Proceedings of the International Conference on Industrial Engineering and Operations Management

Publisher: IEOM Society International, USA DOI: 10.46254/BA08.20250039
Published: December 20, 2025

Impact of Lean Philosophy on Organizational Behavior

Most. Ishat Islam
Department of Management Studies
Begum Rokeya University, Rangpur
ishat49@gmail.com

Mohammad Rafiul Azam Khan
Professor
Department of Management Studies
Begum Rokeya University, Rangpur
neeshar.bru@gmail.com

Abstract

After launching the project, evaluating its success is essential through systematic data collection and stakeholder input. The Lean philosophy emphasizes a long-term commitment that is not necessarily costly, but offers a positive, productive, and adaptable framework. The purpose of this paper is to evaluate changes in organizational behavior at Karupannya Rangpur Limited following the implementation of Lean philosophy and the project emphasizes the practical application of Lean tools based on situational analysis and collects feedback through open-ended questionnaires to analyze behavioral practices and data is analyzed using IBM SPSS Statistics 27 software. The expected outcomes of this study are to assess the extent of Lean behavior practices on the shop floor, to identify specific to optimize operational efficiency, manpower was streamlined to utilize 3 persons. Lead time was significantly reduced from 9,276 seconds to 7,277 seconds- achieving a 21.54% improvement. Production output increased by an average of 20%-that reflecting enhanced productivity. Additionally, the overall process was simplified, reducing the number of steps from 15 to 13. The study aims to evaluate the extent of Lean behavior on the shop floor and identify specific practices that enhance efficiency and support a sustainable, high-performing work environment.

Keywords

Lean Philosophy, Organizational Behavior, Lean Tools, Open ended questionnaire and IBM SPSS Statistics 27 software.

1. Introduction

Lean is a philosophy of work that defines means to improve and optimize the production system, focusing on identifying and eliminating all types of waste and reducing or minimizing variability between demand and supply (Shah & Ward, 2007). Lean concepts originated in the Toyota operating model of the 1930s. The term Lean was first introduced by Krafcik (1988). Lean manufacturing is considered by many authors as a technique to reduce waste, but in practice, Lean manufacturing maximizes the value of the product by minimizing waste (Sundar et al., 2014).

Some of the equipment and procedures were originally developed and the mindset can be applied to an entire company as long as the overall goal remains the same, which is to increase the productivity and efficiency while eliminating waste. Some of Lean is used in the shop floor. These systems have proven to be effective in an effective

organization. It is invigorating to see the operations and methods through the eyes of someone who is not related to the operation can easily understand the overall process.

Lean philosophy helps users identify the gap between current and desired execution measures and uses quantitative and qualitative research and collaborative studies to close that gap. The developing ubiquity of Lean standards stems from the fact that they focus on improving every part of a work cycle and include all stages of an organization's order.

The primary goal of this project is to implement the Lean tools in the shop floor and will assess the level of motivation of the employees of Karupannya Rangpur Ltd. towards the lean tools, as well as to find the factors which affect the organizational behavior (OB).

1.1 Objectives

The below sentences focus on the project objectives:

- The main objectives of this project are to assess the current process
- To change organizational behavior by applying lean philosophy
- Using close end questionnaire as a feedback tool

2. Literature Review

In simple words, lean philosophy may be summarized as identification, reduction, or elimination wastages in the system wherever possible. This looks simple but difficult to implement and execute as this is not just a concept but a lifestyle that needs to be followed religiously. Lean is not time bounded but a continuous improvement journey where there is no limit to achieving excellence. Lean is not a single concept of technique but an amalgam of theories applied constantly to achieve operational excellence (Prabir Jana & Manoj Tiwari, 2021).

Lean is a manufacturing philosophy "whose objective is to minimize the consumption of resources that add no value to a product" (Shah & Ward, 2007). For Toussaint and Berry, Lean is rather "a cultural transformation that changes how an organization works" (J.S Toussaint & L.L Berry , 2013). Liker and Wu on their part defined lean like "a philosophy of manufacturing that focuses on delivering the highest quality product at the lowest cost and on time" (Emiliani, M.L., 1998).

Lean can improve the system as a whole Lean can be adopted by any organization regardless of size, culture, and geographical location (B Emiliani, D.J Stec, L Grasso, J Stodder , 2007). However, it must be taken into account that organizations should not copy Lean practices to the letter, but rather adapt them to their work environment and their sector of activity (D. Foris, A. Florescu, T. Foris, S Barabas, 2020). According to Toyota, organizations that copy its processes exactly are generally doomed to failure. It stipulates that they can borrow its ideas and adopt its principles in a way that corresponds to their context (J.K. Liker, 2020).

