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**EGD5 – DESIGN
MANAGEMENT SCALE: A
TOOL TO MEASURE THE
LEVEL OF MATURITY
WITHIN CORPORATE
ORGANIZATIONS**

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Abstract: This article aims to present a tool that was developed to measure the level of maturity, understanding and use of Design within corporate organizations in a practical, fast and simple way. The proposed tool was based on several methodologies and studies produced by scholars and researchers of Design Management around the planet with its innumerable realities and characteristics. In early 2022, the tool (EGD5)¹ was put into practice (research in progress) with the agricultural machinery industries in the State of São Paulo associated with CSMIA/ABIMAQ - Sectorial Chamber of Agricultural Machines and Implements / Brazilian Association of Machinery Industry and Equipment. Due to the COVID-19 pandemic, the research that would be carried out through interviews, took a different direction and the solution found was to idealize the tool to apply the research, streamlining the collection and measurement of data.

Keywords: Design Management; Business; Strategic.

INTRODUCTION

Agribusiness represents a significant portion of the Brazilian Gross Domestic Product (GDP) (27.4% in 2021) according to data released in March 2022 by the Center for Advanced Studies in Applied Economics (Cepea), of Esalq/USP, in partnership with the Confederation of Agriculture and Livestock of Brazil (CNA), the highest participation since 2004 when it reached the index of 27.53%.

Even with such success and strength in the country's economy, the sector has suffered considerably due to major changes in global scenarios that are happening at unprecedented scales and speeds. The great demand for food due to the growth of the global population, which, according to UN estimates (2019), must be 9.7 billion people in 2050 and the increased strength of the Brazilian agricultural market,

due to the constant sustainable growth of the participation of the sector in the national GDP, over the decades, aroused the interest of countless foreign players.

Faced with these projected scenarios, many foreign multinationals (in the agricultural sector) accelerated their implementation processes in Brazil, causing pressure on national companies to develop and innovate with greater speed and greater added value. In 2020, the world scenarios were surprised by a totally new situation with profound impacts, the COVID-19 pandemic, which completely altered the ways in which society as a whole relates (in the economic, social and governmental spheres) and which is provoking stimuli for breaking paradigms in all spheres of society.

With all these pressures and disruptive scenarios, industries in the agricultural sector (mostly family businesses) are being subjected to rethinking the way of managing and executing their productive activities. The article exposes the development process of the research tool and measurement of the levels of maturity, knowledge and implementation of Design in the management processes of agricultural industries (national) in the State of São Paulo.

WHY THE AGRICULTURAL SECTOR?

In 1985, Professor João Amato Neto, from the School of Engineering of São Carlos, Department of Production Engineering at USP, published an article where he reported the origins and evolution of the Brazilian agricultural machinery industry, one of the first compilations of the scenario (from agricultural industry) and a basis for future researchers in the segment.

Taking this article as a reference, it is possible to understand the justifications for an analysis of the agricultural industry, with

special attention to the research. We can cite the justifications of Professor Amato Neto (1985), below:

...the aspects that would justify considering this subsector of the national industry as a priority for actions to support technological development:

1. The government's strategic aspects towards agriculture;
2. The prospects for growth in demand for agricultural machinery;
3. The need to expand the frontier and agricultural productivity, which is expressed by the requirement to increase mechanization rates, which are still extremely low in the country;
4. The low quality of national equipment, which is often handcrafted and inadequate for the national agricultural production system;
5. The importance of small and medium-sized companies in the industrial sector, especially in terms of the production of agricultural equipment, implements, components and parts for tractors, harvesters and other machines;
6. The great importance of the development of mechanization as a producer of technological innovations in agricultural systems and its immense economic and social consequences. There are countless examples of innovations in the technology of agricultural machines and implements that produced immense and profound revolutions in agricultural production systems. (AMATO NETO, 1985).

After almost 4 decades of publication of Professor Amato Neto's article and considering all the political, economic and social changes that Brazil has undergone since the 1980s,

it is extremely important to consider the historical record of this scenario in relation to the current scenario and the prospects for the future.

Considering the AC scenario (Before COVID-19), in a review of Professor Amato Neto's research (1985), carried out by researchers Váldeon Amaro Lima and Isabel Cristina dos Santos (2017), an overview of the agricultural industry was drawn, since 1985 until 2015. This study aimed to analyze the agricultural industrial sector, based on innovative and technological capacity, not forgetting (as perceived by AMATO NETO, 1985) institutional, technical and structural issues.

As predicted by Amato Neto (1985), the development of the agricultural machinery sector was subject to a great dependence on national agrarian policies, availability of credits and financing for agricultural producers, who are always subject to variations in market prices, commodities agricultural.

The agricultural machinery sector returned to growth in the early 1990s, after a long period of economic and political crises. With the implementation of the Real Plan and the return of credit to agricultural producers with FINAME (Special Agency for Industrial Financing), through BNDES (National Bank for Economic and Social Development). However, industrial growth in fact began in 1996 and with greater force in the 2000s, when industrial policies to promote innovation were initiated (ABDI, 2013).

An important factor that influenced the growth of the industry was the implementation of the MODERFROTA Program (Program for Modernization of the Fleet of Agricultural Tractors and Associated Implements and Harvesters), instituted by the Central Bank of Brazil (BACEN) on 02/24/2000 through Resolution 2,699 (CENTRAL BANK OF BRAZIL, 2000). Other very important

factors influencing the growth and evolution of the sector were the increase in prices of agricultural commodities and the growth of the cultivated area, which, according to the National Supply Company (CONAB), the country increased by 16% the area planted in the 2003/2013 period, resulting in a harvest of 193 million tons of grain in 2013/2014. Figure I shows the growth in sales of agricultural machinery as a function of the average price of a soybean bag.

