ESG STUDIES REVIEW
ENVIRONMENT SOCIAL GOVERNANCE
SUSTAINABLE DEVELOPMENT GOALS
e-ISSN: 2966-1129

PROPOSAL FOR A METHOD FOR FEASIBILITY ANALYSIS AND IMPLEMENTATION OF SDG IN BRAZILIAN MUNICIPALITIES

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ABSTRACT

Purpose: This study aims to propose a method, analyzing the feasibility and implementation of SDGs (Sustainable Development Goals) in Brazilian municipalities, examining the reality of each one. The central question is: what is being done to put the 2030 Agenda into practice in Brazilian municipalities? **Methodology/approach:** DSR (Design Science Research) was used as a methodological basis, as it allows the creation of artifacts, which, during their development, can build theories that describe, explain and predict how reality is defined, in general. In this case, the objective of the method is to analyze local characteristics, verifying the practical implementation of the SDGs in Brazilian municipalities.

Originality/Relevance: this research resulted in Bah! Method, also developing Bah Seal! which plays an effective indicator role, with the aim of improving the present situation and future performance, creating a pioneering certification method/system.

Key findings: It is concluded that there is a lack of implementation of the SDGs in Brazilian municipalities, thus creating the method called BAH, an acronym that means Environmental and Humanized Benefit (in Portuguese), once the implementation of the SDGs generates benefits for the environment and for people, aligning and proposing public policies to municipalities.

Theoretical/methodological contributions: This study intended to contribute academically to the development of DSR in management, demonstrating its importance in helping to solve problems through artifacts, as in the managerial area and other applied social sciences encouraging the development of strategies to collaborate in the Agenda 2030 process.

Keywords: Bah! Method – SDG – Brazilian Municipalities – Sustainable Development – Design Science Research

Received: 08/11/2023
Accepted: 12/01/2024
DOI: https://doi.org/10.37497/esg.v6i1.1573

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1. INTRODUCTION

In order for us to have a sustainable future for the next generations, the Sustainable Development Goals – SDGs are essential. Planned in 17 objectives, 169 targets and 232 indicators, in September 2015, the 2030 Agenda for Sustainable Development was adopted by 193 member states of the United Nations (UN), including Brazil. Based on five principles: people, peace, prosperity, partnerships and the planet, these objectives, goals and principles make up the 2030 Agenda, where each country, state and municipality is free to implement it in accordance with the existing realities in each region (UN, 2021; Pimentel, 2019).

Given this, we question: what is being done to put them into practice in Brazilian municipalities? Thus, this article proposes a method of analyzing the feasibility and implementation of SDGs in Brazilian municipalities, analyzing the reality of each municipality, identifying the feasibility of which SDGs the municipality is able to implement, which can be incorporated into existing policies and practices in the management and suggesting future actions for better results and adding value to the actions of the municipality.

Bearing in mind that the monitoring and evaluation of the goals of each of the 17 SDGs must be carried out at the global, national and regional levels, the challenge for all those involved in the process of implementing and evaluating these data and indicators is great (Vazquez-Brusr , et al., 2020). Thus, this proposed method of feasibility and implementation of SDGs was named Bah! Methods. Bah! is an acronym that means Environmental and Humanized Benefits, as the implementation of the SDGs generates benefits both for the environment and for people, in particular, for the citizens of Brazilian municipalities.

Design Science Research) was used , which, due to its origin, is used for the elaboration of production projects and improvement of scientific knowledge for a certain class of problems. In this case, the class of problems will be the 17 SDGs, with the final objective of creating execution projects according to the unique viability of each Brazilian municipality.

Using the DSR, we can develop artifacts (implementation projects) that allow us to provide a timely response to the viable SDGs in the territorial context of each municipality. According to the performance that the municipalities obtain in the implementation/execution of these projects, the proposed method suggests Performance Seals (Selo Bah!). Therefore, in addition to providing means of feasibility and applicability of policies and practices in favor of the SDGs, this method also provides a performance metric for disseminating the results obtained, as well as a tool to add value to the actions of municipal authorities.

Presenting as a main characteristic the relevant contemporary approach of the necessary participation of the Municipal Public Administration, in its decision-making activities, through acts in favor of the SDGs, in the implementation of the principles of sustainability, the great challenge posed by the 2030 Agenda is the production of quality data, reliable, periodic, up-to-date, relevant, open, accessible and disaggregated, based on official national sources (UN, 2015; Vazquez-Brusr, *et al* ., 2020).

