TOWARD A CAUSAL RELATION FOR BETTER RESULTS - AN APPROACH BASED ON QUALITY AWARDS

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The Brazilian National Quality Award (PNQ) is the highest honor of quality field in Brazil. This paper proposes an updated model to PNQ, in comparison of Deming Prize (Japan), Malcolm Baldrige (USA) and European Quality Award (Europe) that provide a set of causal relations. A model based on the necessary causal relationships between the criteria of the PNQ can support Organizations to achieve continuous improvement and superior results. This study investigated rigorously, making a comprehensive job of reading, interpreting and analyzing of textbooks about excellence PNQ, from 2001 to 2010, seeking the body of its text, information which leads to the connection between the items and the criteria of excellence to suggest an Actual Causal Model to PNQ, that can support an empirically study and evaluate these causal relationships. The PNQ was implemented in 1992, adopting the criteria of the Malcolm Baldrige Award (USA). From 1992 to 2000, the PNQ showed a causal model of the Quality Criteria, but from 2001 to 2010, the PNQ model proposed that “everything connected to everything”. This idea may have come under criticism in the business due to the complexity and difficulty of its implementation.

Palavras-chaves: Causal Relation, Quality, Results
1. Introduction

This study intends to contribute to the expansion of the Organizations performance suggesting a new approach to the Brazilian National Quality Award (PNQ) in the executive routine of business. Until 2000, the excellence model proposed by PNQ represents a sequence of causal relationships between factors. From 2001 to 2010, The Brazilian National Quality Award has shown an abstract figure, with a metaphorical discourse of the relationship between the criteria of excellence, disseminating the jargon that “everything connects with everything”.

Several academics of Quality started their researches initially on TQM (Total Quality Management) that have migrated naturally to studies of national quality awards have understood the necessity and importance of demonstrating the causal relationships between the criteria of excellence and the pillars of management plans of the companies, in order to maximize the effectiveness of such management practices and excellence Garvin (1987); Flynn (1994); Hendricks and Singhal (1996).

This reality is not clearly found in the framework of the major quality awards in the world, but comparing Brazilian Quality Award (PNQ) with Quality Awards around the world, for instance: Japanese, North American and European ones, they demonstrate a kind of causal relationship between the criteria of excellence and the pillars that support management plans of the companies. This fact leads and extends to increase the motivation of this study, which aims to expand this point of view and support its dissemination in the business world.

Given the current condition of the Brazilian National Quality Award (PNQ), this paper analyzes the proposals suggested year by year from 2010 to 2001 and Among other ideas, it suggests a PNQ Causal Relation Model for better Organization results to that can support an empirically study and evaluate these causal relationships.

Based on analyzes about topics of the quality connections in Brazil, empirical studies about the quality relation criteria and the impact of the quality on the results, in special on financial performance, are limited (PIGNANELLI, CSILLAG AND BRITO 2006). Pignanelli (2006) used a sample of Brazilian publicly traded companies which were PNQ winners or finalists and investigated the impact of PNQ Criteria shareholder wealth maximization in use, operating this construct by the market value of the company.

Corredor and Goñi (2010) assert that one of the main ways for an organization to sustain competitive advantage over the others is through the choice of a management model. In recent decades, there has been an increasingly widespread adoption of TQM as a strategy for global management.

According to these authors, the most widespread TQM models in the world are offered by the following quality awards: Deming Prize (Japan), Malcolm Baldrige (USA) and European Quality Award (Europe). All of them provide a set of principles, methods and tools that enable the identification of customer needs, which has resulted in more efficient development process of the product or service.

2. Interactions and factors that impact the results, based on quality systems

The authors Wilson and Collier (2000) studied the causal relationships on the criteria of the Malcolm Baldrige National Quality Award. They observed that the suggested model indicated that the award criteria: Process Management and Information and Analysis have influenced
positively the results of the Organization. The other criteria did not influence the financial performance directly, only through its effects on the Process Management and Information and Analysis. This research represents the beginning of the search for causal models of organizational performance

**Numerous companies had implemented TQM and failed.** The main reason is that they do not understand the systems. Although all TQM gurus kept emphasizing the importance of system thinking, most managers only have vague ideas about systems (Te-Wei Wang, 2004). Although the TQM program can produce advantages on the performance of the business, they are full of pitfalls for companies that lack the necessary complementary resources. Moreover, despite the relentless pressure from the proponents of TQM, it is possible to conclude that it is perfectly possible for companies to thrive beyond the limits of TQM ideology and vocabulary, since they feed the intangible assets which are critical to the survival and success (Powell 1995).