However, due to the great complexity of the sector of agricultural machinery and implements and little research carried out in the sector, we can notice a significant increase in exports in this segment, as pointed out by the National Association of Automotive Vehicle Manufacturers (ANFAVEA, 2015). Which can characterize a considerable evolution of technology in the sector. Exports were concentrated to countries in Latin America and Africa.

We can also notice a growth in investments in Research and Innovation, carried out by the Brazilian Institute of Geography and Statistics of Brazil (IBGE), which since 2009 collects data from the sector. For the 2009/2011 period, an investment of R\$526 million was indicated, while for 2012/2014, there was an increase to R\$680 million, even with a drop in the innovation rate from 53.1% to 40.1% between the periods.

These previously researched and exposed indicators demonstrate that the sector has evolved both in size in the representativeness of the number of national industries and in technological development, even with the numerous economic, social and political changes that occurred in the period from 1985 to 2015.

Research carried out by Amato Neto (1985) and revisited by Lima and Santos (2017) prove the justifications and importance of monitoring, in the sector of agricultural

machinery and implements. These collected data demonstrate the evolution that, together with other factors (in the political, economic and social spheres), influenced and propitiated this consistent growth and evolution.

THE DIAGNOSIS OF BRAZILIAN DESIGN

The first survey focused on portraying the reality of design in the Brazilian industry (in its various segments) was carried out in 2014, by the Centro Brasil de Design (CBD), at the request of the Ministry of Development, Industry and Foreign Trade (MDIC) and had as its main objective to gather the following information:

- Outline the situation (current) of design in the country;
- Understand how companies understand and use design;
- Raise references, metrics and indicators with international support;

From these data, it would be possible to quantify and qualify the companies, relating them to the design practiced by each one, with their competitiveness, in the segments in which each one operates, in addition to the possibility of planning public guidelines for the strengthening of Design, as a strategic tool, and with direct impact on Technology and Innovation to improve Brazilian industrial competitiveness (MDIC; CBD; APEX, 2014).

There were more than 300 companies participating in this survey, which lasted eight months. The study was based on an evaluation tool known as the Design Management Staircase (KOOTSTRA, 2009), developed by the Danish Design Center and adapted by Design Management Europe (DME). This tool classifies companies into four levels, namely:

- DM1 – There is no Design Management - design is not used properly in the company, there is little knowledge about

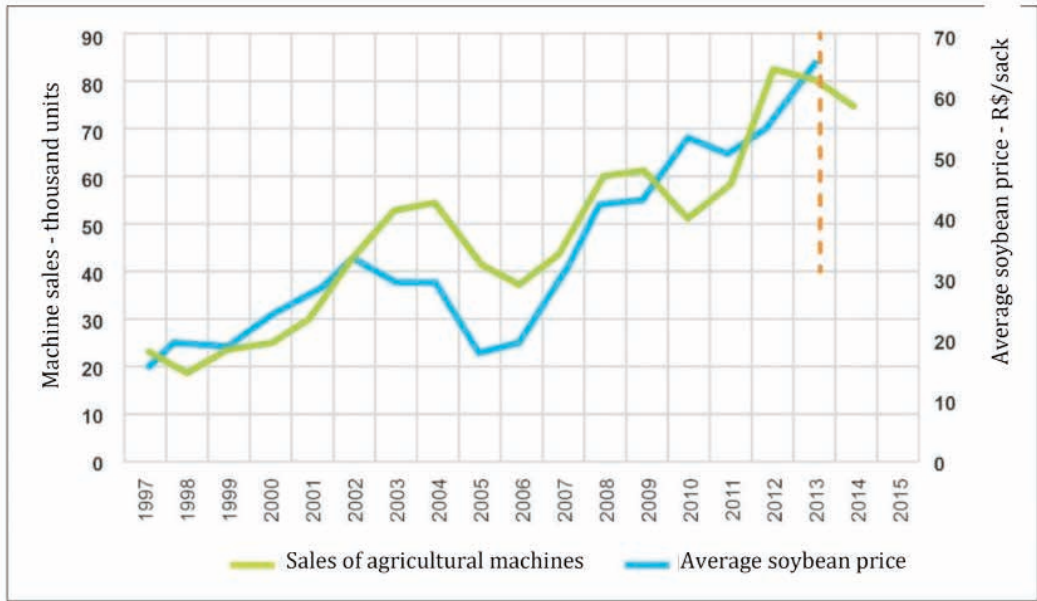


Figure I - Sales of agricultural machinery in Brazil x Average soybean price, in Reais per bag..

Source: Lima e Santos (2017).

Agricultural Machines and Implements	682
Machines	43
Tractors	24
self-propelled harvesters	22
Agricultural Implements	674

Table I - Number of companies in the agricultural machinery and implements sector, by segment (in units) in Brazil - The same company can appear in more than one segment due to its operations on different production platforms.

Source: ABIMAQ (2016)

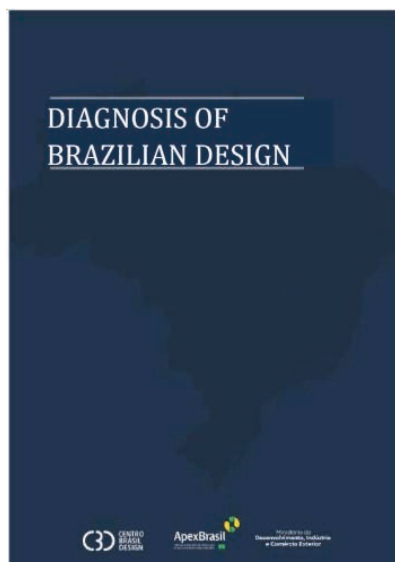


Figure II – Cover of the Brazilian Design Diagnosis survey.