Such a challenge requires an objective and effective method, as well as trained professionals to manage this data so that public policies are developed focused on the reality of each municipality and region, in accordance with each SDG.

2 THEORETICAL BACKGROUND

This chapter aims to contribute with a theoretical foundation based on national and international references, as well as the basis of guidelines from the United Nations (UN). Thus, we intend to support this study with current and relevant concepts and criticisms for sustainable development in Brazilian municipalities.

2.1 Development sustainable

For Camargo (2003) the definition of the term, “sustainable development”, also presented in the Brundtland Commission, (1987), has as its essence a process of transformation in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change harmonize and reinforce present and future potential in order to meet human needs and aspirations. For Elkington (2001), even with the concept formulated, in its principle, the idea of sustainable development was understood as the harmony between financial and environmental issues. According to Almeida (2002), during the UN Conference in Stockholm in 1972, the growing discussion was to seek to reconcile economic activity with environmental preservation (Camargo, 2003; Brundtland, 1987; Elkington, 2001).

As interpreted by Scharf (2004), the objective of sustainable development would be the preservation of global wealth which, in his understanding, refers to financial assets, natural resources and quality of life of the population, arguing that sustainable development would be supported by the tripod formed by the environmental, economic and social dimensions, that is, sustainability would be conditioned to the simultaneous development of the three pillars. Thus, the Sustainable Development Goals (SDGs) emerge as the best instrument for an agenda that allows full sustainable development (Scharf, 2004).

2.2 Agenda 2030 and Municipal Administration

The UN defined the new Sustainable Development Goals (SDGs) as part of a new sustainable development agenda that finalized the work of the MDGs (Millennium Development Goals). With a deadline for the year 2030, this agenda is known as the 2030 Agenda for Sustainable Development. Through the goals outlined therein, sustainable development is sought from both the environmental and human perspectives, in order to reconcile economic progress, poverty reduction and sustainability (UN, 2015).

The Agenda is the fruit of the joint work of governments and citizens around the world to create a new global model that can end poverty, promote prosperity and well-being for all, protect the environment and combat climate change. Since then, the United Nations (UN) has developed forms of cooperation and partnerships with governments, civil society and other social agents, in order to make this ambitious project possible (Castro Filho, 2018).

The posture of the Brazilian municipalities regarding the idea of sustainable development and its direction through their public administrations, must seek the implementation of the sustainable development project of the municipalities, foreseen in Objective nº. 11 of the UN Agenda 2030 (Schneider, 2017). In this regard, a series of governance mechanisms are listed, such as inter-municipal cooperation, which advocates that local and regional governments should work together to ensure a more integrated and efficient approach to territorial development, through cooperation in the provision of services, infrastructure and, when possible, through the sharing of resources and capabilities (Machado Filho, 2016).

It should be remembered that the 2030 Agenda is a new global Agenda created in 2015 by the UN, with the aim of eradicating poverty and seeking a sustainable future for the world's population within a period of fifteen years. The Agenda is guided by the 17 SDGs, which must be achieved through the integrated fulfillment of its 169 goals. In order for Brazil to be able to comply with this Agenda, Decree No. 8,892/2016 established the National Commission for the SDGs, comprising representatives of governments, public institutions, legislative and judicial bodies, civil society and the sector. private. With the Decree, the SDGs receive special attention for the action plans of governments, powers and society, with the role of implementing and monitoring the goals established by the UN (UN, 2021).

Therefore, the 2030 Agenda covers a wide spectrum of social, economic, environmental and institutional issues, which are interdisciplinary and interconnected, and whose information is obtained through different methods and sources (censuses, sample surveys, administrative records, cadasters, images of satellite, among other sources). In this context, authors such as Chapman et al., (2020) and Vazquez-Brusr et al., (2020) state that it is important to recognize that, due to the complexity of each regional reality, encompassed in the process of territorialization of the SDGs, there are several bureaucratic obstacles that hinder the integration, in practice, of the SDGs in municipalities (Chapman, et al., 2020; Vazquez-Brusr, et al., 2020). Still, there are other factors that act compromising the effectiveness of policy coherence for sustainable development, as the SDGs bring different and often conflicting interests within themselves, which make it difficult for them to be included in the cycle of policy elaboration and planning. public.

