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Assessing the Level of Employees' Sustainability Awareness and its Effect on Sustainable Development Progression - A Case Study of Greater Karak Municipality/ Jordan

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Abstract

The current discourse on Sustainability Awareness (SA) is mainly focused on offering employees environmental training and education that aims to increase their participation in the organization's sustainable progress. Hence, overlooking the importance of the SA policy-making phase as well as the critical role designing SA programs plays in activating employees' efficient contribution to sustainability initiatives. Therefore, the significance of this research lies in offering an alternative model that integrates both processes of measuring and raising SA with the prospect of altering the organization's culture where sustainability value is created to motivate employees' engagement. In addition, this research will justify the failure of cases where environmental education, training, and SA programs did not positively affect employees' engagement nor did they benefit the organization's sustainable progress. This research presents organizations and decision-makers with a new approach to raising SA levels aiming to increase the potential for effective employment of the newly acquired knowledge. Hence, makes sustainable achievements more tangible. This model suggests the use of a qualitative approach to measuring employees' SA levels; a model that includes collecting data on employees' insights, conceptions, sources of knowledge, and personal experiences of sustainability. This model would replace the commonly used quantitative approach to measure SA which is limited to analyzing data numerically to draw a statistical picture aiming to determine whether a pre-designed SA program should be implemented. Instead, managers could benefit from the data collected in the SA measuring process to identify the focus areas of the SA-raising program. Furthermore, such data would help organizations design SA programs that are specifically tailored to target a change in their employees' mindset and beliefs.

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Keywords

Sustainability Awareness; Employees Engagement; Environment-Friendly Behavior; Conception of Sustainability; Sustainable Development Progression; Sustainable Initiatives' Success

1. Introduction

The Arab world is facing critical challenges when it comes to achieving sustainability. Considering the environmental, social, and economic aspects of sustainability, the Arab world has its share of obstacles in each of these aspects that could hinder its progression toward sustainability such as the severely arid climate, extreme shortages of water, poverty, demographic transition, and using fuels as the main source of energy (Zafar, 2023). The Arab Forum for Environment and Development public opinion survey in 22 countries in the first half of 2017 revealed that weak environmental and sustainable awareness is one of the most important challenges facing the Arab World (Saab, 2017). Unfortunately, sustainable development initiatives in the Arab World were fragmented, focused in some areas but neglected in others,

and mostly ineffective (Asi, 2021). 95% of Arabs believe that their countries are not doing enough when it comes to tackling environmental challenges (Saab, 2017). Hence, a comprehensive sustainability agenda is needed if the Arab World were to tackle these critical challenges, further, raising sustainability awareness could represent the key to success in such endeavors. The lack of sustainability knowledge among the Arab countries can be driven by their inability to achieve effective sustainable development initiatives which is considered the main motivation behind this study. Considering the fact that most Arab countries are embracing sustainable development plans as part of their commitment to the Paris Agreement -and yet their efforts are still characterized as fragmented and ineffective- is creating pressure to focus on the SA part of the above-mentioned connection. This research is a response to the urge to study the role SA can play in increasing the efficacy of sustainable initiatives. This research raises questions such as: Can a high SA level positively affect sustainable development? Would the process of measuring SA play a role in articulating raising SA policies? Raising SA introduces the possibility of altering the nature of sustainable initiatives into a more successful and effective form, hence, reflecting the significance of this topic as a positive factor in sustainable development. Further, this research aims to address the literature's lack of justification for cases where sustainability education programs and high levels of SA did not yield a positive impact on the organization's sustainable performance. Along with assessing the relationship between SA and sustainable initiative success, this research also aims to assess a model of measuring employees' SA that relies on deep conversations where all aspects of their sustainability knowledge are discussed. This research suggests the existence of underlying benefits behind conducting extensive studies on employees' perspectives of sustainability as a method to measure SA. These benefits will be translated into specified policies aiming to raise both employees' SA levels and their motivation to contribute to sustainable development. In order to reach a deep understanding of employees' conception of sustainability, a qualitative research approach was chosen that relies on collecting non-numerical data as a way to comprehend people's attitudes, beliefs, and motivations.

1.1 Sustainability in Jordan

Jordan adopted the 2030 Agenda for Sustainable Development after pledging to achieve the United Nations' 17 Goals of Sustainable Development (SDGs) in September 2015 (MOP, 2017). An action plan to achieve sustainability development has been devised with the SDGs being mainstreamed into budgeting, national/sub-national planning, and monitoring frameworks. Jordan is also one of the 198 United Nations parties that signed the Paris Agreement in 2016 pledging to pursue efforts to limit the temperature rise even further to 1.5 degrees Celsius (UN, n.d.).

As a developing country, Jordan is facing many challenges that could hinder its commitment efforts to these pledges. Population growth, lack of funds for public projects, water shortages, and being located at the center of one of the most volatile regions in the world, are all some of the challenges that represent an imminent threat to national resilience and have a poor influence, if not undermines, Jordan's capacity to accomplish SDGs as a host country (Ali & Nsairat, 2009).

Despite the numerous challenges Jordan is currently facing, the Jordanian government has stated in many reports that it is determined to maintain its recent development achievements while ensuring a more resilient, thriving, and inclusive economy in the future, not to mention its commitment to the 2030 Agenda.

1.2 Greater Karak Municipality (GKM)

GKM is a governmental organization offering different services (land organization, public work bids, street maintenance, building licenses, weather emergencies….etc.) to 32,216 citizens. Al-Karak is a city located on the southern side of the Hashemite Kingdom of Jordan with a 3,495 km² area. GKM has 111 employees between the ages of 18 and 55 who work in 19 departments under the leadership of an elected Mayor.

GKM was selected to be part of the Model of NEXUS Approach and Renewable Energy Technologies (MINARET) initiative that intends to address the MENA region's unique sustainability challenges and possibilities by building local and regional sustainability capacity through the use of synergies between renewable energy technologies and efficiency, water management, and food security (MINARET, n.d.).

In September 2015, a carton, paper, and plastic recycling station was established in Al-Karak with the support of the German Association for Adults Education, German Cooperation Council, GKM, and Jordan Hashemite Fund for Human Development (GIZ, n.d.). GKM also participated in the European Union's Cleaner and Energy-Saving

Mediterranean Cities (CES MED) initiative aiming to strengthen the capacity of local governments to design and implement long-term local policies (EEAS, n.d.).

In 2016, a Sustainable Energy and Climate Action Plan (SECAP) was developed by the Consortium of Institute of Communication and Computer Systems (ICCS), the National Technical University of Athens (Greece), and Jordanian National Energy Research Center (NERC) for GKM to adopt on a time frame that extends between 2018 and 2023 (CES-MED, 2016).

The SECAP has very powerful insights on enhancing the social line of the Triple Bottom Line framework (TBL) and how to raise not only the employees' but also the community's awareness of sustainability and environmentally responsible actions. For example, The SECAP suggested actively promoting the recycling context through awareness efforts where these efforts will include information days, promotional materials such as flyers and posters, and even statements in local media (TV, radio, and social media). The SECAP also encouraged GKM to adopt a comprehensive communication strategy tailored to all stakeholders. (CES-MED, 2016).

