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The Impact of Livestock Sector on Environment: Industry Leaders Role and Consumers Perception

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Abstract

When it comes to making a good impression on customers, businesses must prioritize environmental protection. Moreover, it is a moral duty of business leaders to do their businesses in sustainable way and trying not to harm the environment as much as possible. Consumers are more worried about a future sustainable environment. Several factors contributing to the deterioration of the environment have pushed people to reevaluate the lifestyle choices they make. This study will seek to evaluate the impacts that customers have on the alteration of food dishes in light of changes in the surrounding environment, the internal knowledge generating system of the organization, and the development of new information. In addition, the top executives of the restaurant chain are working hard to make sure that their employees have access to the best possible workouts. Moreover, the purpose of this study is to analyze the relationship among knowledge, attitude and behavior or practices of the customers towards the impact of livestock products on environment. Different statistical methods were used to do the analysis such as Pearson's correlation coefficient, mediation analysis etc. It was found that knowledge about the impact of livestock on environment, attitude and practices of customers towards this impact was correlated. That means change in knowledge brings changes in attitudes and in return the behavior or practice is changed. However, it was found in mediation analysis that the effect of attitude on behavior or practices is stronger than the effects of knowledge on behavior. Which means the knowledge is not strongly effective as attitude on behavior. The attitude can changes the behavior more than the knowledge. It was also studied how the behavior of the customers are influenced in this study using theory of planned behavior. In this study it was found that the customers had higher attitude and higher subjective norm. However, the customers did not have higher control on perceived behavioral control which made them not to act on reducing the affects of livestock sector on environment.

1. Introduction:

A devastating cyclone that hit Zimbabwe, Malawi, and Mozambique in March 2019 and was given the name "Idai" claimed the lives of over one thousand people, wounded many more, and left many others homeless. In addition, around six weeks later, another cyclone known as Kenneth raced over northern Mozambique. This cyclone impacted places that had not been affected by a cyclone since the advent of satellite technology (Oxfam International, 2022). At the beginning of the year 2020, Australia was in the midst of the worst bushfire it had ever experienced. The fire had burned 10 millions of hectares of land, claimed the lives of 28 people, and more than a billion native animals. There were also some species of animals from which the ecosystem may never recover (Oxfam International, 2022). These are a few instances of the effects of climate change that the world is now experiencing as a whole. Every year, the effects of climate change manifest themselves in a variety of ways, including but not limited to: droughts, floods in lowland regions, melting polar ice, dry crops, and other similar phenomena. The phrase "climate change" refers to practically any sustained variations in temperature or weather patterns (United Nations, 2021b). As a result of climate change, the temperature of the earth is continually increasing. Since the late 1800s, there has been a recorded increase of 1.1 degrees Celsius in the average temperature over the globe (United Nations, 2021b). Burning fossil fuels like gasoline or driving a car, which produce greenhouse gasses like carbon dioxide and methane, is the major and most important factor contributing to the current state of the climate (United Nations, 2021a). One of the most polluting businesses in the world is the livestock industry, according to some estimates (Collins, 2022). Burning fossil fuels for a variety of purposes by humans is the primary cause of climate change because of the impact this has on the environment (United Nations, 2021a).

In the third section of the IPCC report 2022 (IPCC, 2022), it was underlined that there are three activities that may be taken to prevent additional climate change. One of these actions is for individuals to improve their eating habits (Collins, 2022). The primary reason for this is that the majority of people all over the globe rely on livestock to satisfy their need for protein, despite the fact that the livestock business is recognized as one of the industries that contribute significantly to pollution (Collins, 2022). The study suggests that people be willing to limit their desire for meat and dairy products, which is one of the recommendations addressing animals (Collins, 2022). Consumption of meat has a significant impact on the environment, with climate change being the primary and most significant of these effects (Dopelt et al., 2019).

According to a research by the United Nations, the global population is expected to expand from its current level of 7.8 billion to 9.6 billion by the year 2050, representing a growth rate of 23% from its current level (UN, 2013). An increase in population will cause an increase in the amount of food that is produced, and an increase in the amount of food that is produced will need an increase in the amount of land that is used for agriculture. Despite this, the total amount of land that may be cultivated on a worldwide scale has not risen since 1991. (Rojas-Downing et al., 2017). There will be an increased demand placed on agricultural areas to provide a greater quantity of food in a particular region. In such circumstance, items derived from cattle will constitute the single most significant agricultural commodity in terms of meeting the nutritional requirements of the general population. 17% of the world's total calorie intake and 33% of the

world's total protein consumption comes from the cattle industry (ibid). By the year 2050, it is anticipated that global milk output would have increased from 664 million tonnes to 1077 million tonnes (ibid). In addition to this, beef output will more than quadruple within the same time span, going from 258 million tonnes to 455 million tonnes (ibid).

It is estimated that the cattle industry is responsible for 14.5% of the total global emissions of greenhouse gasses. This number is comparable to approximately 7.51 billion tons of emissions produced each year (Rojas-Downing et al., 2017). The great bulk of the emissions that are produced by the livestock industry are composed of carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), and ammonia (NH₃). It is essential to be aware of the fact that domesticated animals have a natural tendency to produce carbon dioxide (CO₂), and that this production is one of the primary contributors to the overall warming of the earth. In addition, the livestock industry is responsible for the production of 68 percent of the total amount of the gas known as nitrous oxide. Nitrous oxide has the potential to remain in the atmosphere for up to 150 years and has a 296-times greater potential to contribute to global warming and the depletion of the ozone layer than carbon dioxide does. In addition, the industry that raises cattle is accountable for 64 percent of the world's total ammonia emissions, which is a significant contributor to acid rain (Dopelt et al., 2019). Another industry that has a role in the destruction of forests is the livestock industry. Despite the fact that some tropical regions are directly used for food production, studies have shown that the agricultural sector is the primary source of deforestation in tropical regions. This is the conclusion drawn from the findings of these studies. However, livestock production, which includes the production of livestock feed, accounts for approximately three-quarters of all agricultural land, which is one-third of the planet's ice-free land. This sector is the single largest anthropogenic land use type because of its dominance in the livestock industry (Machovina et al., 2015). According to another study, 70% of the world's fresh water is used for agricultural purposes, while just 8% of the world's water is used for human use. An increase in temperature will also make it possible to raise the proportion of the cattle industry's consumption that is comprised of fresh water (Rojas-Downing et al., 2017). The rising number of people means that there will be a corresponding rise in the demand for food. In that scenario, the pressure will be exerted against the ground. However, the total amount of agricultural land has remained unchanged since 1991; hence, deforestation will be necessary in order to satisfy the demand for agricultural land. Because of the rise in population, there will be a higher demand placed on the cattle industry to provide enough protein for everyone. This indicates that there will be a greater production in the livestock industry, which will lead to an increased amount of environmental contamination all across the planet.