Source: CBD (2014).

the subject, there is no planning in the area and the results are inconsistent;

- DM2 – Design Management at the Project Level - the design is used as marketing support (visual aspects), with little or no collaboration during the development processes and with low coordination;
- DM3 – Design Management at the Functional Level – management takes place through a person or sector that performs the integration between departments, in this case, design is a tool to develop new products;
- DM4 – Design Management as Part of the Company’s Culture - design is recognized as extremely important, it is part of the company’s strategy and all sectors are involved.

The diagnosis was carried out in nine sectors of industry and services, listed below:

- Audiovisual;
- Footwear;
- Coating ceramics;
- Food packaging;
- HPPC (hygiene, perfumery and cosmetics);
- Machines and equipment;
- Doctor-odonto-hospital;
- Furniture;
- Textiles and apparel.

The development of the Design Management measurement tool (EGD5), for carrying out the research that is currently in progress, focused on the Machinery and Equipment sector. According to the CBD, twenty-two (22) companies in this segment were surveyed, which based on the project briefing, “the sample only includes companies that manufacture products and machines for

the agricultural sector and manufacturers of components and machines used to produce plastic components. It is a diverse range of companies where 45% are from the agricultural sector and 55% from the plastics sector.” (CBD, 2014). In explicit quantities we are referring to 10 companies in the agricultural sector and 12 in the plastics sector. The results can be seen in Figure III, below.

The results obtained from the research indicate that the Machinery and Equipment sector (where the agricultural machinery industries are located) is located in DM1, the lowest level on the Design Management Ladder.

In the CBD survey, the topic Revenue Resulting from Innovation, the Machinery and equipment segment performed very poorly in relation to European equivalents. The percentage in Brazil was 7.5% while in Europe the value is around 35%. If these values were estimated for the sector, it would mean that the Machinery and Equipment sector is losing BRL 6,300,000.00 in revenue (CBD, 2014).

However, regarding the question Perception of the Contribution of Design to Export, we have the following scenario, shown in Graph I, below.

In contrast to the data presented regarding the Perception of the Contribution of Design to Exports, we have another data that was raised by the research and precisely demonstrates a contradictory scenario, shown in Graph II, below.

It is exposed, in a very evident way, that the companies that export the most are the same ones that invest the least in Design Management. In addition, the volume of exports of machinery and equipment is five times smaller than the European equivalents and makes clear the enormous potential to be achieved (LIMA, 2014).

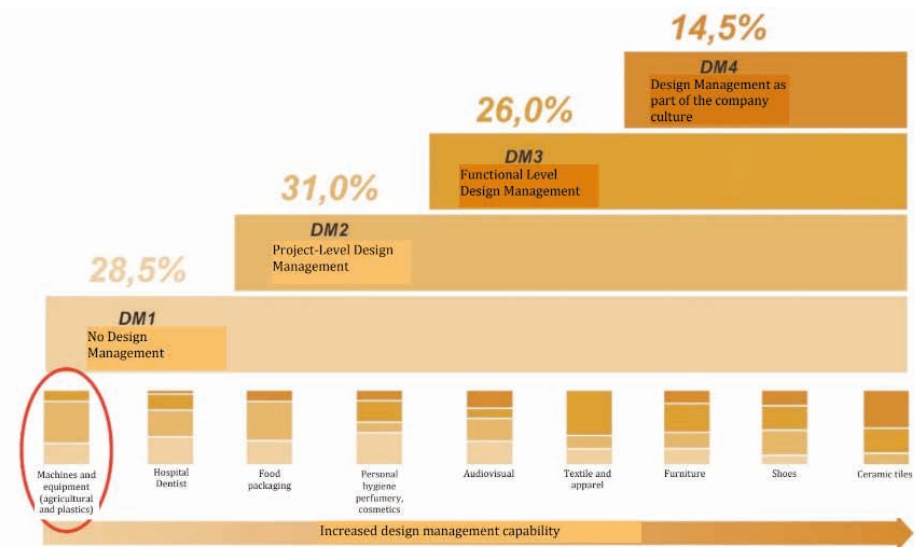
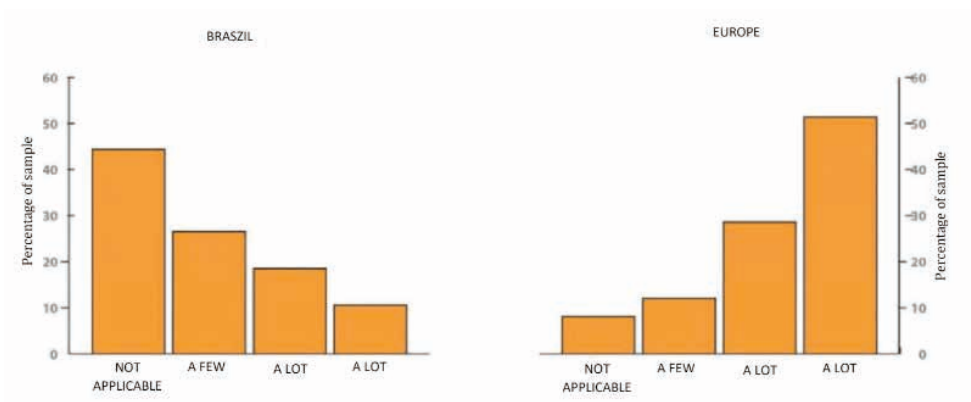