The seminal study of quality framework and results by Flynn, Schroeder and Sakakibara (1994) says: "Quality management is defined as an approach to achieving and sustaining high quality output, thus, it employs a process definition, emphasizing inputs (management practices) rather than outputs (performance quality).” On their analysis quality management is first viewed as an element of the integrated approach known as World Class Manufacturing. Quality management supports and is supported by JIT (Just In Time program), human resources management, top management support, technology management and strategic management.

3. **Main Worldwide Quality Awards**
Following it is presented the Major Worldwide Awards.

3.1 **DEMING PRIZE AWARD - Framework**


The relationship within basic categories and points

1. Management policies and their Deployment (20)
2. New product development, Work process innovation (20)
3. Maintenance and improvement (20)
4. Management system (10)
5. Information analysis and utilization of IT (15)
6. Human resources development (15)

Core Quality System (50)

JAPANESE NATIONAL QUALITY AWARD 2010

Source: The Deming Application Prize 2010

The Deming Application Prize is an annual award which is given to an organization that has implemented TQM suitable for its management philosophy, scope/type/scale of business and management environment. Regardless of the types of business, any organization can apply for the Prize under certain conditions: it has to be public or private, large or small, domestic or overseas, or part of an entire organization. The Deming Prize Committee Union consists of Japanese Scientists and Engineers. (DEMING APPLICATION, 2010)

3.2 The Malcolm Baldrige Seven Evaluation Criteria
According to Prybutok and Cutshall (2004) the MBNQA aims to raise awareness of the organizations to encourage the relationship between quality and competitiveness, increasing the assimilation between the quality level required for obtaining international recognition and dissemination of quality information.

3.3 The EFQM Excellence Model – 2010
According to Conti (2007) and EFQM (2009), since 1992 the EFQM has aimed to promote support and encouragement for a performance for excellence. Nowadays, their objective is to lead the promotion of the implementation of sustainable excellence through the gathering of organizations that aim to achieve excellence, helping them to achieve continuous improvement and superior results. The European model is divided into nine criteria which five are enablers and four are results.

4. **Brazilian National Quality Award (PNQ) and its relevance**

"The Excellence in an organization depends crucially on its ability to pursue its objectives in complete harmony with its ecosystem. The National Quality Foundation understands organizations as living systems, members of complex ecosystems, with whom they interact and on which they depend" (PNQ, 2010).

Criteria of Excellence FNQ - National Quality Foundation is a systemic model of management adopted by numerous world-class organizations. They are built on a foundation of fundamental concepts essential to obtaining the best performance (PNQ, 2010).

The FNQ Brazil is the largest center of study, debate and irradiation of knowledge about management excellence. For 18 years, the organization promotes the quality of business management, contributing to the competitiveness of organizations and Brazil.

4.1 **Brazilian National Quality Award (PNQ) – Preliminary Statistics**

Since its inception, FNQ has trained over 45,000 people in the Management Excellence Model (MEG) and has distributed over 660,000 Criteria for Excellence. By its 18th edition in 2009, the National Quality Award (PNQ) received 484 applications. And during this period 5,027 volunteers were involved in the bank examiner, who visited 148 organizations throughout Brazil, of which 42 finalists and award winners (PNQ, 2010).