T h e roots of Lean can be found in the Japanese company of Toyota. Th e origins of Toyota Production System date back to the beginnings of the twentieth century (Łukasz Dekier,2012). The post-war economic difficulties led to an increase in inventories of unsold cars, which resulted in financial difficulties for Toyota (Prabir Jana & Manoj Tiwari, 2021). To cope with this critical situation and the American competition from the Ford production system, it was necessary to find an optimal management and production system. That is how the two engineers, Eiji Toyoda and Taiichi Ohno, launched the Lean concept (Emiliani, M.L., 1998). Table 1 summarizes the important phases of Lean evolution. The development of the TPS had largely gone unnoticed and only attracted attention during the first oil crisis in 1973 (Prabir Jana & Manoj Tiwari, 2021).Later, Lean spread around the world and gained immense popularity. The world is highly grateful to Japan (Toyota Corporation) to introduce this philosophy of Kaizen, known as synonymous to lean world-wide. The term lean production was coined by John Krafcik because it uses lesser resources as compared to mass production (Womack, Jones, & Roos, 2007). Lean management which is a generic process management philosophy (Wang, 2011) has its roots in the Toyota Production System (TPS) which was developed and practiced by Taiichi Ohno in the 1950s at the Toyota Corporation, Japan (Jana & Tiwari, 2021). TPS was a combination of practices followed by employees of the Toyota Motor Company in the form of their day-to-day efforts to achieve continual improvements. Lean ideas provide newer ways to identify and root out the waste in the process (Hammer & Somers, 2015). Kaizen, a term referred to as Japanese approach for continuous improvement, is the genesis of the Lean way of working. In the 1980s a term named Lean manufacturing was first

coined by researchers at MIT under the guidance of Dr. James Womack. In the 1980s a term named Lean manufacturing was first coined by researchers at MIT under the guidance of Dr. James Womack, who termed the lean approach as a solution to eliminating the process of waste (Womack & Daniel, 2003). Accordingly to the Lean Enterprise Institute, lean is a demand-driven approach based on the pull concept (LEI, 2000) which is in contrast to the traditional thinking of producing more or push concepts (Womack, & Jones & Roos, 2007). Richard Schonberger played an important role in popularizing "just-in-time" concepts in the United States in the 1980s, which emphasized the material flow aspects of lean. Hill (2012) further explains lean is about making processes simple and visual. Once processes are simple and visual, it becomes easier for people in the "Gemba" to make them error-proof and to eliminate waste. Once processes are simple, visual, error-proof, and waste less, it is important to make them standard so that the benefits are sustainable. Lastly, respect for people before, during, and after the process improvement activity is critical to success (Prabir Jana & Manoj Tiwari, 2021). Table 1 explain the overall Lean history from 1927 to after 2000s.

Table 1. Lean journey (Benkarim & Imbeau, 2021)

Date	Lean Evolution
Before 1945	o In 1927 Henry Ford outlined his philosophy and the main principles of Ford's production system (FPS) in "Today and tomorrow". o In 1937 Toyoda Motor Company was established in the city of Koromo, Japan which was later named Toyota.
Journey of TPS in Japan (1945–1978)	o In 1945 Toyota started the innovation of TPS. o In 1978 Taiichi Ohno published a book named "Toyota Production System" in Japanese.
Journey of TPS in North America (1973–1988)	o In 1973 after the oil crisis in North America,TPS won the considerable attention here. o In 1977, Sugimori et al. published the first academic article on TPS. o In 1984,Toyota Motor Company and General Motors working together for testing the TPS in America. o In the mid-1980s different kind of books describing the Toyota's production system in English.
Academically journey (1988–2000)	o In 1988, Krafcik described Toyota's manufacturing system with respect of Lean. o In 1990, Womack, Jones, and Roos published"The machine that changed the world" book. o In1994, Womack and Jones published bookek which named "Lean Thinking". o In 2000, several books and articles highlighting the global nature of lean production were published.
After 2000s	o Major companies adopted Lean: Rolls Royce (2000), Nike (2002), Parker Hannifin (2003), Intel (2004). o Toyota Motor Company was projected to become the number one automobile manufacturer in North America (2006). o Lean principles were translated into other domains: Lean healthcare (2002), Lean Software Development (2003), Lean education (2003), Lean Startup (2008).

LT principles guide management in the process of developing a lean based enterprise and create a continuous journey towards waste elimination by working together and revisiting each activity in a value stream to identify opportunities for further improvements (Thangarajoo and Smith, 2015).

Lean leadership is a methodical system for the sustainable implementation and continuous improvement of LPS. It describes the cooperation of employees and leaders in their mutual striving for perfection. This includes the customer focus of all processes as well as the long-term development of employees and leaders (Dombrowski and Mielke 2013). Teamwork is considered essential for effective Lean organizations. However, the way of teams formed during a successful Lean transformation relative to changes in organizational structure. Constructs for variables and factors that influence formation of teams, during and after Lean transformation maturity, were identified (Herbert and Breggie, 2018).

