

Review

# Organizational Commitment and Lean Sustainability: Literature Review and Directions for Future Research

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**Abstract:** The vast majority of works published on Lean focus on the evaluation of tools and/or the strategies needed for its implementation. Although many authors highlight the degree of employee commitment as one of the key aspects of Lean, what has gone largely unnoticed in the literature, is that few studies have examined in-depth the concept of organizational commitment in connection with Lean. With this narrative literature review article, our main objective is (1) to identify and analyze an extensive body of literature that addresses the Lean Manufacturing approach and how it relates to employee commitment, emphasizing affective commitment as the main type of organizational commitment positively associated with Lean, and (2) to highlight the management practices required to encourage this kind of commitment and promote the success and sustainability of Lean. This paper aims to provide a comprehensive overview that can help researchers and practitioners interested in Lean better understand the importance of employee commitment in this type of approach, and as well, to identify related research questions.

**Keywords:** lean manufacturing; sustainability; continuous improvement; organizational commitment; human resource management practices



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## 1. Introduction

Presently, with a globalized world and highly competitive markets, organizations willing to operate under such conditions ought to be continuously creative, innovative, and efficient. It is in this context that several companies around the world have already resorted to new methods of work organization inspired by the Toyota Production System (TPS) to improve production efficiency and guarantee effective management and sustainable development [1,2]. This system, which was developed by Toyota Motor Corporation under the leadership of its former Executive Vice President Taiichi Ohno [3], has lifted Toyota to become one of the most successful and competitive companies worldwide [4]. The basis of TPS is the absolute elimination of waste [5], aiming to produce better products while using the minimum necessary. This is the idea behind the word Lean in Lean Manufacturing [6]. The concepts of TPS and Lean are, thus, synonyms [3]. Nevertheless, Liker [4] highlighted that outside of Toyota, Lean is often the term used since it has been popularized in 1990 by Womack and his colleagues [6] in their renowned book “The Machine That Changed the World.” Lean is now seen as an essential approach to ensure the competitiveness of organizations [7]. Being at the origin of the success of Toyota, Lean has attracted considerable interest from several other companies around the globe.

Even though many organizations show high interest in the Lean approach, its implementation remains difficult to achieve. In fact, the failure rate in Lean transformation among organizations amounts to 90% [8]. This is mainly due to the lack of employees' commitment [9,10]. A recent study carried out by Gallup (see <https://www.gallup.com/>, accessed on 27 February 2020) showed that around 85% of employees worldwide are not committed. Therefore, organizations that want to succeed in the implementation and sustainability of Lean ought to especially consider the importance of human resources,

since it is an integral part of the Lean approach [11]. In this regard, Wincel and Kull [12] noted that it is the people who make Lean work and that no success is possible without their contribution. Employee commitment is, therefore, a challenge that organizations need to carefully consider before even initiating the adoption of Lean.

In fact, the concept of Lean has become increasingly associated with the term sustainability [13]. Referring to Jørgensen et al. [14], this paper approaches Lean in the context of sustainability from two perspectives: (1) from an ecological and environmental perspective in the sense that Lean can support ecological preservation by reducing waste and conserving resources, thus minimizing the enterprise's negative impact on the environment, and (2) from a perspective that focuses on the concept of Lean itself. The question is how to sustain Lean over the long term so that companies can remain competitive. More specifically, it is a question of identifying how the members of the organization can actually develop the capabilities to implement and adapt to the Lean culture.

#### *Methodological Note*

This paper employs the narrative literature review as a research method. This method was selected because it aims to evaluate and summarize existing research related to a specific topic (i.e., employee commitment in Lean in our case) in order to provide an overview and identify gaps or inconsistencies in existing research, or simply to discuss a particular subject [13,14]. These aims are consistent with the purpose of this article.

The research procedure used for this review was conducted in three steps per Ramdhani et al. [15]:

- Choosing a review topic: This first step is the most difficult because the topic must be of interest to both the author and the reader [15,16]. To focus on the topic of interest, it was necessary in our case to initially identify broad topics in our discipline, scan the area to account for other literature reviews that already exist, estimate the number of research studies to be evaluated, and then clearly formulate and define the purpose and scope of the research [15,16].
- Searching and selecting appropriate articles: Once the topic is selected, the next step consists of identifying appropriate and relevant literature [15]. Literature searches are most often conducted using electronic databases that provide access to vast amounts of information related to a research topic [15]. To ensure that the majority of relevant studies on our topic have been identified, references were searched in numerous popular databases including Scopus, Web of Science, Springer Link, JSTOR, and Science Direct. Although the primary focus has been on published sources, such as peer-reviewed journal articles and book chapters, we have also integrated some websites and conference papers on Lean sustainability, found mainly through Google, Google Scholar, and Research Gate. Authors stipulate that keyword search is the appropriate method for identifying literature and they emphasize that these keywords must be directly related to the subject of research in order to generate the data sought [15,17]. In this sense, the string of keywords used in this study includes ("Lean production" OR "Lean manufacturing" OR "Lean management") AND (sustainability OR sustainable\*) AND ("organizational commitment" OR "employee engagement").
- Analyzing and synthesizing the literature: After identifying and gathering the appropriate literature, the next step is to analyze, synthesize, and discuss the results and conclusions of the selected sources [15]. To do so, a first reading of the articles was undertaken by referring mainly to the summary, and then a classification was made by the type of source, as recommended by Ramdhani [15]. After the initial overview, it was essential to return to the articles to conduct a more systematic and critical examination of the content. Researchers recommend adopting a structure during this process such as that proposed by Cohen [18]. Cohen's PQRS (Preview, Question, Read, Summarize) method was used to keep focused and consistent with the purpose of the article, and it facilitated the identification and analysis of relevant material.

Although there have been plenty of reviews of the literature on Lean, this article focuses particularly on its human side as one of the necessary sides for the success and sustainability of Lean. This paper aims to provide a comprehensive review of the literature and attempts to identify the important contributions in this field. The remainder of the paper is organized as follows. Section 2 describes the Lean Manufacturing approach thereafter called Lean or Lean approach, along with its main pillars. In Section 3, we introduce the concept of organizational commitment and discuss which forms of commitment are the most adequate for the successful implementation and sustainability of Lean. Section 4 explains the link between Lean sustainability and organizational commitment. In Section 5, we discuss current challenges and open questions, and we envision future research directions. Finally, Section 6 summarizes the paper and provides some concluding remarks.

## 2. Lean Approach

The Lean approach is known for its positive effects on organizational performance. Its objective is to reduce costs while improving quality, safety, and morale [7]. Therefore, a Lean organization is an organization that can better respond to market trends and provides products and services faster and cheaper than its non-Lean counterparts [19]. Nonetheless, Lean is not solely restricted to a production method, but rather is a management approach that encompasses the entire organization; it applies to all levels and functions of the company to improve the system as a whole [3]. Lean can be adopted by any organization regardless of size, culture, and geographical location [3,6]. 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 [1,20]. 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 [4].

### 2.1. Lean Origin

The Lean approach was born in Japan, at Toyota, just after the Second World War [4]. The post-war economic difficulties led to an increase in inventories of unsold cars, which resulted in financial difficulties for Toyota [21]. 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 [6]. 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 [21]. Later, Lean spread around the world and gained immense popularity.

