

## Top management commitment and lean team members' prosocial voice behaviour

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**Top Management Commitment and Lean Team-members'  
Prosocial Voice Behaviour**

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## Top Management Commitment and Lean Team-Members' Prosocial Voice Behaviour

### Abstract

#### *Purpose*

Top management commitment (TMC) and prosocial voice behaviour in Lean teams are vital for the successful Lean implementation. We wanted to investigate how TMC influences Lean team members' prosocial voice behaviour and how such changed voice behaviour affects the outcome of Lean implementations.

#### *Design/methodology/approach*

We used a qualitative research methodology to examine six dimensions of TMC (communication, involvement, support, empowerment, encouragement, and monitoring) in two ready-made garment (RMG) factories in Bangladesh. Operational performance was measured by efficiency, quality, value stream mapping, SMED, and 5S scores. Occupational Health and Safety (OHS) was assessed by acceptable head and back positions, machine safety, use of masks, and housekeeping.

#### *Findings*

The findings reveal that TMC influences Lean team members' voice behaviour positively and, thereby, company's performance. **Its six dimensions are all critical for mobilizing prosocial voice, which then improves productivity, OHS and enhancing employee capacity and job satisfaction.**

#### *Research limitations/implications*

**This research involved two sewing lines in two RMG factories in Bangladesh. Cross-sector and large-scale international quantitative research is also needed.**

#### *Practical implications*

This research shows how TMC and Lean problem-solving teams can mobilize employee voice.

#### *Originality/value*

**Employee voice is a central issue in the implementation of Lean. For the first time, we show how the six dimensions of TMC influence Lean team members' voice behaviour in the workplace and thereby how prosocial voice affects team performance.**

## Keywords

Top management commitment, Lean team, prosocial voice behaviour, Lean production, garment industry.

## 1. Introduction

Scholars across academic disciplines have established that top management commitment (Amoako-Gyampah *et al.*, 2018) and prosocial voice behaviour (van Dun and Wilderom, 2012) are decisive factors for successful Lean implementation in manufacturing companies (Alnadi and McLaughlin, 2021; Basu and Dan, 2020; Scherrer-Rathje *et al.*, 2009). Lean means identifying and eliminating waste through the entire value chain of the product and requires employee involvement (Hamja *et al.*, 2019b; Shah and Ward, 2007). Lean interventions seek employee participation (voice) in the form of suggestions and opinions during waste identification and removal (van Dun and Wilderom, 2012). **Prosocial employee voice** includes communication aimed at improving the performance and productivity of an organization (Detert and Edmondson, 2011; Morrison, 2011; van Dyne *et al.*, 2003). Lean scholars have found that TMC influences the behaviour of individual employees and teams and is positively associated with improved performance (Amoako-Gyampah *et al.*, 2018; Niehoff *et al.*, 1990). Some also argue that prosocial voice identifying and solving problems in teams is decisive for a performance-enhancing Lean implementation (van Dun and Wilderom, 2019). Management – including top management – plays a major role in facilitating such proactive behaviour (Parker *et al.*, 2006).

Top management is defined as a person or a pool of people with authority to control and direct the organization, set goals and targets, formulate rules and policies, control resources, and implement projects (Lewis *et al.*, 2000; Amoako-Gyampah *et al.*, 2018). Top management commitment (TMC) therefore refers to the support and participation of top management through their actions and behaviour in activities (Niehoff *et al.*, 1990; Rodríguez *et al.*, 2008; Worley and Doolen, 2006). This study considers the operational level of top management involved in implementing the Lean project at the factory in question: the Head of Operations, the Head of Production, the Head of Quality, the Head of Industrial Engineering, and the Head of Human Resources.

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5 Although scholars have identified both TMC and prosocial voice as critical for successful Lean  
6 implementation, the relationship between them has not been examined (MacDuffie, 1995a;  
7 Akmal *et al.*, 2020; Hamja *et al.*, 2021 forthcoming; Hasle and Vang, 2021 forthcoming; Hopp,  
8 2018). Moreover, the challenges related to TMC, employee voice, and Lean implementation are  
9 going to be greater in the autocratic companies in developing countries where Lean is  
10 increasingly being rolled out (Panizzolo *et al.*, 2012).  
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17 van Dun and Wilderom (2012) call for more research on employee voice in Lean  
18 implementation, whereas Amoako-Gyampah *et al.* (2018) underscore the need for in-depth  
19 examination of TMC in Lean implementation. Numerous authors have called for more research  
20 on global suppliers from developing countries (Gomez *et al.*, 2020; Thakkar and Vinodh, 2021;  
21 Vang *et al.*, 2021; Yadav *et al.*, 2020), but this is the first empirical study to examine the  
22 dynamics of TMC influencing employee prosocial voice behaviour during the implementation of  
23 Lean in a developing country where the autocratic management style is prevalent. Bangladesh is  
24 a typical case (Miah and Bird, 2007). Some companies in Bangladesh are experimenting with  
25 new types of management (Bashar *et al.*, 2021), but the autocratic management style is still  
26 prevalent in the garment industry in Bangladesh.  
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36 Drawing on methods from socio-technical action research, the researchers collaborated closely  
37 with two case factories in Bangladesh on designing and introducing a Lean intervention aimed at  
38 improving both productivity and Occupational Health and Safety (OHS) (Hamja *et al.*, 2019;  
39 Longoni *et al.*, 2013). The researchers collected data through in-depth interviews with the top  
40 management and Lean team members, as well as by observing their behaviour and actions.  
41 Production-related data were also collected before and after the interventions.  
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48 The next section presents the theoretical framework for the model used for the empirical  
49 analysis. Section 3 introduces and justifies socio-technical action research as an appropriate  
50 research method. Section 4 presents the findings from the Lean interventions in the two factories.  
51 We discuss the findings in Section 5 and theoretical contributions and practical implications in  
52 Section 6. The last section draws conclusions and makes recommendations for further research.  
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## 2. Theoretical Framework

TMC is crucial for improving Lean performance (Kundu and Manohar, 2012; Scherrer-Rathje *et al.*, 2009). This section sets out a theoretical framework of the relationship of TMC and team member prosocial voice to successful Lean implementation. Success is defined as the sustained improvement of both production and OHS.

