Supporting Leadership Attributes with Lean Management Tools

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Abstract:

Purpose: The paper compares the attributes of effective leadership with selected Lean Management tools in order to develop guidelines for managers seeking to improve the effectiveness of their work.

Design/Methodology/Approach: The aim of the study was to identify Lean Management tools that may support effective leadership. The theoretical and cognitive objective was a review of the relevant literature and scholarly studies in the field of leadership broadly understood. The analysis of the issue made it possible to identify a previously unrecognized potential of selected Lean Management tools to make leadership both more effective and easier.

Findings: The resulting conclusions may enable managers from various industries to increase the likelihood of effective leadership, as their knowledge will be expanded to include possibilities for using selected Lean Management tools in the performance of their professional duties.

Practical implications: Lean Management tools are presented in a form that enables their practical application by managers in leadership processes broadly understood. The outcome of the conceptual work is a set of recommendations for managers regarding the use of selected Lean Management tools.

Originality/Value: We present possibilities for applying selected Lean Management tools in the process of effective leadership. The application of the presented Lean Management tools requires actions leading to certain changes in the functioning of top management, which may contribute to increased efficiency and effectiveness of their work. An organizational culture based on Lean Management also has the potential to contribute to the development of previously unidentified, effective, and modern solutions within the leadership process understood in a holistic manner.

Keywords: Lean Management tools, Lean Management, leadership, effective leadership, organizational culture.

JEL codes: L15, M12, M54

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1. Introduction

The proposed use of Lean Management tools in leadership may contribute to the identification of previously unrecognized solutions responding to contemporary changes in employee-related trends. Indicating specific tools derived from the Lean Management concept that support leadership effectiveness could increase the potential for disseminating these tools among managers working in organizations with diverse activity profiles.

The aim of the paper is to analyze selected attributes of effective leadership and to attempt to identify Lean Management tools with the potential to increase the likelihood of leadership effectiveness in management processes.

The paper is conceptual in nature; the research framework is based on correlating the attributes of effective leadership with selected Lean Management tools. The outcome of the conceptual work is a set of recommendations for managers on how to support the processes they lead through the use of specific Lean Management tools.

The proposed research framework made it possible to clearly present the role of selected Lean Management tools in increasing the likelihood of effectiveness in leadership understood in a holistic manner. This paper is based on an extensive literature review in the fields of leadership, organizational culture, and Lean Management (including Lean Manufacturing); the analysis made it possible to identify the potential compatibility of leadership attributes with selected Lean Management tools.

2. Leadership and Organizational Culture in Lean Management

Lean Management is a management concept and, at the same time, a widely discussed and applied production philosophy used across various industries worldwide. The primary objective of Lean Management is to deliver high-quality products while simultaneously reducing costs. In order to maintain their market position, many organizations have attempted to implement an organizational culture based on the Lean Management concept (Gupta and Jain, 2013).

Lean Management is a management concept derived from the Toyota Production System (TPS) (Bednarek, 2007). The architects and creators of the Lean Management concept were members of Toyota's top management: S. Toyoda and T. Ohno. Regardless of industry, companies worldwide seek to implement best practices originating from Toyota's production plants (Liker and Hoseus, 2008).

The contemporary world is increasingly described as a VUCA environment, characterized by volatility, uncertainty, complexity, and ambiguity. The economic environment shows a tendency toward broad instability and growing turbulence in the business landscape.

Companies are increasingly turning to the Lean Management concept because it represents a logical response to the consequences of a changing environment. The VUCA world generates new management paradigms and necessitates the formulation of flexible strategies and development directions (Bojar, 2011).

According to the Lean Management concept, organizational culture and leadership are closely interconnected, as the specific nature of organizational culture in individual companies (which is always unique and cannot be replicated) depends to a large extent on employees holding managerial positions.

In other words, behavior patterns, the overall workplace atmosphere, work habits, relationships with stakeholders, and similar factors can support organizational success, and the quality of all these components largely depends on leadership effectiveness. Top management should not only support bottom-up initiatives but also positively inspire and encourage subordinates to undertake creative initiatives, as emphasized by many experts in the field of quality management (Larsson and Vinberg, 2010; Nwabueze, 2011).

