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# Assessing the design, management and improvement of Kaizen projects in local governments

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## Abstract

**Purpose** – Despite the abundant literature in the private sector, a significant gap was detected in the public sector where there were only a few academic efforts to appraise or assess the implementation of the Japanese approach. The likely reason for this lack of literature is the low implementation of Kaizen that has been evidenced over the years in the public sector. Public organizations have a large number of recommendations at their disposal which are vague, abstract and even contradictory. Accordingly, the assessment of the implementation of Kaizen represents a theoretical gap, the filling of which is both necessary and vital to the body of knowledge that represents the application of continuous improvement in a public setting. Therefore, the main purpose of this paper is to evaluate the design, management and implementation of Kaizen projects in local governments through the analysis and comparison of empirical data with regard to a theoretical conceptual scheme found in the literature.

**Design/methodology/approach** – A qualitative study was conducted using a case study strategy. The case studies were conducted in three Town Halls (two in Spain and one in Mexico) with active and sustained implementation of Kaizen projects. It was verified throughout that the selected cases applied Kaizen projects for at least five years in their work processes and public services.

**Findings** – As a result of the empirical work the authors proposed a new specific and individualized framework for the public sector called: “Kaizen projects conceptual schemes (KPCS), based on the cycle Plan-Do-Check-Act in order to form a theoretical and practical guide that can serve as a base for local governments seeking to implement Kaizen in their management.

**Research limitations/implications** – The study focussed on three Town Halls (two Spanish and one Mexican), so is not possible to generalize the results.

**Practical implications** – El KPCS may represent an instrument of evaluation, management, development and improvement to any Kaizen effort initiated in the public sector.

**Social implications** – The study focussed on public service.

**Originality/value** – As far as the authors are aware, this is one of the first paper to propose a framework of Kaizen in public organizations within both academic and practitioner ambits.

**Keywords** Public sector, Assessment, Kaizen, Spain, México, Kaizen projects

**Paper type** Research paper

## 1. Introduction

Since 2002 various academic authors have begun to engage in a greater amount of research, which is slowly creating a more robust body of knowledge concerning the Japanese management approach known as Kaizen or continuous improvement. This is perhaps a reflection of the countless articles on the dissemination of management practice (practitioner) which can be found in the literature. Some of them have generated detailed literature reviews in order to build more theory around Kaizen



(Singh and Singh, 2009; Suárez-Barraza *et al.*, 2011); other empirical studies have been conducted in Japan, China, the USA, Europe and Mexico (Brunet and New, 2003; Bradley and Willett, 2004; Aoki, 2008; Suárez-Barraza and Miguel-Dávila, 2011; Swartling and Olausson, 2011). Thus, the dimensions of Kaizen have been studied in their approach to implementing Kaizen Blitzes or Kaizen events (Laraia *et al.*, 1999; Montabon, 2005; Van Aken *et al.*, 2010), the sustainability of improvement projects (Bateman and David, 2002; Bateman, 2005), the relationship with other methods such as Lean thinking, and even with some techniques such as 5S, restrictions theory or Six Sigma (Liker, 2004; Suárez-Barraza and Ramis-Pujol, 2012).

It must be said, however, that virtually all research on Kaizen has focussed on the private sector, mainly due to the impact that the so-called Kaizen events have had in effecting rapid improvements in both technical (work processes) and social elements (human resources) (Bodek, 2002; Oakeson, 1997; Melnyk *et al.*, 1998). Despite this abundant literature in the private sector a significant gap was detected in the public sector, where there are only small academic efforts to appraise or assess the implementation of the Japanese approach in this sector (Radnor and Boaden, 2008; Suárez-Barraza *et al.*, 2009). The likely reason for this lack of literature is the low implementation of Kaizen evidenced over the years in the public sector. According to some authors, this infrequent implementation is mainly due to the participants of management in the public sector (Swiss, 1992). Furthermore, the way in which to apply the Kaizen in such a particular environment as public management may be another reason why so few efforts are documented in academic literature (Suárez-Barraza *et al.*, 2009). Therefore, some organizations and/or public institutions have taken pains to design, manage and improve Kaizen-type projects in their work processes and public services at a local level, not only in the USA and the UK, but also in Spain and Mexico (McAdam and Saulters, 2000; Suárez-Barraza and Ramis-Pujol, 2010; Yasin *et al.*, 2001). However, when implementing them various difficulties and complexities were encountered.

On the other hand, the large amount of literature on the topic related to management has led to the emergence of several “magic solutions” as to how to implement Kaizen as projects or events. As a result, public organizations have at their disposal a large number of recommendations which are vague, abstract and even contradictory (Van Aken *et al.*, 2010). Accordingly, the assessment of the implementation of Kaizen represents a theoretical gap, for which filling is both necessary and vital to the body of knowledge that represents the application of continuous improvement in a public setting. Therefore, the main purpose of this study is to evaluate the design, management and implementation of Kaizen projects in local governments through the analysis and comparison of empirical data with regard to a theoretical conceptual scheme found in the literature. In order to fill the gap present in the literature two specific objectives were established for the purpose of research:

- Research – objective 1: to illustrate how the conceptual scheme of Van Aken *et al.* (2010) can serve as a tool to evaluate the design, management and improvement of Kaizen projects. For this, we used three case studies (two in Spain and one in Mexico) in order to analyze their application as a diagnostic tool. This assessment involved viewing the implementation of Kaizen projects within a public organization systematically, formally and in a disciplined way. Under no circumstances were public organizations accepted that implemented projects randomly or because it was “fashionable.”

- Research – objective 2: based on the above to propose a new conceptual scheme, specific and specialized for the public sector, called “Kaizen project conceptual scheme (KPCS),” based on the Plan-Do-Check-Act (PDCA) cycle by Deming (1986) in order to create a theoretical and practical self-assessment instrument. This self-assessment instrument will constitute the basis for creating a practical guide for future Kaizen implementations in the public sector.

With this in mind, the paper is organized as follows: first, a literature review of articles on Kaizen and Kaizen projects, as well as on their application in the public sector is presented; subsequently, we will present the conceptual framework of the literature of the private sector, which will form the theoretical framework of the research. Then we will explain the methodology used during research and evaluate six Kaizen projects from the three selected case studies. The paper concludes with the findings and proposed new conceptual framework for the public sector (KPCS).