3. Methods

Change can be considered as episodic or continuous. This project is the reflection of action based project and then questionnaire acted as a feedback tool. The project had three phases, showing in Figure 1.

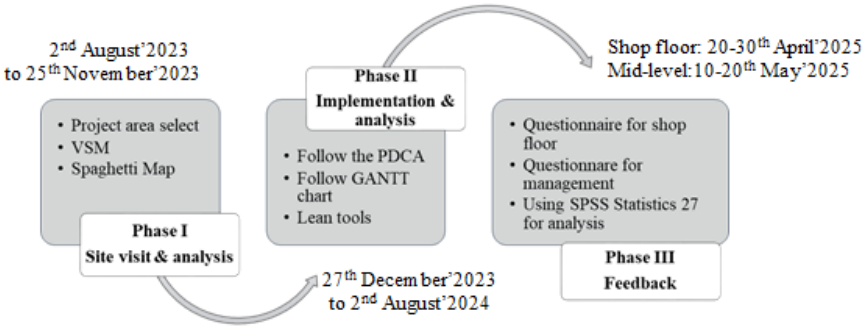

Figure 1. Project phase

The project would suggest that the implementation of lean will introduce a more flexibly orientated organizational behavior over time as the philosophy is adopted.
Leans tools like VSM, Spaghetti map, KANBAN, SOP, TAKT time are used to improve the process and make a regular practice. After that questionnaire are used as feedback.

3.1 Phase I: Site visit & analysis

Phase I activities was started on 2nd August'2023 and completed on 25th November'2023. In that time frame the activities are describe in details below:

From Figure 2-VSM was made to understand the existing situation, where process time (PT) was 2440.99 sec and lead time (LT) was 9276 sec. Total process was and 15 and manpower was 65.

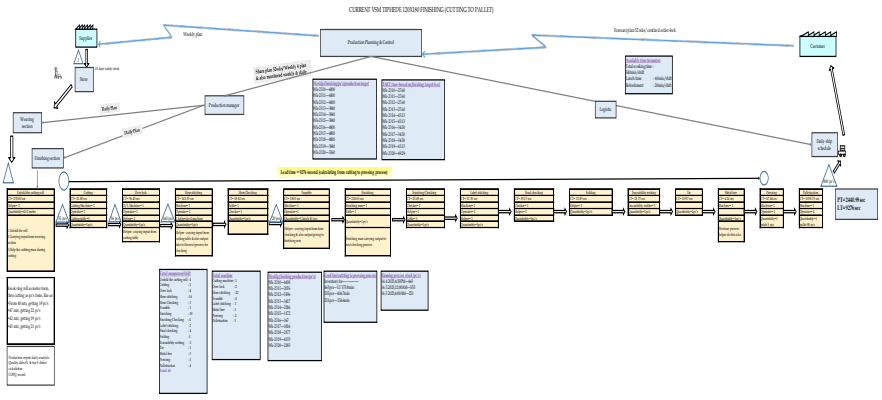

Figure 2. Previous VSM

From Figure 3-Spaghetti map was made to understand the existing movements of the manpower as well as product and process distance form each process, actually to understand the overall layout of project area.

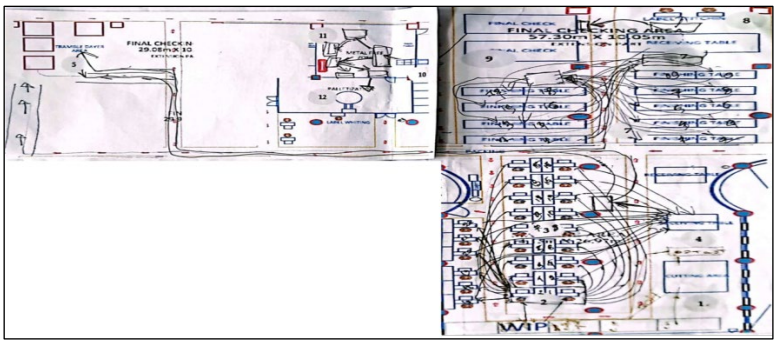

Figure 3. Previous Spaghetti map

From Figure 4-cycle time (CT) was analysis of project area existing product. According to demand scenario TAKT time of that product was also calculated to understand the daily demand and bottle neck process.4 processes CT out of 15 processes, was crossed the TAKT time standard.