### 2.1. Top Management Commitment and Lean

The literature on Lean suggests that TMC is critical for the successful implementation of Lean (Alnadi and McLaughlin, 2021; Belhadi *et al.*, 2019; Scherrer-Rathje *et al.*, 2009; Nordin *et al.*, 2012). TMC includes communication of visions and goals, involvement and participation, support in the allocation of necessary time and resources, initiatives to empower and encourage employees, and monitoring of activities to achieve goals (Amoako-Gyampah *et al.*, 2018; Caroline *et al.*, 2016; Kundu and Manohar, 2012; Niehoff *et al.*, 1990; Tzempelikos, 2015).

#### 2.1.1. Communication

Top management must communicate the organization's visions and goals and the plan of action to achieve them. Lean scholars argue that top management needs to foster effective communication to improve trust and commitment across functions and departments (Hellinghausen and Myers, 1998; Kundu and Manohar, 2012; Scherrer-Rathje *et al.*, 2009; Alnadi and McLaughlin, 2021; Belhadi *et al.*, 2019). Inclusive and efficient communication can create awareness and shared values among all stakeholders in an organization, thereby avoiding unnecessary resistance to Lean (Detert and Treviño, 2010). In developing countries, Lean is often poorly implemented with detrimental effects on employees leading to their resistance (Hasle, 2014). Worley and Doolen (2006) found that effective communication between managers and workers improves the level of acceptance of Lean. And since Lean is a system approach focusing on processes across functions, companies typically need to redesign their organizational structures and dismantle organizational silos to solve cross-departmental problems by improving cross-functional communication and cooperation (Amoako-Gyampah *et al.*, 2018; Rodríguez *et al.*, 2008; Scherrer-Rathje *et al.*, 2009).

#### 2.1.2. Involvement

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3 The involvement of top management is critical for the successful implementation of any project  
4 (Tzempelikos, 2015; Alnadi and McLaughlin, 2021; Belhadi *et al.*, 2019). This involvement  
5 includes its engagement in providing extensive support to implement changes (Amoako-  
6 Gyampah *et al.*, 2018; Rodríguez *et al.*, 2008; Basu and Dan, 2020; Muraliraj *et al.*, 2020;  
7 Narayanamurthy *et al.*, 2018). Lean implementation entails high degrees of uncertainty and  
8 conflicting demands, such as tensions between immediate production goals and long-term  
9 development goals (Maalouf *et al.*, 2019). While mid-level managers can contribute to short-  
10 term *kaizen* (i.e., continuous improvement), only the top management can provide long-term  
11 implementation goals and a working environment that can develop an effective relationship  
12 among all the organization's departments (Lloréns Montes *et al.*, 2004; Rodríguez *et al.*, 2008).  
13 Without a high degree of involvement from the top management, Lean is less likely to be  
14 successfully implemented (Amoako-Gyampah *et al.*, 2018; Boyle, Scherrer-Rathje, and Stuart,  
15 2011; Njie *et al.*, 2008).  
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### 28 2.1.3. Support

29 Managerial support is another crucial component in the implementation of Lean (Scherrer-Rathje  
30 *et al.*, 2009; Young and Poon, 2013; Yusliza *et al.*, 2019; Basu and Dan, 2020; Belhadi *et al.*,  
31 2019; Chapple *et al.*, 2018). This includes both tangible (e.g., financial) support and intangible  
32 (e.g., moral) support (Scherrer-Rathje *et al.*, 2009) as in the allocation of both resources and  
33 encouragement to teams implementing the project and overcoming bottlenecks (Elbanna,  
34 2013; Worley and Doolen, 2006; Zwikaël, 2008).  
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### 41 2.1.4. Empowerment

42 The Lean transformation process entails top management investing in the development of work-  
43 related knowledge and skills (Caroline *et al.*, 2016). Training empowers and motivates  
44 employees to participate in Lean implementation (Kappelman and Prybutok, 1995; Sorooshian *et al.*,  
45 2017; Belhadi *et al.*, 2019; Scheller *et al.*, 2018). Employee training is also a prerequisite for  
46 the meaningful decentralization of decision rights to individual employees and teams (Caroline *et al.*,  
47 2016; Njie *et al.*, 2008). Employees and Lean teams need some degree of decision rights  
48 concerning the implementation of a Lean project (Pheng and Teo, 2004) and therefore require  
49 training (Kundu and Manohar, 2012; Zhang *et al.*, 2017). Jun *et al.* (2006) found that the  
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3 delegation of authority to employees makes them more responsible and committed to the  
4 organization and therefore to the continuous improvement of the production processes, while  
5 training improves employees' skills and develops the problem-solving ability needed during  
6 Lean implementation (Kundu and Manohar, 2012; Sisson, 2019).  
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#### 10 11 12 *2.1.5. Encouragement*

13 Implementing Lean in developing countries often entails transforming a company from a control-  
14 and-command system to a more trust-based system (Panizzolo *et al.*, 2012; Alnadi and  
15 McLaughlin, 2021; Coetzee *et al.*, 2019; Muraliraj *et al.*, 2020). Top management, therefore,  
16 needs to build trust by demonstrating its willingness to listen to employee voices and seek  
17 employee suggestions and opinions, so that employees experience a high degree of psychological  
18 safety and become willing to contribute their ideas, (Edmondson, 1999; Erkutlu and Chafra,  
19 2015). This will encourage teams and employees to embrace the trust-based continuous  
20 improvement philosophy and experiment with improved and novel ways of designing their  
21 workstations, processes or products (Chowdhury *et al.*, 2007; Kundu and Manohar, 2012;  
22 Scherrer-Rathje *et al.*, 2009).  
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#### 32 33 *2.1.6. Monitoring and Guidance*