Within the Lean Management concept, leadership is not synonymous with management. According to Lean organizational culture, if an employee is unable to perform their duties (for example, due to a production line failure), responsibility for the situation lies with the supervisor, who failed to ensure that the work environment and conditions were optimal for the team.

An effective leader should therefore provide lower-level employees with the best possible working conditions and effective tools for performing their duties. In organizations operating under a traditional management model, it is highly likely that responsibility for an unplanned production stoppage would initially be assigned to a lower-level employee.

If an organization seeks to implement an organizational culture consistent with the Lean Management concept, this change should encompass the entire organizational structure in a holistic manner, as partial implementation of this culture (for example, in selected organizational units) is not feasible. A healthy Lean Management–based organizational culture always stems from strong, effective leadership at the top management level, which leads by example and influences middle management, which in turn affects lower-level staff (Dahlgaard and Dahlgaard-Park, 2006).

As a result, all employees in the organization should feel that they are part of an effective team and be aware of the importance of their role within that team. It is worth emphasizing that senior and middle management should not favor individual employees; all members of the organization should be treated equally, fairly, and honestly. When management fulfills these assumptions, the likelihood of loyalty among lower-level employees toward the employer, as well as their full engagement in professional duties, increases (Altman, 2000).

Organizational culture in Lean Management does not focus solely on interpersonal relations but also aims to shorten task execution times and eliminate activities that do not add value (Gonzalez, 2019). In other words, Lean Management organizational culture also involves systematic efforts to reduce waste and costs (Saieg *et al.,* 2018; Urban, 2017).

According to Lean Management, seven types of waste can be identified: waiting, unnecessary transportation, unnecessary motion, overprocessing, defects, excess inventory, and overproduction (Jazani, Sahladabdi, and Mousavi, 2018).

An essential complement to Lean Management organizational culture within a company is the implementation and use of tools derived from this concept (including Just in Time, the pull system, SMED, among others) (Narender, Mehra, and Frolick, 1995). Over many years since the introduction of the Toyota Production System, the Lean Management concept has continuously evolved, along with the tools that facilitate its implementation and maintenance.

It should be emphasized that the direct goal of Lean Management is not the implementation and use of individual tools; rather, these tools are intended to support and guide all employees toward continuous improvement of a broadly understood effective organizational culture, whose foundation is effective leadership.

3. Using Lean Management Tools in Effective Leadership

Based on a review of the relevant literature, this study identified seven attributes of effective leadership. Selecting the most appropriate Lean Management tool to support each leadership attribute involves balancing potential benefits against potential risks.

The use of the identified Lean Management tools can assist managers in performing their duties effectively while also making these duties easier. The selected tools can be implemented in managerial work at a relatively low cost; however, it is important to consider not only the implementation process itself but also the ongoing cultivation of a Lean Management organizational culture, which supports the effective use of these tools.

It should be noted that applying the identified Lean Management tools will not hinder the execution of the organization's pre-established strategy.

Table 1 presents a summary of the potential applications of selected Lean Management tools in relation to the attributes of effective leadership. The aim of this proposal is to explore how selected Lean Management tools can enhance leadership processes.

Table 1. *Mapping Attributes of Effective Leadership to Lean Management Tools*

ATTRIBUTES OF EFFECTIVE LEADERSHIP	LEAN MANAGEMENT TOOLS
Productivity	Kanban
Openness to Improvement	Empowerment
Positive Attitude	Genbutsu / Gemba
Integrity	Respect for People
Courage	Hoshin Kanri
Curiosity	5x why
Inspiring Colleagues	Inspiring Colleagues

Source: *Own compilation based on J. Welch and S. Welch, Winning, Wydawnictwo Studio EMKA, Warsaw, 2005, p. 83.*

In Table 1, each of the identified attributes of an effective leader is paired with a single Lean Management tool. According to us, the use of the presented tools has the potential to make the work of leaders and managers both more effective and easier.