Therefore, the permanent evaluation of the coherence between policies is essential, both to manage and minimize the negative effects of potential *trade-offs* and to explore existing synergies. For example, a carbon-based, energy-intensive growth strategy can be effective in lifting large numbers of people out of poverty at the present time. However, carbon emissions and other pollutants also cause serious damage to the health of people, the planet and the well-being of future generations. Identifying growth paths that minimize these *trade-offs* can bring benefits to all and result in definitive gains in reducing poverty and improving the health of people and the planet (Geore, et al., 2016; Fisher & Sampaio, et al., 2002).

It is also important to advance strongly with pro-socio-environmental initiatives, such as Bah! Methods, in view of a study by Brazilian researchers who indicate that legislative action was more intense in 2019, but the strength of propositions aimed at Agenda 2030 projects, which impact the municipalities of the federation, is still low, since the number of propositions and legislative activities and the types of propositions found do not correspond to a conception of perennial implementation of the 2030 Agenda in Brazil (De Faria & De Paula, 2022).

Authors such as Thomas, Hsu and Weinfurter (2021) believe that the adoption of the Sustainable Development Goals - SDG marks a transition in the global sustainability scenario to a discourse with an increasing focus on equity and the role of urban areas in achieving sustainable and inclusive growth more explicit (Thomas et al. , 2021).

In view of the above, it was concluded, therefore, that the evaluation of the 2030 Agenda requires a consolidated information system, in different territorial cuts and covering its various dimensions, to enable the construction of indicators based on global, regional, national, municipal or in other clippings. To effectively produce statistics, indicators and management tools for decision-making, diversified scientific knowledge applied in the areas of the environment, training, institutional articulation and availability of resources (financial, human, environmental and technological) is required.

2.3 The 17 Development Goals _ sustainable

The 17 Sustainable Development Goals (SDGs) were created with the aim of stimulating actions

in five main principles: people, planet, prosperity, peace and partnership. In the design of these principles and objectives, 169 goals were also listed, organized into 232 indicators, so that agents can implement the 2030 Agenda. The SDGs also have the delimitation of macro objectives (UN, 2015):

1. The poverty eradication ; _
2. protection to the planet ;
3. guarantee of a prosperous life for all;
4. peace universal;
5. the mobilization of partnerships to achieve the proposed objectives (UN, 2015).

The actions developed to achieve the SDGs must be directed towards all segments of society and these efforts need to be aligned in each country, state and municipality. According to O'Connor et al., (2016), the theme of sustainable development was highlighted at the United Nations Conference, held in Rio de Janeiro, in 1992, when the theme of Environment and Development was addressed. This conference became known as Rio-92 and, on that occasion, sustainable development and environmental protection were discussed (UN, 2021; O'Connor et al., 2016.).

At the event, at the time, a work plan was created that was endorsed by 179 countries, to act in the priority areas of development and the environment. Subsequently, 191 nations signed a commitment to the Millennium Declaration, which sought to summarize the international agreements that had been signed in the 1990s (UN, 2015).

Thus, commitments known as the Millennium Development Goals (MDGs) were established. The millennium goals were established by the United Nations (UN) in 2000, and, to achieve the MDGs, eight objectives were established in the period from 2000 to 2015 (UN, 2015).

At the United Nations Conference on Sustainable Development in 2012 (Rio+20), the post-2015 Agenda for sustainable development was defined. Topics such as increasing the participation of different sectors of society in the construction of a new development agenda were discussed. The Conference resulted in the document “the future we want” and, thus, the Open Working Group was created, which proposed the 17 Goals that would make up the SDGs (UN, 2015). In 2015, therefore, the final document was approved at the United Nations Summit on Sustainable Development, which established the 17 SDGs and their respective targets. These objectives include actions that can be summarized in Table 01, below.

Goal	Definition	Description
Objective 1 	Poverty eradication . _	End poverty in all its forms, everywhere.
Objective 2 	Zero hunger and sustainable agriculture.	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.
Objective 3 	Health and wellness .	Ensure healthy lives and promote well-being for everyone at all ages.
Objective 4 	Quality education . _	Ensure quality inclusive and equitable education and promote lifelong learning opportunities for all.
Objective 5 	Gender equality . _	Achieve gender equality and empower all women and girls.
Objective 6	Water drinking and sanitation .	Ensure the availability and

		sustainable management of water and sanitation for all.
Objective 7 	Energy clean and sustainable .	Ensure reliable, sustainable, modern and affordable access to energy for all.
Objective 8 	Decent work and economic growth	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
Objective 9 	Industry , innovation and infrastructure .	Build resilient infrastructures, promote inclusive and sustainable industrialization.
Objective 10 	Reduction of inequalities .	Reduce inequality within and between countries.
Objective 11 	cities and communities sustainable .	Make cities and human settlements inclusive, safe, resilient and sustainable.
Objective 12 	consumption and production responsible .	Ensure sustainable production and consumption patterns.
Objective 13 	Action against global climate change.	Take urgent action to combat climate change and its impacts.
Objective 14 	life in water .	Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
Objective 15 	Earth life .	Protect, restore and promote sustainable use of terrestrial ecosystems, halt and reverse land degradation and halt biodiversity loss.