34 Lean is based on a combination of continuous improvement, root-cause analysis, and a pull  
35 philosophy starting with customer values (Scherrer-Rathje *et al.*, 2009; Alnadi and McLaughlin,  
36 2021; Ramadas and Satish, 2018). It requires the establishment of a systematic and  
37 comprehensive monitoring and evaluation system (Caroline *et al.*, 2016). Top management needs  
38 to set the direction and form of the steering committee to monitor, review, and evaluate project  
39 activities, and continuous improvement requires regular monitoring and evaluation for the  
40 successful implementation of Lean (Kundu and Manohar, 2012; Scherrer-Rathje *et al.*, 2009).  
41 And top management must help translate planned action into realized action (Scherrer-Rathje *et*  
42 *al.*, 2009; Waithera and Wanyoike, 2015).  
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#### 51 52 *2.2. Prosocial Voice and Lean Teams*

53 Employee voice is of central importance to Lean teams. Knowledge is tacit, distributed, and  
54 embodied in individuals, so team-based problem-solving requires team members to share their  
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3 ideas, concerns, suggestions and opinions on waste and bottlenecks, and thereby contribute to  
4 continuous improvement (Fullerton and Wempe, 2009; van Dun and Wilderom, 2016;  
5 Wickramasinghe and Wickramasinghe, 2012). Womack *et al.* (1990) argue that a multi-skilled  
6 workforce with a high degree of responsibility is a prerequisite for successful Lean  
7 implementation (Fullerton and Wempe, 2009; Harley, 2014; Tortorella *et al.*, 2018). Kim *et al.*  
8 (2010) state that workers' involvement through teams directly contributes to a plant's efficiency.  
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### 15 2.3. Top Management and Prosocial Employee Voice

16 Top management plays a significant role in developing the voice climate in teams as well as in  
17 the organization. Voice climate is defined as the shared beliefs and perceptions among group  
18 members or individual employees that influence their voice behaviour (Duan *et al.*, 2019;  
19 Frazier and Bowler, 2015; Morrison *et al.*, 2011). Top management's leadership style, actions,  
20 and behaviour all influence employee voice behaviour (Detert and Treviño, 2010; Morrison *et*  
21 *al.*, 2011) through a "trickle-down" effect in the organization, which (if positive) encourages  
22 team members to take part in problem-solving activities through their inputs and suggestions  
23 (Detert and Treviño, 2010; Morrison and Milliken, 2000).  
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32 TMC can foster effective communication among teams, improve trust and commitment among  
33 employees with different functions, and enhance employee voice behaviour (Alefari *et al.*, 2017;  
34 Kundu and Manohar, 2012; Niehoff *et al.*, 1990; Scherrer-Rathje *et al.*, 2009). In fact, the  
35 involvement of top management is necessary to support employees in solving problems through  
36 regular meetings and discussions (Amoako-Gyampah *et al.*, 2018; Chowdhury *et al.*, 2007).  
37 Support from top management improves the level of communication between managers and team  
38 members, which results in enhanced employee voice, continuously improving team performance  
39 (Rothenberg, 2003), and higher operational performance (van Dun and Wilderom, 2012). The  
40 willingness of top management to support and listen to employees creates conditions in which  
41 employees can share their views without feeling at risk (Detert and Burris, 2007; Dutton *et al.*,  
42 1997; Milliken *et al.*, 2003; Janssen and Gao, 2015). Similarly, encouragement in the form of  
43 incentives, rewards, and appreciation motivates employees to contribute to problem-solving  
44 activities during a Lean implementation (Chowdhury *et al.*, 2007; Niehoff *et al.*, 1990).  
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3 Monitoring from top management also influences employee behavior (Mendelson *et al.*, 2011;  
4 Nagin *et al.*, 2002).  
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#### 8 2.4. Lean Effect on Productivity and OHS 9

10 Lean leads to improved operational and OHS performance (Longoni *et al.*, 2013; Shah and  
11 Ward, 2003). From the beginning, Lean emphasized workers' well-being, though this is often  
12 forgotten in the operations management-literature (Cardon and Bribiescas, 2015; Sugimori *et al.*,  
13 1977). In fact, Hamja *et al.* (2019) found a positive correlation between Lean, productivity and  
14 OHS among global suppliers. Distelhorst *et al.* (2016) found a positive correlation between Lean  
15 and labour standards among Nike's global suppliers. TMC is also associated with Lean  
16 performance (Javed, 2015; Kundu and Manohar, 2012).  
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24 The above-mentioned Lean and organizational behaviour literature demonstrates the importance  
25 of TMC and leads to the comprehensive model used for the empirical analysis and presented in  
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### 36 3. Research Method 37

38 An intervention-based action research was adopted to collect data from two case factories in  
39 Bangladesh. Action research has always been closely linked to interventions and is characterized  
40 by being research *in* action instead of research *about* action; the researchers become part of the  
41 organization, and the organization's members become co-creators in the research design  
42 (Coghlan and Brannick, 2005). Driven by the philosophy of change (Eden and Huxham, 1996;  
43 Lewin, 1946; Saunders *et al.*, 2016), action research gives the researchers privileged access to  
44 the case companies and ensures trust between the researchers and their informants. Action  
45 research focuses on real change decisions, rather than the abstract decisions of survey research.  
46 Our research focused on the influence of top management actions and behaviour on Lean team  
47 members' prosocial voice behaviour and team performance (Yin, 2014). Our access to company  
48 data, internal documents, and continuous interaction with various levels of employees ensured  
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highly reliable and valid data (Voss *et al.*, 2002). Our research also applied the case study strategy for collecting PhD-related data, because it offers a way of gaining an in-depth understanding of a problem or an event (Phelan, 2011).

