

Benchmarking Study of Moroccan SMEs Using Lean Management Tools in Order to Ameliorate Their Performance. (Case of SMEs Based on Casablanca)

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Abstract

Actually, in Morocco, small and medium-sized enterprises (SMEs) are an important component of the economy representing 98% of total enterprises of the country. Today, the competitive industrial environment is encouraging these companies to rethink their manufacturing practices. Lean management (LM) has been widely implemented in several companies in Morocco and especially in Casablanca showing a positive impact on business performance and development, but what about social performance and the well-being of employees? This study aims to highlight a benchmark of countries and Moroccan publications about companies using Lean management tools. Then we will examine the impact of the implementation of these lean management tools on the social performance of small and medium-sized enterprises established in the region of Casablanca by studying the degree of stress perception and the workload by these employees, indeed we will highlight the recent progress of changing management shown in SMEs of Morocco.

Keywords

Lean management, Social Performance, Moroccan SME's, Stress, Psychological performance.

1. Introduction

small and medium-sized firms (SMEs) assume a huge part in worldwide economies and are a significant part of financial development in emerging countries. Thus, SMEs are viewed as one of the main supporters of worldwide GDP and business (Saleh and Ndubisi, 2006). SMEs utilize 93 million individuals in Europe and record for 57% of all out esteem made. Most of SMEs (93%) are microbusinesses with less than 10 representatives (Muller et al., 2017). As indicated by gauges from the Moroccan Confederation of SMEs, SMEs represent 95% of the Moroccan economy. For sure, they are viewed as a fundamental type of revenue and work, representing 40% of result and 31% of products (CDVM, 2011).

Be that as it may, because of the hard contest on the lookout, SMEs are today battling to protect their seriousness. Thus, they focus their endeavours on cost-cutting and making more specific things in more modest amounts and in more limited time spans. Taiichi Ohno created lean management when he concocted the Toyota Production System (TPS) during the 1950s. It endeavours to improve esteem creation and diminishing a wide range of waste. Many organizations from different businesses all over the planet have sent off drives and undertakings to execute Lean practices (Narayanamurthy et al., 2018; Bajjou and Chafi, 2018a; Bajjou and Chafi, 2018b). For a long time,

normal lean methodologies have been utilized to sort out the lean assembling process in a few worldwide companies, initially well versed in the car business and later in other modern areas, including more modest organizations (Rauch et al., 2017). Lean is an administration mode that, notwithstanding the organization of a bunch of procedures and devices, is a mentality as much as a capacity " (Hohmann, 2013). So, assuming the beneficial outcomes of Lean on the monetary execution of the organization have been certified, its impacts on the workers are not and a few explores have shown that Lean creates pressure. Thus, the significance of concentrating on the accompanying issue: "What is the effect of the execution of Lean management apparatuses on the social performance of little and medium-sized Moroccan enterprises based in Casablanca? How is the perception of increasing workload and stress by their employees?

This article plans to feature the effect of Lean management on the social performance of the company, as reflected in the mental and human parts of employees. The article additionally shows that LM has demonstrated its viability in further developing execution in enormous organizations as well as in SMEs.

In this way, we will progressively manage the literature review of the key words like lean management and social performance, the methodology used to conduct our study then the analysis and the discussion answer the scrutinizing of our exploration which is the effect of the execution of Lean management apparatuses on the social performance of Moroccan SMEs, while thinking about the factors stress and the impression of the responsibility by the workers.

2. Literature Review

2.1 Lean Management

It is basic for firms to refresh their administrative models to make and hold their seriousness in a consistently evolving climate. (Alves and Alves,2015) thus, the execution of Lean Management has drawn in countless firms sending off in numerous areas, as the method accommodates expanded seriousness (Martinez-Jurado and Moyano-Fuentes, 2014), efficiency increments, and quality enhancements (Bhasin and Burcher, 2006). Lean began in the Japanese car industry as an administration style focused on persistent improvement, offering some benefit for the end client, and decreasing waste (Pearce and Pons, 2019). It is an administration idea zeroed in on nonstop improvement that requires the responsibility and cooperation of the entire organization to expand quality, cost, and time (Martinez-Jurado and Moyano-Fuentes, 2014); (Womack and Jones, 1997).

