

# Quality of information disclosure with the use of SASB standards in the construction industries in Mexico

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**Abstract**—The research aims to evaluate the current situation of quality of information disclosure that the construction sector in Mexico has in their reporting method using the international standards issued by SASB (Sustainability Accounting Standards Board). In order to achieve this goal, the entities that report, which are listed in the SASB official website and which were considered within the construction industry (Construction Materials – Extractives & Minerals Processing, Real Estate – Infrastructure and Home Builders – Infrastructure), were evaluated following the recommendations that the SASB itself establishes by industry and that should be included in the disclosure reports of the companies. The research found that the disclosure has significant variances by industries and companies in Mexico in terms of quality of information disclosure. Our results show that the quality of disclosure can not only be assessed in terms of whether it uses metrics or not, but that company-focused descriptive language is an important communicator to consider as good quality of information disclosure by companies to interested parties because of the financial impact that it could represent in taking actions, or action plans, that stakeholders should consider.

**Index Terms**—SASB; reports; sustainability disclosure; commitment to stakeholder; construction industry.

## I. INTRODUCTION

Sustainability is one of the actions that societies currently have to combat the problems arising from climate change since it helps to achieve the needs of the present without compromising the ability of future generations to meet their own needs [1]. In this way, applied to companies, it refers to doing business without negatively impacting the environment, community and society as a whole, given that otherwise, negative impacts would be generated not only to the environment but also could generate inequality and social injustice [2].

Nowadays, as a response to the fight against the feared climate change, investors have shown greater interest in issues related to sustainability due to the relevance that these issues are gaining. In this way, the private sector has been adapting to these new measures as a demonstration of its contribution to solving the problem, with ESG (Environmental, Social and Governance) terminology having gained trend and evolved in recent years, since This terminology refers to a set of standards that assess a company's behavior and that socially and environmentally responsible investors use to evaluate potential investments. The foregoing represents a need on the part of companies to adequately convey these terms with a considerable value towards sustainability that transmits transparency and responsibility towards in-

vestors, or their respective stakeholders, in an appropriate manner that may have a particular interest in the business, because this could have a direct or indirect impact on the company's finances. Despite the great importance of the private sector in terms of sustainability, one of the sectors that contributes the most to the increase in health and environmental problems, due to the carbon dioxide (CO<sub>2</sub>) emissions it emits, is the commercial and residential construction industry. This industry has been considered one of the biggest polluters due to the release of CO<sub>2</sub>, since it emits a total of 39% of CO<sub>2</sub> [3], so this industry has an opportunity and responsibility to reduce its emissions, as well as the correct disclosure of information in ESG (Environmental, Social and Governance) terms that demonstrates its commitment to society and the environment. In this way, it is important to identify that the ESG ecosystem has demonstrated important advances in recent years towards greater harmonization on the subject of disclosure, given that there are current practices that help obtain more transparent data such as sustainable reports, which are regulated by frameworks and standards, that help investors to identify the good commercial and extra-financial practices of companies in terms of sustainability and ESG, where investors consider them as one of the most important areas to prioritize.

The aim of this paper is to analyze the current situation of disclosure by examining the reported information of the construction sector in Mexico and classified them according to the quality of information they have on their sustainable reports. To do this, three industries were identified that are part of the construction sector that are reporting with SASB (Sustainability Accounting Standards Board) standards, which are listed on the official SASB website [4], in Mexico and that seek to communicate financially material Sustainability information to investors. The identified industries from the SASB official website are: Construction Materials – Extractives & Minerals Processing, Real Estate – Infrastructure and Home Builders – Infrastructure.

The next section presents the theoretical framework and reviews the current literature available for quality of information disclosure. The methodology is presented in section III followed by the results in section IV. Research conclusion is presented in the last section.

## II. THEORETICAL FRAMEWORK

Climate change has manifested itself in recent years as one of the greatest challenges for this generation of human-

ity and the consequences on natural ecosystems have been notorious and are worsening in various regions around the world, in such a way that they exceed the capacity of those systems to fully adapt according to the Intergovernmental Panel on Climate Change in its fifth assessment report [5]. This is because in recent years it has been possible to notice a temperature increase of 1.0°C compared to pre-industrial levels, which is why in 2015 the Paris Agreement was signed to limit global average temperature increases to 2°C.