People in general are aware of the sources of environmental pollution such as water and air pollution; however, they are only vaguely aware of the pollution that is caused by the food business. The general public is becoming less conscientious about the foods they buy, which contributes to environmental damage through manufacturing and delivery. According to the findings of a number of studies, the level of information regarding pollution caused by the cattle sector is quite low in comparison to the knowledge surrounding other kinds of pollution (Dopelt et al., 2019).

As a result of climate change, coastal nations like Denmark, whose temperature has increased by 1.5 degrees Celsius since records began being kept over a period of more than 150 years, are also being negatively impacted (Ministry of Environment of Denmark, 2021). The frequency of the precipitation showers also increases. To be more exact, the amount of precipitation that falls during the winter months is increased by 25% (ibid). The amount of greenhouse gas emissions that Denmark produced in 2020 was 25.60 metric ton, whereas in 2019 those emissions were 28.40 metric ton (World Population Review, 2022). It is wonderful that the nation has been able to take steps toward reducing its emissions. The nation has been a leader in the fight against the effects of climate change on a worldwide scale by creating a global climate action strategy with the working title "A Green and Sustainable World" (Ministry of Foreign Affairs of Denmark, 2019).

It is indisputable that in order to forestall the onset of climate change, it is necessary to cut back on carbon emissions generated by every facet of human activity. This includes not only reducing our consumption of fossil fuels or the amount of gasoline we burn, but also reducing the proportion of our diets that consists of foods that generate carbon emissions either during their production or their consumption. In this regard, the leaders of the food sector may play an important role as well, particularly in terms of encouraging or motivating customers to eat less items derived from animals. There are now 10,559 restaurants and food operators conducting business in Denmark, which represents a 3.7% increase in the total number of establishments since 2021. (IBISWorld, 2022). This indicates that an increasing number of individuals are considering eating at restaurants. There are so many fast food restaurants and chains in Denmark and Jagger Copenhagen is one of them. They have 14 stores in Copenhagen (Jagger Copenhagen, 2022). To study the role of industry leaders in our case we will use Jagger Copenhagen. They demonstrate that Rasmus Oubaek, a former chef who held a Michelin star, had the proper idea on what he intended to undertake. Due to the fact that Rasmus enjoyed eating so much, he dreamed of founding an original style of fast-food restaurant chain. A location where the burgers are prepared with current, high-quality ingredients, where they taste fantastic, and where the prices are reasonable. A location in the city that is close to you, both physically and psychologically, in the sense that it is never far away and that it has the atmosphere of being a part of the surrounding community. A location where you can get together with your friends while also feeling at ease bringing your children. A hip eatery in the heart of the city known for its excellent burgers (COPENHAGEN, J. (2021).

People at Jagger are foodies and nerds. That is why they place such a strong emphasis on the manner in which they grind their meat in order to achieve the desired structure in the beef; that is why their shakes are made with fresh strawberries and their own Belgian chocolate sauce; and that is why they are consistently making minute adjustments in order to enhance the quality of their food and beverages. It's the little things that add up to make the biggest difference (COPENHAGEN, J. (2021).

The founder ensures that the burgers at Jagger are cooked exactly as he would like them to be, complete with the restaurant's namesake jagger sauce, great organic beef or their very own veggie patty, adequate salt, and a soft brioche bun with just a little bit of a crunch. As a result of

this, it is strongly recommended that you have hamburgers at one of the restaurants. Although you can get items "to go" or have them delivered, the Jagger shops are where you will have the most enjoyable shopping experience (COPENHAGEN, J. 2021).. We are able to make the connection that in order to provide their service to clients, businesses make use of a variety of various facilities. They are working hard to guarantee that the food is of the highest possible organic quality. They also attempted to explain how they source their organic meat, poultry, and buns, as well as any other ingredients that they sell to clients.

They place a strong emphasis on great flavor, superior ingredients, and a cunning no-nonsense approach, all of which are reflected in the meticulous selection of the primary components that go into all of their burgers and sides. Their ingredients are always created from scratch and, wherever feasible, come from their own farms. This involves producing everything from scratch, such as baking their own organic buns for the burgers, for example. You'll find more information about the components in which we take the utmost pride in the following paragraphs (COPENHAGEN, J. (2021).

Their bearnaise dip is made fresh every day from scratch, and each of their jagger dips is produced according to their own unique recipes. In addition, Jagger barbecue sauce, hot dog relish, and their veggie patties are produced at their plant in Snderborg (jaggerfastfood 2021). Each and every one of their shakes is freshly blended and made from scratch by their team every single day, and the selection varies very often. Despite this, many of their most well-liked shakes are always available for purchase on the menu (COPENHAGEN, J. 2021).

Danish cattle that was fed a natural diet and allowed to roam free. Their beef comes from a supplier that was carefully picked and is called spis min gris. They provide us with high-quality meat from animals that are allowed free range. This suggests that they engage in regular physical activity and have led an independent and mobile lifestyle throughout their life. The finished product is beef that is tender and juicy. In addition, the cattle that are kept at Spis Min gris provide a contribution to the conservation of natural surroundings and the expansion of biological variety (COPENHAGEN, J. 2021).

Their chicken comes from a family farm in Denmark, and it is selected by hand. This suggests that the hens live in a more serene and pleasant environment than ordinary chickens do since they have more space to roam about in. The birds are cared for in a compassionate manner, and they are provided with unrestricted access to food and water at all times. Because of this, the hens do not need to be given any antibiotics. Because we bread their jagger fried chicken and chicken nuggets on a daily basis, we can guarantee that they will always have an impressively crispy texture when served to their consumers (COPENHAGEN, J. 2021).

They get their organic dairy products from naturmaelk, which they have on hand. Naturmlk is an organic and biodynamic dairy that is formed of 33 family farms located in Denmark. At Jagger, we use organic butter from naturmlk in their bearnaise sauce, organic halloumi in their halloumiburger, and organic buttermilk in their halloumi and fried chicken marinades.

Additionally, we use organic buttermilk in our halloumi and fried chicken marinades (COPENHAGEN, J. 2021).

Jagger has its own production factory in the city of Snderborg, which is located in Denmark. Jakob Oubaek is in charge of the day-to-day activities there. This is the location where they bake their organic hamburger and hotdog buns. The company's brioche buns and hotdog buns were tested several times until the formula was finalized before the first Jagger restaurant opened its doors in the spring of 2016 (COPENHAGEN, J. 2021).

In this study we will particularly focus on dietary part as it is the most ignorant one among all other reasons of climate change (Dopelt et al., 2019).