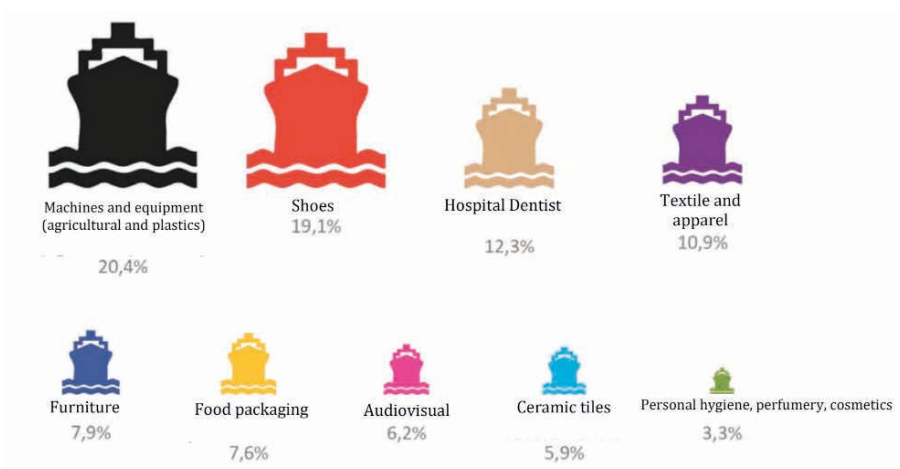
Figure III - Distribution of the sample according to the Design Management Ladder.

Source: CBD (2014).



Graph I - Perception of the contribution of Design to Export.

Source: CBD (2014).



Graph II - Average Export (in 3 years) in relation to revenue.

Source: CBD (2014).

METHODOLOGICAL PROCEDURE

MEASUREMENT MODELS

Some measurement models were found and served as a basis for implementing the most appropriate tool for applying and interpreting data in a quick, simple and intuitive way for researchers and managers of organizations, within the Brazilian reality.

The models found are briefly described below:

- Design Ladder – developed by the Danish Design Center (DDC) – Design Center of Denmark in 2003;
- Design Management Staircase – developed by Gert Kootstra for the Award for Design Management Innovating and Reinforcing Enterprises program in an initiative of the Directorate General for Industry and Enterprise of the European Commission in 2009;
- Four Powers for Design – model developed by Brigitte Borja de Mozota in 2010 to research design-oriented European small and medium-sized companies;
- Design Management Absorption Model – developed by Claudia Acklin in 2011;
- Design Function Maturity Grid – model developed by Ferdy Gilsing in 2012;
- Design Value Scorecard – developed by the Design Management Institute (DMI) and Motiv Strategies companies in 2013;
- Design Innovation Adoption Tool – tool developed by David Pettigrew, Clementine Thurgood and Sam Bucolo in 2016.

EGD5 FORMATION

Based on the models for measuring the maturity of Design Management, presented (in a simplified way), and taking into account the Brazilian reality, the Kootstra model was chosen, due to the simplicity of the concept and the ease of applying the research and measurement method, however, adapting it in terms of adding one more maturity level to obtain an intermediate level within the scale originally created – from 04 Levels to 05 Maturity Levels. With that we will have.

FORMATION OF THE QUESTIONNAIRE BASED ON THE 5 FACTORS

From the adopted and adapted methodology, for the Brazilian reality, it became necessary to build the questionnaire based on the 5 (five) factors that guide the level of maturity of the organizations.

The developed questionnaire was divided into 06 (six) parts, namely:

- 1st part – organization and research data;
- 2nd part – Awareness Factor;
- 3rd part – Planning Factor;
- 4th part – Resource Factor;
- 5th part – Expertise Factor;
- 6th part – Processes.

DESIGN MANAGEMENT SURVEY FORM

- 1 – Name of the organization;
- 2 – Name of the searched;
- 3 – Position in the organization;
- 4 – Email;
- 5 – What is the foundation year of the organization?
- 6 – What is the company's classification regarding annual revenue?
() Small (revenues from BRL 360 thousand

Design Management Maturity Levels					
Factors	Level 01	Level 02	Level 03	Level 04	Level 05
	Absent	As a style	As a project	As a function	As culture
Consciousness	No awareness of the potential benefits or value of design	Few collaborators are aware	Some employees are aware of the importance of design	Most employees are aware of the importance of design within the organization	All employees are aware that design is fundamental for the organization to differentiate itself
Planning	Not included in the company's planning	Limited plans exist at the level of one-off projects	Plans and goals exist that include design in individual projects	There are plans and projects in the organization that are integrated and aligned	Design is part of the strategic plans and guides the organization
Resources	There is no resource allocated for design activity	Recursos limitados a projetos individuais	Limited resources on individual projects, but with departmental management initiation	Sufficient resources destined to projects with more evident return potential, limited to departmental management	Substantial resources with financial evaluation of investments, risks and return follow-ups
Expertise	Little or no expertise installed in the organization	Little installed expertise, basic management skills and tools are inconsistently applied	Some expertise installed, basic management skills and tools are inconsistently applied	Some expertise installed, basic management skills and tools are consistently applied	Appropriate expertise in advanced design management tools used appropriately
Process	Design is not included in any process of the organization	Little idea where design fits into the organization's process	Some idea about design within the organization's process	Consistent and early performance. There is formal design management process and as a guide	The organization is in a continuous improvement process with design management included

Figure IV – Design Management Maturity Levels (EGD5).