The SECAP proposed two scenarios, in the first one, the target was to reach 14% CO2 emissions reduction in 2030. After analyzing different awareness-raising activities -suggested by the SECAP's first scenario- dedicated to different groups, the SECAP ensures that GKM will reach 8869.48 (MWh) of saved energy and 3142.2 (tn CO2) of reduced emissions by only raising SA. As shown in Table 1.

Table 1. Awareness activities directed to different groups and their effect on both energy saving and emission reduction (Data from SECAP)

No	Targeted Goup	Annual Energy Savings (MWh)	Annual Emission Reduction (tn CO2)
1	GKM Employees	53.82	81.67
2	City's Residents	2811.68	4266.58
3	Students and Puiples	58.93	89.42
4	Tertiary Building	108.89	156.23
5	Other Awareness Activities	2811.68	4266.58
	Total	3142.2	8869.48

The 14% target of the first scenario represents a total energy saving of 56736.74 (MWh) and a total emission reduction of 107900.84 (tn CO2). Hence, awareness activities could contribute to 3% of the emission reduction target and 13.5% of the energy saving target, as shown in Figure 1&2.

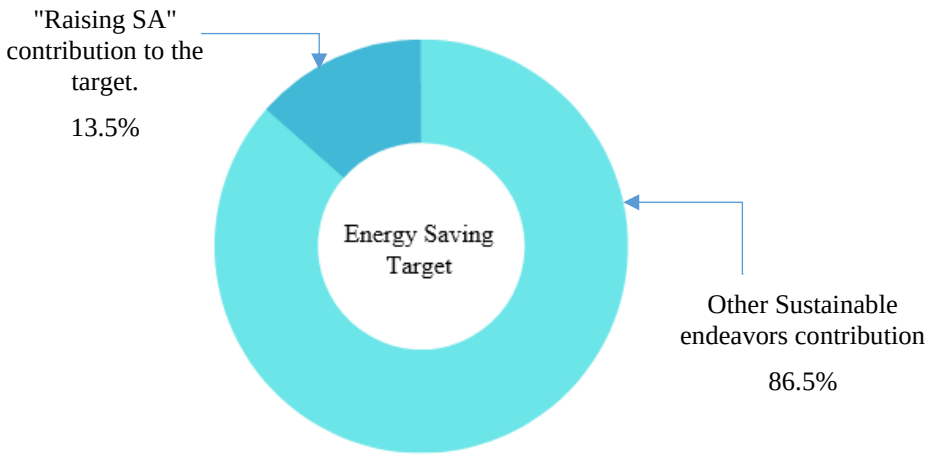

Figure 1. "Raising SA" Contribution's percentage to the SECAP's energy saving target (Data from SECAP)

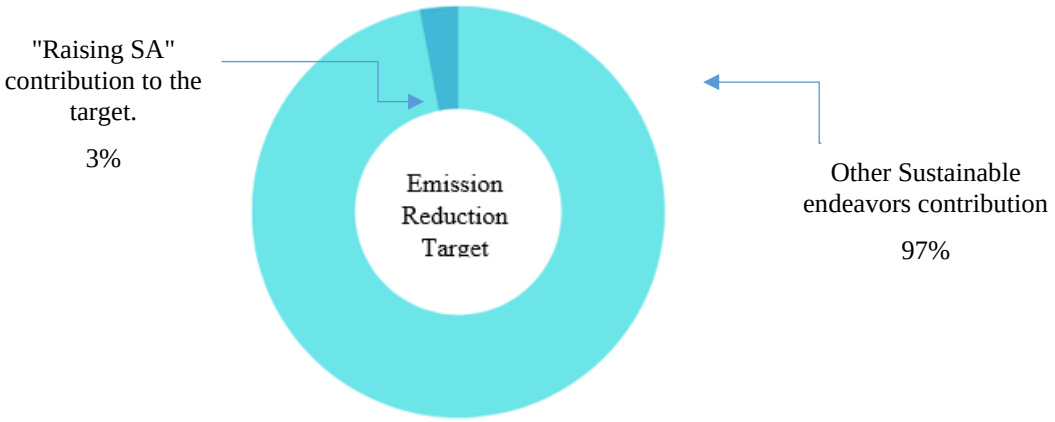

Figure 2. "Raising SA" Contribution's percentage to the SECAP's emission reduction target. (Data from SECAP)

2. Literature Review

2.1 Sustainability Awareness in Different Sectors

Despite the extensive study and research work in the field of sustainability, there are few studies on the relationship between sustainability implementation and employees' SA levels. The recent research work on SA has been focusing on three main aspects of awareness. The first one is raising SA in the educational sector. Educational institutions have an obligation to carry out initiatives and procedures that promote sustainable development (Lopes et al., 2018). Raising SA levels in the education sector is essential to prepare the next generations for the risks they might face (Herremans & Reid, 2002). Focusing on education is justified considering its ability to foster understanding and motivate individuals to acquire the skills, mindsets, and values necessary for a sustainable future (Ridwan et al., 2021). The second aspect of focus in the recent research is stakeholders' awareness. Stakeholder involvement is widely recognized as a crucial element of sustainable development, stakeholders' engagement represents a significant role in the formulation and capturing of sustainable value propositions (Fobbe & Hilletofth, 2021).

The third aspect of focus is on raising local communities' awareness of sustainability. Sustainable development demands a fundamental shift in how humanity progresses and respects environmental boundaries. Enhancing sustainability awareness on local communities' level enriches their obligation toward future generations, hence, preparing them to make the transition towards a sustainable planet (Pinho & Gomes, 2023).

However, when it comes to employees, the research work's focus shifts to employees' engagement, involvement, and contribution to the transition to sustainability despite the fact that some of the older generations who started their careers without any education on sustainability might find themselves involved with projects dedicated to the shift to sustainability with no strong foundation of understanding for this new emerging global trend. Further, organizations cannot rely on the fact that employees are part of local communities so awareness efforts could include them eventually. The Triple Bottom Line (TBL) of the Planet, Profit, and People framework presents an understanding of sustainability where making the transition to sustainability is based on three crucial dimensions of sustainable development: environmental quality, social equity, and economic benefits (Elkington, 1998). TBL's social line refers to engaging in instructive and fair business practices for human capital-labor, and the community in general (Elkington, 1997). Such practices can create value for society and enhance the interaction between organizations that work on being sustainable and the community (Goel, 2010). This research argues that in order to earn the maximum value behind activating the TBL's social line, organizations should prioritize the elevation of their employees' awareness of sustainability before shifting their efforts to local communities.

2.2 Employees' Sustainability Awareness

Successful sustainable initiatives' constraints have been discussed widely in various publications. According to Perron et al. (2006), some of these constraints are related to human aspects of the organization considering employees as an important part of the implementation process. Stone (2000) prioritized an organization's human size when it comes to implementing sustainable creations. Employees can act as the foundation of the company's sustainability strategy as they alter their daily routines and behavior to achieve the targeted environmental performance gains. Klinkers L and Nelissen (1996) argue that employees' support of sustainability initiatives could increase its success possibility. Furthermore, Law et al. (2015) attributed an organization's inability to achieve its overall sustainability goals to the absence of employees' support and commitment. What makes employees' involvement crucial is the fact that they represent a valuable source of knowledge, skill, and innovation regarding the organization's practices. Nadler (1981) also expressed the importance of employees' participation by describing it as the key to the motivation required for change.