## 2. Revision of the literature

### 2.1 Background and definition of Kaizen projects

Masaaki Imai (1986) defines Kaizen as “improvement or continuous improvement in social life, home life, personal life and working life. In the workplace, KAIZEN means continuous improvement involving everyone, managers and workers alike.” For Newitt (1996), the definition by Imai is based on the word Kaizen, which is a derivation of two Japanese (Kanji) characters meaning: KAI = change and ZEN = good (to improve). Suárez-Barraza and Miguel-Dávila (2011, p. 20) update the definition indicating that Kaizen is “a set of personal principles that make you grow as a person, and which assume that our way of life – be it our work life, social life or family life – deserves to be constantly improved.”

On the other hand, the operational form of implementing Kaizen has always been considered in the form of a technique for solving problems and proposing ideas of improvement incrementally and sustained over time (Kume, 1985; Imai, 1986; Sawada, 1995). Imai (1997) argues that at the *gemba* (the actual place) workers must maintain and improve employment standards in order to improve the performance of each process. In this regard, Sawada (1995) suggests that the way to implement this guiding principle of Kaizen to maintain and improve standards is through teams of people known as Kaizen teams or teams of continuous process improvement, which take a series of steps to achieve this. This series of steps is known as Kaizen project or improvement project, i.e. the PDCA cycle by Deming (1986), which he later renamed in 1993 in his book *On the New Economics* as: PDSA.

According to Watson and DeYong (2010, p. 69) the credit for inventing Kaizen projects for problem solving goes to Joseph Juran (1973), who suggested the use of a methodology called “The Story of Quality Control (QC Story),” in classes that he taught Japanese businessmen in 1954 (Kolesar, 2008). Other authors, on the other hand, indicate that the origin of Kaizen projects was in the Toyota Motor Corporation in the 1960s with the use of the Kaizen format “A3,” so-called because of the international standard DIN A3. In this format it follows the previously described steps of the QC Story, i.e. problem selection, current status, root-cause analysis, improvement action plan, monitoring and improvement outcomes (Hino, 2006). Ishikawa (1962) also used the QC Story as a method for quality circles to conduct their improvement projects. But it was not until Tatsuo Ikezawa revised Juran’s model and transformed it into “QC Story for management,” that it began to spread among Japanese organizations. In fact,

this text was the basis for Hitoshi Kume's (1985) book *Statistical Methods for Quality Improvement*, with which Kaizen projects started spreading in Japanese organizations by means of applying the problem-solving methodology "QC Story." Hitoshi Kume (1985, pp. 192-206) proposes seven steps that a Kaizen project using the QC Story must contain: defining the problem, identifying possible causes, finding the root cause of the problem, taking action to eliminate the root cause, verifying that the problem has been corrected, eliminating the cause by standardizing work and reviewing the lessons learnt.

In this sense, Liker and Meier (2006) indicate in their book *The Toyota Way Fieldbook*, that the implementation of the QC Story requires the strict application within a Kaizen project PDCA improvement cycle. Here are the steps (Liker and Meier, 2006, p. 313) that must be implemented: defining the problem, completing a thorough analysis of the root cause, considering alternative solutions to the root cause, applying PDCA to implement the improvement project and reflecting on the learning process.

Noriaki Kano (1993) developed this practice further by extending the practice of QC Story to the management of improvement projects or Kaizen projects as part of the management system of an organization. All this is reflected in the book *Task Achieving QC Story for QC Circles*. From this point on, Kaizen projects began to be considered as an elementary part of continuous improvement systems in Japanese organizations. It is noteworthy, that the Toyota culture has always consisted of improving work processes at all times (Ohno, 1978). For Ohno (2007), the efforts of workers by means of Kaizen projects at the *gemba* (workplace) are the best way to reduce costs, since processes can include activities that do not add value to them, referred to as *muda* in Japanese (Ohno, 1978). In that sense, at Toyota, there is one basic idea within their operations conforming to the Japanese management system, which is the Kaizen or continuous improvement concept. Kaizen activities are implemented through the identification and elimination of *muda* at all times and for all persons involved in workplace processes (Imai, 1986; Shingo, 2007). The art of solving problems through improvement projects which encompass all dimensions (space, time, subject, object, method) is crucial in the culture of Kaizen at Toyota (Shingo, 2007). But Fujio Cho, chairman of Toyota Motor Corporation, was aware that the new outposts would not implement the company's continuous improvement culture reflected in the "Toyota Way" (Stewart and Raman, 2007).

Parallel to the above-mentioned, a project can be defined as: "a plan that consists of a set of activities that are interrelated and coordinated, which are intended to achieve specific objectives within the limits imposed by a period of time, previously defined, and specific resources." Thus, a Kaizen project follows these conceptual requirements, which in some cases have been criticized because of their time limits by followers who favor the application of Kaizen as events or Blitzes (Sheridan, 1997; Laraia *et al.*, 1999; Melnyk *et al.*, 1998). However, Kaizen projects have the PDCA cycle as a guiding principle, which means that the link between the end of an improvement project and the start of the next is clearly stated, following the QC Story. Therefore, despite being called "projects," they retain as their base the practice of continuous improvement. In this sense, a Kaizen project can be defined as: "the set of activities for the solution of a problem by a Kaizen team, which is carried out by means of the QC Story and which has well-defined objectives, sufficient capital and a set time limit" (Suárez-Barraza, 2007). Improvement projects represent the most effective way of improving employment standards, specifically the processes of organizations (Kume, 1985; Kano, 1993; Suárez-Barraza, 2007). Some basic features are: first, the resolution of operational problems is performed by employees; second, the QC Story is used as a tool; third, the project is implemented autonomously; fourth, the employees use their

equipment for improvement; and fifth, they are fully responsible for the implementation, including its monitoring and standardization. To conclude this section, Table I shows a summary of the literature reviewed.