In our study we will focus on how the knowledge and behavior among Danish nationals about climate change due to livestock consumption are interrelated and how the industry leader are coming ahead to change the dietary habit of Danes into a more sustainable habit.

1.2 Research problem:

The impact of the environment has been the subject of much discussion ever since the book's prologue. Denmark is no exception to the worldwide trend of addressing and solving issues related to environmental safety. In our study's dilemma, the food supply is determined by the preferences of customers who are cognizant of their actions' impact on Earth's ecosystems. Company heads that make an effort to learn more about their clients are more likely to succeed. Jagger was chosen so that we could quickly get the answers to our questions and get to the heart of the situation. We selected this particular issue as it is not mostly concerned by the customers as they are not well aware about the affect of livestock sector on environment. That is why we are interested in analyzing the following problems,

Main Question:

How are the restaurants or the leaders from the restaurant industry in Denmark influenced by consumers towards adopting more environmentally sustainable dietary foods, especially discouraging livestock product consumption through creating new knowledge in the organization?

Sub Question:

1. How is the knowledge among consumers about the climate change due to livestock production, consumption and attitude as well as practice or behavior of the consumers towards it are connected?
2. How the behavior of consumers towards the affect of livestock production and consumption on environment is influenced?

2. Literature Review

2.1 Adaptive leadership:

Glover, J., Friedman, H., & Jones, G. (2002). Adaptive leadership: When change is not enough (part one). Organization Development Journal, 20(2), 15.

Every leader in the world needs to learn how to adapt to new situations, but not all leaders are making the changes that their organizations, nations, or communities need to do so. Change and being able to adapt have always been at the heart of being human. People have always had to deal with the "reality of change" as they tried to adapt to their situations or take charge of them. Getting established institutions to use new ideas, methods, and practices have been a problem for as long as people have been around. The only thing that sets our time apart is how quickly things are always changing. Everyone is looking for answers to the modern world's problems, such as globalization, the spread of technology, and political unrest.

Nevertheless, adaptation needs more than only research; instead, it calls for viewpoints that are multifaceted and sensitive to cultural norms. Despite the fact that they may appear to conform to standard principles, leaders of effective organizational transformation initiatives only sometimes use a tried-and-true formula or checklist technique. There are several maladaptations for leaders, including accomplishing things in the best manner possible, choices and how they are implemented, perhaps being influenced by cultural norms that are neither compatible with nor adaptable to the actor's environment, and so forth. It is of the utmost importance to differentiate between superficial organizational changes and adaptive organizational changes. A shift is the reallocation of previously established values, such as time, money, or attention. In order to make a positive and long-lasting impact, the executives of a company that is attempting to adapt to its environment need to find inventive answers to the challenges they face. In order to have a positive and long-lasting effect when a company is changing to its environment, the leaders of that company need to apply fresh solutions to the issues that they face. Innovation, on the other hand, may result in a decrease in overall production.

Assimilation and accommodation are two components of the learning process that, when implemented in accordance with Piaget's and De Gues' respective interpretations, cause the process to become adaptable. This is the hypothesis put out by the authors. The assimilation of relevant information and the subsequent modification in response to that information are both required for appropriate adaptive responses. Learners develop, maintain their tenacity, and reach their maximum potential as a result of the mutually beneficial interaction between themselves and their surroundings. An adaptive response is unlikely to occur if a learner either assimilates information without accommodating it or accommodates information without assimilating it. When leaders refuse to integrate or adapt, they place themselves and their companies in a cultural prison from which it is doubtful that they will ever be able to escape. The following three instances illustrate adaptation, followed by three examples demonstrating the insufficiency of depending on assimilation and accommodation to generate adaptation.

In these texts, there are four different types of adaptations mentioned. When we fail to realize the need to make modifications in response to changes in our environment, we put ourselves in a position where we become victims of cultural traps. We say that a leader and their organization have fallen into a "culture trap" when they make decisions for their learning processes that are based on a lack of absorption and adaption of new information. The natural selection process occurs when leaders take in a large amount of information about their surroundings but do not alter their behavior in any way as a result of this knowledge.

Continuous adaptation, also known as serendipitous adaptation, is a third method for gaining knowledge and generating judgments. This method is used when there is a lack of accurate or sufficient information or feedback. The entire adaptive capability of a leader may be unlocked through systems that are both highly absorbent and very accommodating. A continual, in-depth evaluation of the facts collected from the environment is the foundation for leaders' decision-making and the alterations they implement.

The writers also explored several adaption issues, such as how leaders need to be culturally competent, aware of organizational noise, and able to adapt to individuals who come from a variety of backgrounds. There is a model for understanding how adaptation takes place that can be found in these articles. In this model, the authors illustrate how the amount of adaptation may be characterized by the degree to which assimilation and accommodation have taken place. In conclusion, a number of exemplary cases demonstrate the need of adaptive leadership.

knowledge creation:

Nonaka, I., Toyama, R., & Konno, N. (2000). SECI, Ba and leadership: a unified model of dynamic knowledge creation. Long range planning, 33(1), 5-34.

Knowledge: Since knowledge is produced through interactions between people and institutions, it is in constant flux. Information is location and time-dependent. Without a background or setting, the data is meaningless.

Dynamic Model: The authors present a three-part model of how knowledge is generated: the SECI process, in which new information is made by merging tacit and explicit knowledge; ba, the common environment in which new information is made; and knowledge assets, which are SECI's inputs, outputs, and moderators.

The SECI process, creating new knowledge by putting tacit and explicit knowledge to use: Knowledge is developed inside an organization as a result of the interplay between explicit and tacit information. Knowledge conversion refers to the process through which two distinct forms of information are exchanged and analyzed. Quantitatively and qualitatively, both types of knowledge grow via the process of conversion. Knowledge may be transformed in four different ways.

Ba: shared context set in motion for making knowledge: The formation of knowledge requires a material setting; as the saying goes, "there is no creation without location." The word "Ba" (which may be translated as "place") provides just such a setting. The Japanese philosopher

Kitaro Nishida first presented the notion of ba, which was further refined by Shimizu, as a common framework in which knowledge is exchanged, generated, and used. The energy, quality, and location necessary to carry out the various conversions and progress along the knowledge spiral are all provided by ba, therefore its generation and regeneration are important to the knowledge-creation process.

Ba may be broken down into four distinct categories based on the nature of the relationships involved: initiating, conversing, systematizing, and exercising ba. One dimension is the extent to which people engage with one another on their own or as a group.

Knowledge assets: Every method of knowledge generation rests on a bedrock of knowledge assets. We refer to these resources as "assets" since they are essential to the generation of value for the company. Simply put, knowledge assets are everything that goes into, comes out of, and influences the generation of new knowledge. The knowledge creation process generates trust among organization members, which moderates ba's ability to serve as a platform for knowledge creation.