It is a human-focused system (Kabst et al., 1996), with a definitive target of delivering increasingly more worth with less and less time, space, and mistake (Womack and Jones, 1997). Taiichi Ohno (1988), Lean principal architect at Toyota, features three fundamental execution difficulties of Lean: Muda (killing waste), Mura (investigating and directing interest unusualness), and Muri (further developing efficiency) (wiping out gear and representative over-burden).

2.2 Social Performance

Social execution is an exceptionally undefined thought with a dim definition. "Social execution" is characterized as "the great or adverse result of an association's representatives' connections in accomplishing its targets" (Sutter, 2011). Representatives of a socially effective association are, truth be told, roused, able, and faithful. Social execution emerged from the organization's objective to upgrade the prosperity of its kin working and, subsequently, their efficiency (Baggio and Sutter, 2013).

A firm is viewed as socially fruitful when it can execute a human asset the board strategy that considers the recognizable proof of every individual skill inside the association so that it is recognized and the worker feels spurred and faithful to the organization (Bughin and Colot, 2008). Various modalities of operationalization of

social execution are provided as far as estimating instruments, for example, the statistics finished by Wood (2010), who consolidated Carroll (1979) and Wartick and Cochran (1985) estimation models and made improvements. Along these lines, social execution evaluation might be parted into four significant classifications: multi-classification measures, single-classification measures, and single-class estimations. Measures associated with the corporate social obligation thought, Metrics associated with the responsiveness cycle and measures connected with the classification of results and the impact of measures.

Social execution is contained various social parts, including worker wellbeing and security, inspiration, preparing, cooperation, etc.

2.3 Lean management in SMEs all over the world

Little and medium-sized ventures (SMEs) comprise the foundation of economies. Thus, to flourish in an exceptionally serious environment, these organizations should overhaul their current cycles and fulfil the assumptions for their customers. Lean management is one of the best administration strategies in all areas. SMEs in Europe make a critical commitment to upgrade proficiency and efficiency (Baks et al., 2011). The European Commission has funded the Innovative Productivity in European Regions (ERIP) program on this reason. Six nations are associated with this drive (Norway, Belgium, Sweden, Germany, the Netherlands and the United Kingdom). The ERIP accomplices made and tried a standard methodology for applying lean assembling standards in partaking SMEs (47 little and medium-sized firms were chosen in every country) (Baks et al., 2011). The following table show us a Benchmark of certain nations that they execute Lean management devices in their Small and Medium Enterprises. (Table 1)