*2.2 Applying Kaizen projects in the public sector*

Since the early 1990s, the terms Lean Thinking and Kaizen have become more important in the vocabulary of public sector management in Europe and Asia (Thong *et al.*, 2000; Pedersen and Huniche, 2011). Probably one of the reasons for this has been the reduction of operating budgets, and fiscal deficits faced by countries in these regions. In this sense, at present we are witnessing a crisis in the European model of the welfare state, whose management leads to expenditure far superior to the quality of the service provided and the number of benefits offered. At the same time, it is clearly difficult to attract qualified human resources for work in public-sector entities. The result has been that the public exerts pressure on local governments (those closest to the citizen) for bigger, better and faster public services. This situation is by no means easy, particularly when taking into account that public services are characterized by their heterogeneity (i.e. several services are provided in one and the same place). Furthermore, they are subject to rules and regulations, and are also, at times, very specific, depending on which geographical location the Town Hall is situated in Speller and Ghobadian (1993). This has led to a number of these public services having serious issues regarding quality and response time. Indeed, the literature cautiously indicates that “public services with quality” should have a double reference or purpose: the fulfillment of requirements expected by the individual citizen-client in order to leave him reasonably satisfied and the fulfillment of requirements of the community considered of interest and common benefit; both sides tend to give priority to interest/ common benefit (Gaster and Squires, 2003). In addition, public servants work in an environment where resources (economic and human) are increasingly scarce, while working under strong external environmental pressures (citizenry and society, among other interested parties/stakeholders) (Pollitt, 2006).

Author/element of the improvement project	Kume (1985)	Osono <i>et al.</i> (2008)	Monden (1998)	Liker and Meier (2006)	Hino (2006)
Number of steps	Seven	Eight	Nine	Five	Three
Definition of the problem	Counts	Counts	Counts	Counts	Counts
Clarification of the problem	Counts	Not directly indicated	Not directly indicated	Not directly indicated	Counts
Quantification of the problem	Counts	Counts	Counts	Counts	Counts
Analysis of the causes	Counts	Counts	Counts	Counts	Counts
Establishment of counter measures	Counts	Counts	Counts	Counts	Counts
Evaluation and standardization	Counts	Counts	Counts	Counts	Counts
Use of the PDCA cycle	Not directly indicated	Not directly indicated	Not directly indicated	Not directly indicated	Counts
Conclusions and lessons learnt	Counts	Not directly indicated	Not directly indicated	Not directly indicated	Not directly indicated

**Table I.** Summary table of the literature of authors who consider Kaizen projects as QC Story

**Source:** Authors

This has resulted in the situation that several public administrations of different countries are struggling with how to manage their institutions and have begun to adopt Lean and Kaizen in order “to do more with less” more quickly and with higher quality. In concrete terms, they are creating more value for the citizen-customer, eliminating everything that is not necessary and which is wasteful for their work processes (*muda*). Thus, for Imai (1986) and Womack and Jones (2003), both Lean and Kaizen are based on the idea of continuous improvement of processes, in which managers and employees continuously sustain actions that help eliminate *muda*, in order to generate greater value for customers.

In academic literature on the subject, there have been few empirical efforts to understand either Lean or Kaizen in this area (Radnor *et al.*, 2006; Radnor and Boaden, 2008; Suárez-Barraza *et al.*, 2009). Among those studies focussed on local governments is one by Bhatia and Drew (2007), indicating that there is a vast potential for applying Kaizen to improve productivity and the satisfaction of citizens who receive local government services. However, they clarify that its application depends on the cultural context in which it occurs, be it the USA and/or Europe. Suárez-Barraza *et al.* (2009) present an example of the application of Lean-Kaizen through specific projects in Spanish Town Halls, showing significant changes in processes and public services. However, these authors also expose a series of inhibitors that must be eliminated so that the effort of continuous improvement is consolidated and sustained over time (i.e. the political changes that affect the daily operation of the Town Halls). Finally, Pedersen and Huniche (2011), conclude that the processes and outcomes of Lean not only depend on the techniques and tools that are implemented, but they also involve taking into consideration the negotiations that occur within the public body, in other words, the place where planning and implementation of Kaizen projects are carried out.

There is practically no academic literature in existence for Mexico and Latin America. One of the few studies found was the one by Suárez-Barraza and Ramis-Pujol (2010), which shows an example of the transfer of Kaizen in a human resources office of a public company in Mexico, concluding with a possible adaptation of these techniques in a Mexican context. However, as indicated by Radnor and Boaden (2008), it is a very recent subject, and still needs empirical study. This paper is an attempt to fill this existing theoretical vacuum. It may also be noted that Kaizen in the public sector is still a relatively unexplored subject and continues to be listed as a new topic in the literature of operation management. Recent studies by Radnor and Boaden (2008) and Suárez-Barraza *et al.* (2009) were the first efforts to understand this managerial approach in the public domain. A detailed understanding of Kaizen projects in a completely different context from the private sector represents a form of filling the gap in the existing theoretical vacuum.

### 3. Methodology of research

This section initially describes the methodology used to develop the assessment scheme of the design: the management and the improvement of Kaizen projects; subsequently, it explains the conceptual theoretical framework that was used for comparison with the findings of the case studies.

#### 3.1 Collection and analysis of the data

Each of the case studies analyzed was selected according to the criterion of “theoretical sample” (Strauss and Corbin, 1994), which refers to – in contrast to the statistical concept of sample – a type of purposeful sampling, in which the researcher selects

a case, an incident, people or units, based on their broad potential of contributing to the development and testing of theoretical constructs. This type of sampling is an iterative process, in which the researcher selects an initial sample (one case), analyzes the data, then selects another case to help refine the results, categories and patterns previously found. This process continues with other cases until the researcher hits “data saturation,” or simply when the researcher reaches a point where he finds no more results (insights) although sampling continues (more cases). In addition, at all times the protocols are followed for construction, analysis and description of case studies used to create theory (Eisenhardt, 1989; Yin, 1994; Eisenhardt and Graebner, 2007). It should be noted that the empirical findings were gathered for two years, during which time the lead author of this paper was in close contact with the three organizations, thereby permitting a thorough understanding of the application of Kaizen projects in each Town Hall.

Data collection were performed using four methods: direct observation, non-intrusive participant observation, document analysis and in-depth semi-structured interviews, in that order. During data collection special attention was paid to the triangulation of the four methods, which converged on the same set of facts, in order to strengthen the internal validity of the study (Eisenhardt and Graebner, 2007).