### 2.2. Lean Definition

Although Lean was initially introduced as an approach to eliminate waste in the production process [5], this concept has been expanded throughout the organization to include different management tools and methods. Several authors argued that Lean has evolved over time and will constantly evolve according to the circumstances of the global market and the customers' needs [23,24]. Because of its dynamic nature, it is often difficult to formulate a clear and precise definition of Lean. For example, Emiliani [25] defined Lean as a manufacturing philosophy "whose objective is to minimize the consumption of resources that add no value to a product" (p. 615). Liker and Wu [26], on their part, defined it as "a philosophy of manufacturing that focuses on delivering the highest quality product at the lowest cost and on time" (p. 82). For Toussaint and Berry [27], Lean is rather "a cultural transformation that changes how an organization works" (p. 74).

**Table 1.** Origin and evolution of Lean (adapted from Shah and Ward [22] (p. 787)).

Date	Lean Evolution
Before 1945	<ul style="list-style-type: none"> <li>Henry Ford outlined his philosophy and the main principles of Ford's production system (FPS) in "Today and tomorrow" (1927).</li> <li>Toyoda (later named Toyota) Motor Company was established in the city of Koromo, Japan (1937).</li> </ul>
Birth and evolution of the TPS in Japan 1945–1978	<ul style="list-style-type: none"> <li>Toyota began the innovation of TPS (1945).</li> <li>Taiichi Ohno published a book entitled "Toyota Production System" in Japanese (1978).</li> </ul>
The arrival of TPS in North America 1973–1988	<ul style="list-style-type: none"> <li>TPS attracted considerable attention after the oil crisis in North America (1973).</li> <li>Sugimori et al. published the first academic article on TPS (1977).</li> <li>NUMMI was created in California as a joint venture between Toyota Motor Company and General Motors (1984) to test TPS in America.</li> <li>Interesting books describing Toyota's production system were published in English (the mid-1980s).</li> </ul>
Academic progress 1988–2000	<ul style="list-style-type: none"> <li>Krafcik coined the term "lean" to describe Toyota's manufacturing system (1988).</li> <li>Womack, Jones, and Roos published the book "The machine that changed the world" (1990).</li> <li>Womack and Jones published "Lean Thinking." This book extends the philosophy and the guiding principles of lean at the company level (1994).</li> </ul>
2000-present	<ul style="list-style-type: none"> <li>Several books and articles highlighting the global nature of lean production were published (the 2000s).</li> <li>Major companies adopted Lean: Rolls Royce (2000), Nike (2002), Parker Hannifin (2003), Intel (2004).</li> <li>Toyota Motor Company was projected to become the number one automobile manufacturer in North America (2006).</li> <li>Lean principles were translated into other domains: Lean healthcare (2002), Lean Software Development (2003), Lean education (2003), Lean Startup (2008).</li> </ul>

Overall, the definitions of Lean vary enormously in the literature, by considering Lean as a philosophy, a toolbox, a strategic goal, or a change process [28]. Moreover, we find different viewpoints about the most important characteristics of this concept [24]. There is, therefore, no consensus among researchers about the definition of Lean [22,28,29]. Indeed, Hohmann [30] emphasized that the Lean concept is so rich that it is difficult to summarize it in a precise and relevant way.

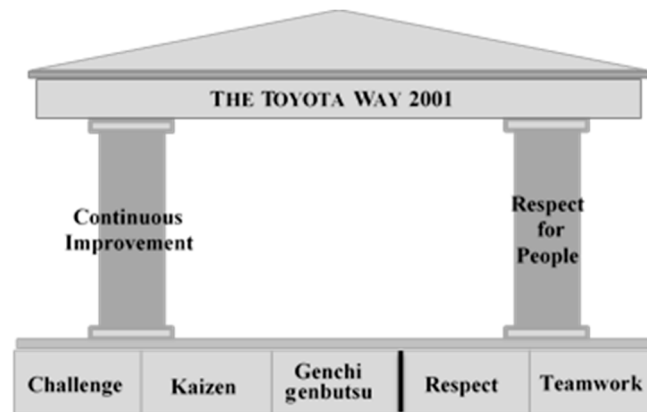
The lack of a universal definition may be a source of confusion among practitioners and negatively impact the implementation of Lean [31]. Consequently, training is often required for managers interested in adopting Lean to have a clear understanding of its principles, and thus be able to choose among its tools and practices, those that meet the needs of their organization [32]. With this purpose, instead of being limited to a single Lean variable, it is more advantageous to consider it as a multidimensional concept in order to understand its different aspects and benefit from them [28].

### 2.3. The Main Pillars of Lean

Several studies about Lean often refer to continuous improvement without considering the importance of human resources. In this direction, Emiliani et al. [3] argued that continuous improvement can and will only be possible through the involvement of personnel. Since the inception of Lean, Toyota has developed a principle known as "respect for people" [33] to show the important role granted to its employees and the practices put in place to engage them. However, this principle is seldom considered in practice, which partly explains the failures in the implementation of Lean [34].

Authors including Bicheno and Holweg [35], Emiliani et al. [3], and Liker [11] recognized the importance of this principle and stated that the Toyota model may be succinctly summarized through two pillars: (1) continuous improvement and (2) respect for people.

These two pillars were reported in an internal document of Toyota Motor Corporation entitled “The Toyota Way 2001” [3]. The Toyota Way (“Toyotawei” in Japanese) describes Toyota’s management system in terms of management values, work methods, and standards of behavior. This is Toyota’s first initiative to document “the company’s fundamental DNA” and to report its global vision of Lean [3]. Figure 1 illustrates “The Toyota Way” according to Liker and Hoseus [33].



**Figure 1.** Main pillars of “The Toyota Way” (adapted from Liker and Hoseus [33] (p. 14)).

Emiliani et al. [3] reported that the managers of Toyota Motor Corporation had realized the importance of these two pillars through the many challenges they have faced since the late thirties.

### 2.3.1. Pillar 1: Continuous Improvement

Continuous improvement is a process that aims at the constant and progressive improvement of products, services, or processes [36]. At the core of this concept lies the idea that nothing is perfect and everything can be improved [37]. Liker and Convis [20] pointed out that every aspect of the organization can be improved, from product design to sales, including the performance of every employee in the organization. Toyota defines continuous improvement as “we are never satisfied with where we are and always improve our business by putting forth our best ideas and efforts” [33] (p. 15).

Continuous improvement is perceived as an extended journey that involves building skills and capabilities within the organization to ensure improvements and problem-solving on a daily basis [38]. In other words, it is a continual effort to enhance the products’ and services’ quality, customers’ satisfaction, and organization’s efficiency [39]. As one of the pillars of Toyota, continuous improvement is based on three principles: Challenge, Genchi Genbutsu, and Kaizen.

- **Challenge:** Basically, it is about forming a long-term vision and meeting challenges with courage and creativity [33] (p. 15). More specifically, in its internal document “The Toyota Way,” Toyota expresses it as follows: “We accept challenges with a creative spirit and the courage to realize our own dreams without losing drive or energy. We approach our work vigorously, with optimism and a sincere belief in the value of our contribution” [4] (p. 25). Toyota incentivizes the creativity and initiative of its employees by continually challenging them to learn and experiment [4].
- **Genchi Genbutsu:** It is about going to the source to find the facts in order to make correct decisions, build consensus, and achieve goals at the best speed [33] (p. 15). Genchi Genbutsu, also known as “go and see,” encourages leaders to go directly to workplaces to thoroughly understand the situation or the problem [4]. With this principle, Toyota shows that all leaders must be aware of any issue that is in their charge and make decisions based on facts in order to avoid unproductive situations [20]. Genchi Genbutsu helps employees acquire more awareness about daily events and a better understanding of the root causes of problems [40].