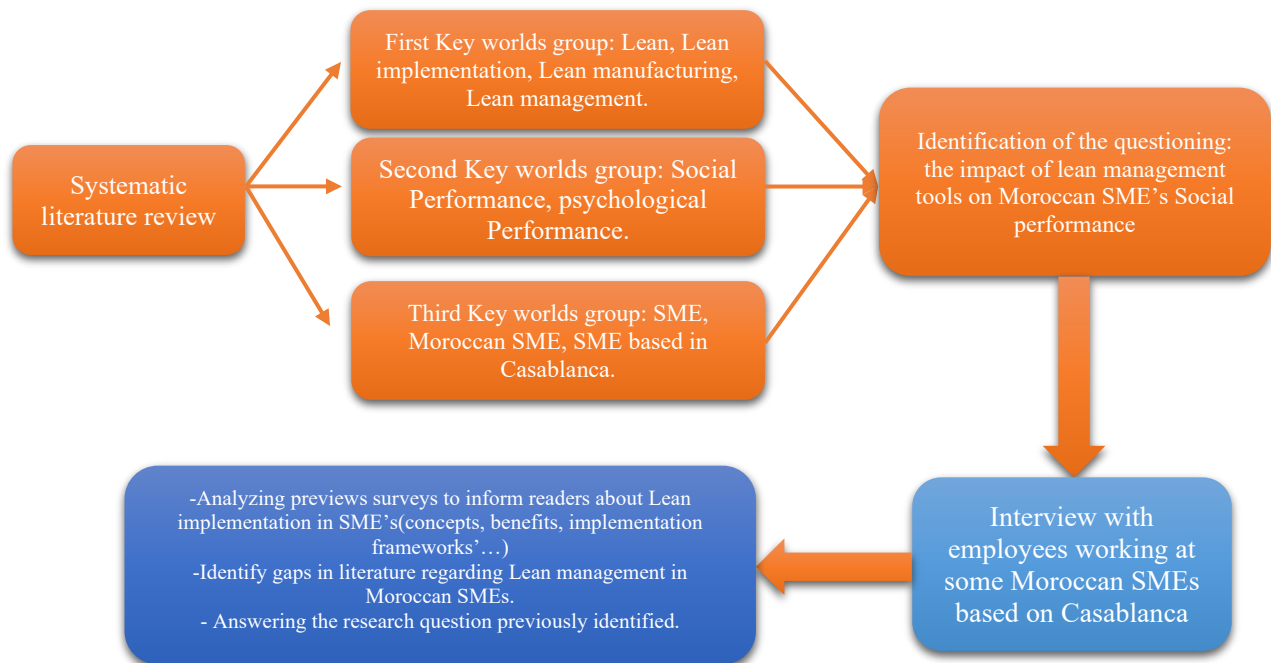
Table 1: Benchmarked countries

Benchmarked Countries	Lean Tools Practices Implemented	Main finding
Greece	-waste reduction -kaizen	-Improvement of the industrial performance. -In SMEs, quality and production departments are more interested in the Lean approach than other parts of the company. - 39% of the respondents in Greece associate the implementation of Lean management with the reduction of the workforce (this perception is negative and contrary to the fundamental principles of LM). - Greek companies are using an external expert. However, in order to successfully implement lean tools, they must be closely linked and adapted to the company's philosophy and culture. Salonitis and Tsinopoulos (2016)
Italy	the methods most applied in SME of Italy: -continuous Improvement (kaizen) -Supplier Integration -Frontloading -Knowledge Transfer	-High potential for improvement and optimization of product development. -Respondents shows difficulties in evaluating the following Lean methods: Workload Leveling (Heijunka), Poka-Yoka, Value Stream Mapping. This is probably due to the fact that some of them are less established, quite complex or complicated, and are just being developed. -Most small companies consider implementing Lean to be costly and time consuming.

		-Lean is less known in most small businesses, which sometimes implement LM practices without realizing that they are LM.
Malaysia	The lean management tools that they are considered like soft lean is: -Top management commitment -Human resources management -Employee commitment -Employee involvement and empowerment -Supplier management -Customer focus -Training -Teamwork -Reward and recognition -Communication -Continuous improvement	-The implementation of a program in 2006 under the automotive cooperation between Malaysia and Japan (MAJAICO). -Higher value-added products, -Improving production competitiveness through capacity and lean production systems. - Various obstacles: lack of management, commitment and organizational support, communication, lack of employee attitudes. - The success factors of lean implementation are not only due to technical practices but also to the integration of non-technical aspects such as human practices. -Implementing 5S is the simplest of the Lean practices. -All companies have started to implement LM on the production line that produces the most waste.
Morocco	- Kaizen - waste reduction	- The implementation of INMAA program (Moroccan Improvement Initiative) which was initiated in 2011 by the Moroccan Ministry of Industry, Trade and New Technologies and Maroc-PME -Deploying LM principles in the Moroccan industrial fabric.