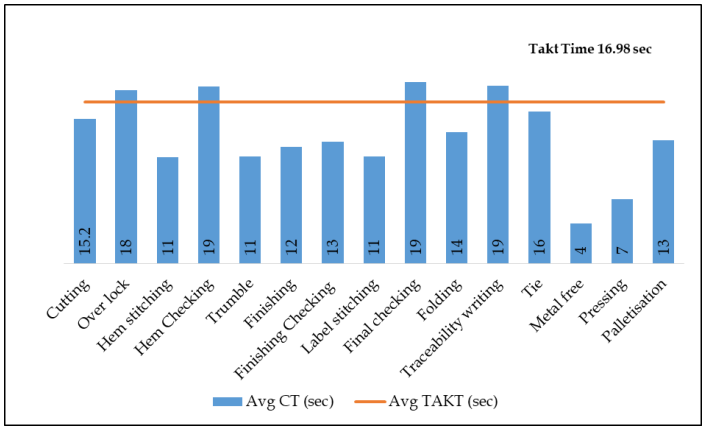

Figure 4. Previous TAKT time and cycle time analysis

3.2 Phase II: Implementation & analysis

Based on Phase I analysis, some improvement tasks was took and implemented according to the action plan. The phase II duration was 27th December'2023 to 2nd August'2024. In that time frame the activities are describe in details below:

From Figure 5. -project organogram was formed and core team discussed the present status of project among them accordingly.

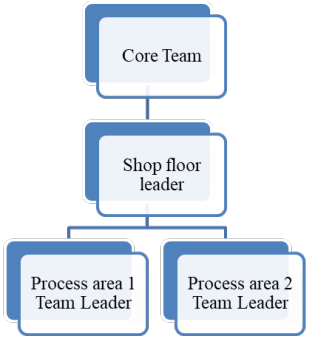

Figure 5. Project Organogram

From Figure 6-redesign the over lock machine table, used a trolley from cutting process output to over lock process input, followed traceability sticker from cutting output to final process checking area so that easily understood who create the defective goods, trained frequently each stakeholder to solve the problem at the needle point where created, build a SOP to ensure each stake holder responsibility. Each shop floor person was concern about their own task so it was easy to reduce hem checking process where checking is non-valuated task. Redressing the workstation of 2 finishing checking and finishing checking procedure.

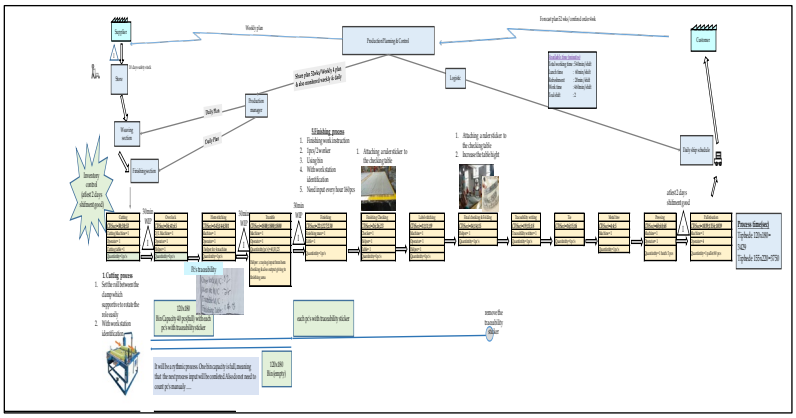

Figure 6. Implemented VSM

From Figure 7 - KANBAN is used for reducing unnecessary movement. As a rhythmic process. One bin capacity is full, meaning that the next process input will be completed. Create a one job post like collector, who collects the goods from each process after a time period, so excess movement of each work station is reduced.

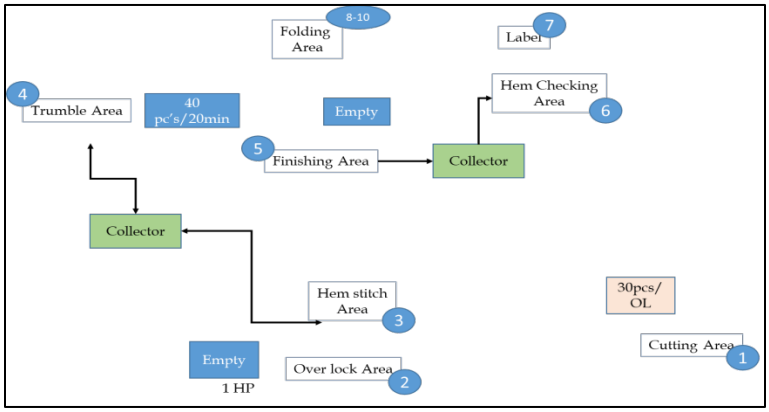

Figure 7. Implemented KANBAN

From Figure 8- again analysis the CT and compared with TAKT time , all the process CT was below the TAKT time , that means implemented process is balanced , process is reduced from 15 to 15and utile 3 manpower.