Source: Adapted from design management maturity grid by Kootstra (2009).

Below are figurative examples of Kootstra's Design Management Stairs (Figure V) and the EGD5 (Figure VI) adapted for the research tool cited in the article.

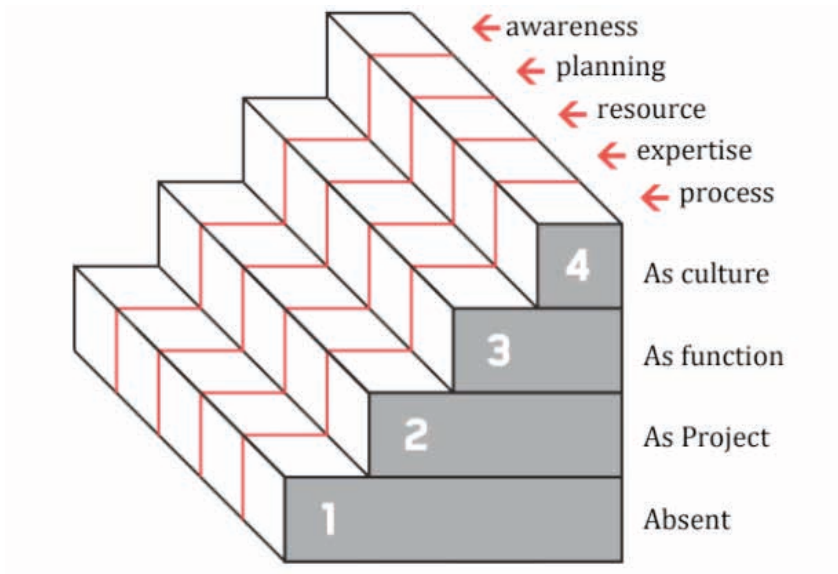


Figure V – KOOTSTRA Design Management Ladder - 2009.
 Source: Design Management Staircase (KOOTSTRA, 2009).

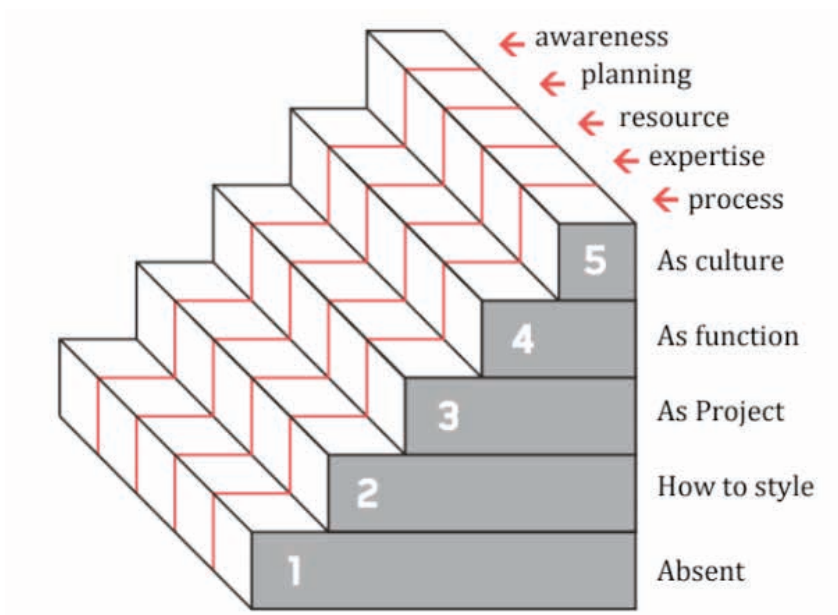


Figure VI – Design Management Ladder 5.
 Source: author (2022).

to BRL 4.8 million / year)

Average (revenues from BRL 4.8 million to BRL 300 million / year)

Large (revenue of + BRL 300 million / year)

7. What is the number of collaborators/employees in the company?

Small (up to 99 collaborators/employees)

Average (from 100 to 499 collaborators/employees)

Large (+ than 500 collaborators/employees)

CONSCIENCE

8 – Does the organization have a Visual Identity Manual (MIV)?

Yes - Level 2

No – Level 1 - Skip to question 11

9 – Does the organization follow the guidelines of the Visual Identity Manual (MIV)?

Yes - Level 3

No – Level 2 - Jump to question 11

10 – Do employees have access to the Basic Visual Identity Manual (MIV)?

Yes – Level 4

No – Level 3

11 – Do you consider that Design adds value to the organization's products/services?

Yes - Level 5 - if the previous question answered was YES from 10 and Level 2 if it comes from question 8 and 9

No – Level 4 if the previous question answered was YES, Level 3 if the previous question answered was NO, Level 2 if coming from question 9 and Level 1 if coming from question 8

PLANNING

12 – Is Design part of the annual planning of any department in the organization?

Yes – Level 2

No – Level 1 – Skip to question 16

13 – Is Design considered in the annual planning of various departments of the organization?

Yes - Level 3

No – Level 2 – Skip to question 16

14 – Is Design part of the organization's strategic plan?

Yes – Level 4

No – Level 3 – Skip to question 16

15 – Does Design guide the organization's strategic planning with clear directions and objectives?

Yes – Level 5

No – Level 4

RESOURCES

16 – Does the organization invest or has invested in Design?