Elaborated by : the authors

3. Methodology



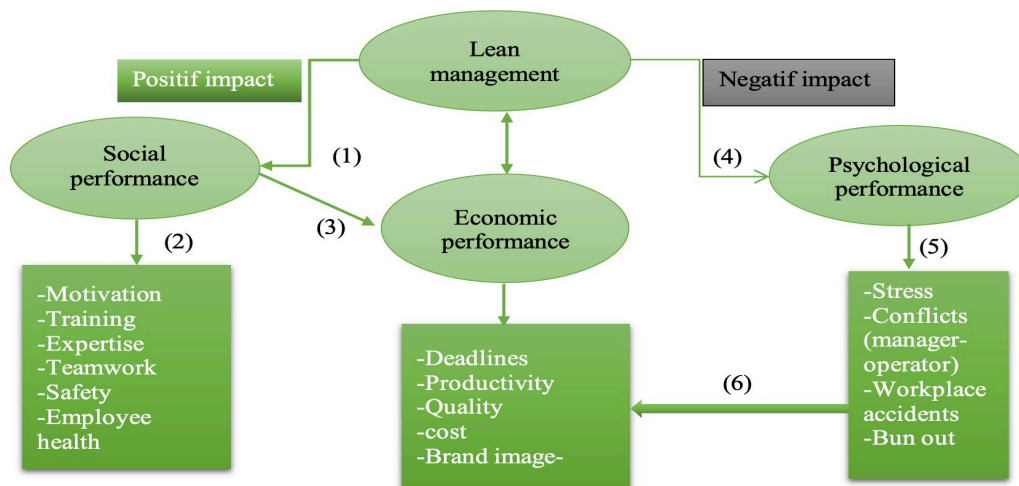
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Figure 1: Flow cart of the research methodology

4. The Analysis

The chart Figure 2 below portrays the impact of rest the board on three classes of execution: social, monetary, and mental.

(1) Indeed, it has been found that lean management, in its positive aspect, prompts (2) the improvement of social execution, including staff inspiration, preparing, group climate... (3) which increments monetary execution by improving quality, cost decrease, time enhancement. The adverse consequence of lean management, on the opposite side, is (4) the deteriorating of mental execution, which might prompt (5) debates, stress, consume out...and this (6) will impact financial execution in all viewpoints.



Elaborated by : the authors

Figure 2: cause and effect diagram of the Lean Management implementation

4.1 Moroccan SMEs' aim to carry out lean management

Moroccan organizations have embraced the Lean management approach to work on the general execution, everything being equal. Lean management has been acquainted with further develop worker execution through a learning framework that considers everybody's self-improvement, affirmation of their skill, and collaboration. A corporate culture integrates all representatives, from directors to laborers, and depends on a precise strategy that takes into consideration the recognizable proof and evacuation of every single waste reason. In any case, most of business leaders view Lean as a tool compartment. As per trained professionals, this wrong view prompts an unfortunate handle of this strategy in Morocco. In this manner, Lean contains a plenty of devices that record for only 30% of the methodology; the excess 70% are in the perspective, suggesting that an adjustment of culture and an alternate association are required.

The main part of Lean is "the HUMAN BEING," which sees and treats the lean cycle through its way of behaving and brain research, since it is at the center of this stage.

4.1.1 Benchmark of Moroccan publications

The Table 2 surge shows us a benchmark of Moroccan publications managing the use of lean management by Moroccan SMEs while taking the "Human" part into account.

Table 2: Recent Moroccan publications highlighted the human side

Data sources	Studied variables	Search results
<p>BENHRIMIDA, . M., & DEKKAKI, S. (2020). LA PERCEPTION DU LEAN MANAGEMENT AU MAROC. QU'EN EST-IL VRAIMENT ?. Revue Du contrôle, De La Comptabilité Et De l'audit , 2(2). Retrieved from https://revuecca.com/index.php/home/article/view/183</p>	<p>-Perception of stress -Perception of workload -Resistance to change</p>	<p>- Disagreement in perception of Lean by professionals involved in the process vs employees of transformed businesses. -Experts see Lean as a necessary step forward in the development of Moroccan industrial companies' competitiveness. -The introduction of new procedures is perceived by employees as an additional source of stress and an increase in the cost of doing business. - A lack of involvement from middle and upper management, as well as resistance to change and the persistence of implemented measures, may be at the root of the failure of Lean implementation in Morocco.</p>
<p>Boutayeb, A., Sabbani, Y., Ennadi, A., & Chamat, A. (2020). Contribution of LEAN Management in the Moroccan Ecosystem: Industrial Sector. 2020 IEEE 13th International Colloquium of Logistics and Supply Chain Management (LOGISTIQUA).</p>	<p>-social security -Motivation -Ergonomics</p>	<p>- 58% of researchers are only concerned with LM tools. - In their studies, 16% of researchers address "social" motivation and safety (MS) with LM. - Only 10% of researchers consider usability while using LM. - Regrettably, nearly 0% of study addresses all areas for improvement. - In order to reach greatness, we must strive for constant improvement of our projects while considering ergonomic, social, and environmental factors. - Taking social and organizational issues into account while implementing a LEAN project would help the Moroccan industry to have a better implementation of a Lean Management system and higher industrial performance.</p>
<p>Khihel F. & Harbal A. (2020) « Mental Security and Health in the Lean Sustainable Enterprise: the corporate psychological responsibility », Revue du contrôle, de la comptabilité et de l'audit « Volume 4 : numéro 3 » pp : 602 – 619.</p>	<p>-work environment -values and ethics - moral and mental safety of employees -motivation -stress -Perception of workload</p>	<p>- The most important component was stress, followed by multitasking and finally conflict. Health issues were mentioned less frequently since most businesses are aware of their employees' health precautions by engaging a medical provider to do regular examinations. -By applying Lean techniques, we discovered that while creating economic goals, organizations often fail to consider their employees' well-being by failing to integrate personal goals with economic goals, such as motivation, skill growth, and work team cohesiveness. This is regarded as the most common reason why business optimization methods and tools fail when they are economically focused, but business goals must be realized by the employees themselves, and implementation must begin in the thoughts of the employees prior to the process.</p>