### 3.1. *Intervention Design*

The interventions introduced selected Lean tools on the production floor to improve productivity and OHS performance. We worked closely with the local factories and form five teams to implement changes aimed at improving 5S<sup>1</sup>, housekeeping, processes such as sewing, methods such as material handling, quality, and style change over time. The teams were multi-departmental and multi-level and comprised mid-level managers and supervisors. Contrary to our recommendations, the management decided not to include workers (operators) in the teams, except temporarily when needed. Top management was asked to form a supervisory team with three to five members, which was responsible for coordinating, guiding, and supervising team activities.

We held three-day training sessions in basic Lean tools and OHS for the mid-level managers, who then acted as coaches for other team members. Discussion and coaching activities were also regularly carried out during the intervention, which thus incorporated both hard and soft Lean components.

### 3.2. *Data Collection and Analysis*

Due to the complex nature of the phenomena under examination, we used a multiple data collection approach based on semi-structured interviews, observations, and recorded production data like value stream mapping (VSM), SMED and efficiency. Standard measures were used, e.g., SMED was measured in changeover minutes, 5S was measured on a 60-point scale, efficiency in daily averages and defects per hundred. All measurements were made before and after the intervention. Statistical analysis was done by T-test or ANOVA. To check the

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<sup>1</sup> 5S refers to a tool in Lean that aims at improving the layout of the individual workstations. Lean's 5S tool consists of five different sequences: sorting through tools and materials, setting them in order, cleaning up the workstation, standardizing the processes, and ensuring they are sustained.

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3 sustainability of the improvements over time, we also measured efficiency six months after the  
4 intervention.  
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8 Semi-structured interviews were conducted with five members of top management from each  
9 factory, most of whom were involved in coordinating the project. Four of the interviews were  
10 audio-recorded, and notes were taken for the others. A total of 24 team members were  
11 interviewed: 13 from one factory and 11 from the other. Of these interviews, 13 were audio-  
12 recorded, and notes were taken for the others. Moreover, 12 of the team members were  
13 interviewed multiple times to obtain additional data and information. We also interviewed three  
14 operators from each factory. All informants were selected based on their functions, but the  
15 interviews covered general issues as well as specific issues related to their functions. The  
16 interviews varied from 10 minutes to one hour. We also had numerous informal discussions with  
17 team leaders and team members concerning the top management's commitment and their  
18 influence on team behaviour. All interviews and discussions were conducted in Bangla (the  
19 mother tongue of the employees and one of the authors). We transcribed the recorded interviews  
20 and translated the interview notes in English.  
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32 Since the research is based on established theories and concepts, the interviews were coded  
33 following a deductive coding approach (Miles *et al.*, 2014). We prepared the code list based on  
34 the conceptual framework of TMC, Lean team, and prosocial voice behaviour. The deduced  
35 codes had to be supplemented with inductively generated codes that emerged from the  
36 interviews. The interpretations of the interviews relied on the hermeneutic circle and included  
37 working with the data in isolation (i.e., statement by statement) and in their entirety. Based on  
38 this system of coding, pattern-matching techniques were used, and relevant themes and  
39 underlying causal mechanisms were identified (Miles *et al.*, 2014).  
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48 We observed the actions, behaviour, and activities of both top management and Lean team  
49 members in the course of approximately 30 visits to each factory. Observations focused on the  
50 prosocial voice behaviour of team members in teams and team meetings, and shop floor workers  
51 in the lines. We also observed two supervisory meetings and four team meetings in the first  
52 factory and two team meetings in the second, which had no supervisory team. More than 80  
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hours of close observations were accumulated in each factory. Observations were noted down in a notebook and subsequently expanded.

#### 4. Findings

This section presents our findings from the Lean implementations. We conducted a description-based analysis of each factory followed by a discussion of the results to provide transparency in the qualitative analysis (Ayres *et al.*, 2003).

##### 4.1. Case Factory A

Factory A is a large fully export-oriented, vertically-integrated knitting, dyeing, finishing, and garment factory, with more than 3,000 employees. It produces T-shirts, trousers, and jackets for global buyers from the EU and the US. The company is a Business Social Compliance Initiative (BSCI)<sup>2</sup>, a Worldwide Responsible Accredited Production (WRAP)<sup>3</sup>, and an OEKO-TEX<sup>4</sup> certified factory, with a well-functioning elected Worker Participatory Committee and Safety Committee. The factory has a separate industrial engineering department with a comprehensive knowledge of Lean tools (e.g., *kaizen* event, time-and-motion study, and 5S), but limited implementation experience.

##### 4.1.1. Top Management Communication

The top management responsible for the Lean project communicated its willingness to implement the project to all relevant top-, mid-, and floor-level managers and workers, discussed the project with other top managers and Lean team members, communicating its determination

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<sup>2</sup>BSCI (Business Social Compliance Initiative) is one of the leading supply chain management systems. It helps companies drive social compliance and improvements in their factories by implementing ILO (International Labor Organization) standards protecting workers' rights and UN guiding principles on Business and Human Rights and guidelines for multinational enterprises of the Organization for Economic Co-operation and Development (OECD). (<https://www.amfori.org/content/what-we-do-0>)

<sup>3</sup>WRAP (Worldwide Responsible Accredited Production), is an independent certification programme mainly focused on the apparel, footwear, and sewn products sectors. It is a non-profit organization of apparel manufacturers that have established and adhere to high standards for labour practices, factory conditions, and environmental responsibility. WRAP is dedicated to ethical manufacturing throughout the world (<http://www.wrapcompliance.org/>)

<sup>4</sup>OEKO-TEX is a worldwide independent certification and testing system for raw, semi-finished, and finished textile products. OEKO-TEX certifies that textile and fabrics products including ready-made garments are free of harmful chemicals and are safe for human use ([https://www.oeko-tex.com/en/business/certifications\\_and\\_services/ots\\_100/ots\\_100\\_start.xhtml](https://www.oeko-tex.com/en/business/certifications_and_services/ots_100/ots_100_start.xhtml))