- Kaizen: It is the essence of continuous improvement and literally means “change for the better.” Kaizen aims to improve the business continuously while always driving for innovation and evolution [33]. In the words of Toyota: “We are relentless in our pursuit of improvement, never easily satisfied, constantly making improvement efforts and steadily encouraging innovation” [33] (p. 324). Even though Kaizen is considered by the Toyota Way as one of the aspects of continuous improvement, the two terms, “Kaizen” and “continuous improvement,” are often used interchangeably [11,33,41].

Continuous improvement is usually formalized by the Plan-Do-Check-Act cycle (PDCA, also known as the Deming cycle) which offers a data-driven approach based on the scientific method of problem solving [42]. PDCA consists of four iterative stages: Plan (study the current situation and develop solutions for improvement), Do (deploy the pilot measures on a trial basis), Check (examine the effect of changes to verify if the desired result is achieved), Action (standardize on a permanent basis). With these steps, PDCA aims to permanently solve a problem by identifying and correcting its cause and thus effect permanent improvement [43]. To this end, all employees must receive education in the PDCA process to be able to perform continuous improvement initiatives [44].

Overall, continuous improvement relies on the creation of a climate based on contributing to daily improvements to ensure organizational performance. This climate can only exist and be strengthened by “respect for people,” the other pillar of the Toyota Way [11].

### 2.3.2. Pillar 2: Respect for People

The “respect for people” pillar is a cornerstone of continuous improvement [45]. In fact, Emiliani [46] stated that simple logical arguments would reveal that authentic continuous improvement is not possible without “respect for people” [46] (p. 177). With this pillar, Toyota aims to make a system where employees can actively participate in improving their workplace and be able to fully display their own capabilities. Organizations that only focus on the technical side of Lean (i.e., continuous improvement), without taking into consideration the “respect for people” pillar are practicing “fake Lean” [47]. “Respect for people” is, then, not an option; it is rather a *sine qua non* condition in Lean [48]. To show its importance, Toyota displays slogans in some of its factories with the message: “Respect for people is the attitude that regards people’s ability to think most” [49]. Although “respect for people” is a concept that seems easy to understand and apply, in reality, it is not [3]. A simple definition cannot capture its whole meaning. The term “people” does not refer only to employees but encompasses all stakeholders, including suppliers, customers, investors, communities, and competitors [48]. It should be noted that in our case, our focus is on the employees as a key element of the organization.

Toyota has not defined “respect for people” with a few words or a few sentences, because it considers that this concept can be understood only through daily practice at the workplace, and in combination with the pillar of continuous improvement [48]. Thus, the aspects we will present to explain the “respect for people” will only be a partial definition of this notion.

According to the Toyota Way, the “respect for people” pillar is based on two principles:

- Respect: Toyota describes respect as follows: “We respect others, make every effort to understand each other, take responsibility and do our best to build mutual trust” [33] (p. 15). At Toyota, all employees are respected regardless of who they are or what they do, and everyone matters in the contribution to the pursuit and the achievement of goals [50]. In this context, respect goes beyond its conventional definition to also encompass the employees’ ideas, contributions, and personal beliefs [51].
- Teamwork: It is defined by Toyota as follows: “We stimulate personal and professional growth, share the opportunities of development, and maximize individual and team performance” [33] (p. 15). Toyota considers teamwork as the foundation of the organization and aims to ensure that all systems are there to support teams doing value-added work [4]. In this way, it encourages them to be committed to making the organization successful [4]. This vision was supported by Marksberry [52],

who stated that to have professional employees work together, each one of them must feel as though he matters to the organization.

In conclusion, to successfully implement Lean and ensure sustainability, both pillars of “continuous improvement” and “respect for people” must not only be taken into consideration but be at the core of every decision-making process and action taken in the organization.

### 3. Organizational Commitment

In recent years, the concept of organizational commitment has gained high interest among researchers and practitioners. This interest has led to important theoretical and empirical developments [53].

#### 3.1. Definition of Organizational Commitment

To better understand and grasp its meaning, we present the concept of organizational commitment from its different angles. This concept is not new as it first appeared in 1938 in Barnard’s work, although at that time, there was no clear definition of the concept of organizational commitment. This prompted researchers to take a closer look at this phenomenon, which remains difficult to grasp. The first definitions of this concept became effective only in the 1960s and are reported in Table 2.

**Table 2.** Definitions of organizational commitment.

Authors	Definitions
Becker [54]	Employee’s need to pursue working in an organization because of costs associated with leaving it.
Grusky [55]	The strength of an individual’s attachment to an organization. The factors that influence this strength are the rewards received from the organization and the required experiences to receive them.
Kiesler et Sakumura [56]	The link that binds an individual to behavioral acts.
Kanter [57]	Employee’s willingness to invest their energy and loyalty in a given organization.

Blau and Boal [58] proposed that organizational commitment refers to an employee who identifies with an organization and wishes to maintain membership in that organization in order to facilitate its goals. Mathieu and Zajac [59] argued that it is “a bond or linking of the individual to the organization” (p. 171). In the same direction, Meyer and Herscovitch [60] reported that organizational commitment constitutes “a force that binds an individual to a course of action of relevance for one or more targets” (p. 301). From these aforementioned and several other definitions, we can see that this concept still eludes a unanimous definition [61]. The reason behind this is that these definitions come from different disciplines and, also, because of the multidimensional nature of organizational commitment [62]. Nevertheless, despite this heterogeneity, we can find a common ground among the authors, where organizational commitment is generally considered to be the link that binds an employee to an organization.

#### 3.2. Models of Organizational Commitment

The dimensionality of organizational commitment has been the subject of several studies. As such, various models have been developed to demonstrate the multidimensional nature of this concept.

##### 3.2.1. Angle and Perry’s Two-Dimensional Model

Angle and Perry [63] proposed two dimensions of organizational commitment, namely, “value commitment” and “commitment to stay.” The first dimension refers to the desire to support organizational goals by making efforts to achieve them. It translates into items, including the willingness to perform for the organization, congruence of personal values with those of the organization, and concern for its fate [63]. The second dimension refers to

the intention to remain a member of the organization. It is based on items that pertain to organizational membership.

The two-dimensional conceptualization advocated by Angle and Perry [63] was later replaced by three-dimensional models. The one proposed by Meyer and Allen [64] is the most popular and widely discussed in the literature.

### 3.2.2. The Three-Dimensional Model of Meyer and Allen

Meyer and Allen's [64] model has become the dominant model for the study of organizational commitment [65]. This model comprises three dimensions labeled affective, normative, and continuance commitment.

The affective dimension of organizational commitment refers to "the employee's emotional attachment to, identification with, and involvement in the organization" [64] (p. 67). This type of commitment reflects the desire to remain within the organization by choice. In other words, employees are affectively committed to the organization because they want to do so [64] (p. 67). Besides, Johnson and Chang [66] stated that employees who are emotionally committed to their company are more committed to its goals and values. This idea was underlined in 1982 by Mowday et al. [67] who considered organizational commitment as a component that is characterized by an acceptance of the organization's goals and values, and a strong desire to remain a member of it.

Affective commitment comes from intrinsic factors of the individual [66], which are summed up in the feeling of achievement, professional and personal growth, recognition, and in general, in job satisfaction. In general, affective commitment may be considered an important dimension of organizational commitment, since employees with high affective commitment go above and beyond contractual expectations to keep the organization running smoothly.