Yes - Level 2

No – Level 1 – Skip to question 20

17 – The investment is made in:

Internal Professional (designer / team) - Level 4

Agency / Design Office – Level 3

Design Consulting – Level 2

18 – How much does the organization invest annually in Design?

less than 1% of annual revenue - Level 2

between 1% and 5% of annual revenue - Level 3

between 5% and 10% of annual revenue - Level 4

more than 10% of annual revenue - Level 5

19 – Is there monitoring of the investment in Design regarding risk and return?

Yes - Level 5

No, because it depends on the previous question – Level 4 if the previous question answered is between 5 and 10%, Level 3 if the previous question answered is between 1 and 5% and Level 2 if the previous question answered less than 1 %.

EXPERTISE

20 – Does the organization have:

01 Designer - Level 2

01 Design Team - Level 3

Does not have - Level 1 - Skip to question

25

21 – How long has the Designer or Design Team been working in the organization?

1 to 2 years - Level 2

2 to 5 years - Level 3

+ 5 years - Level 4

22 – If there is a Design Team, how many professionals make up the department in the organization?

1 to 2 - Level 2

2 to 5 - Level 3

+ 5 - Level 4

23 – What is the (main) academic background of the Design Team?

Architecture - Level 3

Design - Level 4

Engineering - Level 2

Advertising - Level 3

24 – What is the position of the person responsible for the Design Team?

Director - Level 5

Manager - Level 4

Supervisor - Level 3

Designer - Level 2

PROCESS

25 – Is Design used in any phase of the organization's product/service development process?

Yes - Level 2

No - Level 1 – Completed the questionnaire.

26 – What is the decision-making impact of Design on the organization's product/service development process?

High - Level 4

Medium - Level 3

Low - Level 2

27 – Does the organization use any metrics to measure the performance of the Designer or the Design team?

Yes - Level 4

No - Level 3

28 – Is Design involved in the organization's continuous improvement process?

Yes - Level 5

No - depends on the previous question - Level 4 if the previous question answered was YES, if the previous question answered was NO it will be Level 3.

We appreciate your participation in this survey.

Next, there are the figures (of the questionnaires, broken down, based on the 5 Factors of the EGD5 and that facilitate the understanding of the measurement of the data collected from the managers that will be analyzed.

With the questionnaire constructed in such a way that each answer enables the sequence for the next one, a process was obtained that facilitates and simplifies the procedure for collecting and measuring the survey.

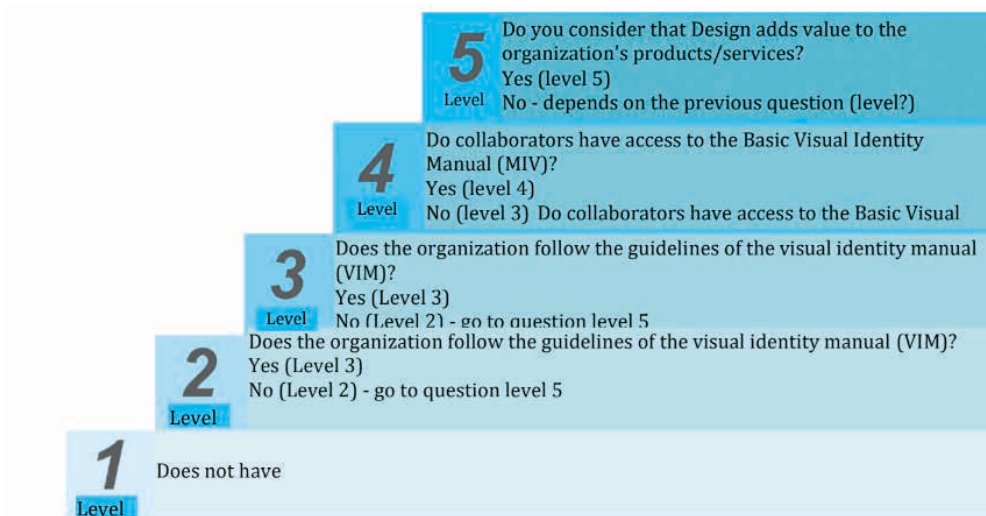


Figure VII – Design Management Ladder 5 – Consciousness Factor.

Source: author (2022).

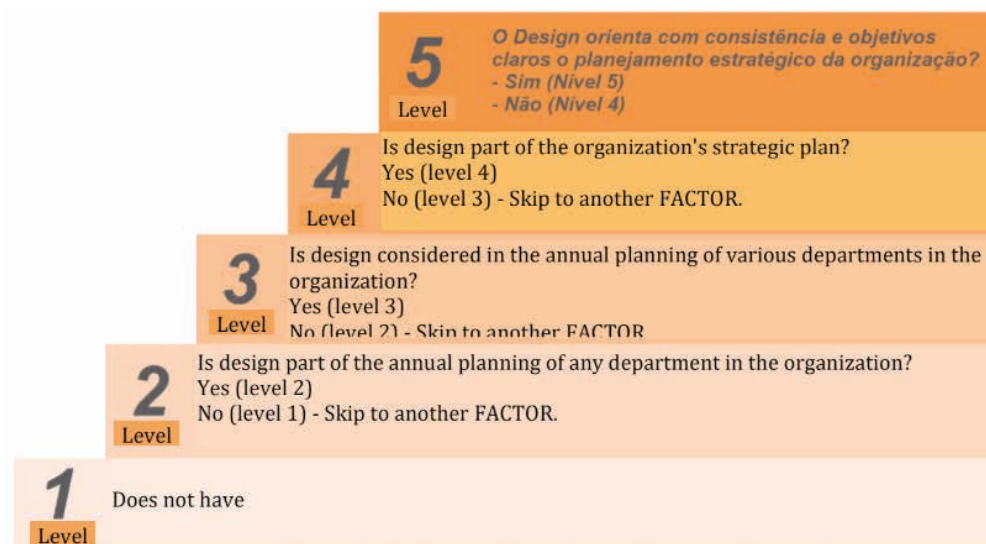


Figure VIII – Design Management Ladder 5 – Planning Factor.