Applying the proposed Lean Management tools in combination with a Lean Management–based organizational culture can support leadership processes in the vast majority of organizations, regardless of the markets in which they operate.

The identified attributes of effective leadership form a holistic framework within leadership processes. An effective manager should not treat individual attributes selectively; rather, all attributes should be regarded as essential elements of their work. The identified attributes correspond to different areas of a manager's responsibilities, which is why the proposed Lean Management tools serve different purposes.

Leadership takes many forms and is practiced in various ways, yet the goal of producing the best possible products or services at the lowest possible cost remains constant. Therefore, an effective manager must demonstrate versatility and flexibility, regardless of the industry in which their organization operates.

Moreover, using specific Lean Management tools to support the attributes of effective leadership can contribute to higher employee morale, and consequently, to improved economic performance of the organization.

3.1 Kanban as a Tool Supporting Leadership Productivity

To achieve production excellence, many organizations have implemented various techniques and methods to make their manufacturing operations more productive and efficient. Many companies use Kanban because it reduces inventory levels and overall costs, for example by eliminating overproduction, minimizing waste, and reducing waiting times (Gupta, Al-Turki, and Perry, 1999).

Kanban is a Japanese term that literally translates as "visible record" or "visible sign." The Kanban tool is most commonly used in production departments. Its primary function is to inform each workstation of the quantity of components needed to produce the customer's ordered quantity of finished products.

One of the main principles of a properly functioning Kanban system is that a component is not produced until a formal order has been placed by the customer. It is also important to note that Kanban requires maintaining a slightly higher level of components than the quantity of finished products ordered by the customer (Gupta, Al-Turki, and Perry, 1999).

Inventory management is often a complex process regardless of the industry in which the organization operates (Kobbacy and Liang, 1999). Therefore, implementing Kanban is not possible without the support of top management and the involvement of lower-level employees (Kumar, 2010).

Moreover, the smooth and efficient functioning of Kanban also depends on the commitment and cooperation of suppliers, as the tool's effectiveness is determined by the time elapsed between placing an order and delivering the raw materials to the production facility.

There is a certain similarity between Lean Management tools such as Kanban and Just in Time, as both aim to maximize the efficiency of supply processes: Kanban for internal deliveries (to workstations) and Just in Time for external deliveries (to customers).

Additionally, both tools aim to eliminate unnecessary inventory and transport, addressing the same types of waste. However, it is important not to equate these two Lean Management tools. Kanban, in addition to reducing excess inventory, also contributes to better control of production processes (Flynn, Sakakibara, and Schroeder, 1995).

The benefits of using Kanban include standardizing inventory management processes as well as standardizing the flow of components between workstations. By using this tool, leaders increase the likelihood that the organization they manage will achieve higher profitability. By establishing optimal rules tailored to the specifics of a given organization, overall productivity in production and warehouse processes can be expected to increase, which may directly enhance the real productivity outcomes of leaders.

3.2 Empowerment as a Tool Supporting Openness to Improvement

Empowerment is one of the Lean Management tools that supports human resource management. This tool helps strengthen employees' awareness of their role within the team and often contributes to increasing their independence.

Empowerment defines the principles of employee participation in eliminating dysfunctions within processes and in implementing efficiency-enhancing actions at the workplace (Walentynowicz, 2014). It focuses on stimulating employee creativity, which can enhance the overall potential of personnel. The implementation of empowerment within an organization can increase individual employees' ability to solve ongoing problems (Jones, Latham, and Betta, 2013).

It can be assumed that employees granted greater autonomy experience lower levels of negative stress. Moreover, in an organization where the culture encourages openness to improvement, the likelihood of full engagement in work responsibilities increases. This, in turn, positively affects employees' sense of responsibility and the importance of their role within the team.

Fostering a culture open to improvement contributes to better quality of organizational processes, which translates into improved customer service and higher customer satisfaction (Eida *et al.,* 2019).