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3 and plan to implement Lean in the factory, and also communicating – albeit in a limited way –  
4 with workers about project-related issues and activities whenever its members visited the shop  
5 floor.  
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#### 10 *4.1.2. Top Management Involvement*

11 Top management displayed a high degree of involvement in the Lean teams. The factory record  
12 documented that the supervisory team held 13 meetings with team leaders to coordinate and  
13 guide their activities during the three-month intervention implementation period. Top  
14 management also actively sought suggestions and opinions from team members in meetings and  
15 during visits to the shop floor, took part in problem-solving activities with the teams and with  
16 line workers, helped the 5S team fix the position of cutting scissors, and took part in OHS  
17 exercises to encourage line workers.  
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#### 26 *4.1.3. Top Management Support*

27 Top management demonstrated its support by establishing the supervisory team and investing the  
28 time required to hold meetings with team leaders for discussing, guiding, and coordinating team  
29 activities. They also invested in replacing the chairs of the designated line following the  
30 recommendations of the OHS team, and in baskets for collecting debris.  
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#### 36 *4.1.4. Initiatives to Empower*

37 Top management empowered employees by allowing a total of 31 floor-level managers and line  
38 supervisors to attend a three-day formal training programme on basic Lean tools and OHS issues  
39 organized by the project, allowing team members and line workers to attend training organized  
40 by the project in the factory, and establishing Lean training programmes for both mid-level  
41 managers and workers in addition to their routine training programmes. Moreover, they  
42 contributed to discussions on technical issues about the problems identified by the different  
43 teams, and assigned specific responsibilities to some team members.  
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#### 51 *4.1.5. Initiatives to Encourage*

52 Top management encouraged team members to raise suggestions and opinions in teams and  
53 showed appreciation for them. They visited the shop floor and collected employee opinions on  
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3 the Lean and OHS interventions. Top management's meetings with team leaders had a "trickle-  
4 down" effect on other team members, encouraging them to contribute to problem-solving  
5 activities. Top management acknowledged that they were at an early stage in creating a Lean-  
6 oriented incentive system, but they always linked performance with promotion and emphasized  
7 that those who performed better in implementing Lean would automatically receive higher  
8 performance ratings.  
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#### 15 *4.1.6. Monitoring and Guidance*

17 Top management monitored the shop floor by visiting to enquire about Lean activities and  
18 performance. Team leaders had to present their performance and activities during meetings and  
19 in reports submitted to the top management. Meeting records showed that the top management  
20 also provided guidelines for improving Lean performance. One team member told us: "Top  
21 management holds regular meetings with us and asks about our activities and performance. They  
22 give us guidelines and suggestions for implementing the project effectively."  
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#### 29 *4.1.7. Top Management Influence on Team Behaviour*

31 The above findings show a high level of commitment by top management in implementing Lean  
32 and promoting team members' prosocial voice behaviour in this factory. Top management  
33 created an environment conducive to employees expressing their views about work-related issues  
34 and motivated team members to work toward implementing Lean. Top management's  
35 involvement in meetings, shop floor visits, and participation in teamwork, encouraged team  
36 members to contribute more to problem-solving activities and had a direct impact on the voice  
37 behaviour of Lean team leaders and an indirect effect on the other Lean team members' voice  
38 behaviour. One member of the supervisory team told us: "In team meetings, individual team  
39 leaders stated their problems and issues and team members were asked for suggestions and  
40 opinions. The top managers listened to them, and decisions were made after listening to  
41 everyone". We noticed more interactions among team members in the later stages of the Lean  
42 interventions. Line operators also acknowledged that they interacted more with team members  
43 and line supervisors about work-related issues after the introduction of Lean.  
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3 Top management's commitment in investing time and allocating resources during the  
4 implementation of Lean clearly had a positive influence on team voice behaviour. Team  
5 members felt motivated to contribute more to Lean problem-solving activities when they found  
6 that their top management allocated resources according to their recommendations. Top  
7 management commitment to training empowered and encouraged team members to adopt a more  
8 proactive problem-solving approach to work. The coaching approach of the top management also  
9 helped other employees to learn and apply their knowledge in waste identification and  
10 elimination. Monitoring by top management also encouraged employees to work more  
11 effectively and promoted active participation in team and problem-solving activities.  
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#### 20 *4.1.8. Improvement Effect*

21 The empirical findings show that TMC had a significant influence on team members' prosocial  
22 voice behaviour, which resulted in improved team performance. TMC encouraged and motivated  
23 team members to organize more problem-solving activities; a total of 102 team meetings,  
24 including the supervisory team, were held during the three-month intervention. The commitment  
25 of the top management translated into active employee participation in problem-solving activities  
26 through raising work and its improvement related issues in the teams, which, in turn, improved  
27 their performance  
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36 The improvement effects were calculated based on the data collected before and after the three-  
37 month intervention. The data was collected from one line with 24 operators before the  
38 intervention and 30 operators after the intervention. The change in the number of operators was  
39 due to a new style of garment. Tables 1 and 2 show the improvements resulting from the Lean  
40 intervention.  
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7 These improvements are due to the combined effect of TMC, the introduction of Lean tools, and  
8 team members' active participation. Like a chain reaction, the TMC motivates Lean team  
9 members in problem-solving activities, which are the source of continuous improvement. Team  
10 members' prosocial voice helps to identify and remove bottlenecks through suggestions,  
11 opinions, and discussions, which lead to improved productivity and OHS. For example, training  
12 in Lean tools improved employee skills and capacities, which improved their performance and  
13 productivity. Top management's supervisory activities motivated teams to meet, discuss, and  
14 solve bottleneck problems. Table 1 shows that over the three-month intervention, the 5S score  
15 was improved by 11%, and the style changeover time was reduced by 25%, resulting in a 10.3%  
16 improvement in the overall efficiency of the line. We found a similarly significant improvement  
17 in OHS, including sitting posture, machine safety, and housekeeping (Table 2).  
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27 The management of this factory continued its commitment to implement Lean by expanding the  
28 programme from one sewing line to 12 lines over the six months following the project, and they  
29 started to provide Lean-specific training for mid-level managers and workers, and a new  
30 motivational programme including activities such as a Lean quiz for workers. As a result, factory  
31 efficiency has improved from 41% to 74% in one year.  
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#### 37 38 4.2. Case Factory B