For clarity's sake, we recommend classifying knowledge assets into four broad categories: Know-how assets may be broken down into four categories: experiential, conceptual, systemic, and routine.

The process of making new knowledge: Organizational knowledge creation model that incorporates SECI, ba, and knowledge assets. As part of the SECI process in ba, a company uses its preexisting knowledge assets to generate new information. The newly minted information is incorporated into the company's knowledge assets, which serve as the foundation for yet another cycle of learning and improvement. Managers, however, may set the stage for the company to develop knowledge actively and dynamically by establishing several necessary circumstances. This process relies heavily on knowledge producers, the managers who are smack dab in the center of the company's vertical and horizontal information flows and collaborate with their peers to generate new insights through activities like ba. Since knowledge production cannot be "managed" in the conventional sense, "distributed leadership" in the form of "middle-up-down" management is essential.

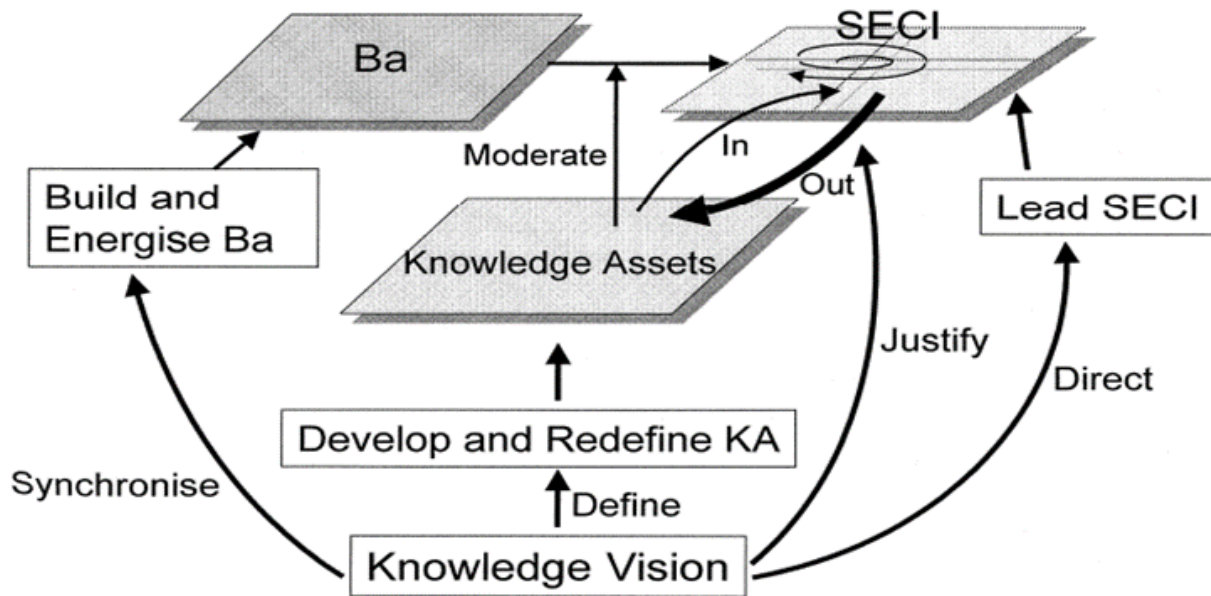


Figure 1: Leading the knowledge-creating process (Nonaka, I., Toyama, R., & Konno, N. 2000)

Management at all levels, from upper to middle, plays a pivotal part in the knowledge creation process by reading the situation and then leading the charge to improve upon the first two components. Knowledge is provided by leaders who also build and encourage sharing knowledge assets, generate ba, and enable and support a never-ending cycle of knowledge production. The knowledge vision is critical because it impacts all three stages of the knowledge creation process.

2.2 The KAP Model:

There is a widespread consensus among academics that people's attitudes and behaviors may be improved by increasing their level of education. Ajzen et al. (2011), on the other hand, claimed that information or knowledge does have an influence on decision making; nevertheless, it is imperative that information be reliable. Not only can the dissemination of false or irrelevant information result in poor decision making, but it also alters the way people choose to live their lives (ibid).

On the other hand, the purpose of this particular study is to investigate the ways in which information and knowledge influence the attitudes and actions of individuals concerning the impact of livestock production and consumption on the natural environment. The KAP model, which is used primarily to determine the changing pattern of knowledge, attitude, and practices of a community or, more generally, a target group of interest, is what we will employ to get the results we are looking for (Kaur et al., 2014). We had looked through a variety of periodicals and written works on this model, as well as the application of this model to research on a variety of discoveries.

World Health Organization. (2008). Advocacy, communication and social mobilization for TB control: a guide to developing knowledge, attitude and practice surveys (No. WHO/HTM/STB/2008.46). World Health Organization.

Within the scope of this article, the World Health Organization (WHO) provided a guideline for the development of knowledge, attitude, and practice surveys. This document is primarily intended to assist tuberculosis (TB) program managers and staff who are interested in engaging in advocacy, communication, and social mobilization (ACSM) activities as a component of their overall TB control strategy (World Health Organization, 2008). On the other hand, the social mobilization component of ASCM activities aims to challenge norms, enhance services, broaden community support, and find solutions to social problems (ibid). According to the World Health Organization (2008), "ACSM treatments need to be evidence-based in order to bring about durable social and behavioral change." The need of gathering baseline and follow-up data in order to develop and assess ASCM programs directed at populations or specific subgroups is highlighted by evidence-based programming. In this publication, the World Health Organization (WHO) explains what a KAP survey is, who this survey is for, what the aim of the survey is, and what possible applications there are for the survey. They also mention guidelines for conducting the survey, which consists of six steps to complete the survey. The procedures are as follows: identifying the survey aim; devising the survey protocol; constructing the survey questionnaire; putting the KAP survey into action; assessing the results; and utilizing the data to accomplish the survey objective.

Dopelt, K., Radon, P., & Davidovitch, N. (2019). Environmental effects of the livestock industry: The relationship between knowledge, attitudes, and behavior among students in Israel. International Journal of Environmental Research and Public Health, 16(8), 1359.