The emission of (CO<sub>2</sub>) into the atmosphere leads to various negative repercussions that contribute to various social, economic and political problems [6], [7], [8]. The construction sector has been one of the main sources of CO<sub>2</sub> emissions, since for each ton of cement a ton of CO<sub>2</sub> is generated [3], even without considering the emissions from the transport machinery or the construction process, and that it is responsible from 5 to 7% of global CO<sub>2</sub> emissions into the atmosphere [9]. In 2015, in the specific case of Mexico, it was estimated that a total of 600 million tons of CO<sub>2</sub> were emitted, where it has been found that during the period 1990 and 2015, CO<sub>2</sub> emissions have increased rapidly in a 54%. [10].

The evident problems that we have witnessed related to climate change are one of the most worrying issues that we have today and that future generations will have, however, the arrival of the Covid-19 pandemic has made it even more evident the great importance that must be had for social issues, where sustainability is one more aspect to be considered by investors when deciding to buy, sell or hold securities in a certain company. This sense of responsibility for investors has been reflected in a 29% increase from the total of 2,092 investor signatories to 2,701 from 2019 to 2020, with a similar case occurring in the increase in the number of asset-owning signatories with 21% per part of the Principles for Responsible Investment, which reflect the growing relevance of environmental, social and corporate governance issues in the context of investment practices [11].

This was supported by a survey conducted by ISS to institutional investors, where it was found that 62% of respondents, receiving from a total of 65 leading asset managers worldwide, social problems attract more attention compared to before the arrival of COVID-19 and 44% of respondents expect that future ESG ratings will pay more attention to safety, diversity and inclusion in the workplace [12]. This is because since 2006, there has been an increase in shareholder proposals requesting that companies report on their climate change performance, as it is seen as a link between long-term corporate health and systematic management in ESG terms [12]. In addition, through the ESG Global Study 2022 report [13], it was shown that more than a quarter of global investors show an interest in complying with ESG criteria within their investment approaches.

In this way, given the increased concern on the part of investors and considering that the new normality requires a correct quality of the information transmitted on the performance by companies in terms of ESG, various frameworks and standards have emerged as measure support to companies for the development of reports. These reports are highly relevant when communicating relevant and accurate information about the social and environmental commitment that companies have to investors, such as the Sustainability Ac-

counting Standards (SASB), the Global Reporting Initiative (GRI) [14], the International Integrated Reporting Council (IIRC) [15], etc. Although there are various frameworks and standards, in this project in this document we will be focusing on the use of SASB standards.

The Sustainability Accounting Standards Board (SASB) was created in 2011, which connects with companies and investors about the financial impacts of sustainability, helping investors to make better decisions, given that global investors currently want to know how companies are doing regarding the environmental, social and governance (ESG) issues that also influenced company finances. According to SASB [16], these standards can have several benefits for investors, such as access to corporate data in terms of ESG that can be comparable, consistent and relevant that could be useful to create or improve long-term business value, as well as developing a deeper understanding of the risks that exist within the business sector being evaluated and some other benefits.

Although the disclosure of the information is an important tool for companies to be in contact with their stakeholders and the level of commitment may vary according to the location of the company, ethics, social and environmental impacts, as well as political problems and the level of publication seems to be higher for companies that belong to sensitive companies such as basic materials [17], [18], [19], the quality of information disclosure remains as an area of concern nowadays. This is because in most industries, despite showing a high level of disclosure of information, the quality that they present is considered a limitation that investors currently have to make informed decisions [20].

The above was supported by [20] where it is mentioned that in 2016 a total of 692 companies were analyzed to assess the quantity and quality of current disclosure practices and it was found that most of the companies analyzed are characterized by high levels disclosure, however, the quality of this information is poor. Although the previous study was a great reference on the quality of information at that time and its quality was expected to increase over the years, the study does not show the results by region or country to assess how the situation is in some countries regarding this quality of information. In the case of Mexico, there is still no relevant information to date where the quality of the information disclosed by the companies that make the SASB standards has been evaluated. For this reason, in this document the objective and relevance of this falls on the quality of the information that companies related to the construction industry in Mexico transmit in their reports.