39 This factory is a large export-oriented, state-of-the-art knitting, dyeing, finishing, and garment  
40 factory, with more than 6,000 employees. The factory produces a variety of knitwear products,  
41 such as T-shirts, tank tops, and polo shirts, for the EU and the US. It is a BSCI- and WRAP-  
42 certified factory with an elected Worker Participatory Committee and Safety Committee. There  
43 is a separate industrial engineering department with several qualified industrial engineers who  
44 have comprehensive knowledge and training in Lean tools (*kaizen* event, time-and-motion study,  
45 and 5S), but little experience in their implementation.  
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##### 52 53 4.2.1. Top Management Communication

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3 The top management declared their commitment to implement Lean in the factory at the initial  
4 meeting with our research group, but they did not clearly communicate this commitment to the  
5 relevant stakeholders in the factory (even the Lean teams). Nor did they formally meet with other  
6 relevant managers, with teams, or with workers. And they did not meet regularly with team  
7 leaders to discuss activities during the Lean implementation. There was therefore no “trickle-  
8 down” effect from top management to team members in communication about the importance of  
9 the Lean project and top management’s intention to implement it.  
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#### 17 *4.2.2. Top Management Involvement*

18 Top management did take isolated initiatives, but there was no coordinated or planned effort to  
19 implement the Lean and OHS interventions. One top manager had occasional informal  
20 discussions with selected team members about the project or team activities. A team member  
21 told us: “The manager asked about the Lean project when we met him, but he did not visit the  
22 line or call us for meetings about the activities of the project.” Other members of top  
23 management seemed unaware of the existence of the project.  
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#### 31 *4.2.3. Top Management Support*

32 Top management offered practically no support. They did allocate resources for implementing  
33 5S housekeeping, but no other support initiatives were observed. It seemed that top management  
34 and the other team members regarded this Lean project as a burden; the project was solicited by  
35 a global buyer and did not originate from an internally experienced need.  
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#### 41 *4.2.4. Initiatives to Empower*

42 Top management took no empowerment initiatives beyond allowing 15 team members and line  
43 workers to participate in the project’s (externally sponsored) training programmes. They were  
44 not interested in organizing any Lean-specific training or awareness-building programmes  
45 themselves.  
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#### 51 *4.2.5. Initiatives to Encourage*

52 Top management did not offer any encouragement to team members or workers by seeking  
53 suggestions and opinions or even showing appreciation for improved performance. They just told  
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3 them to work on the project because one of the global buyers wanted it. A team member  
4 explained that this was not the first project of its kind and he knew that it would not work  
5 without the support of the research team.  
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#### 10 4.2.6. *Monitoring and Guidance*

11 Top management formed no supervisory team and neither guided nor even monitored the Lean  
12 intervention activities. The lack of monitoring resulted in a lack of interest and ownership among  
13 team members.  
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#### 18 4.2.7. *Top Management Influence on Team Behaviour*

19 The above findings for factory B show that the top management had no real commitment to  
20 implementing Lean. The lack of TMC adversely affected the level of team members'  
21 involvement in Lean problem-solving activities. Top management did not communicate any  
22 intention or willingness to implement this Lean project and did not try to create awareness and  
23 preparedness among team members at the beginning of the project. Due to the lack of  
24 involvement from top management, the team leaders and members did not feel encouraged to  
25 engage in Lean problem-solving activities. One team leader told us: "Team leaders and team  
26 members did not feel motivated or obliged to involve themselves in problem-solving activities  
27 due to the lack of top management involvement."  
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37 The top management did not provide the necessary support to create enthusiasm among team  
38 members to work on the project. There was no initiative to improve Lean-related knowledge and  
39 skills through organizing in-house training and coaching for the team members and workers.  
40 There were no monitoring and guiding activities by the top management. Therefore, the team  
41 members neither feel encouraged nor motivated to work proactively in problem-solving nor did  
42 not feel obliged to voice their suggestions to improve organizational performance.  
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#### 50 4.2.8. *Improvement Effects*

51 The effect of the top management's lack of commitment was evident in the performance  
52 indicators for this factory, as shown in Tables 3 and 4. Lean intervention was carried out for a  
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3 duration of three months with 27 operators working on the line during the data collection  
4 process.  
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20 Due to a lack of TMC, the Lean initiative did not result in the improvements seen in Factory A.  
21 Without support or encouragement, team members were not adequately motivated to contribute  
22 to problem-solving activities. As a result, we found only small improvements in production and  
23 OHS variables. There was a 6% improvement in the 5S audit score and an 8% reduction in  
24 changeover time (Table 3), and the overall improvement in line efficiency after the three-month  
25 intervention was only 3.1%. Similarly, there was very little improvement in OHS variables  
26 (Table 4). Top management terminated the Lean activities after the intervention had finished,  
27 and six months later factory efficiency exhibited a downward tendency toward its initial stage  
28 before the intervention.  
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### 36 37 38 **5. Discussion**