The continuance (or calculative) dimension refers to "an awareness of the costs associated with leaving the organization" [64] (p. 67). It relies on the idea that employees' investments (e.g., time, effort, seniority, etc.) would be lost if they leave the organization. Hence, they persist and remain in that organization because they need to do so [64] (p. 67). This situation can be explained by the side-bet theory developed by Becker in 1960. This theory stipulates that the accumulation of investments (side-bets) valued by a person would be lost if this person changes the current position to engage in another. Employees could also remain in the organization when they recognize that alternative employment opportunities are limited. According to the logic of this dimension, the employee commits to the organization in order to keep the benefits that it provides.

The normative (or moral) dimension "reflects a feeling of obligation to continue employment" [64] (p. 67). For example, employees who receive rewards in advance from their organization (e.g., job training) feel an obligation to reciprocate by developing their commitment toward the organization to repay this debt. The normative dimension is then explained by Gouldner's principle of reciprocity [68], which leads individuals to remain faithful to their moral commitments until their debt has been fully repaid.

Lastly, according to Meyer and Allen's [64] tripartite conceptualization of organizational commitment, employees with a high level of affective commitment are likely to exert greater effort to achieve organizational goals than those who remain in the organization out of need (continuance commitment) or those who remain there by moral obligation (normative commitment).

### 3.2.3. Cohen's Model

Cohen [69] also supported the multidimensional perspective of organizational commitment in his work entitled "Commitment before and after: An evaluation and reconceptualization of organizational commitment," bringing a reflection on Meyer and Allen's three-dimensional model.

Despite its widespread use, Meyer and Allen's model has been subject to criticism due to its ambiguity when it comes to the distinction between the normative and affective



dimensions, which do considerably overlap [70–72]. Although Meyer and Allen [64] already pointed out that “the feeling of what one wants to do (affective commitment) and what one ought to do (normative commitment) are not completely independent” (p. 79), authors believe that the status attributed to normative commitment is still vague. To this end, in 2007, Cohen developed a four-component model making it possible to distinguish between these controversial dimensions. To do so, Cohen included the notion of timing and the bases of commitment (see Figure 2).

		BASES OF COMMITMENT	
		<i>Instrumental attachment</i>	<i>Psychological attachment</i>
TIMING	Before joining the organization	<b>Instrumental commitment propensity</b>	<b>Normative commitment Propensity</b>
	After joining the organization	Instrumental commitment	Affective commitment

**Figure 2.** A four-component organizational commitment model (adapted from Cohen [69] (p. 337)).

The notion of timing is used to demonstrate that commitment propensity (instrumental commitment propensity and normative commitment propensity) develops before joining the organization, while organizational commitment (instrumental and affective commitments) develops after joining the organization. As for the bases of commitment, the purpose is to distinguish between commitments based on instrumental or psychological attachment [69].

Instrumental commitment propensity refers to the employees’ expectations regarding the quality of exchanges with the organization. It is about verifying the benefits and rewards they could receive in return for their contribution. Normative commitment propensity, on the other hand, is a moral obligation towards the organization. For the other two forms that develop after joining the organization, there is the instrumental commitment that results from the employees’ perception of the quality of exchanges between their contributions and the rewards received. In other words, instrumental commitment reflects how well met are the expectations of employees regarding benefits and rewards. Affective commitment represents an attachment to the organization that is demonstrated by identification, emotional involvement, and a sense of belonging [69]. Note that this definition is the same as the one presented in Meyer and Allen [64].

Cohen [69] argued that the overlap between normative and affective commitments is because the former was considered in Meyer and Allen’s model [64] as a dimension that appears after joining the organization, when in fact, it should be examined before entry to the organization since it is a predisposition for affective commitment. The introduction of the timing notion has thus clarified the understanding of these two forms of commitment by establishing a clear dichotomy between the normative and affective dimensions. The approach proposed by Cohen [69] has attracted the interest of several authors as it has helped to close the recurring debate about the nature of the normative dimension.

Cohen’s four-dimensional conceptualization [69] is based on the approach of Mowday et al. [67], which argued that the development of organizational commitment is a process that begins before joining the organization and continues during the employment period. In conclusion, Cohen’s approach helped clarify and better present the concept of organizational commitment. Table 3 provides a summary of the different dimensions of organizational commitment.

**Table 3.** Dimensions of organizational commitment.

Angle and Perry [63]	Meyer and Allen [64]	Cohen [69]
Value commitment Commitment to stay	Affective commitment Continuance commitment Normative commitment	Instrumental commitment propensity Normative commitment propensity Instrumental commitment Affective commitment

Although the concept of organizational commitment is multidimensional, the vast majority of researchers have been particularly interested in its affective dimension (e.g., [73–75]).

### 3.3. The Interest in Affective Commitment

After defining and analyzing the different forms of organizational commitment, it seems that affective commitment is a central component of the continuous improvement process since it drives employees to identify with the organization's culture and values and deploy more effort towards achieving organizational goals. This type of commitment is therefore important for all kinds of businesses as it allows them to build a successful and sustainable organization [76]. The interest in affective commitment is also due to the numerous benefits it provides both to organizations and employees. Among these benefits, we can find:

- **Performance:** It refers to the achievement of organizational goals regardless of their nature and variety [77]. Several studies stated that there is a significant relationship between affective commitment and performance (e.g., [64,78]). This correlation could be explained by the fact that employees with high affective commitment are motivated by the achievement of organizational objectives.
- **Organizational citizenship behavior:** This concept refers to the innovative and spontaneous behaviors of employees and their willingness to cooperate [79,80]. The literature confirms the existence of a positive association between affective commitment and organizational citizenship behaviors [81–83]. In a recent study, Danish et al. [82] showed this positive relationship and stated that employees' affective commitment is a factor that improves their organizational citizenship behaviors.
- **Job satisfaction:** Affective commitment is positively associated with job satisfaction [78,84,85]. The notion of job satisfaction is defined by Locke [86] as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (p. 1300). This satisfaction is partly due to the sense of involvement and belonging to the organization. The higher the employees' involvement in the organization, the more satisfied they are. That is, as affective commitment increases, the level of job satisfaction increases too [87].
- **Turnover:** Several studies found the existence of a negative correlation between affective commitment and turnover (e.g., [88,89]). This negative relationship is explained by the fact that employees who exhibit strong commitment are least likely to leave the organization [89]. This means that improving the level of affective commitment could help reduce the turnover rate within an organization. In fact, according to its definition, affective commitment reflects the willingness to remain within the organization. It is, therefore, evident that it is negatively related to turnover, which reflects the desire to voluntarily leave the organization.
- **Absenteeism:** Affective commitment is negatively related to absenteeism [78,90]. This negative correlation could be explained by the fact that employees with a strong affective commitment do not tend to be absent from work [91]. In other words, less committed employees would be absent more.
- **Presenteeism:** Affective commitment is also negatively linked to presenteeism [92,93]. The concept of presenteeism refers to the situation where an employee is at work but is not fully functional and productive because of illness, injury, or other health conditions [94]. Multiple reasons may explain the negative association between affective commitment and presenteeism. First, according to their definitions, the con-

cept of presenteeism is the opposite of affective commitment. The former hinders the achievement of organizational goals [95], whereas the latter prioritizes them. According to Yang et al. [93], employees who exhibit strong affective commitment tend to adopt behaviors that are beneficial to the organization (e.g., increasing performance and decreasing presenteeism). Finally, affectively committed employees have a low presenteeism rate.