### III. METHODOLOGY

For purposes of this research, although there are currently 77 industries listed by SASB in his official website to disclose different topics and the information shared by each of them may have variations, the methodology used for this document is based on the analysis of reports of the companies listed on the SASB page of those companies related to the construction sector. In this research, the Construction Materials – Extractives & Minerals Processing, Real Estate – Infrastructure and Home Builders – Infrastructure sectors, listed on the official page of the SASB for the year 2022

TABLE I  
SUSTAINABILITY DISCLOSURE TOPICS & ACCOUNTING METRICS BY SASB.

Nº	Construction Materials – Extractives & Minerals Processing	Real Estate – Infrastructure	Home Builders – Infrastructure
1	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations	Energy consumption data coverage as a percentage of total floor area, by property subsector	Number of lots and homes delivered on redevelopment sites
2	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Total energy consumed by portfolio area with data coverage, percentage grid electricity, and percentage renewable, by property subsector	Number of lots and homes delivered in regions with High or Extremely High Baseline Water Stress
3	Air emissions of the following pollutants: NOx (excluding N2O, SOx), particulate matter (PM10) dioxins/furans, volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and heavy metals	Like-for-like percentage change in energy consumption for the portfolio area with data coverage, by property subsector	Total amount of monetary losses as a result of legal proceedings associated with environmental regulations
4	Total energy consumed, percentage grid electricity, percentage alternative, percentage renewable	Percentage of eligible portfolio that has an energy rating and is certified to ENERGY STAR, by property subsector	Discussion of process to integrate environmental considerations into site selection, site design, and site development and construction
5	Total fresh water withdrawn, percentage recycled, percentage in regions with High or Extremely High Baseline Water Stress	Description of how building energy management considerations are integrated into property investment analysis and operational strategy	Total recordable incident rate (TRIR) and fatality rate for (a) direct employees and (b) contract employees
6	Amount of waste generated, percentage hazardous, percentage recycled	Water withdrawal data coverage as a percentage of total floor area and floor area in regions with High or Extremely High Baseline Water Stress, by property subsector	Number of homes that obtained a certified HERS® Index Score and average score
7	Description of environmental management policies and practices for active sites	Total water withdrawn by portfolio area with data coverage and percentage in regions with High or Extremely High Baseline Water Stress, by property subsector	Percentage of installed water fixtures certified to WaterSense® specifications
8	Terrestrial acreage disturbed, percentage of impacted area restored	Like-for-like percentage change in water withdrawn for portfolio area with data coverage, by property subsector	Number of homes delivered certified to a third-party multi-attribute green building standard
9	Total recordable incident rate (TRIR) and near miss frequency rate (NMFR) for (a) full-time employees and contract employees	Description of water management risks and discussion of strategies and practices to mitigate those risks	Description of risks and opportunities related to incorporating resource efficiency into home design, and how benefits are communicated to customers
10	Number of reported cases of silicosis	Percentage of new leases that contain a cost recovery clause for resource efficiency-related capital improvements and associated leased floor area, by property subsector	Description of how proximity and access to infrastructure, services, and economic centers affect site selection and development decisions
11	Percentage of products that qualify for credits in sustainable building design and construction certifications	Percentage of tenants that are separately metered or submetered for grid electricity consumption and water withdrawals, by property subsector	Number of lots and homes delivered on infill sites
12	Total addressable market and share of market for products that reduce energy, water, and/or material impacts during usage and/or production	Discussion of approach to measuring, incentivizing, and improving sustainability impacts of tenants	Number of homes delivered in compact developments and average density
13	Total amount of monetary losses as a result of legal proceedings associated with cartel activities, price fixing, and anti-trust activities	Area of properties located in 100-year flood zones, by property subsector	Number of lots located in 100-year flood zones
14		Description of climate change risk exposure analysis, degree of systematic portfolio exposure, and strategies for mitigating risks	Description of climate change risk exposure analysis, degree of systematic portfolio exposure, and strategies for mitigating risks

Source: Table created by author.

were taken into account, which adds up to a total of 10 companies analyzed considering the recommended metrics to be included by the SASB (Table I). In this way, the effectiveness of the quality of information disclosure was evaluated according to the methodology used in [20], where they used a quality classification scheme in the scope of analysis and disclosure, composed of 4 metrics. These metrics are shown in the next paragraphs.