However, individuals' attitudes toward different challenges are vital to solving problems. Hence, employees' contribution relies on their knowledge of sustainability and its applications. For organizations, moving toward sustainability is considered a transformation which Bernstein (1992) described as: "managing [change] is impossible without employee participation. Participation is impossible without understanding". Moreover, Safari et al. (2018) emphasize that once an organization starts sustainable and environmental initiatives, it could put a lot of pressure on its employees who might not be familiar with sustainability concepts and practices. To overcome such obstacles, Renwick et al (2013) suggest raising employees' SA and training them to cope with green practices. Further, Yilmaz and Ameen (2022) suggest that SA would help to transform conscious conduct into human environmental awareness and attempt to equip individuals for natural success by providing people with the values, information, skills, and talents they need to handle current and upcoming environmental challenges. Therefore, organizations should focus on raising SA to guarantee employees' involvement in sustainable development efforts (Hart T., 1996).

Promoting a culture of sustainability where employees are aware of key environmental, social, and economic concerns, behave sustainably, and are dedicated to a sustainable lifestyle for the present and the future can be challenging in light of the current materialism and conspicuous consumption culture (Marans et al., 2015). Garbi (2015) predicts that raising employees' awareness of sustainability at work might motivate them to incorporate sustainability concepts and techniques into their daily activities. Further, this research investigates how a work culture where a comprehensive understanding of sustainability is embedded would not only raise employees' responsibility toward the planet, it also assist organizations in their sustainable endeavors.

3. Research Methodology

3.1. Measuring GKM Employees' Awareness Level

3.1.1. Problem Statement

Albeit GMK's commitment to a 14% reduction of its GHG emissions as well as to an adaptation to climate change as part of the SECAPs' launch in Al-Karak, GKM did not achieve the 14% target. Hence, creating damaging consequences in the long term considering that the main development challenges GKM has are limited natural resources and a stagnant economy. In addition, other GMK's sustainable initiatives did not meet their targets, for example, the widely-recognized waste recycling station is only working on separating the waste with no recycling capabilities. The involvement of GKM's employees is considered to be crucial for the SECAP's target to be achieved. This research argues that the absence of employees' involvement in the SECAP and other GKM's sustainable initiatives prevents GKM from stepping forward with its sustainable targets. Employees' engagement in sustainability-related initiatives requires a proper understating of the term itself and its applications. Hence, this research aims to measure GKM's employees' awareness level of sustainability to determine the possibility of an efficient involvement as well as to determine if a higher level of awareness could have a positive influence on GKM's progression toward sustainability.

3.1.2. Research Methodology

To determine the level of GKM employees' SA, individual in-depth interviews with employees, decision-makers, and employees working on GKM's sustainability agenda were conducted to provide a rich description of how sustainability is conceptualized and the reasons behind this conception.

3.1.3. Sampling

In-depth interviewing is a qualitative research approach that involves running intense individual interviews with a limited number of respondents to investigate their viewpoints on a certain topic, program, or issue (Marshall et al., 2013). As sampling entails choosing a small segment of participants to generalize results to a wider group. Creswell & Creswell (2018) estimated the number of participants to be between 10 to 50 as being sufficient depending on the research question. This research aims to determine GKM's employees' level of SA, hence, including at least 50% of GKM's employees would justify the results. After reaching both theoretical and data saturation, the study sample contained 70 employees representing 63% of GKM's staff located in its headquarters. The number of participants complies with Guest et al. (2020) recommendation to include a larger sample when dealing with a diverse and ethnographic set of participants. The 70 interviews were conducted with male and female employees between the ages of 26 and 55 years old as well as Al-Karak's Mayor -who represents the decision-maker figure in GKM- and GKM's chief executive officer (CEO). In addition, a focus group discussion was held with employees involved with sustainability-related projects. Employees' approval was ensured before initiating the interviews, and their privacy was guaranteed. The interviews were conducted in a four-week time frame, each interview was 25-60 minutes long. To maximize the quality of the data, the focus group discussion and individual interviews were constructed based on the research purpose, as shown in Figure 3.

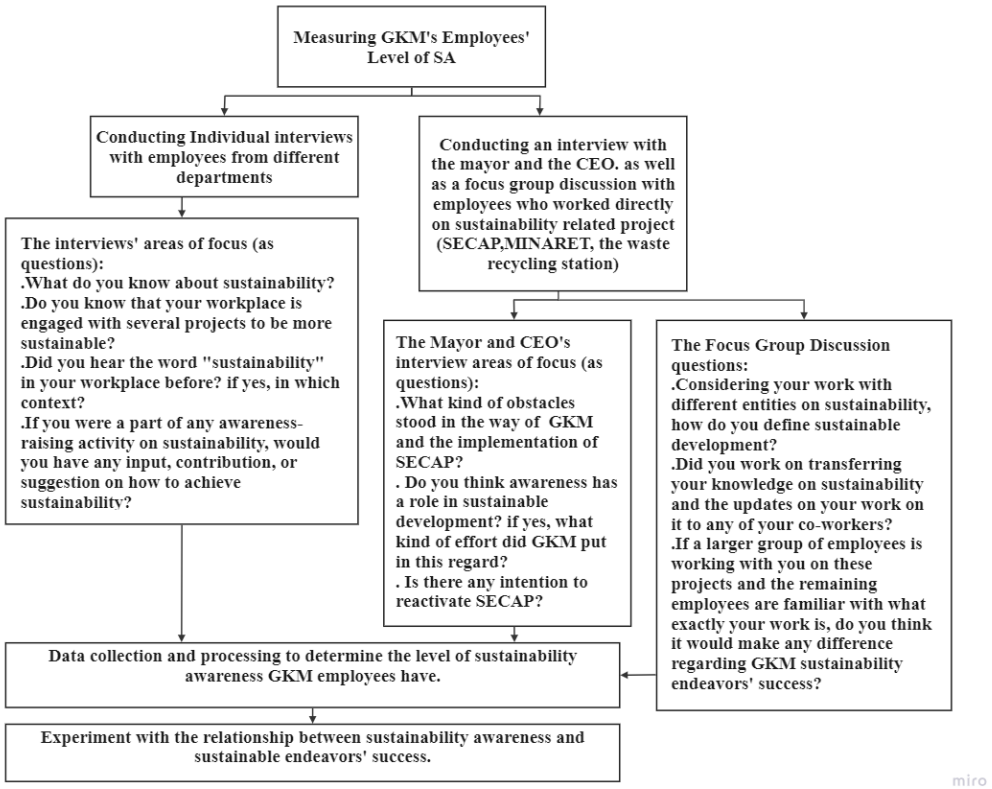

Figure 1: Research Methodology (In-Depth interviews and focus group discussion)

Would Awareness Make a Difference?

In this section of this research, the relationship between SA and sustainable initiative success will be tested by using an empirical approach.

The Paper-consumption Reduction Initiative/Experiment

An initiative to reduce paper consumption was designed and implemented in two of GKM's departments to assess the relationship between SA and sustainable initiative success.

Experiment Description

GKM is highly dependent on paper as the core of its service-providing process. For instance, Citizens would come to GKM to apply for a building license and the application would be in a file form containing at least 30 pages, in addition, another 10 pages will be added as part of the auditing process.