5. Results

5.1. Impression of stress by Moroccan workers

Because of the Lean execution, the association will endeavour to turn around the supposed customary pyramid. It involves designating liability to representatives in the different creation working environments with the goal that they might work on progress drives all alone. This will be the principal constraint of carrying out Lean management in Moroccan SMEs since it would raise representative pressure. The accompanying chart embodies this:

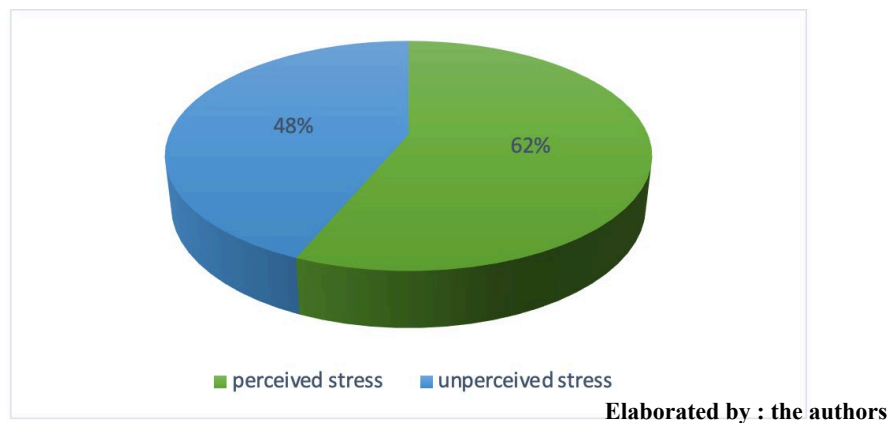


Figure 3: Perception of stress by workers of Moroccan SMEs based in Casablanca

As per Figure 3 n^o3, 62% of workers talked with see an expansion in pressure while utilizing Lean techniques. This is inferable, from one perspective to the execution of new cycles and working conditions that keep representatives from examining with each other, and, then again, to an absence of resistance to change, especially among more established workers. The degree of stress is likewise connected with the worry of staff decreases during Lean reception. As indicated by 48% of the representatives talked with, Lean regards the administrator and doesn't cause pressure among faculty.

As per them, LM ought to be important for an organization's general development program that consolidates all representatives to bring together them behind shared objectives. This would empower getting representative obligation to the reception of Lean and, subsequently, changing their impression of this methodology. There is a differentiation among Lean and Taylorism; under Taylorism, the administrator was just an agent; he reserved no privilege to think. Lean, then again, accepts that the administrator ought to be asked his thought process and afterward convinced. Lean is subsequently a bunch of convictions that should be imparted to workers.

5.2. Responsibility discernment

The expanded responsibility is an unfortunate result of Lean. This extra responsibility is fundamentally the consequence of a terrible execution of the methodology. Subsequently, the organization is neither in its previous purported conventional circumstance nor in a condition of progress, which disturbs the smooth activity of the organization, expands the quantity of controls, and in this way builds the responsibility for representatives, requiring the execution of preparing for all workers before carrying out the Lean methodology.