- No Disclosure: The company does not provide disclosure relevant to the topic under analysis

- Boilerplate: The company provides disclosure using generic language that could be applicable to most, if not all,

issuers in the industry. Normally, such disclosure has not been tailored to reflect the company's specific and unique circumstances, and lacks sufficient and significant information that would allow for differentiation between the company and most, if not all, of its peers.

- Company-tailored narrative: The company provides disclosure using specific language that can be understood only in the context of the issuer. Such disclosure has been sufficiently and significantly tailored to reflect the company's specific and unique circumstances. Therefore, if analyzed outside the context of the company, such disclosure would not be applicable to other issuers. However, such disclosure

does not provide information that enables quantitative comparisons of performance between companies.

- **Metrics:** The company provides disclosure using quantitative performance indicators which, by their nature, can be understood only in the context of the issuer.

In this way, adapting the aforementioned methodology for this research, weights were assigned with evaluation scales for each of the classifications, in terms of metrics, a classification from 0 to 3 was added, where 0 represents No disclosure, 1 Boilerplate, 2 Company-tailored narrative and 3 Metrics as the best score for using metrics. This with the aim of classified the various sustainability disclosure topics and accounting metrics that SASB establishes for each of the industries. In the case of the construction materials industry, there are currently 13 metrics to be considered by the SASB, while by Real Estate and Home Builders there are 14 for each, as shown in the following table.

TABLE II  
FIRST METRICS BY INDUSTRY.

	Construction Materials	Real Estate	Home Builders
Number of accounting metrics	13	14	14
Total SASB	39	42	42

Source: Table created by author.

Subsequently, a classification of "high quality", "medium quality" and "low quality" was made, which has variations according to the score obtained as shown in the Table III.

TABLE III  
FIRST CLASSIFICATION FOR DISCLOSURE QUALITY

Disclosure quality	Construction Materials	Real Estate	Home Builders
High quality	39-35	42-37	42-37
Medium quality	34-24	36-26	36-26
Low quality	23-0	25-0	25-0

Source: Table created by author.

It is important to consider that there are current metrics considered by SASB that although they cannot be measured in terms of metrics or "hard data", companies do provide relevant information for their stakeholders. This information of only measuring or classifying the quality of information based on metrics could be a disadvantage in terms of quality when in reality there is quality. Due to the above, a metric was proposed in the same way in terms not only of whether or not they provide metrics in their reports, but also whether they provide quality information and metrics, where 0 represents No disclosure, 1 Boilerplate, 2 Company-tailored narrative and 2 Metrics as showed below.

TABLE IV  
SECOND METRICS BY INDUSTRY

	Construction Materials	Real Estate	Home Builders
Number of accounting metrics	13	14	14
Total	26	28	28

Source: Table created by author.

TABLE V  
SECOND CLASSIFICATION FOR DISCLOSURE QUALITY

Disclosure quality	Construction Materials	Real Estate	Home Builders
High quality	26-24	28-26	28-26
Medium quality	23-16	25-17	25-17
Low quality	15-0	17-0	17-0

Source: Table created by author.

#### IV. RESULTS

The purpose of this section is to represent the results by each sector. In the table VI can be found the number of companies that disclosure information according to the scales 0-3 and 0-2 explained in the section III.

##### A. Construction Materials – Extractives & Minerals Processing (CM – E&M)

In this sector there were only 2 companies that provide disclosure information for their stakeholders for the 2021 year at the moment of writing this paper. There were found that there is a lack of disclosure quality by one of the companies and was classified with a medium-quality disclosure, while the other enterprise provides high-quality disclosure in its report with almost all the topics explained according to the SASB standards.

In this sector, although the company had a high level of disclosure quality, the problem that it demonstrated as a lack of data was not providing information regarding the cases of silicosis within the company, which did occur in the company with a low quality of disclosure of information. On the other hand, a great difference could be noted in the disclosure of information regarding the incident rate, where the company with a medium is currently developing the rate.