4.2 **Brazilian National Quality Award - Chronology and Evolution**

The processes of transformation of Brazilian Foundations of Excellence (FNQ) over the years can be summarized in three periods:

<table>
<thead>
<tr>
<th>Period</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 1992 to 1996</td>
<td>- developed a structure and gained credibility based on sound concepts and criteria for evaluating business management;</td>
</tr>
<tr>
<td>From 1997 to 2003</td>
<td>- PNQ was consolidated as a reference point for management excellence in the country;</td>
</tr>
<tr>
<td>Since 2004</td>
<td>- has educated professionals and entrepreneurs from all over Brazil about the importance of effective management and has disseminated the concepts and foundations of excellence that are part of the Management Excellence Model ® (MEG).</td>
</tr>
</tbody>
</table>

Source: Brazilian National Quality Award (PNQ) criteria 2010, page 09

The FNQ Foundations of Excellence express known concepts and translate into managerial processes or performance factors which are found in World Class organizations that seek for constant improvement and adaptation to the global changes (PNQ, 2010).
4.2.1 Brazilian National Quality Award (PNQ) original causal model

In 2000, 7 (seven) criteria for Management Excellence PNQ were:

1. Leadership
2. Strategic Planning
3. Customer Focus and Marketing
4. Information and Analysis
5. People Management
6. Process Management
7. Organization Results

The criteria structure defines the management model for performance excellence, supports the strategies and action plans form that sets guidelines to be followed throughout the organization. These guidelines stem from the strategic planning of short and long term, and serve as a guide for decision making and the application of resources. They also serve as facilitators of alignment of performance indicators for all sectors and units to ensure the success of the organization. The representation of Figure emphasizes that all critical aspects of managing an organization, incorporated and represented by seven (7) criteria, must be perfectly aligned with the strategy and action plans. For example, actions to improve the management of processes and people must be developed in harmony with the strategies and action plans defined (PNQ, 2000).
4.2.2 Brazilian National Quality Award (PNQ) 2010 model

In 2010, the Criteria for Excellence in Management PNQ are 08 (eight) as the figure represents. The representative figure symbolizes the organization, considered as an organic and adaptable that interacts with the external environment. This picture suggests that the elements of the Model, immersed in an environment of information and knowledge, interact in a harmonious and integrated way, aiming the results (PNQ, 2010). The leadership, bearing in mind all this information, set the principles of the organization, practices and experiences the main beliefs of excellence, boosted by his own example, the culture of excellence in the organization. The most responsible leaders for achieving results that ensure the satisfaction of all stakeholders and the perpetuation of the organization, analyze its performance and implement, where necessary, required actions, consolidating the organizational learning.

The strategies are formulated by the leaders to lead the organization and its performance and to determine its competitive position in the market. Goals which consider forward-looking statements are set, as well as the performance of competitors or other benchmarks. The strategies are spliced at all levels of the organization into action plans for short and long term. Appropriate resources are allocated to ensure the implementation of the strategies. The strategies, targets and plans are communicated to people in the workforce and, where
appropriate, other interested parties. The organization is constantly evaluating the implementation of strategies, monitoring their plans and responding quickly to changes in the external and internal environment.

Even with the level of precise details in the criteria of the excellence manuals PNQ, since 2001 it is not clear how the criteria and award items are related and affect each other. Therefore, they insist on the Idea that "everything connects to everything." This idea may come under criticism in the business area due to the complexity and difficulty of its implementation.

5. Quality Awards: an approach for Related and Causal views of Brazilian National Quality Award
Since 2001 the PNQ is no longer an administration practical test and shall demonstrate a literary jargon with little or no contribution business. The Jargon of saying that "everything is connected to everything" shows some erudition, but the contribution to executives and business managers is hampered by failing to proof the causal relationships and influence of the Prize.

In order to propose an updated model with the necessary causal relationships between the criteria of the PNQ, from 2001 to 2010, a comprehensive job of reading, interpreting and analyzing of textbooks about excellence PNQ was prepared, seeking the body of its text, information which leads to the connection between the items and the criteria of excellence. To organize this work it was adopted a methodology of studies which has shown the following.

6. Methodology
At first it was performed a content analysis, observing the criteria of proximity and similarity between words, thus enabling the generation of connections between the items and criteria of excellence.

The second analysis was to sort all the information gathered in a qualitative way and accumulated year by year, in a Frequency Analysis.

6.1 Quality Evaluation – Content Analysis

Beyond the interpretation and reading of all the Excellence Criteria of the Brazilian National Quality Award (PNQ) with the Supporter Foundation, in order to standardize and structure the qualitative study, it was adopted a standard sequence for reading the criteria of excellence of PNQ. The reading included the Brazilian National Quality Award Criteria (PNQ) entirely, between 2001 and 2010, year by year.