The purpose of this paper was to investigate the knowledge, attitudes, and behaviors of 361 Israeli students on the environmental damage generated by the cattle business. They made use of the statistical analysis, in which they made use of several statistical techniques such as correlations to assess the connection among different variables, the t-test for independent samples, and linear regression models to forecast the results. According to the findings of the study, students who had very no information about the environmental impact of the food they consume had views that were fairly pro-environmental; nevertheless, their behaviors or behavior were not pro-environmental. This dichotomy was identified among the students. On the other side, the study came to the conclusion that pupils who had a greater awareness of the environment also exhibited a more environmentally friendly attitude and conduct. In this particular investigation, they came to the conclusion that an individual's attitude served as a moderating factor in the connection between one's level of knowledge and their actions with regard to the environmental damage produced by the cattle business. This finding indicates that the attitudes had a greater influence on the participants' behaviors than the information did in this specific research. The study also discovered that the individuals who had been or had previously been responsible for the care of animals, as well as women in comparison to males, possessed a higher level of environmental awareness, attitude, and conduct. In addition to recommending the incorporation of an introductory course on environmental science into a variety of academic study programs, the researchers of this study recommended increasing

public awareness of the negative effects that the livestock industry has on both the environment and human health.

Kwol, V. S., Eluwole, K. K., Avci, T., & Lasisi, T. T. (2020). Another look into the Knowledge Attitude Practice (KAP) model for food control: An investigation of the mediating role of food handlers' attitudes. *Food Control*, 110, 107025.

This study's objective was to evaluate the role that food handlers play in ensuring that appropriate hygiene and sanitation procedures are adhered to at all times. The hotels and medical clinics in Nigeria provided the research team with the necessary information for the study. Using the KAP framework, a survey of 403 people was performed. The influence of food handlers' safety awareness on their personal cleanliness, kitchen hygiene, and disease control practices was studied. In the study the researchers examined the impact of food handlers' safety knowledge on their hygienic-sanitary practices of personal hygiene, kitchen hygiene, and disease control measures. Because food handlers' safety knowledge engages their apprehension of conditions and practices pertaining to the proper handling, preparation, and storage of food. The study examined the effect of this knowledge on their hygienic-sanitary practices of personal hygiene, kitchen hygiene, and disease control measures. This is because food handlers' safety knowledge encompasses an understanding of the circumstances and procedures related with the proper handling of food. In this study, the researchers uncovered major gaps in previous research that demonstrated a clear association between food control awareness and understanding of safety measures. According to the findings of these investigations, there is a direct connection between behavioral understanding and research on food control and safety measures. This study aimed to fill in the gaps by constructing and testing an empirical model that examined the direct effect of food handlers' knowledge on their hygienic-sanitary controls of personal hygiene, kitchen hygiene, and disease prevention practices. This was accomplished by examining the relationship between knowledge and hygienic-sanitary controls of personal hygiene, kitchen hygiene, and disease prevention practices. In order to determine where the gap existed, this was done. In order to carry out this analysis, the group came up with three hypotheses: Food handlers' attitudes have a positive influence on their perceptions of personal cleanliness (H2), kitchen hygiene (H3), and disease control methods (H4). The researchers also discovered that employees' views acted as a mediator between their understanding of food safety and the hygiene and sanitation practices that they followed. The findings of the study substantiated this aspect of the dynamic between the couple. According to the findings of the study, employees' levels of knowledge regarding food safety had a significant bearing on the workers' perspectives regarding food safety, and the workers' perspectives had a significant bearing on the degree to which food handling facilities were kept in a clean and sanitary condition.

Liao, X., Nguyen, T. P. L., & Sasaki, N. (2022). Use of the knowledge, attitude, and practice (KAP) model to examine sustainable agriculture in Thailand. *Regional Sustainability*, 3(1), 41–52.

The practice of sustainable agriculture contributes significantly to the achievement of sustainable development goals, which are related to the protection of the environment and the

security of food sources. Whereas sustainable agriculture is almost entirely dependent on sustainable farming practices being used by farmers, which in turn helps to lower the amount of greenhouse gasses produced, ensures that local natural resources are used efficiently, and lowers the amount of negative impact that agriculture has on the environment and on human health. This study was carried out with the intention of analyzing farmers' knowledge, attitudes, and practices in the field of sustainable agriculture in Thailand. The sustainable practice criteria were kept in mind when the research was carried out. In the course of carrying out this research, the aspects of farmers' knowledge, attitudes, and practices that were being affected were also taken into consideration. During the course of the research, the researchers took into account two distinct socio-environmental contextual settings. It was discovered that the views of environmental deterioration held by farmers, the amount of years spent working in agriculture, and agricultural policy all have a role in shaping the perspectives and behaviors of individual farmers. The research also indicated that the attitudes and actions of individual farmers foster collective behaviors that are sustainable in the agriculture industry. The researchers demonstrated the study's implications at the end by demonstrating how improving individual farmers' ability to learn about the environment and sustainable agricultural practices through social learning and scientific knowledge dissemination can result in sustainable collective development behaviors.

Notarnicola, B., Tassielli, G., Renzulli, P. A., Castellani, V., & Sala, S. (2017). Environmental impacts of food consumption in Europe. *Journal of Cleaner Production*, 140, 753–765.

Researchers almost unanimously agree that the consumption of food is one of the primary factors contributing to environmental contamination. [Citation needed] However, in order to exist and to satisfy the most basic requirements for nutrition, humans and other creatures require food. This research endeavored to determine the extent to which human food intake has an effect on the natural environment by applying a lifecycle assessment (LCA) methodology to a collection of items that served as a representative sample of foods that are typically consumed in Europe. The following items were chosen for inclusion in the selection: pork, beef, chicken, milk, cheese, butter, bread, sugar, sunflower oil, olive oil, potatoes, oranges, apples, mineral water, roasted coffee, beer, and ready-made meals. A highly disaggregated inventory model based on a modular approach was constructed for each of the products so that the impact could be evaluated. This was done. Using the technique of the international reference life cycle data system (ILCD), the environmental effect of the food that is consumed on a daily basis by the ordinary European was determined. It was determined that animal items like pig, beef, and chicken, together with dairy products like cheese, milk, and butter, were the foods that caused the most damage to the ecosystem due to their consumption. The agricultural phase had the biggest influence on the environment because to the agronomic and zootechnical activities that took place during that phase. This was true across the production, transportation, and consuming phases. Due to the high energy intensity and the creation of heat, steam, and electricity during transportation, food processing and logistics come in second on the list of industries that have the greatest negative influence on the environment. When it comes to the end of life phase, human excretion and wastewater treatment both have environmental loads that are connected to eutrophying compounds. These substances have affects on the

environment that are bigger than those of preceding phases such as production and processing. Food waste was also taken into account because it can account for as much as sixty percent of the total amount of food purchased.

Because of these research, we now have a better notion of how to conduct a KAP survey and how to conduct an analysis utilizing the KAP model. In addition to that, those studies encouraged us to think about things from a new perspective before we put up the questionnaire. This allowed us to choose the content of the questions and figure out how to achieve the best possible results from the questionnaire.