The initiative is based on examining employees' capabilities to reduce paper consumption through articulating ideas, techniques, and recommendations as part of an effective contribution. The initiative was conducted in two different departments. Based on the results and observations from the process of measuring GKM employees' SA level, the two departments were selected by the following three criteria:

1) Based on the interviews with GKM employees, both departments (Dep A) and (Dep B) should have employees with the least knowledge of sustainability and sustainable development (level 1, Categories 1-4).

2) The two departments should have a high consumption of paper reams (this data will be collected by contacting GKM's Supplies Department).

3) The two departments should be separated in terms of location and tasks to guarantee a minimum discussion between the two departments' employees about the initiative would occur to maximize the accuracy of the results.

For Dep A, the initiative was introduced as a request to cut expenses. On the other hand, a focus discussion group was held with Dep B's employees to build on their sustainability knowledge and to explain the positive impact of paper consumption reduction on the environment using facts and numbers. For example, the group discussed the meaning behind sustainability, environmentally responsible behaviors, and high-paper consumption disadvantages by using facts such as 42% of all trees harvested for industrial use go to making paper which could lead to deforestation which is considered one of the main environmental problems humankind is facing currently (Suraj & Khan, 2015). In other words, the researcher tried to create motivation and value for the initiative by raising Dep B's awareness of the purpose behind it.

Each department's current consumption rates of paper were established and compared with the rates after the initiative to examine its success. Another comparison was conducted between the two departments to determine if there is a relationship between SA and sustainable endeavors' success.

Experiment Participants

Dep A has six employees between the ages of 35 and 50 with different educational backgrounds. Dep A's consumption is two reams of paper (800 sheets of paper) on a weekly basis.

Dep B has eight employees between the ages of 26 and 43 with different educational backgrounds. Dep B's consumption is three and a half reams of paper (1400 sheets of paper) on a weekly basis.

Experiment Duration

The initiative took place over two weeks. Although results can be determined in a week, the researcher's aim was to examine employees' willingness to contribute to the initiative by giving them more time to come up with ideas and suggestions that can leverage the initiative. Interviews with the employees were conducted at the end of each week to examine their progress.

4. Results

4.1. Interviews results

The interviews' results show that GKM's employees can be organized into six different categories when it comes to the level of awareness they have of sustainability and how they conceptualize it based on the question "What do you think sustainability is". As shown in Table 2.

Table 2. Results of the Employee Interviews

<table>
<tr><th colspan="2">Employees Interviews</th><th>The Mayor's and CEO's Interview</th></tr>
<tr><td>Category #1</td><td>24 employees never heard the term sustainability before. They asked the researcher to repeat the word as they tried to place it in their memory. Some employees took more time to answer the question and ended up asking for more clarification. Hence, in these cases, the question became "What is meant by "sustainable" when referring to a project?"
A 38-year-old employee stated:
"I don't know what sustainability is. Maybe I have heard it before as I watch a lot of news. However, there is so much going on in the world right now and it's hard to keep up."</td><td rowspan="2">After a brief introduction about the research purpose, the researcher could not proceed with any questions related to

The SECAP as the Mayor stated:
"I do not know that such a plan exists, I may recall working with the European Union on a project related to energy consumption back in 2016. However, due to the leadership transition that occurred in early 2017, I did not have the opportunity to witness any outcomes of this partnership".
Note: "The current Mayor was elected in 2022, he also filled the position between 2012-2016"

GKM's employees' level of awareness was discussed and the Mayor was asked for a justification in this regard when he stated:
"Both employees and GKM should be blamed, employees are focusing on the financial benefit of working for the governmental sector rather than improving their knowledge. GKM's employees do not have knowledge management skills which could be considered as a characteristic of governmental sector workers"

The mayor also stated:
"Employees' lack of knowledge and low levels of awareness could negatively affect our sustainability endeavors as well as any other projects GKM is working on"
When asked about any intentions to reactivate SECAP, the mayor stated:
"Yes, GKM would consider reactivating the SECAP while focusing on its employee engagement"
GKM's CEO has been in this position since 2017; she had the opportunity to supervise most of GKM's sustainability initiatives.

GKM's employees' level of awareness was discussed and the CEO was asked for a justification in this regard when she stated:
"I admit that we failed when it comes to raising our employees' awareness of sustainability. However, working on sustainable projects was very overwhelming considering the government's lack of infrastructure in terms of regulations and procedures concerning sustainable projects' implementation. Sometimes we had to partner with the private sector which required a massive amount of time and energy leading to the dereliction of duties on our part regarding awareness".</td></tr>
<tr><td>Category #2</td><td>20 employees assumed that sustainability is something that endures over time, however, without connecting their definition to any threats that could face future generations as a result of this long-time performance.

This specific interpretation might be driven by the fact that the word "sustainability" in Arabic reads as "always", hence, when an Arabic native speaker -who is not familiar with the term sustainability- hears a sentence such as "this project is sustainable", the closest interpretation will be "the project is permanent".

Employees in this category used structural analysis to drive the word back to its root which is a technique used when someone encounters a new word (Sujadi & Wulandari, 2019).

A 35-year-old employee stated:
"A sustainable project is a project that keeps performing for a long period of time."</td></tr>
</table>

Category #3	10 employees misinterpreted the word sustainability as something being merely successfully performing such as a company that is making a profit or a group of people working efficiently. Employees in this category sensed the positivity in the term sustainability even though they do not exactly know what it means. Each one of them interpreted sustainability based on his/her view of success and perfection. - A 33-year-old employee stated: "We can call a project sustainable when it keeps making a profit for a long period of time despite any change in its leadership" - Another 45 years old employee, stated: "Sustainability is when everybody is working with harmony on a specific project ".	**The Focus-Group Discussion** A focus group discussion was held, and six employees involved with sustainability-related projects were asked about their conception of sustainability. The purpose of this focus-group discussion was to determine if the group's work on sustainability is based on a comprehensive understanding of its concept. Four of these employees are located in Category 2 of the first level of SA, whereas the other two are located in Category 5 of the second level. In addition, employees were asked to justify the low level of SA their co-workers have. A 37-year-old employee (Category 5) stated: "I have attended a lot of conferences about sustainability, however, conversations with other employees were not made about their outcomes as I don't think they would be interested in this topic. Our focus was on local communities" Another 42-year-old employee (Category 2): "Other employees would feel uncomfortable when trying to inform them about something new. They would not accept the idea that a fellow co-worker is trying to teach them about anything" All employees who are involved with sustainability-related projects believe that their co-workers' involvement in such projects could be beneficial. A 37 year old employee (Category 5), stated: "It would make a great difference if other employees were working with us. They have great potential. However, I think we are not qualified to transfer knowledge to our co-workers as it needs some kind of skills we don't have"
Category #4	9 out of the 70 employees who have been interviewed associated sustainability with technology and industrial evolution. Employees in this category tried to justify their lack of information about sustainability by considering it as a manifestation of technological development. Employees in this category viewed sustainability as an emerging technology in a modern world where they are trying their best to be updated on its development.	
Category # 5	7 employees showed a good foundation of sustainability knowledge. They showed a fair yet brief understating of some of the core concepts of sustainability. The knowledge on sustainability obtained by employees in this category was driven by the emphasis on introducing sustainability into the education sector. A 27-year-old employee stated: "Sustainability is focused on environment preservation and CO2 emissions, so when a company is sustainable that means it could last for a long time by being environmentally responsible" When asked about the source of his information, he answered: "In my last year in college, I took a course named "Green Buildings" which was really interesting"	**Have you heard the term "Sustainability" before?** When asked if they heard the term "Sustainability "before in their workplace, 94% of employees in the study sample gave a negative response. The remaining 6% stated that they have heard the term, however, when explaining in what context the term was used, the explanation was based on their inaccurate understating of sustainability. A 42 year old employee (Category 2), stated: "I have been asked to ensure my work is sustainable, so if I'm not there for any reason, my department keeps running smoothly" Another 30 year old employee (Category 3), stated: "Before I start working on my latest project, I agreed to keep monitoring it even after it's finished to ensure it's working properly which makes it sustainable" Employees who confirmed hearing the term "Sustainability" in their workplace are located in categories 2-4. Describing the context where the term was used might be driven by their commitment/devotion to their own definition of sustainability; they tried to match their