Objective 16 	Peace, justice and effective institutions.	Promote peaceful and inclusive societies for sustainable development, build effective, accountable and inclusive institutions at all levels.
Objective 17 	Partnerships and means of implementation.	Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Table 01: 17 Sustainable Development Goals – SDGs.
Source: United Nations (2018).

As shown in Chart 01, each of the 17 UN SDGs has a delimited scope for a specific action. It should be noted that this 2030 Agenda is an action plan for people, for peace, for the planet and for prosperity by 2030 to transform the world through actions developed by different actors and institutions (UN, 2021).

In particular, for SDG 11 and its targets to be achieved, we need municipalities to invest in the sustainability agenda (UN, 2015):

SDG 11. Sustainable Cities and Communities - Make cities and human settlements inclusive, safe, resilient and sustainable

11.1 By 2030, guarantee access for all to decent, adequate and affordable housing; to basic services and urbanize precarious settlements in accordance with the goals assumed in the National Housing Plan, with special attention to vulnerable groups.

11.2 By 2030, improve road safety and access to the city through more sustainable, inclusive, efficient and fair urban mobility systems, prioritizing mass public transport and active transport, with special attention to the needs of people in of vulnerability, such as those with disabilities and reduced mobility, women, children and elderly people.

11.3 By 2030, increase inclusive and sustainable urbanization, improve capacities for planning, social control and participatory, integrated and sustainable management of human settlements, in all units of the federation.

11.4 Strengthen initiatives to protect and safeguard Brazil's natural and cultural heritage, including its tangible and intangible heritage.

11.5 By 2030, significantly reduce the number of deaths and the number of people affected by natural disasters of hydrometeorological and climatological origin, as well as substantially reduce the number of people residing in risk areas and the direct economic losses caused by these disasters in relation to the gross domestic product, with special attention to the protection of low-income and vulnerable people.

11.6 By 2030, reduce the *per capita* negative environmental impact of cities, improving air quality indices and solid waste management; and ensuring that all cities with over 500,000 inhabitants have implemented air quality monitoring systems and solid waste management plans.

11.7 By 2030, provide universal access to safe, inclusive, accessible and green public spaces, in particular for women, children and adolescents, elderly people and people with disabilities, and other vulnerable groups.

11.a Support economic, social and environmental integration in metropolitan areas and between urban, peri-urban, rural areas and twin cities, considering territories of traditional peoples and communities, through inter-federal cooperation, reinforcing national, regional and local development planning .

11.b By 2030, significantly increase the number of cities that have policies and plans developed and implemented for climate change mitigation, adaptation and resilience and integrated disaster risk management in line with the SENDAI Framework.

11.c Support least developed countries, including through technical and financial assistance, for sustainable and robust constructions, prioritizing local resources.

In this sense, according to Fernandez-Díaz, *et al.* (2022) the municipalities of Latin America and the Caribbean have an even greater challenge to overcome the proposed goals and indicators for the 2030 Agenda to develop successfully, allowing the citizen to experience the results of public policies, the improvements in the municipality (Fernandez- Diaz, *et al.*, 2022).

For Mazza (2022) the scope of sustainable practices for municipalities is connected with most of the SDGs, thus highlighting the role of municipal managers and citizens for the transformation and advancement of pro-social and environmental projects for municipalities on different continents, on the planet (Mazza, 2022).

3 RESEARCH METHOD

For the development of this method, proposed in this article, we used DSR (*Design Science Research*) as a basis, as it is a method that allows the creation of artifacts, which, in the course of its development, can build theories that describe, explain and predict how reality is defined in general. In this sense, Popper (2006), defines that theories are networks, launched to capture what we call the world: to rationalize it, explain it and dominate it. Following this thought, the basis for building theories are scientific research methods. Research methods, therefore, consist of a set of rules and procedures, accepted by the academic community, for the construction of scientific knowledge (Andery et al., 2004; Popper, 2006).