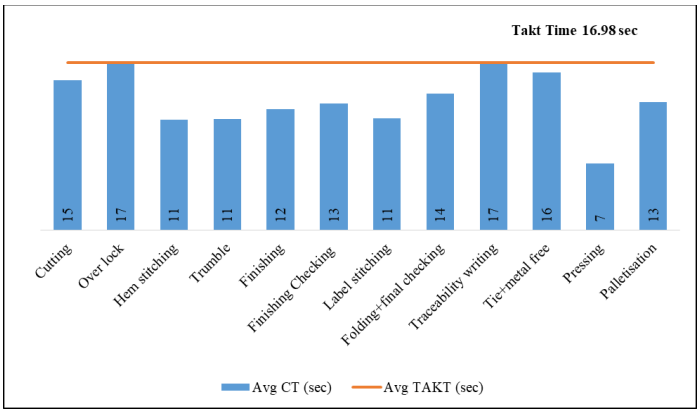

Figure 8. Implemented TAKT time analysis

3.3 Phase III: Feedback

After completing the project phase I and II, likert items were used to measure respondent's attitudes to a particular question or statement. To analyses the data it is usually coded as follows in Table 2.

Table 2. 5-Point Likert Scale Measurements

Likert-Scale Description	Likert-Scale
Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly Disagree	1

The phase III duration was divided into two slots…….

1. Shop floor questionnaire analysis: From 20th April to 30th April'2025, taking feedback from shop floor personnel who are related with the project with five questions and 21 responded.
2. Mid-level questionnaire analysis: From 10th May to 20th May'2025, taking feedback from mid-level personnel of the organization. Mid-level questionnaire is designed into four sections (Quality, Productivity, Benefits & Lean tools) with 10 responded.

3.4 Analysis by IBM SPSS Statistics 27 software

1. Shop floor questionnaire analysis (Table 3)

Table 3. From shop floor questionnaire frequency (f) analysis

Response Options	Q1		Q2		Q3		Q4		Q5	
Strongly Agree	10	47.6%	14	66.7%	10	47.6%	9	42.9%	15	71.4%
Agree	9	42.9%	7	33.3%	7	33.3%	9	42.9%	5	23.8%
Neutral	2	9.5%			3	14.3%	3	14.3%	1	4.8%
Disagree					1	4.8%				

Interpretation of Table 3

- 47.6% strongly agree,42.9% agree and 9.5% neutral with the Lean implemented process is efficient(Q1)
- 66.7% strongly agree and 33.3% agree with the Roles and responsibilities are more defined through lean implementation (Q2)
- 47.6% strongly agree,33.3% agree, 14.3% neutral and 4.8 with the New process guidelines are communicated to all stakeholders (Q3)
- 42.9% strongly agree,42.9% agree and 14.3% neutral with the Production rate is consistent (Q4)
- 71.4% strongly agree,23.8% agree and 4.8% neutral with Lean has 100% impact on OB (Q5)

Table 4. From shop floor questionnaire mean analysis (IBM SPSS Statistics 27)

		Q1	Q2	Q3	Q4	Q5
N	Valid	21	21	21	21	21
	Missing	0	0	0	0	0
Mean		4.38	4.67	4.24	4.29	4.67

Interpretation of Table 4

- All means are relatively high (above 4), indicating generally favorable responses.
- Q2 and Q5 have the highest average ratings (4.67), suggesting those items were rated most positively.
- Q3 has the lowest mean (4.24), still positive, but relatively less so.

2. Mid-level questionnaire analysis
   Section 1: Quality

Table 5. From shop floor questionnaire frequency (f) analysis (IBM SPSS Statistics 27)

Response Options	Qu1		Qu2		Qu3		Qu4		Qu5	
	f	%	f	%	f	%	f	%	f	%
Strongly Agree	9	90.0%	5	50.0%	6	60.0%	5	50.0%	6	60.0%
Agree	1	10.0%	4	40.0%	3	30.0%	5	50.0%	4	40.0%
Neutral		0.0%	1	10.0%	1	10.0%		0.0%		0.0%

Interpretation of Table 5

- 90% strongly agree and 10% agree with the with the CTQ (Qu1)
- 50% strongly agree, 40% agree and 10% neutral with the with the DHU (Qu2)
- 60% strongly agree,30% agree and 10% neutral with the improved process (Qu3)
- 50% strongly agree and 50% agree with QA performance (Qu4)
- 60% strongly agree and 40% agree with Over all quality permmance (Qu5)

Table 6. Mid-level quality section questionnaire statistics analysis (IBM SPSS Statistics 27)

		Qu1	Qu2	Qu3	Qu4	Qu5
N	Valid	10	10	10	10	10
	Missing	0	0	0	0	0
Mean		4.9000	4.4000	4.5000	4.5000	4.4000

Interpretation of Table 6

- Qu1 has the highest average (4.90), suggesting strong agreement or high ratings from respondents.
- The other items range between 4.4–4.5, indicating generally positive responses across the board.