2.3 Theory of Planned Behavior (TPB):

The Theory of Reasoned Action (TRA), which has a weakness in its ability to deal with activities over which people have imperfect volitional control, has been extended into what is known as the Theory of Planned Behavior (TPB), which is an acronym for "Theory of Planned Behavior" (Ajzen, 1991). In the course of our research, we will make use of TPB to make predictions about the factors that influence people's actions with regard to the impact of livestock production and consumption on the environment. Our primary objective is to determine the elements that have an effect on the actions taken by customers. Because of this, we read a number of publications in order to gain some understanding of this idea and how other scholars incorporated it into their own study.

Ajzen, I. (2012). The Theory of Planned Behavior. In Handbook of Theories of Social Psychology: Volume One (pp. 438–459). SAGE Publications.

Ajzen, the author of this book, described the idea of planned conduct, which he referred to as a significant reasoned action model. In addition to that, he discussed the conceptual base of the theory, as well as its history of intellectuality and the research that it had created in the past. This theory stems from propositional control and expectancy theory, which eventually developed into a fundamental framework for evaluating, assuming, or forecasting, and altering human social behavior. This theory's origins may be traced back to propositional control and expectancy theory. According to this theory, conduct is a result of a person's attitude toward the activity, their subjective norm, and their perceived level of behavioral control. The theory cites intention as the immediate antecedent of behavior. Ajzen stated that the empirical support for this particular theory came from a number of correlational studies. Those studies demonstrated the ability of this theory in predicting intentions and behavior. In addition, those studies demonstrated that from interventions showing that changes in behavioral, normative beliefs, and control beliefs has the ability to produce changes in intentions, which in turn are reflected in subsequent behavior. Ajzen mentioned that the empirical support for this particular theory came from a host of studies. In this chapter, he also discussed his idea of reasoned action, which subsequently led to the development of his theory of planned conduct as an expanded version of the original theory. In a general sense, the theory of reasoned action suffers from a few shortcomings, all of which are addressed by the theory of planned conduct.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.

In this paper, Ajzen explored some outstanding difficulties and evaluated a variety of facets of the TPB that were brought up throughout different research projects. According to the assertion that Ajzen made, this hypothesis has been confirmed by a large number of empirical research. Here, he argued that the theory accurately predicted people's intentions to engage in specific behaviors based on their attitudes toward the behavior in question, their subjective norms, and their perceptions of their own degree of behavioral control; and that these intentions, along with perceptions of behavioral control, account for a substantial amount of variation in actual behavior. Moreover, it is believed that a combination of behavioral, normative, and control beliefs about the behavior is linked to attitudes, subjective norms, and perceived behavioral control; however, the nature of this relationship is yet unclear. This is due to the fact that it is believed that the relation is still unclear. In this section, successful formulations of expectations and values for coping with these relations may be discovered. The inclusion of previous behavior in the prediction equation in order to offer a way of assessing the theory's adequacy was another significant unsolved topic that was covered here. This was done in order to provide a means of determining whether or not the theory is enough.

Beck, L., & Ajzen, I. (1991). Predicting dishonest actions using the theory of planned behavior. *Journal of Research in Personality*, 25(3), 285–301.

In this article, Lisa Beck and Icek Ajzen detailed a research that they conducted to anticipate dishonest acts among some college students in the context of the idea of planned behavior. The investigation was based on the premise that dishonest actions are the result of a lack of planning. A survey was given to the students, and the results were analyzed to determine their perspectives, subjective norms, perceptions of behavioral control, intentions, and moral obligations. In addition, the teachers asked the students to provide an honest account of their behavior in terms of whether or not they had cheated on an exam, stolen anything, or lied to get out of doing their homework. A portion of the individuals who first filled out the questionnaire came back after some time had passed to answer additional questions. According to the findings of the study, the TPB was able to accurately identify intentions with a high degree of precision, but it had only modest effectiveness in predicting actual conduct. The prediction equation was improved by the addition of felt moral responsibilities, although this did not assist to account for a significant amount of the diversity in cheating or shoplifting behavior. In order to determine whether or not the theory of planned conduct is adequate for predicting future behavior, self-reports of dishonesty in the participant's history were employed.

Ajzen, I. (2020). The theory of planned behavior: Frequently asked questions. *Human Behavior and Emerging Technologies*, 2(4), 314–324.

In this essay, Ajzen examined a variety of concerns and problems that have been brought up in relation to the TPB. He also offered a brief summary of the theory itself. Dissimilarities between the TPB and the theory of reasoned action, the relative merits of self-efficacy and perceived behavioral control, the distinctions between locus of control and perceived behavioral control,

the potential for incorporating additional predictors into the TPB, the lack of a standardized TPB questionnaire, the difficulty in predicting behavior in a choice situation, the intention-behavior gap, and the intention-behavior gap were some of the topics discussed.

Shah Alam, S., & Mohamed Sayuti, N. (2011). Applying the Theory of Planned Behavior (TPB) in halal food purchasing. *International Journal of Commerce and Management*, 21(1), 8–20.

This research was carried out with the purpose of making forecasts on the purchasing patterns of halal food in Malaysia. The study presented several compelling arguments in favor of shopping for halal food. In this study, there were a total of 251 people that were investigated using three hypotheses. The results of the investigation demonstrated both the reliability of the TPB as well as its statistical significance. According to the findings of the study, attitude has a sizeable and beneficial impact on the intention to purchase halal food. In addition, the study discovered that there was a positive correlation between the subjective norm and intention, with the researchers discussing the benefits of communal behavior in society as opposed to individualistic behavior. According to the findings of the study, perceived behavioral control is an important component to consider when making decisions about the purchase of halal goods.

Mahmud, S. N. D., & Osman, K. (2010). The determinants of recycling intention behavior among the Malaysian school students: An application of theory of planned behaviour. *Procedia - Social and Behavioral Sciences*, 9, 119–124.

The purpose of this study was to investigate the factors that led to recycling intentions and behaviors among secondary school students in Malaysia and to report their findings. They did a survey with four hundred students who were chosen at random. According to the findings of this study, perceived behavioral control is the factor that most accurately predicts future behavior. This is followed by subjective norms, which had a lesser influence but were still significant to some degree. The findings of the study's analysis showed that certain attitudes were a predictor of intention behavior in a roundabout way. This was accomplished through the mediation of subjective norms and perceived behavior control.

White Baker, E., Al-Gahtani, S. S., & Hubona, G. S. (2007). The effects of gender and age on new technology implementation in a developing country. *Information Technology People*, 20(4), 352–375.