In this case, the purpose of the method is to analyze Brazilian characteristics, verifying and analyzing the feasibility of real implementation of the SDGs, in practice, in Brazil, as it is a country with continental dimensions, which has unique characteristics in the world. When we look at the micro national context, that is, the Brazilian municipalities, these unique characteristics become more evident, therefore, this method focuses on these unique characteristics that can be the differential to apply the SDGs, according to feasibility, in each municipality (territoriality) .

In order to understand DSR it is necessary to understand how this method is applied. Thus, Simon (1996) argues for the need to create a science (a rigorous and validated body of knowledge) dedicated to proposing how to build artifacts that have certain desired properties – that is, how to design them. Such is a "Science of Design", a *Design Science* . "The project is interested in what and how things should be, the conception of artifacts that accomplish objectives" (Simon, 1996).

The main mission of *Design Science* is, therefore, to develop knowledge for the design and development of artifacts (Van Aken, 2004). In this sense, Romme (2003) states that studies related to organizations or public sectors, as proposed in this article, should include Design *Science* and *Design Science Research* , as one of the main ways of conceiving knowledge and carrying out scientific research. The knowledge generated from the foundations of *Design Science* also contributes to advancing the development of knowledge-based research (Lacerda et al., 2013; Van Ken, 2004; Romme, 2003).

The knowledge in this proposed method is multidisciplinary, and research oriented towards this type of knowledge is concerned with solving relevant complex problems, which consider the context in which their results will be applied (Burgoyne & James, 2005). Therefore, considering the purpose of this method, the context is the municipalities and their respective peculiarities, and the results are: achieving the goals proposed by the viable SDGs to be implemented in each municipality. Therefore, these results will be classified with Bah Stamps! of performance, which are proposed in this method. Consequently, the knowledge developed by *Design Science Research* is not explanatory descriptive, it is prescriptive.

It should be noted that the distinction that Van Aken (2004) makes between research oriented to description and prescription is analogous to the discussion between natural and artificial sciences. In practice, the vision of natural/social science, applied to management, helps to understand the phenomenon, discovering the laws and forces that determine its characteristics, functioning and results (Romme, 2003). Therefore, *Design Science* is the epistemological basis, *Design Science Research* is the method that operationalizes the construction of knowledge, in this context (Chakrabarti, 2010).

Thus, this article proposes a method of operationalizing the construction of the feasibility of applying the SDGs in Brazilian municipalities, based on an analysis of the context, municipality, considering its peculiarities and, thus, creating artifacts that make possible the SDGs that are possible to implement. to be applied/developed, in accordance with the principles of territoriality. From the application of the artifacts, the municipality will be evaluated by a metric that will take into account its performance, which will be classified in Bah Stamps! proposed in this method.

It is worth mentioning that the SDG implementation method relies on innovations in its approach – reinforcing the transversality of themes, which can no longer be treated in isolation – and in the protagonists for their implementation – going beyond the public sphere, starting to rely on the private sector and third sector, and emphasizing the importance of local actors. Therefore, given the previously mentioned methodological choice, it is appropriate to use the DSR, which, due to its origin, is used for the elaboration of production projects and improvement of scientific knowledge for a certain class of problems.

4 SEARCH RESULTS

This chapter aims to present the main points of discussion of this study, as well as to present its results. To this end, four sub-chapters were divided, which follow below.

4.1 Bah! Method

This article proposes a method of analyzing the feasibility and implementation of the SDGs in Brazilian municipalities, analyzing the reality of each municipality, identifying its peculiarities, thus understanding the viability of which SDGs the municipality has a structure and financial, human, and environmental conditions and technological, to implement in your reality, being able to be incorporated into policies and practices that already exist in management, as well as in future policies.

This proposed SDG feasibility and implementation method was named Bah!, an acronym that means Environmental and Humanized Benefits, as the implementation of the SDGs generate benefits for both the environment and people, in this context, Brazilian municipalities. These benefits are the result

of policies and practices aligned with the SDGs.

As a basis for the creation of this method, we used the DSR method (*Design Science Research*) which, due to its origin, is used for the elaboration of production projects and improvement of scientific knowledge for a certain class of problems and, thus, elaborating artifacts that make possible the execution of the implementation of viable SDGs in the municipality.

The basic method chosen for the development of Bah! Method was *Design Science Research*, as it enables a new look or a set of analytical techniques that allow the development of research in different areas, in this case the SDGs. In this sense, *Design Science Research* is a rigorous process of designing artifacts to solve problems, evaluating what was designed or what is working and, thus, communicating the results obtained (Çağdaş & Stubkjær, 2011).