Category # 6	Unfortunately, GKM did not manage to enhance employees with a comprehensive understanding of sustainability and its applications, nor allow them to participate actively in sustainability-related initiatives that could embed sustainability in their everyday life. If existed, these employees could have been located in category 6 in GKM's Three Levels of Sustainability Awareness model representing the third and highest level of SA, as shown in Figure 4.	definition with their specific job requirements even if they had not heard the term "sustainability" before. After the researcher made a brief description of what exactly sustainability is and GKM's actions in this regard, employees in the study sample were asked if they think that efforts dedicated to raising their SA levels would make a positive difference regarding GKM's sustainable endeavors. 97% of the sample study gave a positive response. A 42 year old employee (Category 2), stated: "It would be really interesting and beneficial to be part of this new emerging trend. Sometimes I feel like a robot doing what I do since I was hired in 2007" - Another 32 year old employee (Category 1), stated: "I believe I have the potential to contribute effectively to projects related to sustainability, after knowing what sustainability is I guess I have been practicing some sustainable activities. I have been separating plastic waste in my home for two years now, aiming for some extra cash but it never accrued to me that it's what you just called an "environmentally responsible behavior"" Another 31-year-old employee (Category 3), stated: "It is really disappointing to know that my organization is working on such a decent purpose without engaging us. I have five sisters in both universities and schools causing tons of paper waste that I'm giving away to a paper recycling start-up just to free up some space at home. Although my purpose is not environmentally oriented, it proves that I have problem-solving skills which could be handy when it comes to GKM's sustainability plans"

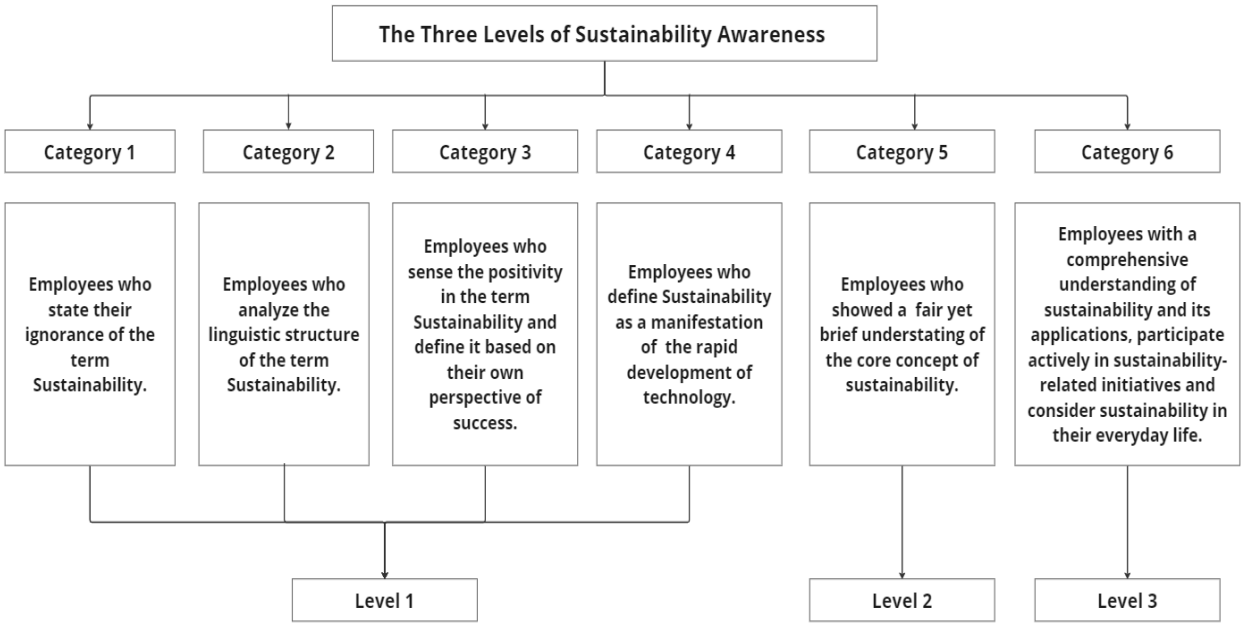

Figure 4. GKM's Three-Level Model of Sustainability Awareness

Based on the data collected from the interviews, GKM's employees showed a lack of knowledge of the notion that sustainability is "A development that meets the needs of the present without compromising the ability of future generations to meet their needs" (Harlem, 1987, p.41).

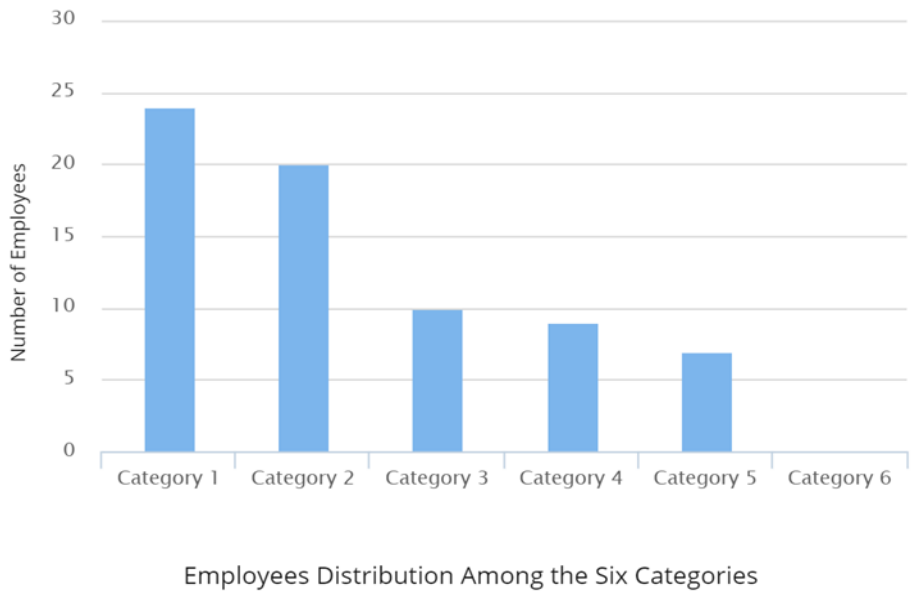

Figure 5. Employees' Distribution among the Six Categories of SA.