39 Lean is a micro-level problem-solving and micro-incremental improvement activity that requires  
40 team members to identify, voice, and solve bottlenecks and problems to generate improvements.  
41 The challenge of Lean therefore is to keep its team members proactive in problem-solving. This  
42 requires management – including top management – to motivate and encourage team members  
43 and workers to achieve the goals recognized by Lean. This study aimed to identify how TMC  
44 influences Lean team members' prosocial voice behaviour and establish a link between prosocial  
45 voice behaviour, productivity, and OHS during a Lean intervention in a developing country. The  
46 findings show that employee voice behaviour is contingent on the commitment of the company  
47 leadership to the Lean implementation. TMC is positively associated with prosocial voice, while  
48 a lack of TMC is negatively associated with prosocial voice. The findings also show that the  
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3 level of prosocial voice behaviour affects the results of the Lean intervention captured by  
4 productivity, OHS, and sustainability measures. The findings suggest that top management  
5 commitment to the Lean implementation increased both the capacity and the well-being of the  
6 employees.  
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11 Although employee prosocial voice behaviour concerns micro-incremental changes, these  
12 nevertheless translate into continuous critical improvements in both productivity and OHS  
13 performance. Moreover, the differences between case factories A and B were amplified over  
14 time, leading to respectively a sustainable and an unsustainable result. The two case companies  
15 are comparable for most background variables, and the differences are therefore not likely to be  
16 the effect of an unobserved variable. The findings also indicate that the theoretical model  
17 captures critical factors in explaining performance differences in relation to Lean  
18 implementations in developing countries.  
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27 We focused on the garment industry in Bangladesh, which is a very hierarchical country in the  
28 sense of scoring high on Hofstede's power distance scale (Bashar *et al.*, 2021), but the findings  
29 of this study resonate with more generic findings in the top management literature. Niehoff *et al.*,  
30 (1990), for example, identified how top management actions and practices change the attitudes  
31 of employees and influence their commitment positively toward organizational performance, and  
32 Alefari *et al.* (2017) and Scherrer-Rathje *et al.* (2009) demonstrated the influence of leadership  
33 on Lean performance.  
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41 The paper also contributes to recent streams of research that focus on leadership and Lean in the  
42 context of developing countries, where Maalouf *et al.* (2019) indicate the importance of  
43 managing paradoxes, but provide no insights on the impact of employee voice in implementing  
44 lean, and Hasle and Vang (2021) indicate the need to pay attention to institutional logics in the  
45 context of the implementation of Lean in developing countries, but do not show how employee  
46 prosocial voice plays into this. Some authors stress the ambiguous impact of Lean on OHS in  
47 developing countries (Hamja *et al.*, 2019) but fail to introduce the importance of voice for  
48 assessing how Lean could be beneficial to employees. Other papers pay attention to various  
49 performance factors, including human dimensions related to Lean implementation, but ignore  
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OHS and prosocial employee voice in this context (Ramadas and Satish, 2018). Detert and Treviño (2010) found that when top management made employees feel encouraged, they responded positively, contributing to prosocial voice and therefore problem-solving. This finding also corresponds with insights stemming from the psychological safety literature (Edmondson, 1999) and the implicit voice theories literature, which holds that employees only speak up when they have solid knowledge (Detert and Edmondson, 2011).

More specifically, the findings echo results in the Lean literature, such as those of Bateman and Rich (2003), who showed that communication is crucial for successful Lean interventions (Kundu and Manohar, 2012; Lantz *et al.*, 2015; van Dun and Wilderom, 2012). Likewise, several Lean scholars have documented that employee involvement is a central parameter for a successful Lean implementation (MacDuffie, 1995b; Shah and Ward, 2003; van Dun and Wilderom, 2012; van Dun and Wilderom, 2016). The two case studies show the positive effect of top management's monitoring of team performance on employees' prosocial voice behaviour. Monitoring influences employee behaviour (Beatty and Zajac, 1994; Kundu and Manohar, 2012). The findings of this research have therefore successfully established the positive relationship between TMC and team voice behaviour that leads to improved operational performance, including OHS.

## 6. Theoretical contributions and practical implications

This study is the first empirical study on the influence of TMC on voice behaviour in the context of Lean implementation in a developing country. This research contributes theoretically by bridging the gap between TMC and Lean team members' voice behaviour, taking insights from the field of organizational behaviour into the Lean literature. This research contributes to the operation management field by introducing voice research.

This research has practical implications too. The first implication is that TMC has a positive impact on the barriers preventing employees from speaking up: culture is not an absolute barrier, and prosocial voice contributes to improved operational performance. Top management can demonstrate its commitment by means of communication, involvement in implementation

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3 processes, support to teams, increased empowerment and encouragement, as well as by  
4 systematic monitoring activities.  
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## 8 **7. Conclusions and Further Research**

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10 In this paper, we aimed to help close the research gap regarding the importance of TMC and  
11 employee voice behaviour in teams during Lean implementations at suppliers in developing  
12 countries. We developed a model to operationalize the concept of TMC in the context of  
13 developing countries.  
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19 When the two case companies are compared, it becomes clear that one should be hesitant to  
20 generalize across suppliers in developing countries. In this paper, we relied on data from two  
21 suppliers within the same segment of the industry and located in the same country, within 20  
22 kilometres of each other. The two companies nevertheless displayed significant differences in  
23 TMC and therefore also in team behaviour and performance (including long-term performance).  
24 Considering the differences between the two case companies, this paper provides evidence for  
25 the importance of both TMC and prosocial voice to the performance of Lean projects. The paper  
26 thereby feeds into contemporary Lean research that has underscored soft factors (Netland *et al.*,  
27 2015) and behavioural components, including employee voice, in the context of Lean  
28 implementation. To the best of our knowledge, this paper is the first to contribute to addressing  
29 these new research themes with insights from suppliers in developing countries. The paper also  
30 suggests that TMC is at least as important for Lean implementation in a developing country as it  
31 is in developed countries.  
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43 Having drawn on data collected through in-depth action research, we would claim that this data  
44 is robust and linked to the underlying causal mechanisms surrounding the role of top  
45 management. This claim is supported by the positive association between our findings and  
46 generic findings on prosocial voice behaviour and critical success factors in the Lean  
47 implementation literature.  
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53 One potential weakness in the findings is that they stem from only two cases in the same sector.  
54 To support the findings, there is a need for additional studies in different developing countries  
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(and in different sectors). Currently, the data quality in developing countries is often poor, but when this data quality improves, our findings would benefit from being assessed based on quantitative longitudinal data. Moreover, the project design allowed us to find data on sustainability for only one variable, which meant that we could not document whether other components of the intervention were sustained. This calls for more research on the link between TMC and Lean implementation and whether TMC plays the same role in sustaining OHS and efficiency gains. **This paper attempts to identify the practical implications of how top management can demonstrate its commitment and of how crucial the visualization of its dimensions is in this respect.** The practical implications would benefit from complementary studies focusing on barriers to implementing TMC and perhaps paying special attention to the role of mid-level managers. Nevertheless, this paper provides the first in-depth findings on the link between TMC and operational performance as an outcome of Lean intervention.