Thus, the Bah! Method is the construction of a rigorous process that designs artifacts to solve the problems, in this study, the SDGs, evaluating what is already being carried out and implemented, also proposing new processes that make possible the SDGs that are not yet developed, suggesting improvements those in progress and, consequently, communicating the results obtained.

To understand the objectives of Bah! Method It is necessary to understand the method construction process. Understanding what the SDGs are and understanding that, in this method, they are classified as a class of problems, each SDG being a class, which allows the artifacts and, consequently, their solutions, not to be just a punctual response to a certain problem (SDG), in a given context (municipality), but the way in which knowledge can be used to design solutions to this problem. In this sense, the generated knowledge can be generalized, when valid for each SDG, understood here as a class of problems.

This method is scalable, that is, it can be replicated in other municipalities with similar peculiarities. When there are no similarities, these peculiarities help to identify differences, providing clarity in the generation of viable solutions, they are not an impediment to analysis, only requiring a new analysis and adequacy of the context of territoriality of the municipality in question. It is understood and reinforced that the real problem (SDG), and, consequently, the artifacts that generate satisfactory solutions for this, is always unique in its context (municipality).

In this way, the Bah! The method takes into account multiple alternatives that are situated in a contextualized way, in different real environments, that is, the municipalities. The knowledge generated from the decisions taken from the effect of the artifacts build understanding and improvement in the context in which they are applied. Achieving the objectives proposed by the SDGs and improving the lives of people in the municipality and thus generating sustainable development.

Understanding that each class of problems are the SDGs, it is necessary to conjecture the other factors that help in understanding the contextualization of the municipality. For this, there are some consolidated parameters that are considered important in this method, such as the IDMS Sustainable Municipal Development Index. This parameter helps in understanding the municipal reality and its peculiarities.

Again, it is important to understand what the 17 SDGs are, in their totality and complexity, and that the implementation of all the Objectives in the municipality may not be feasible to be achieved, since, for this, it is necessary to understanding the context of local territoriality and analysis of resources (financial, human, environmental and technological), so that viable, real and effective solutions are proposed for the municipality, being able, in the future, to use other parameters to assist in this analysis (Pimentel, 2019). From the application of these solutions there will be a classification that will be carried out by Selos Bah! of Sustainable Performance.

4.2 Sustainable Municipal Development Index (IDMS)

The Sustainable Municipal Development Index (IDMS) seeks to assess the sustainable development of municipalities. It also tries to situate public managers in relation to a desirable future scenario and define local priorities aimed at achieving higher levels of sustainability (FECAM, 2021). The dimensions evaluated in the index are: sociocultural, economic, environmental and political-institutional. Each of them is subdivided into others to compose the indicator, as shown in Table 1.

IDMS Composition	
Dimension	**subdimension**
Sociocultural (25%)	Education - 45%
	Health - 35%
	Culture - 10%
	Housing - 10%
Economy (25%)	Economical - 100%
Environmental (25%)	Quite environment - 100%
Political-institutional (25%)	finance public - 40%
	Management public - 30%
	participation - 30%

Table 2: IDMS composition .
Source: Fecam , (2021).

Considering that the variables that make up the dimensions are presented as positive (the bigger the better and the smaller the worse) and negative (the smaller the better and the bigger the worse), according to the context of their relationships, in this context, the transformation of these variables , enabled the proper aggregation of these indices, leading to the need to establish the type of relationship that each variable presents in the context of the sustainability of the locations studied. From this perspective, the types of relationship (positive or negative) that these variables have with sustainable development were defined, identified by the behavior of the variable in which, if its value (indicator) increases, it favors or disfavors the development process (Martins & Cândido , 2017).

The variable presents a positive relationship when verified that the higher the indicator, the better the index and the lower the indicator, the worse the index. The variable has a negative relationship when it is verified that the higher the indicator, the worse the index; the smaller the indicator, the better the index.

After identifying the positive or negative relationship of the variable with the sustainable development process, the operationalization for calculating the index is carried out based on formulas that recognize these relationships and allow the analysis of sustainability by aggregating all the indices.

When the relationship is positive:

$I = (xm)/(Mm)$

When the relationship is negative:

$I = (Mx)/(Mm)$

Where :
I = index calculated for each state and municipality analyzed;
x = value of each variable in each state and municipality;
m = minimum value identified in these locations;
M = maximum value identified in these locations.