After the data were collected, it was analyzed. For this, we used the construction of concepts through “constant comparison” of data (Glaser and Strauss, 1967) and the techniques proposed by Miles and Huberman (1994) for coding and analysis of data, which, in our case, are reduced to three main procedures:

- The amount of data were reduced by selecting, abstracting, focussing and transforming data into notes and field transcripts that laid the foundations for the analysis of the generated data.
- The presentation of the data consisted in arranging and assembling the information by creating an electronic database, in which data were organized and presented in order to obtain a better understanding of the results that were achieved. In addition, summaries were used, along with synoptic observations made during participatory and non-intrusive in-depth interviews.
- For the final analysis and outlining of the conclusion and verification we established the meaning of concepts, i.e. the developing of matrices, obtaining patterns and observing regularities to test a minimum degree of validity. There was continual data crossing obtained from each manager with regard to the patterns found, returning to the first interviews and observations, thereby achieving a criss-cross-triangulation among multiple data-collection methods (Eisenhardt, 1989).

### *3.2 Brief description of the case studies*

The case studies were conducted in three Town Halls (two in Spain and one in Mexico) with active and sustained implementation of Kaizen projects. It was verified throughout that the selected cases applied Kaizen projects for at least five years in their work processes and public services (Bateman, 2005). In this paper we will refer to the three cases as follows: T.H. A; T.H. B and T.H. C.

T.H. A is a Spanish Town Hall which has been recognized for its extensive experience in management systems related to excellence and continuous improvement (Kaizen), having been presented with several awards for quality and excellence in management, such as the Ibero-American Quality Award in the year 2000 and a Special



Mention by the European Foundation of Quality Management (EFQM) in the same year. The implementation of Kaizen projects was begun approximately in the late 1990s to improve processes and public services of the Town Hall, which presented results for around 42 Kaizen projects implemented per year. Examples of the processes in which Kaizen projects have been implemented through QC Story are: security and daily co-existence, maintenance of public spaces, citizen attention services, socio-cultural development and a legal department. Both the EFQM and the Ibero-American Quality Award have provided an opportunity for managers and public officials of the Town Hall to maintain a rigid structure of evaluation and monitoring. The results obtained from the 42 projects laid the groundwork for political as well as technical support which backs public servants by offering group recognition in the form of diplomas and days off for each participating team. Another important feature of T.H. A was that the leaders had important positions in the institution. As an example, the Director of the Finance Department led two Kaizen teams.

T.H. B is a Spanish Town Hall known for its extensive experience in management systems related to excellence and continuous improvement. In 2004 it scored the necessary 500 points to win the prize for the Gold Seal from EFQM. Until that time it was the only Spanish Town Hall to have received this recognition. This Town Hall calls these improvement projects "Improvement Workshops." From 1999 to 2009 (i.e. for ten years) 86 improvement projects were developed, which generated nearly 320 improvement actions. Moreover, the method used in the improvement workshops was based on forming a voluntary improvement team or group, comprised of workers at a technical-operational level and the office and/or unit manager, i.e. employees who have direct contact with the process and know it in depth. After the approval of the project, both by the service area management, and by the department involved, and with the help of an outside facilitator, this group of employees worked for five days during business hours in search of opportunities for the improvement of processes, which they selected because they warranted improvement. At the conclusion of these five days, the group was to have specific solutions ready to be implemented in order to eliminate the problems encountered as well as their main causes. The main obstacle that public servants of the Town Hall were able to overcome over the years while working with Kaizen projects was the existing barrier among local government departments. At the beginning of the Kaizen projects this obstacle caused public servants to work in an isolated and uncooperative manner.

An example of the work performed is shown in Table II.

The process under study	Kaizen team	Result of the Kaizen project	Citizen satisfaction survey
Handling applications	Team for licenses and disciplines	Reduction of requirements because of deficiencies in the documentation and reduction of processing times	7.14 average data from 2002 to 2005
Customer service department	Customer service department (10 members)	Formalization and standardization of criteria and reduced response times (40% improvement)	6.88 (2003) 7.18 (2004) 7.25 (2005)

**Note:** Satisfaction scale for citizens from 0 (not satisfied) to 10 (completely satisfied)

**Source:** Historical report of T.H. B

**Table II.**  
Kaizen project results  
in Town Hall B

The third case-study analysis (T.H. C) concerns a medium-sized Town Hall located in the southeastern state of Mexico, with almost five years of experience working on Kaizen improvement projects. In fact, five years is a significant figure, since in Mexico government officers at municipal level serve for three years without the possibility of re-election. This fact is significant because a complex situation arose in the first administration, which decided to undertake an effort to solve the problem. Upon completion of the term of office a new administration came into office, which, despite being from a different political party, decided to continue the effort to change by means of Kaizen projects. This decision was made due to the results obtained both in improved public services and in the response of the citizenry.