Leaders who maintain a culture resistant to change, where ineffective practices are repeated, risk stagnation not only in their own work but also in the areas they manage. A modern leader should expand their own comfort zone and encourage the same from their subordinates.

Jeff Bezos, one of the world's most effective leaders, encourages employees to experiment and continuously seek innovation. Paradoxically, he expects employees to make mistakes, based on the belief that if an employee never makes mistakes, they are not acting in the company's best interest. This approach to risk within organizational culture can help identify previously undiscovered opportunities for development.

Granting greater autonomy to lower-level employees does not mean relinquishing control. Excessive control can be paralyzing for some, whereas fostering a sense of independence often unlocks creativity (Perumal, Tang Sai Hong, and Razali, 2010). Trusting subordinates allows leaders to cultivate positive motivation within the team, a fundamental skill of effective leadership (Shah, 2003).

3.3 Genbutsu Gemba as a Tool Supporting a Positive Attitude

Genbutsu (Japanese for "the actual thing") and Gemba (Japanese for "the place where it happens") is a widely used Lean Management tool applied by managers in many organizations. The use of this tool involves managers personally observing employees and the processes in which they participate at the location where these processes occur (e.g., production and warehouse floors).

Through Genbutsu Gemba, managers are not solely dependent on reports or subjective opinions. Personal observation of processes and discussions with various

lower-level employees, who often have different perspectives on the same process, allow managers to fully understand the specifics of the workplace. According to Lean Management principles, an effective leader should not make decisions regarding failures or undesired situations from the isolation of their office.

Instead, they should personally go to the location where the issue occurred (the gemba) and, only after direct observation and consultation with all involved participants, make binding decisions.

Moreover, Genbutsu Gemba allows managers to reflect on the necessity of certain process elements and decide whether to modify existing practices, often resulting in improvements or innovations.

Genbutsu Gemba supports holistic organizational improvement by facilitating direct information exchange and integration between supervisors and subordinates. Problem-solving in the workplace often requires building consensus, which can be difficult or impossible without the presence of the manager.

Additionally, Genbutsu Gemba provides managers with the opportunity to identify lower-level employees who demonstrate objectivity and initiative in stressful situations, potentially supporting their career advancement (Romero *et al.,* 2020).

An effective leader should inspire genuine, positive emotions among the personnel they manage. During routine, cyclical tours of production and warehouse floors, managers should pay attention not only to internal procedures and customer requirements but also to the overall team atmosphere. Direct, friendly, and supportive contact with subordinates can enhance employee motivation and, consequently, productivity.

Furthermore, by being physically present on production and warehouse floors, managers demonstrate recognition and respect for lower-level employees, boosting team morale and gaining employees' trust (Aij and Teunissen, 2017).

3.4 Respect for People as a Tool Supporting Integrity

Respect among employees, regardless of their position, is one of the fundamental principles of Lean Management (Coetzee, van Dyk, and van der Merwe, 2018; Emiliani, 2006). The application of the Respect for People tool by managers involves adhering to specific norms and values toward all employees within the organization.

When combined with the core principles of Lean Management, Respect for People can contribute to the creation and maintenance of a distinctive and supportive organizational culture (Parkes, 2015).

An effective Lean Management leader should understand that being honest and fair toward subordinates is not optional, but essential. A leader's approach to colleagues should not depend on their mood or personal circumstances on any given day.

A respectful leader should clearly communicate the rules of cooperation, ideally at the outset of the working relationship. They should explicitly define employees' tasks and clearly convey the expectations associated with these responsibilities. Additionally, a manager should not withhold critical information that could influence employees' attitudes toward the organization (e.g., potential organizational bankruptcy).

One of the key elements in implementing Lean Management is shifting employees' perspective toward thinking critically about organizational processes (Ohno, 1988). A leader operating under Lean Management principles should recognize their own fallibility and encourage subordinates to question the validity of specific processes, provided they present logical reasoning.