The information referring to the municipalities will be obtained by searching secondary data made available at the main research institutes and government agencies, accessible on the sites of the Atlas of Human Development (IDH 2000), Health Information Booklet (DATA SUS), National System of Urban Indicators (SNIU), Brazilian Institute of Geography and Statistics (IBGE), Caixa Econômica Federal (CEF), Foreign Trade Secretariat (SECEX) of the Ministry of Development, Industry and Foreign Trade, FINBRA - Finance of Brazil of the National Treasury Secretariat, National Telecommunications Agency (Anatel), and the Anísio Teixeira Educational Research Institute (INEP). From the collection of these data, possibly, a punctual collection with local managers of data in processing, not yet available, in these public portals is still necessary.

Afterwards, the variables will be transformed into indices, which will aggregate the indices by dimension by the arithmetic mean, arriving at the social IDSM, demographic IDSM, economic IDSM, political-institutional IDSM, environmental IDSM and cultural IDSM of the municipalities. The final IDSM will be calculated using the arithmetic mean of the IDSMs of the dimensions.

This aspect should help in decision-making regarding investments and that should be a priority in the public policies of the municipality, being an inducer of social practices and generating action programs through the link of values and goals, that is, the Bah! The method is in line with the purposes of FECAM, as the purpose of the method is to generate solutions together with the public policies of the municipality, aligning them with the SDGs.

4.3 Bah! Method

Simon (1996) does not define what a class of problems would be, although he exemplifies them. In fact, the “problem classes” can consist of an organization for the trajectory and development of knowledge in a *Design Science* . The very nature of artifacts, as can be seen in this section, can lead to the formation of such classes. The main discussion involving the need to define problem classes is in Van Aken
(2004).

The problem classes allow that the artifacts and, consequently, their solutions, are not just a punctual answer to a certain problem in a certain context. Design *Science* is not concerned with the action itself, but with the knowledge that can be used to design solutions (Van Aken, 2004). In this sense, knowledge in *Design Science* is generalizable when valid for a given class of cases (Van Aken, 2004), understood here as a class of problems. It is understood, reinforce, that the real problem, and, consequently, the artifacts that generate satisfactory solutions for this, is always unique in its context. However, both problems and satisfactory solutions can share common characteristics that allow an organization of knowledge of a given *Design Science* by “classes of problems” – thus enabling the generalization and advancement of knowledge in the area.

The classes of problems in this study are the SDGs that are organized as a set of problems, performing a municipal survey from the IDMS and also conducting a focus group with municipal leaders

who can be mayors, councilors, secretaries, community representatives, among others. others, in order to identify the feasibility of implementing a given SDG (problem class) in the municipality or add the objectives of the viable SDG to an existing project.

As regards the Artifacts that will be created in this method, it is necessary to understand what artifacts are, they are artificial objects that can be characterized in terms of objectives, functions and adaptations that are normally discussed, particularly during conception (SIMON, 1996) . Thus, the artifacts that will be built have the purpose of fulfilling the SDGs. In this way, the artifact is the organization of components (SDGs) of the internal environment (municipality) to achieve objectives in a given external environment (sustainable development).

4.4 Stamps Proposed by Bah! Method

Considering that organizations seek strategic positioning directing socioeconomic behavior, in the search for alignment with *stakeholders* , public organizations are no different (Drucker, 1984). Researchers such as Munk and Souza (2009) and Ashley (2002) indicate that more and more investors for projects and public-private partnerships perceive value in promoting socio-environmental public policies. Given this context, the role of complying with the SDGs for nations, states and municipalities, in addition to being strategic, is a duty, in terms of the role of public managers (Munck & Souza, 2009; Ashley, 2002).

In order to make it tangible and, also, as an alternative to publicize the actions of the public authorities, in this study, in particular, the municipal power, the constitution of a seal of recognition is a tool that constitutes a differentiating element that enables benefits, because, in the short term, it promotes a wide visibility impact. And, in the long term, it benefits the construction of an image of proactivity in relation to the *stakeholders* , which, here, we can consider public and private partners, profit and non-profit organizations, municipal public servants, managers and citizens. (Guimarães , *et al.*, 1999).

So the Bah! Method, developed the Bah Seal!. The Bah Seal! it plays an effective indicator role, as it provides reflection and communication between agents who grant and those who receive the Seal, with the aim of improving the present situation and future performance (Fischer & Sampaio, 2002). The potentiality of the Bah Seal! it allows the practice and dissemination of the favorable issues it represents, linked to the performance of each of the 17 SDGs.