Section2: Productivity

Table 7. Mid-level productivity section questionnaire frequency (f) analysis

Response Options	P1		P2		P3		P4	
	f	%	f	%	f	%	f	%
Strongly Agree	6	60.0%	7	70.0%	7	70.0%	5	50.0%
Agree	4	40.0%	3	30.0%	3	30.0%	5	50.0%

Interpretation of Table 7

- 60% strongly agreed and 40% agree with the P1
- 70% strongly agreed and 30% agree with the P2
- 70% strongly agreed and 30% agree with the P3
- 50% strongly agreed and 50% agree with the P4

Table 8. Mid-level productivity section questionnaire statistics analysis (IBM SPSS Statistics 27)

		P1	P2	P3	P4
N	Valid	10	10	10	10
	Missing	0	0	0	0
Mean		4.6000	4.7000	4.7000	4.5000

Interpretation of Table 8

- All variables are tightly clustered around the mean, with values between 4 and 5.
- P2 and P3 share identical statistics, suggesting they may be duplicates or measure very similar constructs.

Section 3: Benefits

Table 9. Mid-level productivity section questionnaire statistics analysis (IBM SPSS Statistics 27)

Response Options	B1		B2		B3		B4		B5		B6		B7	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Strongly Agree	9	90.0 %	8	80.0%	7	70.0%	8	80.0%	6	60.0%	7	70.0%	7	70.0%
Agree	1	10.0 %	2	20.0%	1	10.0%	2	20.0%	2	20.0%	1	10.0%	2	20.0%
Neutral					1	10.0%			1	10.0%	2	20.0%	1	10.0%
Disagree					1	10.0%			1	10.0%				

Interpretation of Table 9

- 90% strongly agreed and 10% agree with the B1
- 80% strongly agreed and 20% agree with the B2
- 70% strongly agreed , 10% agree, 10% neutral and 10% disagree with the B3
- 80% strongly agreed and 50% agree with the B1
- 60% strongly agreed , 20% agree, 10% neutral and 10% disagree with the B5
- 70% strongly agreed , 10% agree and 20% neutral with the B6
- 70% strongly agreed , 20% agree and 10% neutral with the B7

Table 10. Mid-level benefits section questionnaire Statistics (IBM SPSS Statistics 27)

		B1	B2	B3	B4	B5	B6	B7
N	Valid	10	10	10	10	10	10	10
	Missing	0	0	0	0	0	0	0
Mean		4.9000	4.8000	4.4000	4.8000	4.3000	4.5000	4.6000

Interpretation of Table 10

- Highest Mean: B1 (4.9) — participants rated this item highest on average.
- Lowest Mean: B5 (4.3) — lowest average score.
- All means are relatively high (between 4.3 and 4.9), suggesting positive ratings.

Section 4: Lean tools

Table 11. Mid-level lean tools section questionnaire frequency (f) analysis

Response Options	VSM practices		KANBAN practices		5S practices		SOP practices	
	f	%	f	%	f	%	f	%
Strongly Agree	6	60.0%	5	50.0%	8	80.0%	8	80.0%
Agree	4	40.0%	4	40.0%	2	20.0%	2	20.0%
Neutral			1	10.0%				

Interpretation of Table 11

- 60% strongly agreed and 40% agree with the VSM practices
- 50% strongly agreed , 40% agree and 10% neutral with the KANBAN practices
- 80% strongly agreed and 20% agree with the 5S practices.
- 80% strongly agreed and 20% agree with the SOP practices

Table 12. Mid-level lean tools section questionnaire Statistics (IBM SPSS Statistics 27)

		VSM practices	KANBAN practices	5S practices	SOP practices
N	Valid	10	10	10	10
	Missing	0	0	0	0
Mean		4.6000	4.4000	4.8000	4.8000

Interpretation of Table 12

- 5S and SOP have the highest mean ratings (4.8), indicating they are the most consistently well-practiced.
- KANBAN has the lowest mean (4.4), suggesting slightly lower implementation or satisfaction.

4. Results and Discussion

From Table 13, to optimize operational efficiency, manpower was streamlined to utilize 3 persons. Lead time was significantly reduced from 9,276 seconds to 7,277 seconds, achieving a 21.54% improvement. Production output increased by an average of 20%, reflecting enhanced productivity. Additionally, the overall process was simplified, reducing the number of steps from 15 to 13.