Using the TPB, the purpose of the study was to investigate the ways in which gender, age, and education all play into the implementation of new technology in Saudi Arabia. This study was an empirical investigation that was carried out by conducting surveys among a total of 1088 Saudi knowledge workers. It was discovered that the TPB worked effectively in Saudi Arabia, which accounts for 37% of the variance in behavioral intention. The intellectual and cultural traditions of Saudi Arabia are wholly unique and stand in stark contrast to those of other western cultures. It has been mentioned in the study that the demographic variables such as gender and age, which were significant moderators of the influence of attitude, subjective norm, and perceived behavioral control on behavioral intention in other cultural samples, were found to be non-significant in this Saudi Arabian sample. This is because the study found that those

demographic variables were significant moderators of the influence of behavioral intention in other cultural samples.

2.4 Correlation:

Correlation is one of the most widely used statistical methods in analyzing and summarizing scientific data (Taylor, 1990). In the broadest sense correlation is a measure of association between variables (Schober et al., 2018). It is common in scientific research to measure if there is any relationship between two different variables and if there any how strong or significant the relationship is (Taylor, 1990). In correlated data, the change in the magnitude of a data is dependent on the change of magnitude of another data (Schober et al., 2018). The change could be positive or negative or there could be no change (ibid). The correlation coefficient is most of the time termed as Pearson's product moment which is denoted by "r" or sometimes termed as "r coefficient" (Taylor, 1990). The correlation r value requires a magnitude of data and a direction of the magnitude of the data which could be either positive direction or negative direction (ibid). Usually the correlation takes values from negative (-) 1 to 0 to positive (+) 1. The correlation coefficient zero (0) indicates that there is no correlation between the variables which means in the graph the data are scattered in x-axis and y-axis. On the other had, when there is a positive correlation between variables it indicates that due to change in the magnitude of one variable, the magnitude of another variable is changed in positive direction in the graph and negative correlation between variables indicates that due to the changes in the magnitude of one variable, the magnitude of the other variable also changes, but in negative direction in the graph. When the r value or correlation coefficient value is either positive 1 (+1) or negative 1 (-1), then it is called "perfect linear correlation" (ibid). The statistical formula for Pearson's correlation coefficient is:

$$r = \frac{\Sigma(xi-\bar{x})(yi-\bar{y})}{\sqrt{\Sigma(xi-\bar{x})^2 \Sigma(yi-\bar{y})^2}}$$

2.5 Mediation analysis:

Mediation analysis is a set statistical procedures used to analyze if a particular data set poses a mediational structure or not. A mediational structure on the other hand is a concept of mechanism through which an independent variable (knowledge in our case) might effect a dependent variable (behavior in our case); but not directly rather indirectly through an intervening process, which is captured by a third variable called the mediator variable (attitude in our case) (Iacobucci, 2008). Usually the researches make statement while testing the mediator relationships, such as, the independent variable affects the mediator and which in turn affects the dependent variable (ibid). It is also important to distinguish the two different functions of the third variable which are, 1) moderator function and 2) mediator function. Using the moderator function it can be partitioned a focal independent variable into subgroups and can be determined their areas of maximal effectiveness in regard to a given dependent variable. On the other hand mediator function of the third variable shows a generative mechanisms through which the focal independent variable gains the ability to influence the dependent variable of

interest (Baron & Kenny, 1986). However, in this research our area of interest is mediator variable. Mediator is able to explain how external physical events take on internal psychological significance (ibid). To make the mediator more understandable Baron & Kenny, (1986) introduced a path diagram model to depict the casual chain among the variables. This model presumes a three variable systems where there are two casual paths feeding into the dependent or outcome variable, the direct impact of the independent variable on the outcome variable (path c), and the impact of mediator on outcome variable (path b). Moreover, there is another path called “path a” from the independent variable to mediator variable.

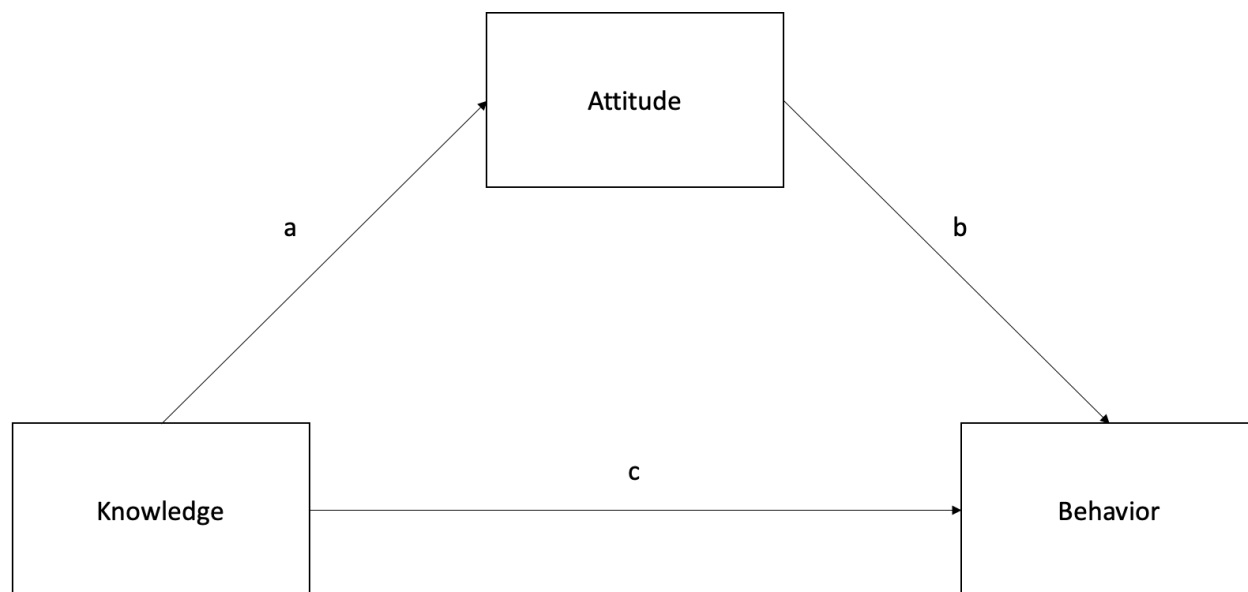


Figure 2: the mediator model of knowledge, attitude and behavior (Baron & Kenny, 1986)

According to Baron & Kenny, (1986), a third variable will work as mediator only when it fulfills three conditions. They are, a) variations in the level of independent variable significantly effects the variations in the presumed mediator (path a), b) variations in the level of mediator significantly accounts for the variations in the dependent variable (path b) and c) when path a and path b are controlled accordingly, the significant relationship between independent variable and dependent variable in the path c will no longer be significant because of the strongest demonstration of mediation on dependent variable occurring when Path c is zero. If the path c is zero, then it is evident that the mediator is single and stronger. However, if the path c is not reduced to zero, it is evident that there are multiple mediators operating.