- Job stress: It is defined by the National Institute for Occupational Safety and Health (NIOSH) as “the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker” [96]. It has been shown that affective commitment is negatively associated with job stress [78]. This negative correlation was discussed by several authors. For example, Schmidt and Diestel [97] argued that affective commitment creates a sense of emotional stability and belonging in employees, which strengthens their ability to resist work stressors such as workload and lack of social support. For Setti et al. [98], affective commitment is an important resource for protecting against stressful situations.

It is true that affectively committed employees are more resistant to job stress, but it is important to keep in mind that excessive stress can have the opposite effect.

To sum up, the analysis of the benefits of affective commitment shows that the higher the level of commitment, the more positive the outcomes are for workers and organizations. It is, therefore, important to know how to improve the level of employees’ affective commitment within the organization in order to ensure not only better outcomes but, more importantly, sustainable continuous improvement.

#### 4. Relationship between Lean Sustainability and Organizational Commitment

There is a close relationship between Lean sustainability and employees’ commitment within the organization.

##### 4.1. The Relationship between Lean and Employees’ Affective Commitment

Some researchers stated that committed employees contribute significantly to the success and sustainability of Lean (e.g., [99,100]). However, this commitment largely depends on the employees’ understanding of Lean. If the purpose and principles of Lean are correctly understood by managers and adequately explained to employees, affective commitment is likely to be developed by the latter. In fact, Jaaron and Backhouse [101] indicated that employees working in Lean organizations are more likely to develop an affective commitment to their company compared to those working in “traditional” organizations. In a similar vein, Angelis et al. [102] stated that organizations adopting a management philosophy, such as Lean, that is based on mutual trust, support, and receptiveness to employee suggestions can go a long way in improving employee commitment and, particularly, affective commitment.

In their study, Angelis et al. [102] reported that among the three types of commitment (i.e., affective, normative, and continuance) proposed by Meyer and Allen [64], only affective commitment is linked to the concept of Lean. This is because affectively committed employees do not limit themselves to what is written on their job descriptions, but participate in additional activities, including self-inspection of work tasks and improvement projects. These employees are usually attached to the organization and adhere to its management system in such a way that they support change and defend organizational goals. Angelis et al. [102] therefore suggested that there is a strong correlation between affective commitment and Lean.

Moreover, affective commitment is also linked to the decentralization of decision-making, which gives employees a sense of personal importance and value in the organization [103]. This is reflected in Lean organizations that support employees’ participation in decision-making. For example, in this type of organization employees are authorized to stop production when an issue occurs (e.g., defect detection in a product or a device)

so that errors are not propagated to the next stages of production [3,20]. Having such decision-making latitude allows employees to feel responsible for the equipment they operate and the product they produce. Hence, they find themselves at the heart of the action, which encourages them to have an affective commitment towards their organization.

As mentioned in Section 3, affective commitment comes from intrinsic factors of the employee [66], such as the feelings of recognition and professional development. This is in line with the Lean philosophy, which relies, among other things, on employee recognition and human development to demonstrate its principle of “respect for people”. This also shows the link between the two concepts of Lean and affective commitment.

Overall, the concept of affective commitment is rooted in the Lean philosophy: Lean organizations significantly strengthen the affective commitment of employees resulting in a dual benefit of improving performance and reducing overall costs.

#### *4.2. Human Resources According to Lean Philosophy*

Lean depends on human resources since 67–99% of the Lean effort is about them [104]. They are the force that can help organizations grow and succeed in their transformation [105]. Hence, organizations must understand employees on all levels and, especially, treat them as individuals [106]. According to Veech [107], when an organization focuses on human resources, results will follow. In contrast, when it focuses on results, the same troubles as in other organizations will occur (e.g., lack of interest, no ownership of improvements, decreased productivity). Thus, Lean is a people-based philosophy [108].

Human resources behaviors and roles are assumed to be different in Lean organizations where employees need to be proactive in the workplace and continuously looking for ways to improve flow, reduce errors and eliminate non-value-added activities [2,109]. In other words, these actors are expected to make continuous improvements. However, only employees who understand the implementation of Lean can produce these improvements and achieve the expected results [110]. The rest of the employees may be passive or even become resistant to change. Employee resistance often stems from the perception and beliefs they have acquired about Lean. They often believe that Lean is accompanied by job losses, increased work, high-stress levels, and longer workdays [109], or that Lean is just another fad that will pass and be replaced by another one. However, Toyota states that its Lean philosophy is primarily based on job stability and a supportive work environment for the long term [4]. In this perspective, some authors argued that the obstacles that can prevent the proper functioning of Lean are often related to the role played by human resources rather than to technical aspects [111,112]. It is, therefore, important for organizations to adjust their management practices accordingly to ensure adaptation to the aforementioned change. Involving employees in Lean transformation by encouraging them to participate in making decisions about their job or work conditions may be among the winning policies [113]. However, in order to enhance and ensure employees' involvement, it is necessary to inform them about the “why” and train them about the “how” of the Lean implementation [114]. Employees must understand the objective of Lean transformation and acquire the necessary training to be able to participate [115].

Furthermore, given that employees are the most powerful factor that can help organizations to successfully transition to Lean, Toyota's approach is to focus on the selection and hiring process. Several authors, including Alagaraja and Egan [116], Liker [4], and Sisson and Elshennawy [117] argued that the selection and retention of people with Lean skills is the key criterion to shift towards continuous improvement. These skills are manifested in part through the ability to solve problems and work well in teams.

Overall, it is evident that Lean organization needs effective employees that adhere to its philosophy [110], and it is commonly accepted that Lean success depends heavily on the active participation of employees [4,6]. However, the roles of leadership and management should not be overlooked in the process of bringing Lean to fruition.

#### 4.2.1. The Role of Leadership

Leadership is defined as “the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives” [118] (p. 8). Leadership is particularly important in organizations undergoing major changes, such as the introduction of Lean [119]. However, in a new context governed by continuous improvement, the transition from traditional leadership to Lean leadership is necessary. Lean Leadership can then be defined in terms of: “Beliefs, behaviors, and competencies that demonstrate respect for people, motivate people, improve business conditions, minimize or eliminate organizational politics, ensure effective utilization of resources, and eliminate confusion and rework” [120] (p. 34). Above all, Lean leaders must be able to understand the purpose of the change and have a clear idea of their contribution. Then, they must be able to communicate the need for change to their employees, create a common vision and goals, use Lean tools in an expert manner, and put in place all the adequate conditions that would encourage employees to get involved in the new system [121]. Emiliani et al. [3] claimed that the most important aspect of leadership is its physical presence in the factory, in the office, in all the processes in order to be visible at all times and intervene if necessary. In this way, the author encourages the “Genchi Genbutsu” practice and highlights the importance of face-to-face communication.

Lean requires a change of behavior and the acquisition of new skills, not only from the employees but especially from the leaders who should support the long-term change [122]. Liker and Convis [20] argued that transitioning to Lean requires competent leaders, capable of hiring and developing collaborators in order to make continuous improvement a daily reality. These authors compare the role of a Lean leader to a sports coach, who does not “play,” but supports the team members and puts them in a position to “win.” In other words, employees are the players, whereas the leader is in charge of creating the strategy, building the team, and developing their skills. Similarly, Dombrowski and Mielke [122] concluded, in their study on the fundamental principles of Lean Leadership that leaders are not the people who add value to the product, but they have to pave the way for employees to do so in an efficient way. To better understand the meaning of Lean leadership, Liker and Convis [20] created a model that captures the Toyota approach to leadership, as shown in Figure 3.