All paragraphs were marked and coded in order to provide traceability in the work reviewed, since the content analysis and qualitative studies leaves the bias of the author’s interpretation. The sequence of annual reading of the guide was given the following order:

The first reading session was: Fundamentals of Excellence, which lists the criteria for excellence and its main types and classifications that year.

The second step involved the reading of the Excellence Model, the proposed structure of the items of excellence, their interactions and understanding of the key guiding management.

The third analysis was reading the contents described in the Excellence group of items for the current years. At this session there is a management check list proposed for each year. Every
year, based on the revisions and updates, new terminologies and corporate buzzwords grows and are suggested.

For this reason, a fourth step of reading “the glossary” was adopted, it works like a way to double check the analysis criteria observed in that year, complementing the observations diagnosed in the previous year.

The fifth and last session also evaluated in order to ensure the legitimacy of the reading of the criteria of that year is the session Key Changes, which are demonstrated the updates and the proposals for the current year.

6.2 Quantitative Evaluation – Frequency Analysis

Items that were analyzed are summarized in a cumulative framework where every time that the relations were observed, the corresponding paragraph integrated the linkage.

At this point, it was made a simple tabulation of the frequent times that a particular relationship between the items and PNQ criteria appeared in the reading of the criteria between 2001 and 2010. This analysis provided a hierarchy of relations with higher incidence in the texts presented in the manuals of PNQ excellence this period.

This cumulative analysis has generated a longitudinal view of the study, generating an updated proposal for the PNQ, enabling the maximization of the scientific contribution to the Prize, but mostly for educational grants for the management corps of the companies that base their models and management items and criteria on the PNQ.

The relative percentage of influence on each criterion of excellence has been calculated for both the Predecessors to the criteria and the Successors Criteria.

As a cutoff criterion, it was prioritized the causal relationships that make up about 80% of the relationship demonstrated among the criteria, as summarized below:

<table>
<thead>
<tr>
<th>Input</th>
<th>Excellence Criteria</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Information and Knowledge</td>
<td>1 Leadership</td>
<td>2 Strategy and Plans</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>6 People</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 Society</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Customers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 Process</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 Results</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 Information and Knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3%</td>
</tr>
<tr>
<td>1 Leadership</td>
<td>47%</td>
<td>2 Strategy and Plans</td>
</tr>
<tr>
<td>5 Information and Knowledge</td>
<td>27%</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Customers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 People</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 Results</td>
</tr>
</tbody>
</table>
Table 1: The Cumulative results of longitudinal analysis | 2001 – 2010

Source: Created by the authors
7. Result

The results of the study and research propose the Causal Model for the Brazilian National Quality Award (PNQ) 2010, including all the characteristics of the last real systemic view (2000). Based on this proposal Organizations Toward a causal relation for better results - An approach based on Quality Awards is presented.

![Causal Model for the Brazilian National Quality Award (PNQ) 2010](image_url)

Source: Designed by the author

8. Conclusions

As demonstrated in “The result” section, Information and Knowledge access many other criteria, and supports the Leadership, which after other connections causes business and customer satisfaction results. The evidence from this study toward a causal relation for better results, following to the Brazilian National Quality Award (PNQ) criteria and causal model.

The Causal Model for the Brazilian National Quality Award highlights that management must work through this framework defined by the PNQ to impact results because they cannot be done directly.

Limitations of this study include the personal understanding and reading from the text of the following Brazilian National Quality Award, from 2001 to 2010. This kind of research is very important because it is a good analyst of the organizational performance and its proposal: The Causal Model for the Brazilian National Quality Award suggests the modification of the PNQ.
After this “new approach of PNQ” we can’t accept the current PNQ model that proposes: "everything connects to everything". This idea may come under criticism in the business due to the complexity and difficulty of implementation. The year by year study, among 2001 and 2010 support and suggest an Actual Causal Model to PNQ.

For next studies this PNQ Actual Causal Model can support a future and empirically study that evaluate these causal relationships, propose a new one, or validate these findings.

This study represents just the beginning of finding a Causal Model to PNQ, much more researches need to be done in Brazil, like in USA since 2000.

Exploring this causal model can become an international research that can help the dissemination of quality awards in development countries.

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