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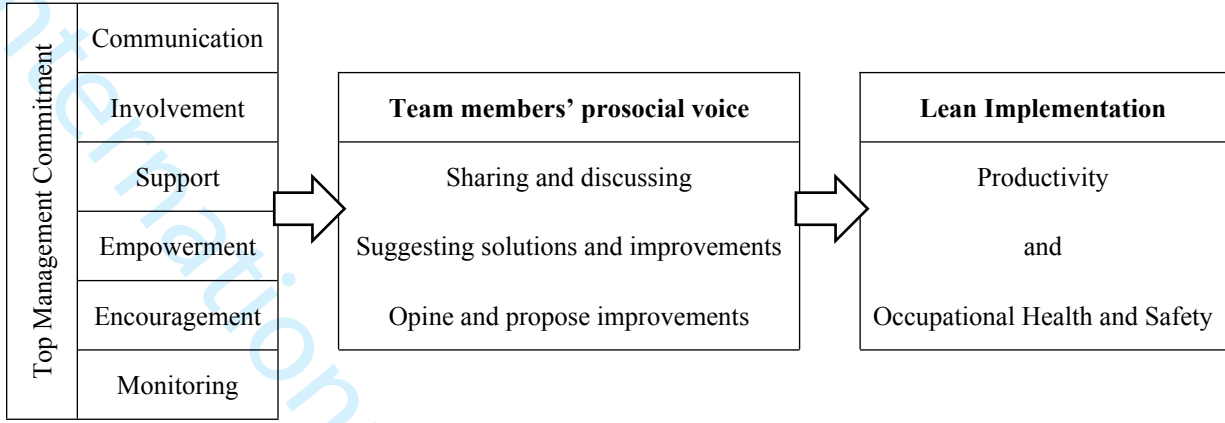
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Figure 1. Analytical Model of Top Management Commitment



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**Table 1. Improvement in Production Variables for Factory A**

<b>Productivity Variable</b>	<b>Before Intervention (%)</b>	<b>After Intervention (%)</b>	<b>Change (percentage points)</b>
Efficiency <sup>b,e</sup>	50.5 (n=23)	60.8 (n=25)	10.3 <sup>h</sup>
Quality <sup>b</sup>	4.9 (n=23)	4.06 (n=25)	-0.84 <sup>g</sup>
VSM <sup>b,d</sup>	3	4	+1%*
SMED <sup>b,c</sup>	480	360	-25%*
5S Score <sup>a,f</sup>	33	40	+11%

<sup>a</sup> T-test, <sup>b</sup> Anova with direction, <sup>c</sup> Minutes, <sup>d</sup> Value added,

<sup>e</sup> Percentage, <sup>f</sup> 1–5 scores measured for 12 parameters of 5S set by the project team,

<sup>g</sup>  $0.05 > x > 0.10$ , <sup>h</sup>  $0.01 > x > 0.05$ , <sup>k</sup>  $0.00 > x > 0.01$

\* not possible to calculate significance levels

**Table 2. Improvement in OHS Variables for Factory A**

OHS Variable	Before Intervention (%, n=24)	After Intervention (%, n=30)	Change (percentage points)
Acceptable Head Position <sup>a</sup>	17	50	+33 <sup>h</sup>
Acceptable Back Position <sup>a</sup>	13	47	+34 <sup>h</sup>
Machine Safety <sup>b</sup>	92	99	+7 <sup>k</sup>
Use of Mask <sup>a</sup>	87	87	0
Housekeeping <sup>b</sup>	63	77	+14

<sup>a</sup> T-test, <sup>b</sup> Anova with direction,

<sup>g</sup>  $0.05 > x > 0.10$ , <sup>h</sup>  $0.01 > x > 0.05$ , <sup>k</sup>  $0.00 > x > 0.01$

**Table 3. Improvement in Production Variables for Factory B**

<b>Productivity Variable</b>	<b>Before Intervention (%)</b>	<b>After Intervention (%)</b>	<b>Change (percentage points)</b>
Efficiency <sup>b</sup>	60.9 (n=22)	64 (n=17)	+3.1
DHU/Quality <sup>b</sup>	9.0 (n=22)	6.8 (n=17)	-2.2
VSM <sup>b,d</sup>	2	3	+1*
SMED <sup>b,c</sup>	120	110	-8*
5S Score <sup>a</sup>	41	45	+6

<sup>a</sup> T-test, <sup>b</sup> Anova with direction, <sup>c</sup> Minutes, <sup>d</sup> Value added

\* not possible to calculate significance levels



**Table 4. Improvement in OHS Variables for Factory B**

OHS Variable	Before Intervention (%, n=27)	After Intervention (%, n=27)	Change (percentage points)
Acceptable Head Position <sup>a</sup>	26	33	+7
Acceptable Back Position <sup>a</sup>	11	26	+15
Machine Safety <sup>b</sup>	87	90	+3
Use of Mask <sup>a</sup>	73	73	0
Housekeeping <sup>b</sup>	61	67	+6 <sup>k</sup>

<sup>a</sup> T-test, <sup>b</sup> Anova with direction

<sup>g</sup>  $0.05 > x > 0.10$ , <sup>h</sup>  $0.01 > x > 0.05$ , <sup>k</sup>  $0.00 > x > 0.01$