Open communication in this way can lead to the implementation of process improvements that make operations more efficient and effective. By managing in this manner, a leader demonstrates respect for employees while simultaneously strengthening an organizational culture that prioritizes the company's success over the ambitions of any individual manager. Moreover, Lean Management encourages lower-level employees to contribute to the strategic development of processes.

An honest leader who respects their colleagues should possess not only diplomatic skills but also embody a broad spectrum of ethical behaviors. These can range from simple gestures such as greeting employees, being punctual, and keeping promises, to consistently treating employees fairly and equally, without favoritism or personal bias.

3.5 Hoshin Kanri as a Tool Supporting Courage

Hoshin Kanri was developed in Japan by Yokogawa Hewlett-Packard in the early 1970s. By the mid-1980s, Hoshin Kanri began gaining popularity, and some European and American companies, including Xerox Corporation and IBM, started implementing their own versions of the tool.

Hoshin Kanri focuses on executing systematic actions aimed at achieving an organization's priority objectives, particularly in process improvement (Dias and Tenera, 2020). It guides the organization's efforts to attain a leadership position within its industry.

According to Hoshin Kanri principles, all employees should be autonomous experts in their work environments. The tool strengthens employees' self-control through

continuous communication of the organization's priority objectives (Jelenc, Lerner, and Knapic, 2020).

In organizations using Hoshin Kanri, managers overseeing specific processes should work with their teams to set goals (monthly, quarterly, and annual) and actively pursue their achievement. Goals should be reviewed regularly and be measurable, allowing progress to be tracked through key performance indicators (Konieczka, 2021).

Hoshin Kanri promotes a process-oriented approach, relying on the development of a coherent and systematic action plan that involves employees at all organizational levels. The primary aim of Hoshin Kanri is to strengthen and unify the organization as a whole while fully leveraging its key resources: intellectual, material, infrastructural, and financial (Worley and Doolen, 2006).

One key reason organizations adopt Hoshin Kanri is to improve communication across departments. By establishing overarching priorities derived from the organization's mission and vision, employees at all levels and in all departments are more likely to work toward clearly defined goals. This alignment can help eliminate waste caused by conflicting objectives across different departments within the same organization (Worley and Doolen, 2006).

Implementing Hoshin Kanri allows managers to prioritize goals and focus on the most important initiatives. As managers achieve successive objectives, their confidence naturally increases, along with their courage to pursue long-term initiatives.

Regular goal reviews and marking completed objectives help managers develop a sense of inner strength, thereby expanding their comfort zone. Discipline and diligence in achieving goals enable managers to set increasingly ambitious tasks for themselves and their teams, including challenges that may have previously seemed impossible to accomplish.

3.6 5 x Why as a Tool Supporting Curiosity

The 5 x Why tool is an integral element of an organizational culture based on Lean Management (Paez *et al.,* 2004). Its use involves asking a series of questions designed to identify the root cause(s) of a problem. In other words, the primary goal of this tool is to determine the underlying cause of an issue and eliminate it through corrective actions. The number "5" in the name is conventional; in practice, the number of questions may be greater or fewer depending on the situation.

The 5 x Why tool helps establish cause-and-effect relationships between problems or failures and omissions or errors. 5 x Why is one of the simplest and most versatile analytical tools for process improvement. It does not require statistical analysis and

can be applied relatively easily in virtually any process or organizational unit. It is important to note that using the 5 x Why in process improvement aligns with the approach of E. Deming, a pioneer of modern quality management.

Deming argued that when a process fails, the problem lies in the design of the process, not the employees (Gîfu, Teodorescu, and Ionescu, 2014).

An example of the practical application of the 5 x Why tool is presented below:

Problem: Damage to a load during forklift operation.
First question: Why was the load damaged?
Answer: The forklift tines broke while lifting the load.
Second question: Why did the tines break?
Answer: The tines broke due to wear and tear.
Third question: Why were the tines worn out?
Answer: Because no one knew they needed to be inspected.
Fourth question: Why did no one know this?
Answer: Because the forklift did not have an up-to-date technical logbook.
Fifth question: Why did the forklift not have an up-to-date technical logbook?
Answer: Because the logbook was lost, and no one replaced it.
Conclusion: the corrective action should be to assign a person responsible for overseeing forklift logbooks.