Source: author (2022).

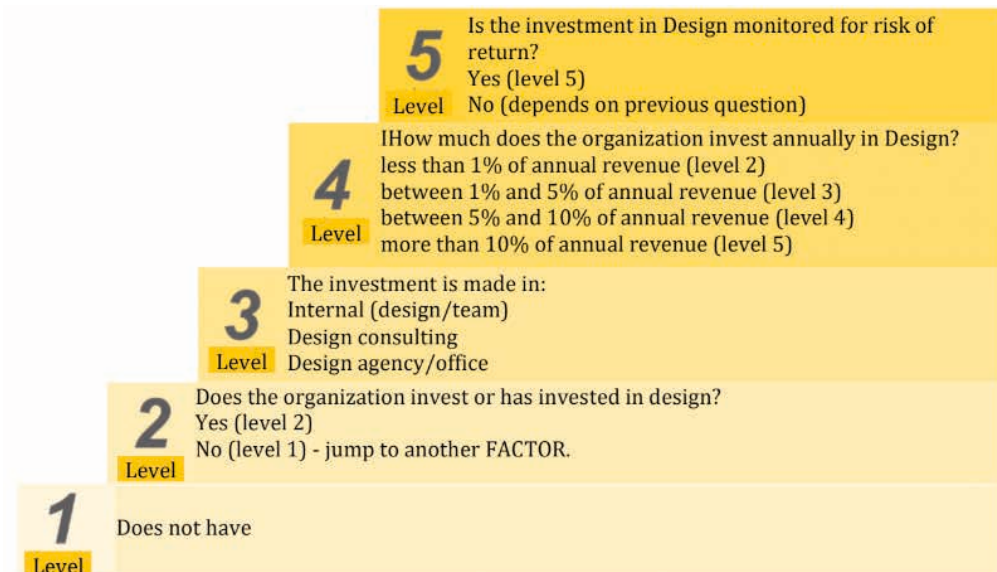


Figure IX – Design Management Ladder 5 – Resource Factor.

Source: author (2022).

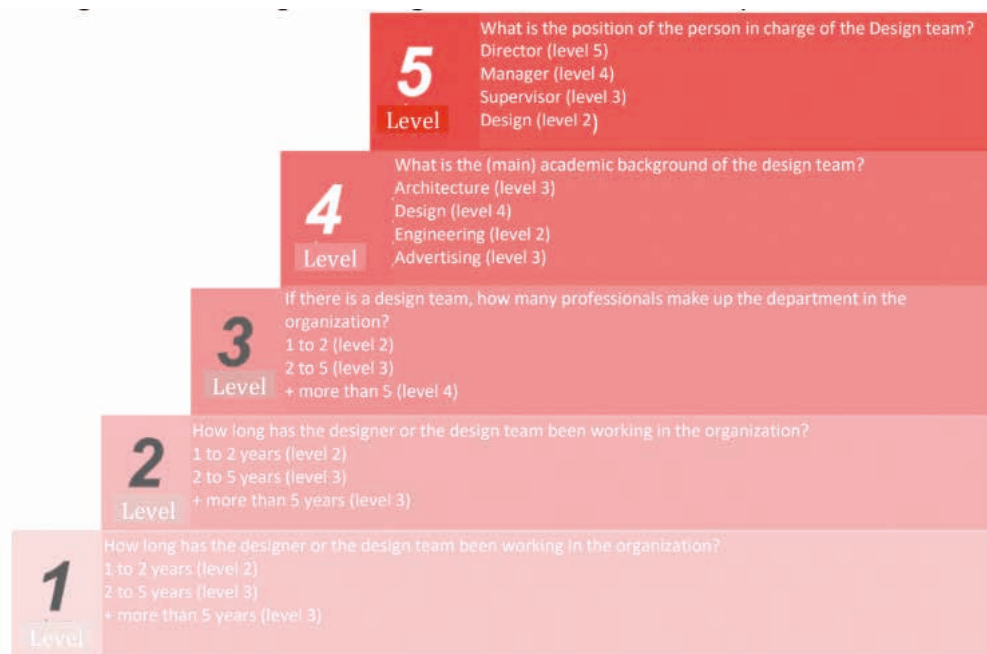


Figure X – Design Management Ladder 5 – Expertise Factor.

Source: author (2022).



Figure XI – Design Management Ladder 5 – Process Factor.

Source: author (2022).

unesp iagc Design

Research - Design Management in the Agricultural Industry in the State of São Paulo

Convidamos o(a) Sr(a) para participar da pesquisa sobre o "Nível de conhecimento e maturidade da Gestão do Design nas indústrias de máquinas e implementos agrícolas do Brasil", sob a responsabilidade de Anderson da Conceição Rollim e orientação da Profa. Dra. Paula da Cruz Landim.

O objetivo deste estudo é levantar o atual cenário das indústrias (nacionais) de máquinas e implementos agrícolas do Brasil, quanto ao conhecimento, utilização e maturidade da Gestão do Design dentro das organizações, classificando-as em uma escala que foi desenvolvida a partir de conceitos amplamente praticados dentro da área de estudo da Gestão do Design.