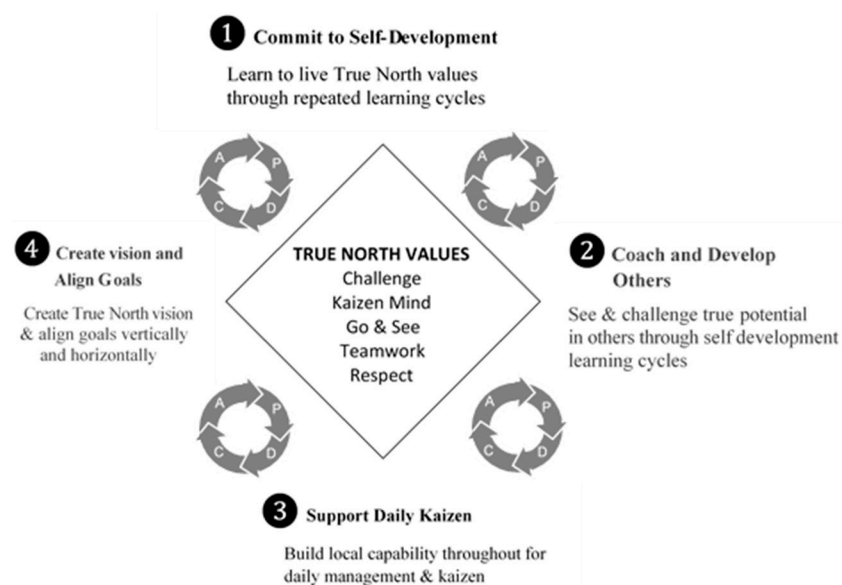


Figure 3. Lean Leadership model (adapted from Liker and Convis [20] (p. 39)).

This figure illustrates the values and functions required to be a leader at Toyota and shows how leaders need to continuously grow within that organization. Mastering the four stages of Leadership development is required for a successful lean transformation.

#### 4.2.2. The Role of Management

Although there are several variables that may influence the success of Lean implementation (e.g., the involvement of leaders and employees), many researchers agreed that management commitment is fundamental in this process [123]. In this regard, Liker and Hoseus [33] argued that if Toyota currently has a high-performance culture, it is because this organization has decades of practices that are constantly valued and supported by management. A firm commitment from management in the Lean project is necessary because otherwise, employees will not be engaged either [3]. This commitment should not be just verbal but also factual; it must be demonstrated by providing employees with the necessary resources, such as time and materials, to enable them to actively participate in the continuous improvement process [123]. In this line, Meyer [124] argued that “a culture of excellence must be driven, with actions and not simply slogans and statements, from the top.” When employees perceive that top management supports them and respects their efforts, they will be more encouraged to bring improvement and, thus, the resistance to change will be reduced [125]. In reference to Toyota, Emiliani et al. [3] pointed out that management takes seriously its responsibility to effectively manage human resources and help them get involved in the change.

Furthermore, Emiliani [46] emphasized that top management must make efforts to understand the two principles of Lean (i.e., continuous improvement and respect for people) to achieve favorable financial and non-financial results. If top management does not understand these principles, it will be impossible to succeed in Lean transformation [3]. This understanding is achieved through direct participation in the continuous improvement process, which enables top management to acquire a better balance between thinking and doing [46]. In addition to being directly involved in the transformation, it is required from top management to produce consistency, predictability, and order [126].

Leadership, as we have seen, is a process that aims to encourage employees to get involved in the change process, whereas management aims to support this process by creating, primarily, order and consistency [127].

Altogether, Lean organizations need sustainable continuous improvement, which is only possible through the participation of all stakeholders, including employees and managers [3].

#### 4.3. *The Practices of Human Resource Management (HRM) in Promoting Employee Commitment in Lean*

To succeed in the Lean project, organizations must review their HRM practices and ensure their effectiveness. If these practices are properly implemented, employees will develop a high affective commitment towards their organization, which facilitates the transition to and sustainability of Lean [128]. It is therefore important at this level to raise the question about the choice of effective practices to implement in order to increase employee commitment in the continuous improvement process.

Liker [4] suggested that the force behind Lean consists of the fact that the organization invests heavily in the commitment of human resources while basing itself on a participative management approach and by betting on the “respect for people” concept. This notion is not limited to the traditional definition of giving consideration to employees, but it encompasses a multitude of management practices that define it. Several authors emphasized the concept of mutual trust as an integral component of “respect for people”, (e.g., [3,11,129]). “Mutual trust means that management and the employees have confidence in one another. It comes from the belief that everyone is, however, striving for the same purpose” [129] (p. 10). Liker and Hoseus [33] argued that when there is a lack of trust between employers and employees, the latter tend to overlook and hide problems. In contrast, when the relationship between the two parties is based on mutual trust, employees are more likely

to identify problems and take responsibility to solve them. In this context, Toyota values and ensures the maintenance of mutual trust, not only because it is essential for employees' commitment and involvement in Lean, but because it is the foundation of the organization and employee growth [129].

"Respect for people" also refers to the concept of occupational health and safety [11,130]. According to Liker [11], respect is demonstrated when employees are provided with physical and mental safety on a daily basis, and when they are given the means to make their day a success. Several researchers have been interested in studying the effect of Lean on employees' health and safety. In this regard, some authors reported that the implementation of Lean could be a source of stress for employees who must adapt to change [131–133]. Moreover, the reduction in cycle time required by Lean could lead to an increase in musculoskeletal risks since the employee is faced with an increase in work pace and stress, a lack of recovery time, insufficient time to control work, and time pressure [131,133,134]. In contrast, other authors stipulated that these negative effects only occur as a consequence of poor Lean implementations [134]. They even go against what has been said previously to announce that Lean could improve working conditions [131], reduce the level of stress among employees [135], and produce job rotation, which is considered as a means of reducing the risk of work-related musculoskeletal disorders [136]. Angelis et al. [102] argued that job rotation is an aspect that greatly facilitates employee commitment. Moreover, the objective of Lean is to use the minimum in all aspects of the organization: less waste, less manufacturing space, less investments in tools, and, especially, less human effort [6]. However, Lean will only bring its positive effects on employees' health and safety if managers focus more on occupational safety and health (OSH), ergonomics, and working conditions in general [131,134]. In other words, the principle of "respect for people" will only be effective if the organization is interested in the health and safety of its employees because unhealthy employees cannot be productive and efficient [137] and, consequently, cannot be committed and involved in the continuous improvement process.

According to Toyota, "respect for people" is also characterized by sincere communication [3,120]. This communication promotes information sharing and employee commitment in the continuous improvement process. Sisson and Elshennawy [117] emphasized that when major changes have to be made within the organization, communication about the reasons for these changes and all their implications is essential to getting all stakeholders on board. This should be the case when implementing Lean. Likewise, a study by Choi and Liker [138] showed that communication is a key factor in the establishment and deployment of Lean since it encourages employees to participate in the improvement process. Toyota managers believe that employees need to be informed in order to do their jobs effectively. They encourage, therefore, the exchange of information in a quick and transparent way and are open to any suggestions from employees to resolve problems [139].

Furthermore, the dedication of time and resources is essential to successfully implement Lean [105]. Among these resources is training, which is another aspect of "respect for people." Toyota expresses the importance of human resource development as follows: "Because people make our automobiles, nothing gets started until we train and educate our people" [140] (p. 50). Toyota designs a career path that emphasizes the acquisition of in-depth skills in each discipline [7]. Its objective is to provide training at all levels to keep these skills up to date. To achieve this, Toyota offers several forms of training: pre-job, on-the-job, and off-the-job training [139]. The notions learned during these trainings are applied immediately afterward in the workplace. Toyota stipulates that the best approach is to provide training followed by immediately doing [4].