Curiosity, as a managerial attribute, can be directly supported through the use of the 5 x Why tool. By applying this tool, a manager can quickly and effectively analyze a problem situation and implement corrective actions that address the root cause.

3.7 Kaizen as a Tool Supporting the Inspiration of Colleagues

After World War II, the Japanese economy was in deep recession. Japanese companies sought solutions to improve production processes by minimizing waste and optimizing efficiency. Kaizen emerged as a response to the challenges faced by Japanese industry.

The word Kaizen comes from two Japanese words, kai and zen, which can be translated as "good change" (Palmer, 2001). Applying Kaizen in an organization involves promoting a culture of continuous improvement through small, incremental, but ongoing enhancements. It is widely recognized that Kaizen cannot be successfully implemented without the engagement of all employees, regardless of their position.

An organizational structure that supports Kaizen, characterized by horizontal decision-making, high autonomy, and employee self-discipline, tends to achieve greater benefits than a strictly hierarchical structure (Watanabe, 2011).

Organizations with communication barriers between top management and lower-level staff fail to fully leverage their development potential. Conversely, companies with effective communication systems tend to see higher levels of employee-generated improvement initiatives. Implementing Kaizen increases the likelihood of better communication across organizational levels, which can indirectly enhance customer satisfaction, productivity, and revenue.

Despite the recognized benefits of Kaizen, not all organizations succeed in implementing it. One of the most common barriers is an archaic organizational culture, where employees resist changes in their work routines and are reluctant to step outside their comfort zones.

Overcoming this barrier requires top management to adopt a long-term, consistent, and coherent plan that demonstrates the benefits of Kaizen to employees. Additionally, a clear and fair reward system should be established to encourage active participation from all employees (Bateman and Rich, 2003).

Implementing Kaizen can help an effective leader positively inspire their colleagues. A leader who actively participates in the team, understands the principles of continuous improvement, and communicates them effectively to employees increases the likelihood of successful, efficiency-driven changes within the organization (Pagell, 2004).

The use of multidisciplinary teams fosters not only a sense of collective responsibility for process quality but also inspires individual employees. A single improvement idea proposed by one team member can stimulate another member to propose further enhancements (Marin-Garcia, Pardo del Val, and Bonavia, 2008).

Modern managers should be able to effectively inspire their colleagues to implement improvements in their work areas. It is important to note that managers usually do not have as detailed knowledge of the specifics of individual production lines as the employees who work there daily.

Therefore, the greatest potential for improving a process comes from empowering those with the most in-depth knowledge of it. An effective leader should encourage and support even the smallest improvements, as incremental changes over time can lead to significant, noticeable results.

4. Conclusion

In today's unstable and rapidly changing environment, organizations are required to act with flexibility while simultaneously maximizing routine and repeatable organizational behaviors. The response to this apparent paradox lies in effective leadership supported by Lean Management tools and a broadly process-oriented approach.

Leadership, according to many definitions, is more than mere management. Modern leadership demands that contemporary managers guide their employees in a comprehensive sense of the term. An effective leader should not only be proficient in the attributes outlined in this study but also demonstrate exceptional discipline and maintain a long-term, holistic vision for the development of the organization they lead.

The use of Lean Management tools, as presented in this work, can significantly enhance a leader's ability to implement these identified attributes. Lean Management can be understood as a management strategy whose effectiveness, and that of its associated tools, has been confirmed by numerous empirical and theoretical studies.

In most cases, the attributes of effective leadership develop over time, as learning to lead people is a complex, ongoing process, much like continuous improvement in the context of Lean Management. Leaders who wish to stay ahead of emerging trends must continuously educate themselves and remain aware of their limitations.

Individuals who are open to new experiences and reflective, with a genuine desire to improve, are best positioned to lead others successfully.

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