5.3. Preparing before the execution of the Lean management apparatuses

The administrator's pressure originates from the administration of progress. Lean is viewed as a major social change that requires preparing and readiness of staff for them to stick to and embrace this new culture, in light of the fact that the strategy can't work without the representatives' participation. Supporting the change and including the labor force is accordingly basic to the interaction's prosperity. (Figure 4) A few experts decipher pressure as "temporary" in a similar class. Accordingly, adjusting to change is trying from the outset, however over the long run, attributable to the administrators' commitment, they gain responsibility for nonstop change process.

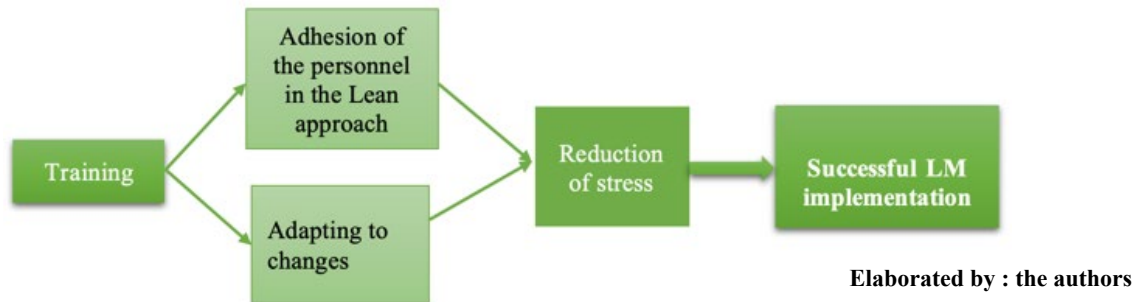


Figure 4: The execution of Lean management preparing

6. Discussion

6.1. The effect of Lean management on the social performance of the Moroccan SME.

Lean devices impact the organization's general exhibition. Since the Lean idea is personally attached to the commitment of HR to the reception of devices and standards in processes, its impact stretches out past financial execution to social execution.

The accompanying Table 3 sums up the lean management devices that affect the social presentation of associations overall and SMEs specifically:

Table 3: The positive impact of Lean management on social performance

Tools	Positif impact on SP
Empowerment and commitment of staff	Buttom-up strategy; finding solutions while engaging all staff
Kaisen	Continuous improvement
Transparency towards stakeholders	Long-term supplier commitment, worker engagement, corporate reliability, community support and enhanced ethical engagement.

Elaborated by : the authors

Notwithstanding, other Lean Management instruments adversely affect the social exhibition of the organization. The Table 4 underneath records the super Lean instruments and rules that can adversely affect social execution. This can be summed up as follows:

Table 4: The adverse consequence of Lean management on Social Performance

Tools	Negative impact on SP
Waste elimination	Multiple risks, multiple tasks
Élimination des déplacements inutiles (muda)	Muscular health problems
Work in progress	Because the equipment is crammed into a small space, this principle causes health issues (both auditory and neurological).
Single minute exchange of die (SMED)	Can lead employees to stress through frequent equipment changes, fast-paced tasks.
Just in time (JIT)	Increases stress among employees through the principle of respect for time
jidoka	Can limit the innovation and creativity of employees and this through the strict respect of work standards
Visual management	Can be a source of stress as teams may set goals that are not appropriate for the tools and capabilities.
La perfection (vinardi, 2016)	This principle can lead the company to neglect employees who have been competent

Elaborated by : the authors

6.2. The impact on worker brain research

Representatives might encounter pressure and debasement in working circumstances because of multi-skilling or the presentation of new techniques: having opportunity and willpower to speak with partners or not having repaying recruiting in the work unit are parts of decay that can be felt. One more reason for pressure expressed by most firm individuals is the possibility of staff decreases during Lean execution; the Lean strategy can prompt an expansion in principles, which might bring about the take-off of specific people from the association.

Of truth, various Lean management instruments, like SMED and JIT, despite the fact that accomplishing financial outcomes, unfavourably affect the mental prosperity of representatives by causing pressure, loss of inspiration, a feeling of being assessed, and a fear of the associations utilizing Lean management.