The results show that most employees in the study sample are located in Level 1 of the Three Levels of SA Model (categories 1 to 4) which reflects a severe lack of knowledge of sustainability, as shown in Figure 5. Both employees who directly stated their ignorance of the term "sustainability" (Category 1) and employees who tried to analyze the term using their logic –which led to insufficient understanding- (Category 2-4) represent 90% of the study sample. On the other hand, employees who managed to capture some of the core concepts of sustainability represented only 10% of the sample study.

GKM's employees suffer from a severe lack of knowledge of sustainability and its applications. Despite GKM's efforts in sustainability-related projects, 94% of the study sample had not heard the word sustainability before in their workplace. The interviews managed to give GKM employees a brief explanation about sustainability which made them realize that some of their everyday activities could be considered environmentally friendly behaviors. Hence, leading them to believe in their ability to positively contribute to GKM's sustainability endeavors. On the other hand, employees involved with GKM's sustainability-related projects did not have a comprehensive understanding of sustainability, their conception of the term sustainability was limited to GKM's sustainable projects; they defined sustainability according to what they have been working on "such as the waste management station". They believed in the power of other employees' engagement without any intention to put effort in this regard. GKM's leadership recognizes the negative consequences of employees' engagement absence in sustainability-related endeavors. Intentions to activate employees' roles in the future were expressed by GKM's leadership.

4.2. Results of the Paper-consumption Reduction Initiative/Experiment

Table 3. The Paper-consumption Reduction Initiative/Experiment's Results

The Experiment process	
First-week benchmark After the first week of the initiative, the researcher interviewed both departments' employees as part of the data collection process. Along with establishing their paper consumption so far, employees were asked if they offered any ideas or insights that contributed to the initiative.	
Department A	**Department B**

Through the first week of the initiative, Dep (A)'s paper consumption kept its rates. Employees did not prioritize reducing paper consumption when performing their everyday tasks. A 37-year-old employee stated: "We have a lot to do already, our job requires archiving each document using three copies at least. I want to get that done and thinking about how to reduce paper consumption will waste my time" Another 41 years old employee stated: "Since we had this new printer, our paper consumption increased. We spent a month learning how to use it and yet we couldn't figure it out completely. Due to this inconvenience, we waste a lot of paper reams on printing trials" Another 38 years employee, stated: "It is not like I don't want to contribute but they are asking us to reduce paper consumption while the reason we are using a lot of paper is them. After printing 3 copies of a required document, it has to go through three checkpoints: my direct manager, the CEO, and the mayor. Each one of them would edit something so I update and reprint the 3 copies then the others would edit another thing until I end up wasting 6-9 sheets of paper" Dep (A)'s employees did not have any motivation to participate. They made legitimate excuses including the unsupportive work conditions they are facing. However, Dep (B) is facing the same conditions; Dep (B)'s employees did not receive any training on using printers, they have to archive three copies of each document, and the editing process of printed documents includes many checkpoints.	Through the first week of the initiative, Dep (B)'s paper consumption dropped from 3.5 reams of paper (1400 sheets of paper) to 2.5 reams (1000 sheets of paper). Conversations were spotted where employees discussed their paper consumption with their coworkers, they also shared insights on new techniques to minimize paper waste. Interviews were conducted with Dep (B)'s employees to explain their contribution to this reduction. Another 42 years employee, stated: "I'm part of the auditing team and I usually pick out an A4 sheet of paper, write down my notes, and attach it to the file. Now I noticed my notes do not need that much space and I have a lot of wasted paper due to printing errors. So, I started cutting each wasted A4 sheet of paper into two A5 sheets of paper and using them to write down my notes" Dep (B)'s employees started examining their everyday practices regarding paper consumption. Although their contributions seemed simple, they managed to reduce paper consumption by 28.6%. However, some employees showed a lack of interest in contributing to the initiative. A 42-year employee stated: "I totally support the cause and I truly love nature but I think whatever is happening to the planet is all in god's hands" Employees' resistance is a normal aspect of any change process. Employees' resistance to change is usually driven by either stress or uncertainty surrounding the change process (Rehman et al., 2021). Uncertainty might be the cause behind any resistance that appeared in Dep (B) considering the unprecedented experience and cause this initiative represents.
Second-week benchmark	
Department A	**Department B**
Through the second week of the initiative, Dep (A)'s paper consumption dropped from 2 reams of paper (800 sheets of paper) to 1.8 reams (720 sheets of paper). Employees were asked to explain the techniques they used to achieve this reduction. A 41-year-old employee stated: "Instead of printing the usual three copies of each document, I informed other departments that if the document concerns you then you have to print it on your own" Another 47 years old employee, stated: "I brought my own notebook" Dep (A) employees managed to reduce both paper consumption and some of their tasks. Employees felt the pressure to achieve reduction even if they -or other departments- had to replace the reduced amount of paper.	Through the second week of the initiative, Dep (B)'s paper consumption dropped from 2.5 reams of paper (1000 sheets of paper) to 2 reams (800 sheets of paper). 75% of Dep (B) employees started to show commitment to the initiative by tracking their paper consumption on a daily basis. A 34-year-old employee stated: "I keep a small piece of paper on my desk where I write down the number of paper sheets I use. Each day I try to hit a smaller figure without sacrificing my work quality" Another 30 years old employee stated: "The other day and by mistake I printed out four copies of a document instead of one. I felt guilty for something I used to not even consider harmful or even bothering" New techniques to reduce consumption also appeared in the second week of the initiative. A 42-year-old employee stated: "The auditing process includes archiving four documents for internal use. All I did was print out every two documents as two-sided of the same sheet of paper and it felt like doing the right thing" In the second week, Dep (B)'s employees' managed to reduce paper consumption by 20% making the total reduction 48.6%.

Results
The results showed a significant difference between the two departments' reduction rates; Dep (B) managed to achieve a higher reduction percentage than Dep (A), as shown in Figure 6. These results prove the constructive/ positive relationship between SA and sustainability initiatives' success. Dep (B) had a better understanding of sustainability with an emphasis on paper consumption; an understanding that managed to assist in creating motivation and value efficient enough to drive constructive contribution to a relatively simple sustainable initiative. On the other hand, Dep (A)'s employees did not feel the urge to contribute. Their attitude toward the initiative differs as 60% of them made excuses to justify their lack of interest. The other 40% made contributions that only benefitted their department as the reduced number of papers was transferred to be used in other GKM departments. Dep (B)'s success represents a promising future for GKM. Employees showed how effective their engagement could be when efforts are dedicated to raising their SA levels. Naturally, larger in-scale and more inclusive sustainable projects would need more devotion in terms of time and effort when it comes to raising SA.

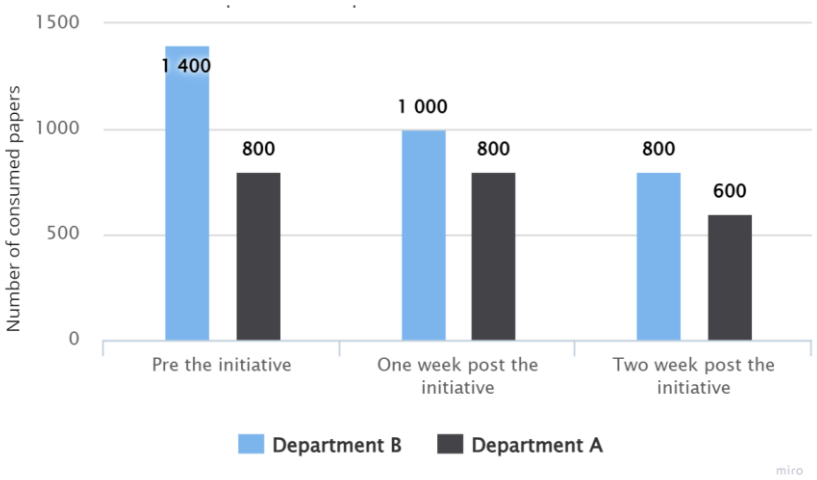

Figure 6: Results of the Paper Consumption Reduction Initiative.