##### B. Real Estate – Infrastructure (RE - I)

This sector was the most dominant of the sectors evaluated, given that 6 companies that made reports on the year 2021 were evaluated. However, according to the first scale, 3 of the 6 companies evaluated were classified as having low disclosure quality, 2 with medium quality and 1 with high quality. The case of quality of information using the second scale, in terms of high, medium or low, was similar to the first scale, except that there were 3 companies with a medium quality of information disclosure.

One of the most predominant metrics in this sector was the one where the SASB standards requested the area of flood zones. This information was fully completed only by one company with a high level of disclosure of the information using metrics, and the other companies showed a low level by using generic language or not giving information regarding this graph. This is because it was possible to notice that the company that managed to report that information is an enterprise considered bigger than the others and was able to address said studies recommended by the SASB standards.

In the same way, another relevant metric was the use of energy star certification, where it was noted that companies did not share information without explaining, while others explained that they carried out other types of similar certifications or that the energy star certification does not apply in Mexico.

TABLE VI  
NUMBER OF COMPANIES THAT DISCLOSE INFORMATION ACCORDING TO THE SCALE CLASSIFICATION

Scale classification	CM – E&M				RE - I												HB - I			
	First scale		Second scale		First scale				Second scale								First scale		Second scale	
0	1	4	1	4	7	3	4	1	1	9	7	3	4	1	1	9	6	3	6	3
1	0	2	0	2	2	2	0	0	7	3	2	2	0	0	7	3	3	0	3	0
2	0	0	12	7	1	1	0	0	2	0	5	9	10	13	6	2	1	2	5	11
3	12	7	-	-	4	8	10	13	4	2	-	-	-	-	-	-	4	9	-	-
Total	13	13	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

Source: Table created by author.

### C. Home Builders – Infrastructure (HB – I)

The Home Builders - Infrastructure sector had the evaluation of 2 companies that report to the year 2021. Low and medium-quality classification results were given for both scales.

The criterion that stood out the most in this section was that of the HERS index, where one company states that they do not have information available, while the other company, despite not having the HERS index in its report, mentions that they make use of other indices

## V. CONCLUSION

As a result of this research, it was noted that despite there are several factors that can influence when deciding whether to invest, maintain or withdraw shares within a certain enterprise, the importance of hard data or metrics when evaluating a company is very useful to have more clarity the situation of the company that is useful for investors, since interpret standardized sustainability data will vary greatly.

It was found that most of the companies related to the construction industry show an average quality of the information transmitted, with 4 of the companies analyzed being considered at a low-quality level for the first scale and for the second 3 entities, being only 2 companies for both scales in terms of high quality of disclosure.

However, despite the relationship between the quality of information and the performance that they demonstrate, it is advisable to include graphs and be as explicit as possible about the company's actions, because this is subject to ambiguity and, as it was noticed, demonstrate a low quality of information disclosure and that as a result, investors do not have tools for correct decision making.

It was also noted that having a rigid evaluation, in terms of whether or not companies reported in their reports using metrics, could be a limitation for those companies that did cover the points established by the SASB standards, but certain companies actually explained their situation on these points and future action plans. Due to the above, a second evaluation metric was established, such as Table IV and V, where the evaluation method was not so strict with those companies that did report information to their stakeholders (as are explanations of why they did not apply a certain parameter requested, or proposed, by the SASB regulations or because they have it as a short-medium term action plan) but they did not use metrics so as not to harm their performance in this investigation. This resulted in a slight increase in the evaluation results, as has been observed, since an entire sec-

tor cannot be classified very strictly knowing that various implications may occur for certain cases.

On the other side, even though action plans are required by companies for some metrics and these do not show a metric recommended by the SASB, some companies have clearly and concisely communicated their future plans in terms of action and this has resulted in a slight increase in the quality of disclosure of information by the company by the second scale.