A participação da organização na pesquisa científica irá contribuir auxiliando a universidade, entidades setoriais e órgãos governamentais com ações assertivas para o desenvolvimento do segmento industrial agrícola junto ao design.

Foi enviado o Termo de Consentimento Livre e Esclarecido, em anexo, no e-mail que explica sobre a pesquisa, seus objetivos, prazos e entrega dos resultados. Solicitamos que o(a) Sr(a) leia o Termo de Consentimento Livre e Esclarecido antes de responder a pesquisa.

Ao participar desta pesquisa, há a concordância com o Termo de Consentimento Livre e Esclarecido e a utilização dos dados com objetivos exclusivamente acadêmicos e científicos.

Os resultados serão:

- analisados e publicados;
- a identificação das organizações participantes não será divulgada, ficando em sigilo;
- será enviado, para o participantes da pesquisa, o resultado individual e comparativo com o cenário geral;
- descrição dos níveis de maturidade da Escala de Gestão do Design (EGD5).

A pesquisa foi aprovada pelo Comitê de Ética em Pesquisa (CEP) da UNESP e está sob o registro CAAE: 53605821.6.0000.5663

Figure XII – EGD survey entry screen 5.

Source: author (2022).

DISCUSSION

With the methodology defined, the questionnaire constructed and the public to be researched aligned with the CSMI/ABIMAQ, the research was collected. However, with the COVID-19 pandemic, the collection process proved to be unfeasible, leading to a rethinking of the collection process, which at first would be through interviews with managers of national agricultural industries in the state of São Paulo. With the distancing and worsening of the pandemic, the process of “interviews” proved to be unfeasible.

According to Dresch (2015) there are two fundamental factors for research to be successful in terms of objectives, which are: relevance and rigor.

The relevance of the research is important because its investigations and the generated knowledge must provide solutions to existing problems in organizations. For Dresch, Lacerda and Júnior, relevant research can serve as a form of awareness and a possible search for new knowledge and, with this, contribute to organizations being able to measure the degree of use and maturity of design in their structures.

Rigor is also fundamental, so that the research has credibility, is reliable and contributes to the growth of existing knowledge, its execution must follow a method with scientific rigor (DRESCH et al, 2015).

For Prodanov and Freitas (2013), methodology is a discipline that consists of:

- Study, Understand, Evaluate.

These actions analyze the various methods available to carry out an academic research and, for them, the methodology is the application of procedures and techniques that must be observed to build knowledge with the objective of proving its validity and usefulness in numerous social environments.

Therefore, it is concluded that good research

is one that at the same time has high technical and methodological rigor combined with a high practical utility and with the purpose of solving relevant problems for organizations (DRESCH et al, 2015).

The paradigm would have to be broken and the interview process must be “online”, even with all the prejudices and risks that the new research collection method may present, but due to the pandemic, this procedure had to be used on a large scale by many researchers.

Based on the obstacles presented and based on research and researchers that provided support for decision-making, the entire questionnaire was assembled on an online platform where it is possible to collect data in a systematic, fast, intuitive way and without influencing the managers’ choices. With the data collected and with the programming that was carried out depending on the answers, the respondent has a journey where his research will be in accordance with the reality of his organization.

Figure XII (above) is the initial screen of the research with the acknowledgments for the participation, the data of the researcher and the advisor, of the academic Institution the Universidade Estadual Paulista – UNESP-Bauru/SP, the link with the CSMIA/ABIMAQ – Sectoral Chamber of Agricultural Machinery and Implements / Brazilian Association of Machinery and Equipment Industry, the Free and Informed Consent Form, the registration in the Committee of Ethics in Research (CEP) of UNESP and the results that will be obtained with the information that will be assimilated and transformed knowledge for all involved.

The results that will be obtained will result in an individual overview of each organization and a general one, since all the data will produce a vision of the level of understanding and maturity regarding design in the agricultural industrial sector (only in the state of São Paulo), but which will give a

very interesting for the entire sector that is responsible for 1/3 of the national GDP in 2021.

FINAL CONSIDERATIONS

The great opportunity for growth and evolution for the agricultural machinery and equipment sector is clear, with the data collected and monitored from 1985 to 2015, with João Amato Neto, Valdeson Amaro Lima and Isabel Cristina dos Santos (in the field of Agribusiness) and correlated with the research carried out on the Diagnosis of Brazilian Design, carried out by the Centro Brasil de Design (CBD), in 2014.

As Landim (2010) states, "... design in Brazil is not yet properly disseminated. And yet, when this occurs, it is induced by institutional actions, leading many companies to postpone their investments in this area.", in a way there is a barrier that needs to be overcome so that Design is finally recognized and exercised with all its power. strength.

For this to happen, research in Design must be expanded and gain depth to, finally, stop being an "aesthetic prop in a piece of equipment" and become a science respected within the industrial spheres as much as engineering.

Therefore, it is necessary to carry out a new research, but this time, focused only on the agricultural machinery and equipment sector to verify the current scenario of Design Management within these industries.

Designers can work and contribute a lot with managers in the Industry Management process, in a broader and more involving way, but for this to happen, awareness, dedication and perseverance will be necessary so that all employees are really involved with a true DESIGN culture.

THANKS

The author thanks the board of CSMIA/ ABIMAQ for the support with access to content, data and organizations for the application of the research as a way to improve the development of the national agricultural industry with design in a conscious and sustainable way.

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