5. Recommendations

After measuring GKM's employees' SA level and proving the positive impact a high level of SA has on the success of sustainable endeavors, serious concerns have been revealed regarding GKM's workplace culture and the value behind its sustainable initiatives.

GKM does not have a knowledge management strategy; its work environment is fractured in the sense that each department is working as a separate entity. Several sustainable projects were launched carrying GKM's name, however, this effort represents GKM's leadership and the few number of employees who worked on these projects but not GKM as a whole.

5.1. Employees Resistance

Employees' resistance to change could not be the reason behind this lack of engagement as employees were not informed about nor asked to participate in sustainable-related matters. GKM's leadership and employees working on sustainability made a mere prediction that the rest of GKM's employees will not only resist change, they predict resistance to awareness. The only reason behind this kind of prediction is to justify the low level of sustainable awareness GKM's employees have. Even if employees would resist awareness, using the wrong methods to approach them might be the cause.

The methodology this research adopted was meant to measure the level of SA of GKM's employees. However, these interviews managed to raise employees' awareness of sustainability without intention in this regard. A large number of employees asked several questions about sustainability and its application. Even after the interviews were conducted, they reached out to the researcher asking for sources to learn more about sustainability. The level of awareness GKM's

employees have will probably be higher now due to a number of 25 to 60-minute interviews which makes us wonder what improvement would occur if serious efforts are dedicated to this purpose.

GKM's strategy to raise awareness on sustainability should be focused on the best method to reach employees concerning their different educational backgrounds, ages, and job requirements. Awareness efforts' nature should be specific to each group of employees to guarantee that their attention is caught and their curiosity is evoked. For instance, for employees with a low level of SA (Category 1), sustainability should be introduced as a new emerging global trend with a focus on the fact that it is normal not to know anything about it.

Further, the language used to deliver sustainability-related knowledge should be informal and friendly by keeping in mind that raising employees' awareness is not the same as lecturing them. Employees should not feel ashamed of themselves for their lack of awareness which could repel them and lead to losing their interest. When it comes to employees who tried to identify sustainability using their own logic and experience (Category 2-4), sustainability should be explained by using their own -close to the term- examples and conceptions.

For example, for employees who associated sustainability with smart cities (Category 4), the connection they made should be used to illustrate what sustainability is. The same goes for employees who used linguistic structural analysis (category 2), the notion that "sustainability does indeed represent the concept of a long-lasting performance, however, this performance has to meet a set of requirements if we were to consider it sustainable" should be emphasized when sustainability is introduced to them. Using employees' own interpretation of sustainability and trying to link it to "what sustainability really is" -instead of asking them to neglect their wrong conception- could make them feel relevant. Hence, leading to an efficient type of communication where employees start exploring their interpretation from a sustainability perspective.

On the other hand, employees with a higher level of sustainability awareness (Category 5) should be praised for their knowledge even if it's not comprehensive, making the employees feel proud of what they already know would make them eager to expand their knowledge. The awareness effort dedicated to such employees should focus on reminding them of the importance of what they already know and how beneficial it could be to improve this knowledge.

Interviews with GKM's employees showed their interest in storytelling. Even when employees stated their ignorance of the term sustainability, the researcher kept asking questions about their lifestyle as a way to find any environment-friendly behaviors which included giving them examples of responsible practices. As mentioned in the previous section, some employees realized that they have been environmentally responsible by recycling paper or plastic, using solar energy, and driving hybrid cars. When such realization came to the surface, employees were engaged in the discussion and started to explain those behaviors.

They did not expect such modest behaviors to be a positive contribution to the term sustainability which they stated they never heard about moments earlier. GKM should use these stories to minimize the gap between employees and sustainability. When addressing employees, using such stories about their coworkers could prove that "even if you – employees- do not have a deep understating of sustainability, you are contributing to the planet". This contradiction would act as a hook driving employees' attention, hence, their curiosity to learn more.

All awareness efforts should emphasize behavioral change as well as the relationship GKM's employees have with the environment rather than associating sustainability with only GKM's success. It is important to create value at this level by answering questions such as "how sustainability can benefit our future generations?" instead of "how sustainability can benefit GKM?" A solid foundation of sustainability knowledge would lead to employees' active participation in GKM's sustainability-related initiatives, in addition, employees' behaviors and their everyday routines could change to become a part of a sustainable lifestyle.

Awareness should also consider the wide range of services GKM provides through its 19 departments. Sustainability should be connected with employees' different job requirements to avoid questions like "What is the relationship between sustainability and my work?" For instance, awareness efforts dedicated to the Transportation Department should rely more on giving examples of GHG emissions and the benefits of using hybrid vehicles, the Studies Department -which is responsible for designing and constructing GKM's buildings- should be given examples of the benefits of using sustainable building materials and utilizing natural light.

To sum up, in order to exploit awareness, differences among employees should be respected. Although this strategy might take more time to raise awareness, it will lead to a permanent shift in the employees' mindset.

6. Incremental Change

GKM should adopt an incremental change approach if employees' mindsets are to be sustainably oriented. The change from a low level of SA to sustainability being embedded in GKM's culture should occur gradually and thoughtfully. When adopting such an approach, raising SA will be the pilot project that will act as the momentum for change. GKM should design this pilot project with respect to its culture and status quo, it should also be specified to groups of employees based on their SA level. GKM should acknowledge that raising SA is not a mere requirement that can be achieved through staff meetings where sustainability is explained, instead, it's a preparation phase where value is created. Creating a value with the capability to positively affect success may take a long time considering the complexities of altering the mindsets of GKM's diverse workplace.

In an incremental change strategy, GKMs should follow three main criteria when it comes to the preparation phase (raising SA). First, GKM should focus on using unconventional tools to approach employees instead of indoctrination. This may include sustainability-related competitions among departments, field visits to GKM's sustainable projects, hosting external expertise, and having a benchmarking phase where employees are allowed to share their insights and personal experiences about what has been achieved. Second, creating a change agent position. The change agent will be responsible for outlining and designing the preparation stage, managing the success of the SA raising, and modifying externally designed programs to fit GKM's work environment. Looking internally for change agents is also recommended to guarantee that knowledge and capabilities are internalized which is necessary for organizational learning to occur and for the skills to be preserved for use in future change initiatives (Benn et al., 2018).

Third, celebrating small successes. GKM's strategy does not involve setting targets for its employees, hence, celebrating both small and big wins is not embedded in GKM's workplace culture. If this was not the case, employees would have known about their organization's sustainable achievements. Although this may sound like a disadvantage, the change agent can exploit this situation. The fact that employees are not familiar with celebrating small wins could drive their enthusiasm to step up, participate, and eventually be part of this new work culture. Introducing this technique might accumulate and deepen the momentum for change (Wieck, 1984). Once the number of small wins is increased and employees start setting targets through their sustainability learning process, their routines, values, and beliefs could be altered, hence, offering the possibility for transformational changes in the long run (Termeer & Dewulf, 2019).