Another aspect found within this investigation was that the disclosure of information is also dependent on other external factors and not merely on the company, such as the evaluation of the areas of flooding that SASB recommends in its evaluation metrics, which may be dependent on the information available at the public level if the company does not have the capacity to carry out such studies, or the use of certain types of certifications. that are not applicable or not very common in Mexico. The latter is a recommendation to companies that even when these aspects do not apply at the moment in their area of action, such information is shared as detailed as possible, while on the part of the SASB, include within these same sections that they consider other types of evaluation standards and not just one that in some cases may not be applicable, reputable or useful in specific countries.

In the case of the Construction Materials – Extractives & Minerals Processing (CM – E&M), despite the fact that there are variations in the quality of the information according to the size of the company and that each company is free to choose what type of information to share or No, it is recommended that companies mention in their reports the situation of the aspects recommended in SASB in their reports so that the stakeholders can know how this parameter is. For example, even if there are no cases of silicosis within the company, it will always be worthwhile to represent it in a textual way as it has been represented in the long-term and short-term plans for the reduction of emissions. Another similar example is the Total recordable incident rate (TRIR), which despite the fact that these incidents do not exist within the company, it is always worth explicitly mentioning that there are no reported incidents. On the other hand, it is also advisable to express that the company is taking action on certain types of issues, such as product innovation. Product innovation can also be related to the size of the company, however, it is worth mentioning that it is being worked on so that investors also know future plans in the short, medium and long term.

For Real Estate – Infrastructure (RE - I), the most notorious issue was adaptation to climate change, which although

this is a relatively new issue that companies are considering, according to the results, only one company fully complied with this theme in the criterion of flood zones. Just as it happened in the previous Construction Materials – Extractives & Minerals Processing (CM – E&M) sector, if there are no such actions within the company at the moment due to operating costs or for any other reason, if it is planned to comply with the criteria and improve the quality of the disclosed information, it is useful to consider mentioning that it is in the future plans of the company to carry out this type of study that can have long-term consequences, but that can be counteracted if an adequate plan of adaptability is expressed. Another criterion that should be mentioned is the total amount of water extracted by area, since, like some other criteria, with the current scarcity of water that exists in the country and that was strongly experienced in the northern part, without a doubt, this This criterion will also be a relevant aspect for investors to consider, as well as the action plans that companies have to face in the coming years, which are expected to continue to be affected by the shortage.

For Home Builders - Infrastructure (HB - I), as happened in the last two sectors, they should also consider to disclose information for future plans to consider the recommendations from SASB. The case of water is also a relevant issue when considering Land use and ecological impacts, where it is advisable to express how the current situation of the company is, as well as the environmental considerations that must be considered taken into account in the design, development of the site and construction so that this information, which will have consequences in the future, can be viewed by stakeholders and know that the company is taking it into account in its current or future action plans.

A factor to be considered after this research was the limitation in the region for the construction sector because there are not many companies that have this type of sustainable reporting practices and that are registered, or do so, through SASB standards. The above would mean that this construction sector needs to implement more presence of sustainable reports in Mexico so that the sustainable commitments that they are achieving can be understood, if this is the case, therefore, both the government sector, as well as the stakeholders interested in the companies belonging to this sector should opt for trying to encourage this sector to handle this type of practices that can help to obtain social, environmental and economic well-being. This is also a reason to consider carrying out a broader investigation when analyzing other means by which companies usually report their ESG practices, such as GRI and IIRC, and establishing metrics to measure the quality of the information shared for the construction sector. , highlighting that this sector is one of the main polluting sectors. However, despite the amounts of emissions made by this sector, it is one of the most important sectors for the development of a country's economy, therefore, to ensure the interaction of those investors with social and environmental interests, it is You must begin to implement sustainability reports that can be the means of communication between the company and investors that help its stakeholders to make investment decisions. Similarly, the role of government is also an important factor, since this can even mean an area of opportunity to seek to

encourage, inform and create relationships so that the construction sector turns to carry out more sustainable activities and that these are also transmitted to their respective stakeholders. Since these actions would also support the reduction of CO2 emissions released into the atmosphere by an important sector, which in turn would mean the achievement of Mexico's climate objectives.

For the mentioned, by performing these actions, companies could benefit from access to capital and good public relations while investors, in the other side, obtain a better understanding of companies' actions and have a better investment thinking or not while having benefits for the environmental and social sector.

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