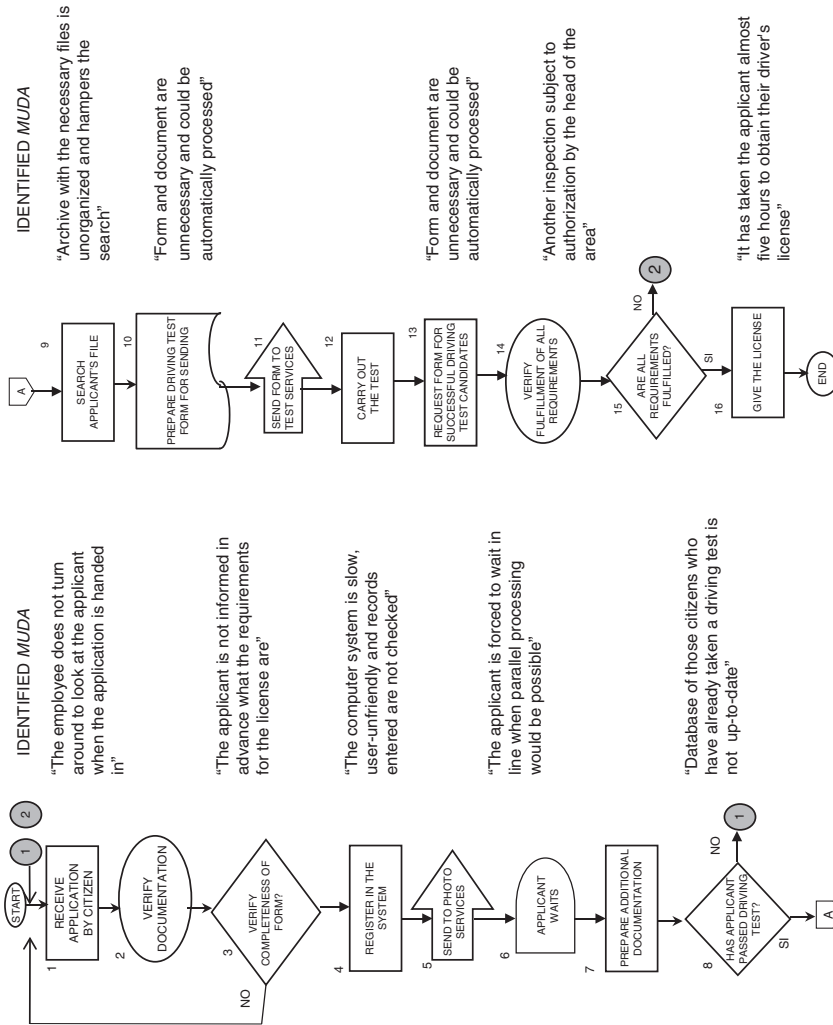
A sample implementation of Kaizen projects in T.H. C focussed specifically on two processes, namely the handling of car licenses for car dealers, for which the Transit Authority is responsible, and the processes of the Customer Service Department of the Transit Authority. As a first step, a Kaizen project team was established in each of the selected areas to begin improving each process. Each team was made up of a person responsible for the process itself (the sub-director of the area) and three technicians (civil servants) who had in-depth knowledge of the processes.

Their first task as a team, once formed, was to tour the workspaces where the process is carried out, which is referred to as *gemba* in Japanese. The idea of walking the *gemba* is to try to find all possible activities that do not add value to the process (termed *muda* in Japanese). Once both Kaizen project teams had toured the *gemba* they proceeded to document the process, identifying all activities that are performed in order to run it, from the receipt of the application by a client for obtaining or renewing a license, to the delivery thereof. The same was done in the Customer Service Department by identifying activities from the receipt of an application or inquiry by a citizen to its solution. Until the researchers intervened, the Kaizen project had only reached the analysis stage, in which all the *muda* of the selected processes had been identified. At that point, each Kaizen project had completed 60 percent, i.e. the corresponding improvement actions to eliminate the *muda* of the process were still outstanding. An example is shown in Figure 1.

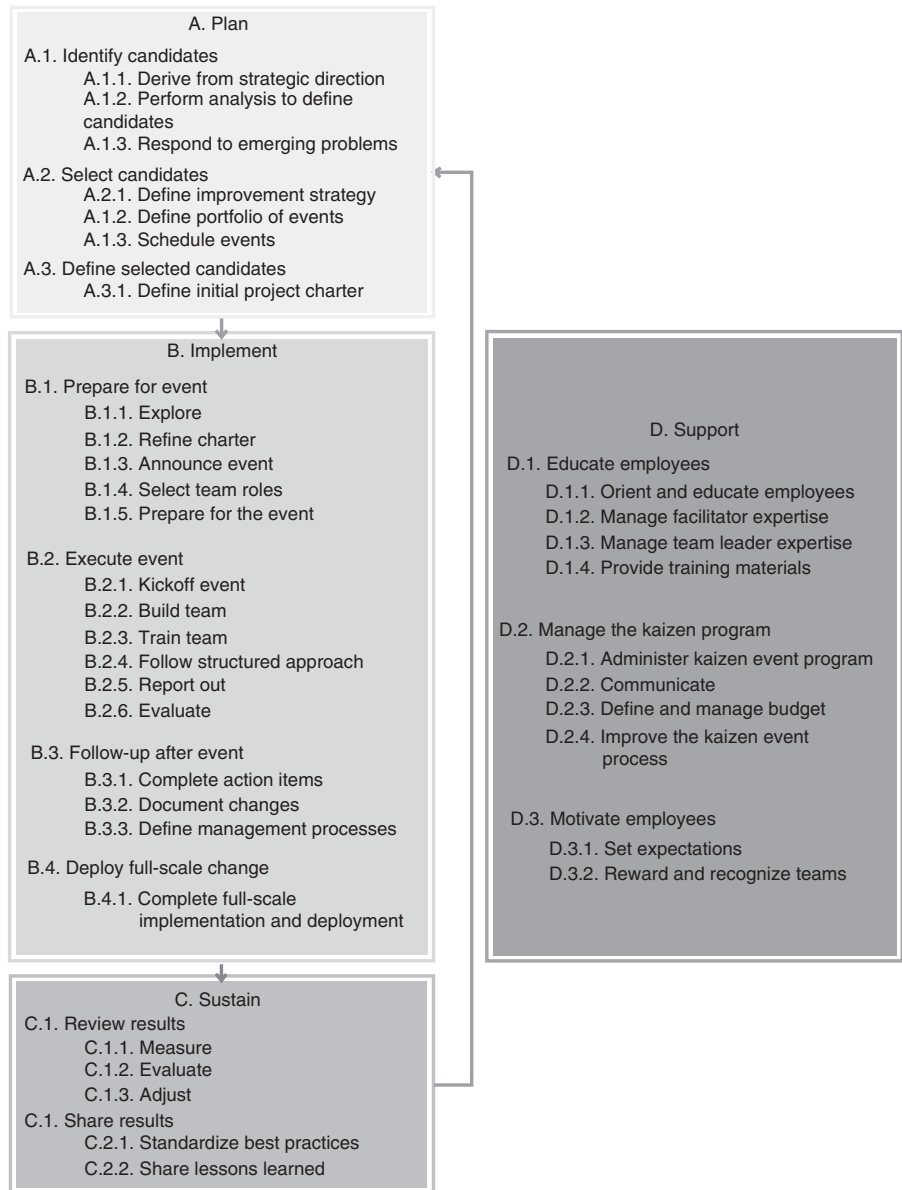
According to the department head of citizen services, the most difficult part of eliminating 60 percent of the *muda* related to the processes of obtaining a driver's license was to understand that all these activities were not static rules which were "impossible to change." For public servants who had spent many years in this type of work environment, eliminating activities represented a total change in their way of conceiving work. One way that helped to minimize this effect, in addition to working on the Kaizen project team was the final presentation of the results to the entire Town Hall by the public servants who had made the improvements. This event created the feeling among the public servants that they were all "in the same boat" and not working in independent departments but in a local administration which relies on integrated processes and delivers public services to its citizens.