In conclusion, GKM should follow the clues to achieve sustainability. The SECAP showed the importance of SA in numbers, some of GKM's sustainability initiatives did not meet their objectives, and employees have a low level of SA, yet associated with willingness for improvement and efficient contribution.

7. The Silver Lining

Despite the low level of SA that employees have as well as the time and efforts needed to raise this level, GKM could benefit from the situation. GKM is offered an exceptional opportunity to solidify and deepen a comprehensive understanding of sustainability. The current situation allows GKM to build a solid belief system that is based on experience, efficient communication, insights sharing, and value creation. This represents a privilege that can guarantee a constructive relationship between a high level of SA and sustainability Success.

Other organizations may have a higher level of SA, however, a higher level does not necessarily associate with the existence of values and beliefs. For instance, employees could be fully aware of what sustainability is, however, they do not believe in its core concept nor are they willing to incorporate sustainable behavior into their daily routine. This type of awareness could be unbeneficial as it represents a mere set of obtained information without the passion nor the interest to contribute to the success of sustainability ambitions, hence, exemplifying an inefficient form of high SA level. GKM should avail its status quo by raising both SA and passion towards sustainability leading eventually to effective participation and involvement.

8. Discussion

In sum, these research findings add to the current literature on sustainability awareness by emphasizing the crucial role of sustainability knowledge and awareness in achieving successful sustainability endeavors. In their research entitled "Employees Give Business its Green Edge", Klinkers and Nelissen (1997) found that Employees are key when it comes to the implementation process; their support of sustainable initiatives will increase the potential of successful implementation. in a descriptive cross-sectional study conducted in different organizations in Erbil-Iraq that aimed to identify the impact of an organization's environmental awareness policies on employees' behavior and the relationship between them, Yilmaz and Ameen (2022) found that an organization's environmental awareness policies can lead to improving employees' behavior which eventually leads to the achievement of the organization goals and implementation of the organization plans and strategies.

Remmen and Lorentzen (2000) conducted practical experiments in five Danish firms within different industrial sectors aiming to develop a more active role for employees in environmental activities. These experiments showed that the firms' employees who had a comprehensive understanding of environmental problems and solutions enabled them to improve the firms' environmental activities. Hence, emphasizing the notion that employee participation can have a strong effect on increasing environmental consciousness which leads to a successful implementation of sustainable initiatives. These research findings also agree with Haugh and Talwar's (2010) perspective of how organizations can address sustainability issues; they stated: "The dissemination of information about sustainability should be company-wide and not restricted to small groups of selected employees".

However, this research argues that awareness efforts are not necessarily translated into successful sustainable achievements. Raising SA is a critical phase of an organization's journey toward sustainability that requires time and effort and can be outlined by data collected in the SA measuring process. Otherwise, the benefits of sustainable initiatives will most probably not be realized. Furthermore, this research argues that even if sustainability awareness efforts were made and an organization conducted training programs that meant to embrace its employees with sustainability and environmental knowledge, it is not necessarily that employees would use this knowledge to participate in the organization's sustainable ambitions nor it will drive any success for such endeavors. In support of this argument, Perron et al. (2006) presented a case study of the environmental management education and awareness training efforts in two Canadian electricity companies.

Managers of Company 1 invested a lot of time and money in an environmental awareness training program; the level of sustainability knowledge obtained by this company's employees was compared to the level of knowledge (Company 2)'s employees have –(Company 2)'s employees were not subjected to training programs- (Perron et al., 2006). The study assessed the environmental knowledge acquired by the employees of both companies and found that the employees of Company 1 did not meet the level of environmental awareness that the literature associates with better environmental performance. Perron et al. (2006) also found that "The environmental knowledge of employees in Company 1 was not found to be different from the environmental knowledge of the employees of Company 2. .... although a higher mean score was found for Company 1 for half of the questions pertaining to environmental knowledge,... the difference was not significant". Perron et al. (2006) predicted that the awareness training provided to Company 1 was not sufficient enough to increase the environmental awareness of their employees and they suggested a pre-training assessment program if Company 1 were to ensure the effectiveness of the training.

The Canadian companies' case study supports the argument of this research. Not all SA efforts are qualified enough to offer the possibility of succeeding in sustainable initiatives. In addition, what this research recommends is to exploit the SA measurement process as a database to outline SA programs instead of a pre-assessment training program. Further, the slight difference between the two companies -Company 1 scored higher in questions related to the environment- did not lead Company 1 to perform better than Company 2 regarding environmental issues. This contradiction proves what this research introduced as "the inefficient form of high SA level".

9. Limitations and Directions for Future Research

The findings of the present research should be interpreted in the context of its limitations. The results of this study should be treated cautiously considering the contextual effects and cultural differences that may affect individuals'

attitudes and behavior toward sustainability. The cross-sectional nature of the research could also represent a limitation. Although the selected two departments shared major similarities regarding work logistics and general procedures, the services offered by each department differed in some aspects. Another limitation is the relatively long timeframe the qualitative approach would need to measure SA compared to a quantitative approach.

This research establishes a basis for future studies to examine a model to increase the potential of a successful sustainable initiative implementation where the SA-raising process fully relies on the measurement process. Scholars should also consider examining indicators of the existence of an inefficient type of high SA level in an organization which can jeopardize its progress toward sustainability.

The different results between this research experiment on two of GKM's departments and Perron et al. (2006) case study might be driven by differences in the study sample size and nature of the targeted performance. In other words, GKM's case study is focused on a relatively controllable issue -paper consumption- that involved a small number of participants.

However, other variables should be examined such as organizations' leadership approach and characteristics, work culture, employees' sense of belonging and commitment to their organization, and the size of the targeted employees' group. Such examination could justify the differentiation in the level of employee participation in sustainability initiatives between companies that share the same level of SA.

10. Conclusion

In seeking to assess the level of SA and its effect on sustainable development progression, this research used a qualitative research approach that involved running intense individual interviews to measure GKM's employees' SA levels. It also used a sustainable initiative as an experiment in two departments with different SA levels to assess the relationship between SA and sustainability endeavors' success. The results showed that SA cannot be measured without exploring employees' beliefs, attitudes, and conceptions of sustainability. Such a deep measurement process can allocate employees on different scales of sustainability understating.

Hence, different levels of SA require an in-house tailored strategy to approach employees and raise SA levels instead of packaged and off-the-shelf change programs. The results also showed that a higher level of SA can lead to more potential for success when it comes to sustainability initiatives. These results represent the need for GKM to prioritize raising SA as a crucial factor that leads to the success of its sustainable ambitions. Raising SA should be seen as a value and belief-building phase that can overcome any leadership transitions that GKM could encounter. Building value will assist more of GKM's employees in joining Category 6 where a comprehensive understanding of sustainability and its applications is acquired. Hence, offering an active participation in sustainability-related initiatives as well as consideration for sustainability in employees' lifestyles. This research also introduces the possibility that organizations with low SA levels have the opportunity to build a comprehensive and deep understanding of sustainability from scratch.

Winston (2014) argues that if you run a business or a government as if the future will look exactly like the past, you will become irrelevant. In GKM's case, looking internally is the key to a relevant, sustainable future.

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