Empowerment is also part of "respect for people" [141]. As pointed out by Doustar et al. [142], Lean implementation advocates for new management techniques (e.g., eliminating waste and improving performance) that can be achieved only through employee empowerment. They stipulate that this aspect must be taken into account before even implementing Lean. It is possible to begin empowering employees by asking them to find

ways to improve productivity, safety, efficiency, etc. in their daily tasks [141]. This technique strengthens employee involvement and creates a sense of belonging that allows them to identify with the organization and its objectives. Furthermore, McMahon [141] argued that in order to empower employees, it is important to create an organizational culture based on rewards. Although rewards for constructive ideas, comments, or opinions may be symbolic and inexpensive, they are necessary to encourage employees to continuously improve operating procedures and the work environment [4].

Toyota also demonstrates respect by seeking to engage team members through active participation in improving their work and, most importantly, by ensuring job security [4,11]. Overall, Toyota's approach is to create human resource practices that ensure fairness in the workplace, so as to create an environment in which each member is willing not only to identify and report problems but to actively engage in resolving them [20].

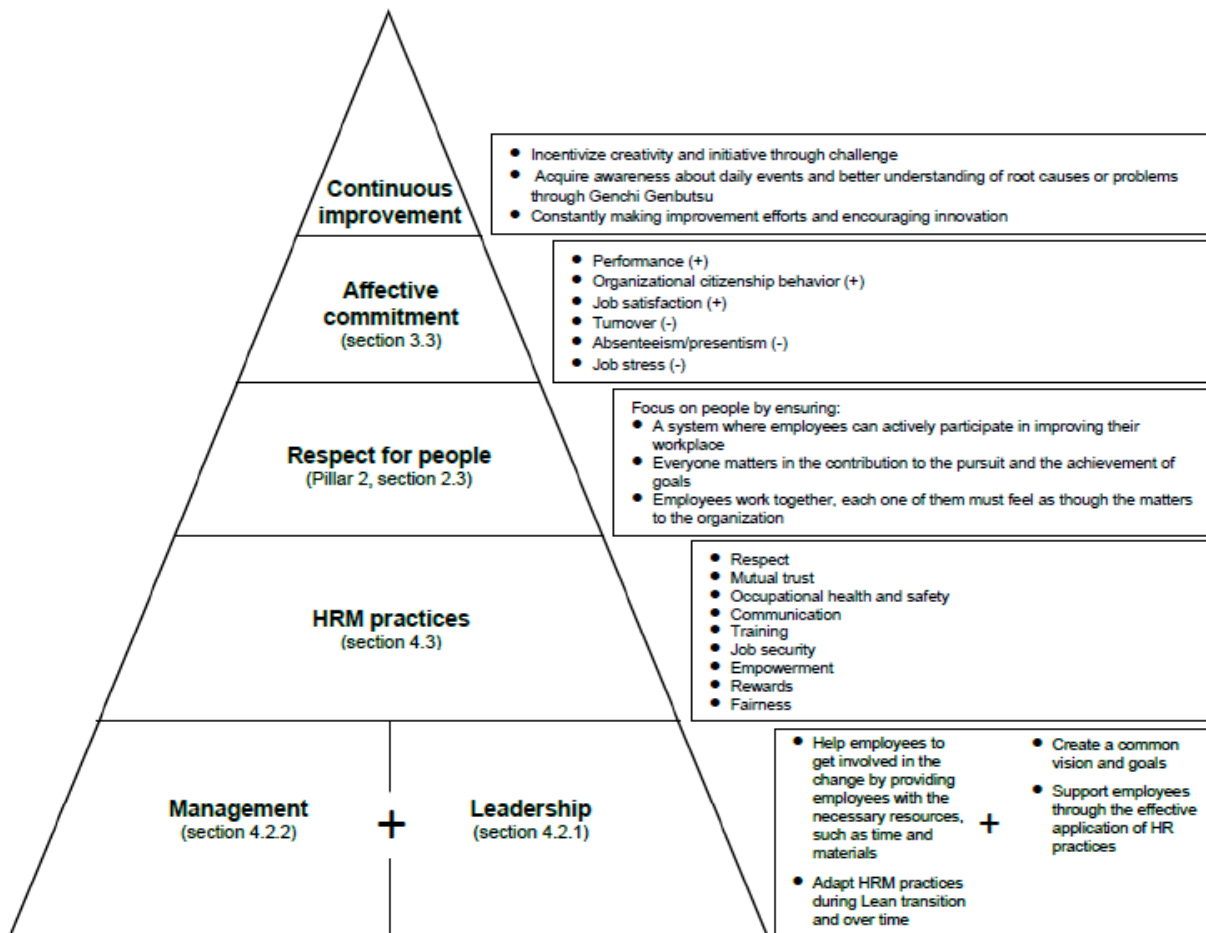
Toyota's HRM practices are a primordial and excellent source of inspiration for organizations that are planning to implement Lean in order to engage their employees to improve their processes. However, the choice of the right practices is highly dependent on the particular singularities (e.g., context, culture) of each organization.

## 5. Discussion and Directions for Future Work

While we can find a plethora of works on Lean in the literature, for example, [13,143–146], the vast body of research has mainly focused on one single pillar (i.e., continuous improvement), relegating the “respect for people” pillar to a secondary role. The result of this review should allow the research community to better understand the influence of this aspect in the success of Lean, to become aware of the role of management practices, and to realize the importance of employee commitment towards the organization. In other words, we aim to underline that the successful implementation of Lean requires a greater focus on three components that are often overlooked during the transition to Lean: the “respect for people” pillar, affective commitment, and HRM practices. These components and their associations are summarized in Figure 4.

**Respect for people:** Through “respect for people” Toyota emphasizes the importance granted to its employees since it considers them to play a key role in the success of Lean [110]. They are the ones who do the actual work. Their participation, involvement, and cooperation are important factors in ensuring the Lean transition. However, until now, research has largely neglected the human side of Lean. A study carried out by Hines [147] addressed the gaps in the Lean literature and showed that there is a lack of focus on people. It concluded that sustainable continuous improvement requires giving greater focus to the role of systems, culture, and, especially, people. In this regard, there are some questions remaining unanswered or requiring further clarification in the literature: Why is the “respect for people” pillar often ignored by management even though Toyota insists that both pillars must be taken into account in order to successfully implement Lean? And when not ignored, how do companies incorporate this pillar during their transition? Most importantly, how can these companies measure or ascertain that they are actually integrating the “respect for people” pillar when adopting Lean? Furthermore, we cannot find an entire definition of this concept in the literature [48]. This may lead to confusion and hinder the correct implementation of Lean. In this sense, some authors (e.g., [31,102]) argued that the lack of a consensual lean definition may cause difficulties for academics and practitioners. Developing a concise and overarching definition of “respect for people” is therefore essential to help companies understand its full meaning in order to facilitate its implementation. Moreover, although researchers stress the crucial role of employees, there is a lack of studies that provide an in-depth explanation of the changes that occur in the roles during the Lean transformation. So, what exactly is the role that employees should play during and after the implementation of Lean? How do they contribute to the Lean transformation? Does their role undergo changes over the years? Further work is still needed to clarify these questions and shed more light on the “respect for people” aspect of Lean.





