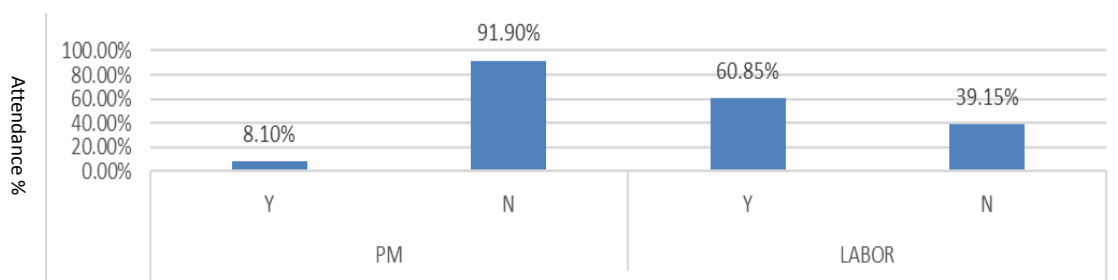
Factory: -12	Fabric, Chemical composition
Factory: -13	Chemical composition
Factory: -14	Fabric, Chemical composition
Factory: -15	Chemical composition
Factory: -16	Fabric, Chemical composition
Factory: -17	Chemical composition
Factory: -18	Fabric, Chemical composition
Factory: -19	Chemical composition
Factory: -20	Fabric, Chemical composition

From this Graph (05), We can see that, Question no (05) lead four defects because that are seen more in washing factory.

From 20 factories the GM, PM, and technician has given their feedback Negative about this matter.

3.6. Question Number 06: Do You Face Health Problem During Working in the Washing Sector?

From this Graph (06), We can see that, Question no (06) the average value of PM and Labor feedback are 8.10% and 60.85%.



Graph 6. Feedback Summary of Question no 06



Graph 7. Feedback summary of Question no 07

3.7. Question Number 07: Do You Satisfied to Work in the Sector?

From this Graph (07), We can see that, Question no (07) lead one factors such satisfied to work in the washing sector. Maximum labor of washing factories is satisfied.

3.8. Question Number 08: Impact of Washing Defect on the Total Production

Industry Serial	Order Place	Due to stock lot amount	Impact on next order
Factory: -01	500000 pice	6%	Yes
Factory: -02	650000 pice	5%	Yes
Factory: -03	30000 pice	6%	Yes
Factory: -04	430000 pice	8%	Yes
Factory: -05	177560 pice	4%	Yes
Factory: -06	350780 pice	0%	No
Factory: -07	500000 pice	3%	Yes
Factory: -08	35000 pice	6%	Yes
Factory: -09	55000 pice	5%	Yes
Factory: -10	2400 pice	3%	Yes
Factory: -11	3800 pice	4%	Yes
Factory: -12	15000 kg	0%	No
Factory: -13	85000 kg	4%	Yes
Factory: -14	150000 kg	5%	Yes
Factory: -15	90000 pice	6%	Yes
Factory: -16	70000 pice	5%	Yes
Factory: -17	95000 pice	7%	Yes
Factory: -18	120000 pice	0%	No
Factory: -19	85000 pice	4%	Yes
Factory: -20	250000 pice	3%	Yes

Stock lot: - Maximum washing factory store stock lot after completing the order. This is the wastages % of different washing factories.

Next order: - Maximum of the factory effect in the next order due to huge stock lot and defects problem.

4. Conclusions and Recommendations

Garments washing is the process to improve hand feel, appearance, and better outlook of garments. That's why washing plays a vital role in garments manufacturing. Because of various washing defects, the rejection of

garments increases [5,6]. Maximum number of washing factories has huge stock lot problem up to 10% [7,8].

So, The Factory, Authority and Buyer should implement the CSR to sustain of garments washing factory in future. Decrease of chemical use that can Increase the next order. In total income of Bangladesh washing factory directly and indirectly related to the total economy of Bangladesh. Finally, the research team recommend all the recommendations to increase the economy of Bangladesh.

Modern technology in washing sector can reduce the worker. But production quantity will high, and cost consumption will be reduced.

4.1. Recommendations

From the view of General Manager-GM:

1. Skillfull labor should be placed in the factory.
2. Manpower should be skillful.
3. Buyer should be positive about any type of order loos.
4. Factry authority should be positive their order quantity.
5. Authority should ensure job security for their employ.

From the view of Technician:

1. Machine should be updated.
2. Factory technology should be updated.
3. Skillful orders should be placed in the workplaces.
4. Maintenances should be regular.
5. About CM and lead time.

From the view of Labor:

1. Job security should be ensured.
2. Salary should be handsome.
3. Safty of labor should be ensured.
4. Safty equipment should be ensured.
5. Medical support should be ensured.

Recommendation from the view of Research team:

1. All the recommendations Should be followed by the Factory, Authority and Buyer.
2. Will ensure the Sustainability of garments washing factory.
3. Will Increase of order.
4. Will Increase of economy in Bangladesh.
5. Will decrease of chemical use.

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