Table 13. Implementation impact summary

Topics	Utilize or increase
Manpower	Utilize 3 persons
Lead time	9276 sec to 7277 sec (21.54%)
Production	Average increase 20%
Process	From 15 to 13

Table 14. Summary of all tools section questionnaire Statistics analysis

Questionnaire	Mean	Average mean
Q1: Lean implemented process is efficient	4.38	
Q2: Roles and responsibilities are more defined through lean implementation	4.67	
Q3: New process guidelines are communicated to all stakeholders	4.24	
Q4: Production rate is consistent	4.29	
Q5: Lean has 100% impact on OB	4.67	
Qu1: I am satisfied with the CTQ	4.9	
Qu2: I am satisfied with the DHU	4.4	
Qu3: I am satisfied with the improved process	4.5	
Qu4: I am satisfied with the QA performance	4.5	
Qu5: Overall, I am satisfied with the quality performance	4.4	
P1: I am satisfied with the OTD	4.6	
P2: I am satisfied with the plan vs actual	4.7	
P3: I am satisfied with the production rate	4.7	4.574
P4: Overall, I am satisfied with the productivity improvement	4.5	
B1: Improved inter communication each stakeholder	4.9	
B2: Improved inter relation each stakeholder	4.8	
B3: Increase self confidence	4.4	
B4: Lean has 100% impact on OB	4.8	
B5: Proper utilization of process & equipment & control	4.3	
B6: Proper utilization human resource	4.5	
B7: Reduced overall wastage (transportation, movement, process)	4.6	
VSM practices	4.6	
KANBAN practices	4.4	
5S practices	4.8	
SOP practices	4.8	

From the Table 14, average mean of all section is 4.574, which is greater than score 4 (agree), so all employees are strongly agreed that with the implemented lean tool help to impact organizational behavior.

5. Conclusion

This project paper is the explanation of Lean practice how to make a regular practice in the shop floor activates, when implemented effectively, can positively impact organizational behavior by fostering a culture of continuous improvement, promoting teamwork, and enhancing employee motivation. SPSS software can be used to analyze data collected through surveys methods to quantify these impacts and identify relationships between lean implementation and various aspects of organizational behavior.

The implementation of Lean to improve organizational behavior is a proven concept. Figure 9 represents the overall reflections of the project team members. During the implementation, the team encountered various reactions and challenges, such as: “We are with you 100%,” “We are a TEAM!” as well as concerns like “We have a busy schedule,” “There are no materials,” “How is this possible?” and “This will not work!” Because Lean was a completely new approach, additional manpower, communication efforts, and adaptation were required, which at times led to minor conflicts. However, all challenges were ultimately overcome through Lean philosophy—

supported by teamwork, management involvement, innovative ideas, effective work practices, and deliberate, thoughtful steps.

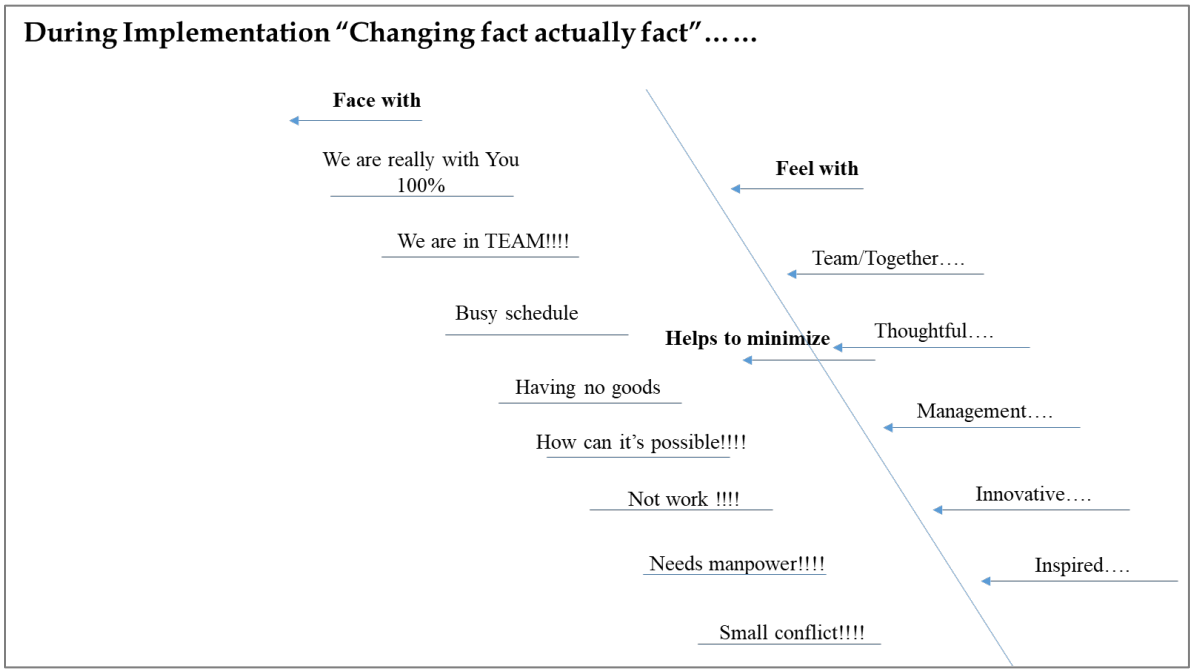

Figure 9. Over all changing status

So, we can say……
"Whoever knows that each small LEAN ascends toward the apex—can they be compared to those who do not know?