### 3.3 Conceptual theoretical scheme and methodology for evaluating Kaizen projects

Since the specific literature of the subject presents no theoretical conceptual scheme of Kaizen projects, we decided to use the theoretical scheme of Van Aken *et al.* (2010) (see Figure 2), which refers to the technique of Kaizen events or Kaizen Blitzes. We, as researchers, are aware that a Kaizen event is different with regard to both its conception and features from a Kaizen project. The main difference lies in its temporary nature: the Kaizen events last between three and eight days, whereas



**Figure 1.**  
Example of the flow  
diagram for the process  
of licensing with  
MUDA detected



**Figure 2.**  
Conceptual theoretical  
framework

Source: Van Aken *et al.* (2010, p. 647)

improvement projects are permanent and can last up to six months, at which point another is started. Some authors also suggest that Kaizen events are very likely to succeed due to the very focussed nature of the improvement (Cohen and Bailey, 1997; Laraia *et al.*, 1999). However, this may also occur in Kaizen projects because the workers implementing the improvements directly participate in the work processes in

the *gemba* (in their own workplace), thereby ensuring, “at least” in practice, that the approach is equally focussed in practice.

In summary, the theoretical conceptual scheme used in this research can be applied to Kaizen projects using the aforementioned conceptual matrices. As is evident, Van Aken *et al.* (2010) divide their proposal into four phases that follow the principle of the PDCA cycle, i.e. planning, implementation, maintenance and support. They are composed of 12 sub-processes and 37 improvement activities (see Figure 2 for details).

In order to assess Kaizen projects from this index, the conceptual theoretical scheme in Figure 2 is assessed and scored as follows:

- 0 = no improvement action: there are no improvement actions; elements related to improvement are either absent or require major adjustments.
- 1 = informal execution: initial tests of a Kaizen project, with some identification of improvement activities but lacking important components (application tools), which need adjustment.
- 2 = Kaizen project management: repeatable practices, with small items lacking, or requiring adjustments.
- 3 = a well-defined Kaizen project: repeatable and standardized practices without missing elements.

How the Kaizen projects are being implemented is assessed by following the aforementioned point scale. Once each of the phases, sub-processes and improvement actions of the Kaizen projects have been identified they are assessed, thus generating an average with respect to the number of improvement actions for each sub-process of each phase. For example, to validate phase A in its sub-process “A.1. identify candidates” we evaluate each improvement action hypothetically. Thus, we obtain: A.1.1. determine the corporate strategy for improvement (two points); A.1.2. analyze the processes for selecting candidates to improve (one point); A.1.3. prepare a contingency plan (two points). A total of five points have been allocated, which are divided among three improvement actions, so that we obtain a sample score of this Kaizen project of 1.67 points.

It must be noted that the assessment should be formulated as objectively as possible, but there must always be some flexibility at the moment of assessment. Therefore, it was necessary to create specific guidelines on how to evaluate each improvement action of each sub-process. It is also necessary to maintain multiple sources of evidence for each improvement project at all times. In this case we used documentation from each Town Hall (annual reports, reports of each Kaizen project, flow charts, manuals, etc.), in addition to the data collected by researchers through direct observation and unobtrusive participant observation in the form of notes and reflections recorded in a research journal. Finally, the semi-structured in-depth interviews with key players involved in the Kaizen projects allowed a corroboration of the implementation process of each Kaizen project and its results.

**4. Results: rating Kaizen projects according to each case study**

Six completed Kaizen projects were selected for the three Town Halls studied. The first selection criterion was that all selected Kaizen projects use the QC Story methodology from beginning to end, i.e. from the selection of the problem to the implementation and standardization of solutions in the daily work. It is also important to note that the six selected Kaizen projects used the QC Story-methodology proposed by Kume (1985), thus ensuring uniformity in the understanding of the term Kaizen.

The second selection criterion was that the Kaizen projects be conducted 100 percent by civil servants of the Town Hall. It is important to note that in four of the cases there was support from external consultants, but their role was simply to advise the Kaizen team members. In three cases there was external consultation, done by the same person, thus creating uniformity in the application criteria of the QC Story-methodology. The Kaizen project in the Mexican Town Hall was chosen because it failed to be concluded, which meant a “not so successful” case, which Yin (1994) calls “extreme case sampling.” In other words, the aim is to compare successful cases with those which do not obtain such good results. The selected Town Halls and their respective improvement projects, improvement objectives, improved processes and results thereof are shown in Table III.

Upon completion of data collection of the six selected Kaizen projects shown in Table III, we proceeded to assess each one with the theoretical scheme of Van Aken *et al.* (2010). The evaluation was performed by a single researcher to avoid a possible bias toward criteria or implementation mechanisms. In addition, data collection followed the protocol outlined in the section on methodology regarding documentary analysis, the observation of the implementation of each project and the in-depth interviews. The results of the assessment are shown in Table IV.