**Figure 4.** Components influencing the successful implementation of Lean.

Affective commitment: Employee commitment is of paramount importance and a crucial component of the success of Lean because committed employees are productive [148], accept job responsibilities [149], seek to overcome organizational problems, adhere to organizational goals [150], and care about the fate of the organization [63]. For all these reasons, it is important to increase and maintain the level of employee commitment throughout the Lean implementation process. To do so, the organization must answer questions such as: What is driving employees to be affectively committed? What are the factors that increase/decrease affective commitment? How can this commitment be maintained during the transition to Lean? In other words, employers must target the factors that lie behind the motivation of employees (e.g., Toyota Way's reward system) and, more importantly, must know how to reliably measure affective commitment. Although outcomes of affective commitment (e.g., higher job satisfaction and performance, lower presenteeism and absenteeism) are reported by several authors such as Ampofo [85], Donald et al. [84], Kim and Beehr [90], Meyer et al. [78], and Taifor et al. [92], the set of factors that influence employee commitment in Lean has received less attention from the academic literature, especially when it comes to non-committed employees and the elements that negatively impact commitment. In this context, what are the factors that impact employee commitment? Considering that affectively committed employees put themselves at the service of the organization and exert above-normal efforts to ensure its success, a promising line of future work is, therefore, to investigate and provide an in-depth explanation of not only the factors that stimulate their feelings of attachment and organizational belonging but likewise the factors that undermine these feelings. In other words, studies that focus more on studying the relationship between affective commitment and Lean are needed. To the best of our knowledge, the only study that has discussed these factors in the Lean context

and that has examined the direct relationship between affective engagement and Lean is that presented by Angelis et al. [102]. The results of this study demonstrated that there are some necessary factors for workers' commitment, including allowing workers to participate in improvement projects, helping in meeting production standards when needed, and increasing cycle times through parallel workflows. In addition, the study confirmed the existence of a positive association between the two concepts (affective commitment and Lean) and stressed that employees who are affectively committed identify with the organization's goals, which facilitates the transition to Lean. It would also be interesting to expand the discussion about the other types of organizational commitment (e.g., continuance commitment, normative commitment) to explore how they may or may not hinder the implementation and durability of the continuous improvement process. This could help managers know which employees are committed in Lean, elucidate how committed they are, and take the necessary actions to raise the commitment level among those who show little to no commitment at all. Furthermore, some authors including Emiliani et al. [3], Liker [4], and Liker and Convis [20] argued that employee commitment can be influenced by leadership and management in the sense that employees can be committed in Lean only if leaders and managers are also committed. How do leaders and managers influence employee commitment specifically in Lean? We believe it is important to explore in more detail the relationship between Lean leadership/management and employee commitment.

**HRM practices:** Although the spectrum of management practices is ample and diverse, for example, [151–153], we can find few works in the literature reporting on HRM practices that can develop employee commitment in Lean. This finding is complementary to the rare studies that have discussed the importance of management practices in the success and sustainability of Lean. For example, the study by Bonavia and Marin-Garcia [154] concluded that, to date, the debate about which HRM practices should be considered in Lean firms remains inconclusive. It also confirmed that the association between HRM practices and Lean is still practically unexplored. It is therefore interesting to explore this association to answer questions such as: Among the various HRM practices, which ones ought to be incorporated to facilitate the Lean transition? On what basis should the organizations choose these practices? Is there a time frame in which HRM practices must be modified to be adapted to the evolution of Lean? Moreover, the context in which these practices are studied is largely specific to Toyota. This precludes the availability of an accurate and reliable assessment of the suitability and projection of these practices to other domains or sectors. Toyota itself advises organizations willing to successfully implement and maintain Lean to not simply copy its management practices but rather adapt them to fit their organizational context; otherwise, the implementation of Lean will likely be prone to failure. The choice of HRM practices is highly dependent on the organizational culture and differs across work environments, sectors, etc. In this sense, the investigation conducted by Gao and Low [139] revealed that construction firms implement some of the Toyota Way people management practices, such as selectivity in recruitment, training, teamwork. In the same direction, Martínez-Jurado et al. [111] as a result of case study research stated that management practices are important during the transformation process. The results of their study showed five main practices to be adopted when implementing Lean in the aeronautics industry: training, rewards, communication, job design, and work organization. Moreover, the study carried out by Bonavia and Marin-Garcia [154] in the ceramic tile industry showed that some management practices (training and job security particularly) are significantly linked with the implementation of lean. However, the literature that approaches these practices considering sector-specific idiosyncrasies remains limited. To fill this gap, it is important for future research to identify the adequate management practices and/or the adjustments required to adapt them to these different domains. The literature does however insist on training as a necessary practice in the Lean transition (e.g., [37,105,139]). Should this practice then be taken into account by all organizations regardless of their sector of activity and context? If yes, what forms of training are needed to ensure a lean transformation? Besides, as shown in Figure 4, HRM practices have an

impact on employee affective commitment. Most studies addressing the link between these two concepts (e.g., [128,152]) only report the HRM practices that are likely to affect employee commitment but do not examine how this influence is materialized. Investigating the nature of this influence requires further attention from research [2].

Finally, to achieve excellence and reach its goals, an organization must not limit itself to the implementation of Lean but must make efforts to maintain it and ensure its sustainability. Organizations must therefore answer additional questions: How can Lean be maintained in the long term? How can affective commitment be preserved or increased over the years? To this end, follow-up strategies must be established to guarantee that: (1) implemented actions are still effective, (2) ineffective practices are improved or even removed, and (3) better and modern practices are regularly incorporated. Lean is a continuous and dynamic process that requires close and constant supervision. In this context, there is a considerable lack of literature on the evolution and supervision of management practices within Lean organizations.

#### *Research Limitations*

This narrative review provides an overview of the relevant literature on employee commitment in Lean. However, some limitations should be mentioned.

The first limitation of this study is due to the subjective nature of the method used (the subjectivity of the researcher in determining the studies to be included in the paper). This is a common limitation of narrative literature reviews [155]. The second limitation is due to a large number of articles on Lean. It was almost impossible to access and analyze all of them. Therefore, some relevant articles may not have been included in this study.

## **6. Conclusions**

In this paper, we have presented a thorough review of the literature on the pillar concepts of Lean and organizational commitment. We have provided a comprehensive summary of the advantages offered by Lean to an organization and highlighted the complementarity of its pillars in order to achieve a successful implementation. We especially emphasized the role of the “respect for people” pillar as a necessary condition that must be considered, in conjunction with continuous improvement, during the adoption of Lean.

With the “respect for people” pillar, we have reviewed the role of human resources and their high relevance in the implementation and sustainability of Lean within an organization. Understanding their roles and the management practices needed for their involvement is key to the success of Lean. This is the responsibility of managers and leaders, who have to support employees to get involved in the change process and take the right actions to make Lean implementation a smooth and durable process. In this context, we have accentuated the role of organizational commitment, presented its different dimensions, discussed their characteristics, and pointed out the specific form of commitment that can help in concretizing a successful Lean implementation. Particularly, we have shown the consolidated position of affective commitment and its advantages within Lean. For this reason, numerous organizations are invested in improving the level of affective commitment of their employees and consequently help them adopt the organization’s culture and become more involved in the continuous improvement process. Putting the focus on the human factor appears as a strong starting point to avoid resistance to change and circumvent failure in Lean implementation.

Furthermore, we have presented the background on the relationship between Lean and affective commitment and outlined the positive correlation that exists between them. Nevertheless, there is still room for improvement. Better knowledge about this relationship is needed, and more work on the generalizability and effectiveness of management practices and their effect on employee commitment is required. To summarize the “what to do” and “how to it” that will help an organization improve the level of affective commitment from its employees so as to succeed in a durable Lean implementation needs more attention from the research community.

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