References

Benkarim, A.; Imbeau, D.,Organizational Commitment and Lean Sustainability: Literature Review and Directions for Future Research. Sustainability, 2021.

Dekier, L.,The Origins and Evolution of Lean Management System, Journal of International Studies, Vol. 5, No 1, , pp. 46-51. 2012

Dombrowskia, U.,Mielkea, T., Lean Leadership fundamental principles and their application, Forty Sixth CIRP Conference on Manufacturing Systems, 569-674, 2013.

Emiliani, B., Stec, D., Lawrence Grasso, L., Stodder, J., Better Thinking, Better Results: Case Study and Analysis of an Enterprise-Wide Lean Transformation, Kensington, Conn. : Center for Lean Business Management, March 2007.

Emiliani, M.L., Lean behaviors, Management Decision, 36/9 , 615–631,November 1998.

Foris, D., A Florescu,A., Foris, T., Barabas, S., Improving the Management of Tourist Destinations: A New Approach to Strategic Management at the DMO Level by Integrating Lean Techniques, Sustain, MDPI, vol. 12(23), pages 1-22, 2020.

Hammer, M. & Somers, K., More from less: Making resources more productive, McKinsey Quarterly Report. McKinsey & Company, 2015.

Jana, P. & Tiwari, M., Lean management in apparel manufacturing, The Textile Institute Book Series, Pages 1-16, 2021.

Liker, J.K. , The 14 Principles of the Toyota Way: An Executive Summary of the Culture Behind TPS, New York : McGraw-Hill,2004.

Shah, R., Ward, P., Defining and developing measures of lean production. *Journal of Operations Management* ,Volume 25, Issue 4, Pages 785-8057, 2007.

Sundar, R., Balaji, A. N., & Kumar, R. M. S., A review on Lean manufacturing implementation techniques. A Kowalski et al 2020 IOP Conf. Ser.: Mater. Sci. Eng. 916 012053,2014.

Thangarajoo, Y., Smith A., Lean Thinking: An Overview. IEM an open access journal, 2015.

Toussaint, J.S.; Berry, L.L, The Promise of Lean in Health Care, Mayo Clin. Process (88/1), 2013,74-84.

Womack, J.P. & Jones, D.T., LEAN Thinking, second edition, New York: Productivity Press, 2003.

Vries, H. ,Poll, B., Cellular and organisational team formations for effective Lean transformations, Production & Manufacturing Research, 6(1):284-307, August 2018.

.

Biographies

Most. Ishat Islam is currently serving as an Assistant Manager at Karupannya Rangpur Limited, Bangladesh. Her prime responsibilities are resource utilization and inventory management. Currently she completed her Master's degree from Begum Rokeya University in Business Administration (Professional) . She implemented lean tool to change co-worker behavior to get better out and make a project paper during her Master Degree (Professional) from Begum Rokeya University. Throughout her career, She has been actively involved in Lean manufacturing initiatives. During her tenure at SQ Birichina Limited, she led several key improvements including the implementation of 5S in documentation, equipment redesign for process efficiency, and Lean tools such as 6S, visual management, Kanban, and Just-In-Time (JIT) in the manufacturing unit (Cut-to-Box). Her contributions culminated in a research paper presented at IEOM 2016 in Malaysia, where she earned 1st place in the poster presentation category. She completed her BSc from Khulna University of Engineering & Technology in Industrial and Production Engineering. She has published her project paper "Optimization of Grinding Parameters for Minimum Surface Roughness using Taguchi Method " in ICMIEE-2014, showcasing her academic and technical capabilities. She is passionate about continuous improvement, data-driven decision-making, and fostering a culture of efficiency and innovation in the manufacturing sector. She is a member of IEOM. She served as reviewer for 10th North American IEOM Conference in Orlando, 6th Asia Pacific IEOM Conference in Bali.

Dr. Mohammad Rafiul Azam Khan is a professor and head of the Department of Management Studies at Begum Rokeya University, Rangpur, Bangladesh. He earned an MBA in Management from the University of Rajshahi, Bangladesh, and a PhD from the Institute of Bangladesh Studies, University of Rajshahi, Bangladesh. His PhD title was Sustainability Management for Groundwater Irrigation in Barind Tract of Bangladesh. He has published research articles in various recognized journals and presented papers at international conferences both locally and abroad. He is a reviewer for an internationally recognized journal like Springer. He has also completed research projects as a project director funded by Begum Rokeya University, Rangpur, and the Bangladesh University Grants Commission. His research interests include sustainability management, resource management, organization appraisal, and HRM..