6.3. Lean Management Success and Failure Factors

Although Lean Management is certainly not another idea, barely any associations have grasped the way of thinking behind the methods of this methodology. As a matter of fact, an enormous number of organizations take on Lean devices, however many carry out them in confinement without a profound comprehension of the idea of Lean as a framework, which seriously endangers the maintainability of the methodology and the accomplishment of the ideal outcomes.

There is a wide agreement that HR and social change are basic variables for Lean reception (Emiliani, 2006). The utilization of apparatuses and strategies isn't sufficient to guarantee the outcome of the Lean change. It is likewise expected to think about the human part and the structure of a culture that upholds the Lean undertaking (Martnez-Jurado et al., 2014). Staff inspiration, commitment, and versatility are basic parts in the methodology's prosperity (Hines et al., 2004). Moreover, the ability to work in groups, address issues, learn, imagine, and constantly create (Martnez-Jurado et al., 2014). Top administration, as far as concerns its, should exhibit commitment and initiative, as well as make sense of the change related with the Lean venture to the entire business (Womack and Jones, 1997). The Table 5 beneath sums up the significant achievement and disappointment parts of Lean management.

Table 5: Key variables of accomplishment and disappointment of Lean Management

Focus	Success factors	Failure factors
Management / Lean project management	Involve management and the executive committee from the beginning of the process	Weak link between top management and operational staff - High budget allocation for implementation
Human resources	Communicating information on the project, all employees impacted by the project must be aware of current and upcoming projects	Lack of time - Lack of training - Difficulty in finding Lean partners
Tools and methods	Train employees by calling on external experts external experts when needed	Lack of expertise - Difficulty in collecting data collection and measurement
Company culture	Anchor the Lean culture in the daily life of all employees.	Resistance to change - Use only of tools without adopting the lean culture

Elaborated by : the authors

7. Conclusions

The progress of the Lean change isn't restricted to the utilization of devices and cycles; it is likewise expected to think about the human viewpoint and the structure of a culture that upholds the Lean venture (Martnez-Jurado et al., 2014). Staff inspiration, commitment, and flexibility are basic to the methodology's prosperity (Hines et al., 2004). Besides, the ability to work in gatherings, settle issues, learn, design, and constantly create (Martnez-Jurado et al., 2014). Top administration, as far as it matters for its, should exhibit devotion and authority, as well as make sense of the change connected to the Lean undertaking to the entire business (Womack and Jones, 1997). The table beneath sums up the significant achievement and disappointment factors in Lean management.

In this paper, we illuminate a little-examined issue in friendly and conduct the executives: the mental way of behaving of representatives in Moroccan little and medium-sized organizations during the sending of the Lean management procedure. This is achieved through the examination of two major thoughts, in particular, worker

view of pressure and responsibility because of the execution of new cycles and working conditions. Accordingly, social execution is being focused on to advance social incorporation and mental equilibrium among work force. We likewise featured the need of preparing preceding the sending of lean instruments, which is basic for the outcome of the methodology, as well as the components that add to the achievement or disappointment of lean management. All in all, we suggest that Moroccan SMEs increment representative commitment by coordinating and remembering them for corporate improvement programs.

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Biography

Jihane Nejari began the academic career in 2006 at the National school of Business and Management of Oujda followed by achieving a master's degree in Auditing and Management Control at the same school. From 2011 to 2019 working as a responsible of the relation “company-suppliers” in a medium company based in Morocco and specialized on the importation and distribution of all construction materials. By 2019 began the doctoral research cursus at the Interdisciplinary Laboratory of Research and Applications in Management about Moroccan SME's Performance under the supervision of Professor Hassine Mostafa.

Hassine mostafa is a Professor of Higher Education at the National School of Business and Management, began his academic career in France with the award of his doctorate in economic sciences at the University of Aix Marseille in November 1991, specializing in the field of management and corporate finance. Just few moments after in January 1992, started the position of Senior Manager at the Ministry of Finance, but always passionate about scientific research has quickly occupied the position of Research Professor in September 1992 at the Faculty of Legal and Economic Sciences of Fez until 2010. Since October 2010 and still remaining a professor of Higher Education continued its profession until now at the National School of Business and Management and the University Mohamed First.