Town Hall	Kaizen project	Objectives	Results
“A” Code “A”1	1. Organization of warehouse management	Innovate warehouse management of the Town Hall to improve the response time to citizens	40 kg of unnecessary material was removed or recycled 62% of warehouse space was freed, organized and cleaned 100% of the electrical and plumbing materials used in the Town Hall were labeled
Code “A”2	2. Project “Punctual rubbish collection”	Collect the rubbish at the same time every day of the year, with a maximum deviation of 20 minutes	From 2000 to 2005 the indicated standard was met 96% of the time
Code “A”3	3. 100% maintenance of public space	Repair breakdowns or malfunctions of facilities in public spaces within a maximum of 72 hours	From 2000 to 2005 the indicated standard was met 94% of the time
“B” Code “B”4	4. Organization of records management in the social intervention office	Innovate the management of documents in the office for social intervention to organize files and offices more efficiently	11,000 hanging files sent to recycling 7,500 kg of paper sent to recycling 44% total office space freed
Code “B”5	5. Optimizing the management of building permits	Reduce the activities of the management process of building permits by 20%	Total process of bureaucratic activities reduced by 40%, leading to an improved response time of 4 days (from 10)
“C” Code “C”6	6. Optimizing the management of the response time for car licenses	Reduce response time and number of errors for car licenses	Kaizen project not completed. Up until the time of the study 30% of those activities that did not add value were able to be eliminated

**Table III.**  
Analysed Kaizen projects  
of the selected cases

**Source:** Authors, from the case studies

A. Plan	"A"1	"A"2	"A"3	"B"4	"B"5	"C"6
<i>A.1. Identify candidates</i>						
A.1.1. Derive from strategic direction	3	3	3	2	3	3
A.1.2. Perform analysis to define candidates	2	2	2	1	3	2
A.1.3. Respond to emerging problems	0	1	1	0	1	0
Total A.1. Identity candidates	1.67	2.00	2.00	1.00	2.33	1.67
<i>A.2. Select candidates</i>						
A.2.1. Define improvement strategy	3	3	3	3	3	3
A.2.2. Define portfolio of events	1	2	2	1	2	1
A.2.3. Schedule events	3	2	1	3	2	2
Total A.2. Select candidates	2.33	2.33	2.00	2.33	2.33	2.00
<i>A.3. Define selected candidates</i>						
A.3.1. Define initial project charter	3	2	2	1	1	2
Total A.3. Define selected candidates	3.00	2.00	2.00	1.00	1.00	2.00
<b>B. Implement</b>						
<i>B.1. Prepare for event</i>						
B.1.1. Explore	1	2	1	1	2	2
B.1.2. Refine charter	3	2	1	1	2	1
B.1.3. Announce event	3	3	3	2	3	3
B.1.4. Select team roles	3	2	2	2	3	3
B.1.5. Prepare for the event	3	2	2	2	3	2
Total B.1. Prepare for event	2.60	2.20	1.80	1.60	2.60	2.20
<i>B.2. Execute event</i>						
B.2.1. Kickoff event	3	3	3	2	2	2
B.2.2. Build team	3	2	2	2	3	3
B.2.3. Train team	3	2	2	2	2	3
B.2.4. Follow structured approach	3	3	3	2	2	2
B.2.5. Report out	2	3	3	2	3	2
B.2.6. Evaluate	2	3	3	1	3	1
Total B.2. Execute event	2.67	2.67	2.67	1.83	2.50	2.17
<i>B.3. Follow-up after event</i>						
B.3.1. Complete action items	3	3	3	3	3	1
B.3.2. Carry out documents changes	3	3	3	2	2	1
B.3.3. Define management processes	2	3	2	2	1	0
Total B.3. Follow-up after event	2.67	3.00	2.67	2.33	2.00	0.67
<i>B.4. Deploy full-scale change</i>						
B.4.1. Complete full-scale implementation and deployment	0	2	2	1	2	0
Total B.4. Deploy full-scale change	0.00	2.00	2.00	1.00	2.00	0.00
<b>C. Sustain</b>						
<i>C.1. Review results</i>						
C.1.1. Measure	3	3	3	3	3	2
C.1.2. Evaluate	3	3	3	3	3	0
C.1.3. Adjust	3	3	3	1	2	0
Total C.1. Review results	3.00	3.00	3.00	2.33	2.67	0.67
<i>C.2. Share results</i>						
C.2.1. Standardize best practices	1	2	2	2	1	0
C.2.2. Share lessons learned	2	2	2	2	2	1
Total C.2. Share results	1.50	2.00	2.00	2.00	1.50	0.50

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**Table IV.**  
Results of the assessment  
of the selected Kaizen  
projects

**Source:** The authors, taken from the case studies

The main motivation for developing the six Kaizen projects was a need to improve the processes involved in each. In some cases, as in “C”6, the Kaizen project at the Mexican Town Hall, this need had begun to permeate down to the citizens, who were beginning to complain seriously (even in the press) about the delays in issuing car licenses. In this way, the planning stage (A) had acceptable scores almost above 2, with the exception of “B”4 and the document management project in the area of social intervention which obtained a score of 1 in A.1. (identify the candidate), and A.3. (define selected project). For this last criterion, “B”5 obtained the same rating. In general, the Kaizen projects presented acceptable levels between 1.67 and 3 in all criteria regarding planning, which indicates that despite the immediate need a systematic effort was gradually made to plan each Kaizen project carefully. It should be noted that the lowest criterion in the six projects was to prepare a contingency plan, which probably was not considered a priority in any of them.

Regarding the implementation stage (B), both pre-start project preparations B.1., as well as the execution of the events themselves (the project itself) B.2., obtained scores above 1.80, with the exception of Kaizen project “B”4, which presented problems during preparation because of its poor planning (1.60). During the follow-up phase of the project after event B.3., the results also showed high scores >2, except for the Mexican Town Hall Kaizen project “C”6, whose follow-up phase was not initiated due to its non-completion. Finally, at this stage, one of the worst criteria, which scored the lowest of the entire conceptual scheme, was the running the whole organization, B.4. For this criterion, three Kaizen projects (“A”2, “A”2, “B”5) made a small effort, but neither whole-heartedly nor consistently enough (two points) to achieve it.

The last step of the conceptual scheme to be assessed was that of support (C). For the criterion of reviewing the performance (C.1.) five of the six Kaizen projects yielded scores above 2.33, but the project “C”6, which had not been completed, scored a lowly 0.67. For the last criterion, sharing results (C.2.), scores were low in the six Kaizen projects, which explains that in Town Halls, i.e. public organizations, standardizing and sharing lessons learnt is not an institutionalized practice, even within local authorities which have made efforts with Kaizen.