The Bah Seal! features three categories: Seal Bah! Gold, Bah Seal! Silver and, finally, Bah Seal! Bronze. Each rating is inserted into the following performance standards in meeting the SDGs:

Table 1: Bah Seal! - Performance Ranking in each category

Seal ! Gold	**Seal ! Silver**	**Seal ! Bronze!**
Municipalities that reach between **85% and 100%** (considering the 17 SDGs, together with their 169 targets and 232 indicators).	Municipalities that reach between **65% and 84%** (considering the 17 SDGs, together with their 169 targets and 232 indicators).	Prefectures that reach between **50% and 64%** (considering the 17 SDGs, together with their 169 targets and 232 indicators).

Source: Prepared by the authors, 2021.

The Bah Seals! present the following representation, according to the design reproduced below.

Figure 1: Bah! – Classification by categories
Source: Prepared by the authors, 2021.

It is clarified that this method of evaluating municipalities in the 17 SDGs, 169 goals and 232 indicators will be adapted to the regional and local context (principle of territoriality), given the complexity of the field, constantly evaluating their demands and needs, in a survey together with the

actors involved in each of the indicators, so that an assessment can be drawn up in accordance with relevance, impartiality, professional and ethical standards, ensuring responsibility and transparency, as well as preventing the misuse of data, complying with the confidentiality rules, international and legal standards, so that, in this way, it can guarantee the efficiency of data management and provide the added value that the municipality will generate (Callado, 2010; Kuzma, et al., 2017) .

5 FINAL CONSIDERATIONS

This article proposed a method of analyzing the feasibility and implementation of SDGs in Brazilian municipalities, analyzing the reality of each municipality, thus identifying the feasibility of which SDGs the municipality has the capacity and resources (financial, human, environmental and technological) to implement. them, in their reality, and can be incorporated into policies and practices that already exist in management, generating as a result of this method a performance classification that will have seals (Bah Seals!) for performance certification, with the role of adding value to public policies developed and publish these results.

It should be noted that the method is in the development process and the results obtained from it are still initial and will again undergo validation analyses, which is a limitation of this research. However, even in development, the method presents a significant and innovative performance in its applicability, and may, in the future, bring benefits in the performance analysis of SDG implementation in Brazilian municipalities. The pilot project is in effect and is being carried out in a municipality in the state of Rio Grande do Sul, on a voluntary basis for research and method improvement purposes.

This method intends to contribute academically to the development of DSR in management, demonstrating its importance in helping to solve problems through artifacts, as well as in the area of administration and other applied social sciences that encourage the development of strategies to collaborate in the Agenda process. 2030.

The sustainable development agenda, especially in the planning of public policy agendas, is increasingly evident and growing, and this study is in line with this advance. O Bah! Method, specifically, is a method aimed at solving problems involving the feasibility and implementation of SDGs, in the municipal context, however, after its completion, we hope that it can also help the private sector, not limited to the public sector, in this way becoming a management tool aimed at SDGs for private organizations as well.

Although we recognize that the alignment of existing plans and programs to the 2030 Agenda, in Brazilian municipalities, is only a first step on the path that leads to the achievement of the SDGs, for the nations of the world, we understand that it is fundamental and provincial to motivate this engagement of the entities public with management tools that add value, as shown in this study with the Bah! Seals.

Thus, we reinforce that the SDG indicators need to be used by decision makers and public and private managers, in planning actions and formulating public policies. The appropriation of the SDG indicators by such actors is essential to guarantee both the continuity (evolution) of their production, and the application of the observations and conclusions obtained from it, in the effective pursuit of achieving the goals of the 2030 Agenda, in the different sectors and portfolios of action of municipal administrations. As suggestions for future studies, it is evident that the research field of the 2030 Agenda in Brazil is still incipient, requiring qualitative and quantitative studies that investigate the quality of public data, their credibility, as well as monitoring and advancement of these indicators, so that decision-making studies, such as the one shown here, can be successful and launch greater challenges that add to the theme.

Thus, we will be able to meet the current needs of humanity without compromising the possibility that future generations will also be able to do so and play our role as academics in a country that needs to improve its rates, with regard to the UN goals, with the understanding that “we must not leave anyone behind”.

We know that the proposal for this method is daring and is in its initial phase, but in science everything has a beginning and innovations are necessary for the evolution of knowledge. We have the ambition of a better world through the applicability of the SDGs, and certain transformations start in the micro-regional context, which is why we believe that the academy, as a source of knowledge, and its interaction with the municipalities, where people's lives take place, can make the difference.

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