



The Journal of The Textile Institute >

Volume 108, 2017 - [Issue 11](#)

1,906 29

Views | CrossRef citations to date | Altmetric

0

Articles

# An application of Pareto analysis and cause-and-effect diagram (CED) to examine stoppage losses: a textile case from Bangladesh

Jamal Hossen, Nafis Ahmad & Syed Mithun Ali

Pages 2013-2020 | Received 23 Nov 2016, Accepted 16 Mar 2017, Published online: 27 Mar 2017

Cite this article

<https://doi.org/10.1080/00405000.2017.1308786>



Sample our  
Engineering & Technology  
Journals  
>> [Sign in here](#) to start your access  
to the latest two volumes for 14 days

Full Article

Figures & data

References

Citations

Metrics

Reprints & Permissions

Read this article

Share

## Abstract

Spinning industries are facing challenges of improving productivity in the competitive market nowadays. Ring spinning, the most widely used yarn manufacturing process for short staple spinning, uses several types of machinery from blow room to ring frame for producing yarns from cotton fibers. An enterprise can improve utilization of resources by identifying unwanted machine stoppage and taking corrective actions at different points in the production cycle. This study focuses on the major six stoppage losses that are used to calculate Overall Equipment Efficiency (OEE) of ring frame section. The Pareto analysis reveals that idling and minor stoppage and breakdown losses are responsible 89.3% of total stoppage losses. According to cause-and-effect analysis, root causes for the stoppage losses are: high doffing time, high traveler changing time,

broken end of yarn due to piles generation through the front roller, power failure and change in Draft Change Pinion (DCP) due to breakage of teeth of the gear during starting of machine by operators before lowering of ring rail and change of Twist Change Pinion (TCP) due to the displacement of TCP gear shaft. Finally, few recommendations are made to reduce stoppage losses and to increase the productivity of the ring frame section.

Keywords:

- Yarn manufacturing process
- ring frame
- OEE stoppage losses
- Pareto analysis
- cause-and-effect diagram
- loss prevention

Related research ⓘ

People also read

Recommended articles

Cited by  
29

## Information for

Authors

R&D professionals

Editors

Librarians

Societies

## Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

## Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

## Help and information

Help and contact

Newsroom

All journals

Books

## Keep up to date

Register to receive personalised research and resources by email



Sign me up



Copyright © 2025 Informa UK Limited [Privacy policy](#) [Cookies](#) [Terms & conditions](#)

[Accessibility](#)

 Taylor and Francis Group

Registered in England & Wales No. 01072954  
5 Howick Place | London | SW1P 1WG