The main lesson learnt from the results obtained was that the conceptual scheme of Van Aken *et al.* (2010) helped to see that it is possible to assess Kaizen projects implemented in a public setting, in this case local authorities. However, it also became clear that is not a simple process, due to: first, the complexity and peculiarities of the public environment, such as a lack of confidence toward “outsiders” to provide information owing to a focus on strict legal compliance; second, the attitude of certain civil servants who are still reluctant to think about real change; third, the weak effort to unfold the Kaizen project across the organization, because of a tendency to work in “isolated” departments like “fiefdoms” and fourth, the heterogeneity of public services that supported the Kaizen projects, which further complicates the analysis of processes and improvement efforts.

Furthermore, despite the fact that the Kaizen projects were designed with the need to improve public services for citizens-clients, they did not take hold until a kind of crisis emerged within the Town Hall. Finally, one of the issues that was identified during the research was the absolute necessity of political commitment to specific actions, together with a clear link between the Kaizen project and the public service improvement which was sought.

## 5. Conclusions and proposed conceptual scheme

In order to corroborate the first objective in the research of assessing Kaizen projects in three Town Halls, we can conclude that using the conceptual scheme of

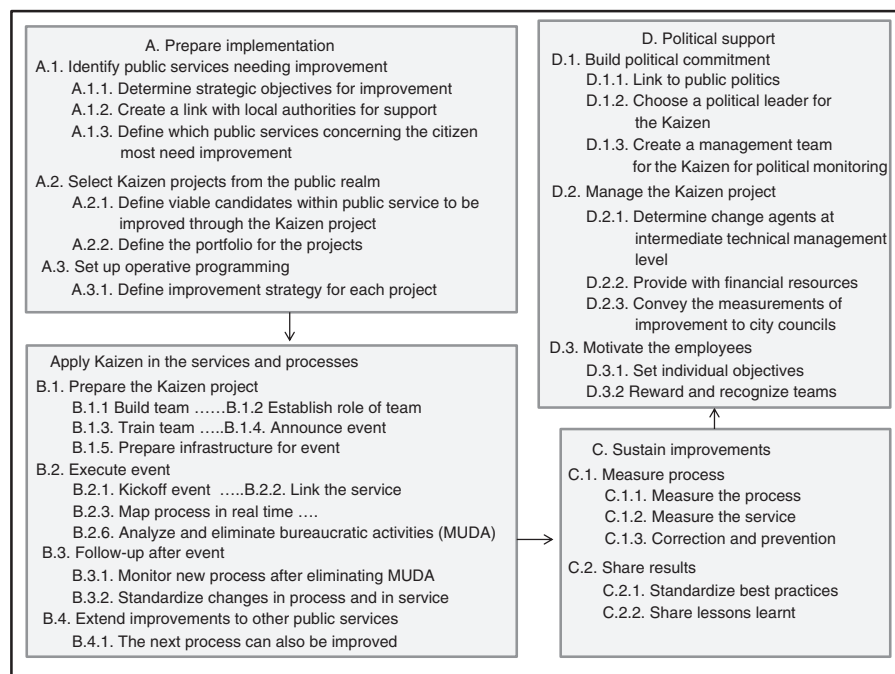


Van Aken *et al.* (2010) was useful. For each phase of a Kaizen project a specific score was established for each stipulated criterion. Thereby it was possible to assess each of the studied Kaizen projects at the root within its design, management, implementation and monitoring. However, as indicated in the lessons learnt, there are certain elements that are peculiar to the public context, which means applying a conceptual framework for the public sector presents certain obstacles that are difficult to specify under this theoretical scheme.

Thus, to fulfill the second objective of the research, i.e. to propose a new conceptual scheme which is specific and specialized for the public sector, a “KPCS” has been developed, based on the PDCA cycle. Its main purpose is to serve as an instrument of initial self-assessment for those Town Halls which have initiated or are implementing Kaizen projects.

In Figure 3 it is briefly presented and explained. As mentioned previously, the KPCS follows the improvement phases of the PDCA cycle:

- In its planning stage, three improvement actions are incorporated that are elementary for the planning of the implementation (phase “A”): identifying of public services needing improvement which are closely linked to public policy, configuring Kaizen projects and finally, operational programming to implement Kaizen projects.
- When the step Do is reached, four specific improvement actions were identified for the implementation of Kaizen in each of the selected projects (phase “B”). These specific actions range from preparation prior to the project, implementation and follow-up, up to the outreaching of the improvement to other services. With reference to this last action it is extremely important for the results of the implementation of Kaizen projects to be presented by civil servants to other employees of the public institution.



**Figure 3.**  
Kaizen project  
conceptual  
scheme (KPCS)

**Source:** The authors, taken from the case studies

- The steps Check and Act represent phase “C,” sustaining the improvement. Improvement actions for the measuring of processes and public services after improvement help to monitor the changes made. Finally, correcting mistakes in implementation and standardizing good practice are also present in this phase.
- Phase “D,” political support, represents the “anchor” for the KPCS. It is the basis for those improvement actions meant to ensure that the three previous stages are completed successfully. Improvement actions such as the determination of the change agents, the allocation of resources, the recognition of improvement teams among others, are crucial activities to ensure that the KPCS will achieve positive results in the Kaizen projects. Another important finding in this regard was that the absence of each improvement action during phase “D” can cause failures, blockages and inhibitions to Kaizen project implementation and, consequently, the “break” of the cycle of improvement of the three KPCS phases.

Finally, it is important to note that the KPCS is not definitive in its theoretical conception, due to the fact that its findings and conclusions can definitely not be generalized: it is based on three case studies and six Kaizen projects; it is worth noting that an analytical generalization may be possible based on the patterns found and the context mentioned previously, which led us to generate the KPCS, based on the patterns found in the qualitative study of the case studies. Our theoretical contribution could be enhanced and extended in future research in two main areas:

- (1) substantiate the conceptual scheme of KPCS in its stages and improvement actions with a greater number of Kaizen projects in public institutions, which would allow us to convert the KPCS into a detailed practical guide in the form of standard operating procedures for the implementation of Kaizen projects in Town Halls; and
- (2) conduct quantitative studies which provide and test KPCS patterns and which indicate true or possible causal relationships among the items found with respect to other possible variables such as operational efficiency, citizen satisfaction or even legitimacy of the public image.

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