3. Theories

3.1 Adaptive Leadership Theory:

The capacity of modern leaders to adjust is put to the test on a regular basis. Communities, governments, and businesses are always looking for more efficient and effective strategies for technology transfer, mergers and joint ventures, performance improvement, diversity management, economic growth, resource sustainability, environmental protection, globalization, and market expansion. These goals can be accomplished through a variety of means. The pressures of change may be felt in a wide variety of circumstances, ranging from the business executive who is sent overseas on a building project for a joint venture in another country to the heads of state who are engaged in the battle against terrorism. These leaders frequently come to the conclusion that the conventional institutions and the commonly held assumptions about how to alter them are unable to meet the demands of the current situation. In order to adjust to the ever-increasing complexity and rate of change, it is vital to take the lead on change projects. It is possible to innovate without having the ability to adapt. In order for businesses to successfully navigate the challenges provided by the modern world, its leaders need to have the abilities that enable them to exercise adaptive leadership in environments that are both complicated and subject to rapid change. Many attempts to implement change wind up being less adaptable than maladaptive, wasting significant company resources in the process despite the fact that those making the changes had good intentions. This serves as an example of a change initiative that was not implemented properly. (Glover, J., Friedman, H., & Jones, G., 2002)

No change after Training

From this vantage point, adaptation is the ongoing process by which leaders take in data about the external environment and modify internal processes to suit better the environments in which their firms operate. As a result, adaptive leadership is predicated, at its most fundamental level, on being sensitive to the changes that are occurring around us and then making successful judgements in the wake of these widespread changes, including correctly executing them. To respond adaptively, this learning is crucial. However, adaptation entails more than just studying; it calls for multifaceted and culturally sensitive viewpoints. Although they may appear to adhere to common principles, leaders of effective organizational change initiatives rarely use a tried-and-true formula or checkbox approach. Leaders who adapt to new situations do not allow their biases or preconceptions to cloud their judgment. Because adaptiveness is constantly conditional, a leader must strike a balance between the present moment's

requirements and the organization's long-term goals (Glover, J., Friedman, H., & Jones, G., 2002)

Doing things in best way

Decisions and how they are implemented may be influenced by cultural norms that are neither compatible with nor adaptable to the environment in which the actor finds himself or herself. Someone's short-term solution to a problem could be maladaptive, but it might get the job done. (Glover, J., Friedman, H., & Jones, G., 2002)

Adaptation always does not come from change

It is crucial to distinguish between superficial and adaptive shifts in an organization. Allotting different amounts of time, money, or attention is an example of change. The two cases show, however, that being open to change is no assurance of a smooth transition into a new environment. When a business adapts to its environment, its leaders must use innovative solutions to problems to make a positive and long-lasting impact. If an organization's culture is not adapted, then any attempts at change may just put more work on top of the old, making things worse than before. (Glover, J., Friedman, H., & Jones, G., 2002)

Innovation sometimes causes decreased in productivity

When a business is adapting to its environment, its leaders must use innovative solutions to problems in order to make a positive and long-lasting impact. (Glover, J., Friedman, H., & Jones, G., 2002)

The restaurant's general manager and the manager of that location had previously been baffled about the source of a persistent issue. To stay up with the times in terms of accounting and information systems, they implemented a new piece of technology, but only after failing to gather crucial data on their staff. Thus, the mechanism intended to boost productivity ended up doing the opposite. A shift had taken place, but it had yet to aid the company in becoming more flexible. In reality, productivity has been falling due to the inefficient use of new technology. One example of an extension is the application of original thought to the organisation challenge by recombining established practices into something fresh. For instance, all technological advancement results from the reorganization of previously acquired information. Even though they are rarely called out

as such, extensions are always present in novel government or social organization systems. Extending may also be thought as as a means of reconciling stakeholders' sometimes at-odds values. In other words, we should always be looking for ways to extend ourselves, whether we are pushing the boundaries of society or technology. (Glover, J., Friedman, H., & Jones, G., 2002)

Organizations can use processes that go beyond our biological and cultural capabilities in a way that is sustainable for all stakeholders by resorting to adaptive extensions, which allow them to adapt to any environment without resorting to violence. Enhancements that do not interfere with the basic human genetic makeup allow humans to quickly adapt to new circumstances and find solutions to old problems. Leaders who can adapt to changing circumstances must change the way they approach the management of both information and people. (Glover, J., Friedman, H., & Jones, G., 2002)

Adapting Challenges

The most recent wave of globalization has had a significant impact on how we think about effective leadership and what makes a leader successful during the previous three decades. To begin, adaptable leaders must be culturally competent. To be really adaptive, an organization must embrace an entirely new structure, with new leadership and employee behavior norms. Traditional businesses cannot easily incorporate "adapting" into their existing strategies and infrastructures. To adapt, they must create distinct company cultures. The new culture must be adaptive and eager to better itself. Adaptive CEOs may also make sense of the "noise" in their surrounds and devise a plethora of tactics to adapt their businesses to changing situations. To adapt is to undergo a major structural change. However, there is more to it than that. Adaptive leadership is a leadership style that assists a company in meeting the challenges of a changing internal and external environment. Adaptable executives must be responsive to signals from their surroundings in order to make significant and continuing changes to their businesses. (Glover, J., Friedman, H., & Jones, G., 2002)

Third, leaders who can adapt to different situations must be able to work with people of different backgrounds. Leaders in every modern nation face a wide range of difficulties due to their societies' diversity and the fast transformations wrought by advances in technology, politics, and the economy. There are many various kinds of people around the globe, and it is becoming clear that each of these communities has its traditions and customs. The ability to work with colleagues who may not have the same worldview or management philosophy is essential for leaders. (Glover, J., Friedman, H., & Jones, G., 2002)

In conclusion, leaders who can adjust to changing conditions must have long-term perspectives. The process of adapting does not include adding more to the things we are already doing. Instead, it calls for overhauling our core worldview and the structures we have established to deal with its consequences. Organizations as we know them need to be rethought from the ground up, from the information systems they use to how they interact with customers to the goods and services they provide. (Glover, J., Friedman, H., & Jones, G., 2002)

A Model for Understanding Adaption

Our paradigm for understanding adaptation is based on the teachings of eminent developmental psychologist Jean Piaget. Piaget's studies may teach us a lot about human growth and development in general, as well as how we learn as we become older. We agree with other adaptation researchers that Piaget's theories of individual learning can be extended to offer light on the workings of adaptive leadership. Using Piaget's theories, we may assess how leaders process information and respond to their surroundings. We have expanded his concepts of assimilation and accommodation to explain why some leaders and organizations are flexible while others are not. Learning by assimilation, as defined by Piaget, comprises absorbing input for which the learner already has structures in place, allowing for recognition and the attachment of meaning. Most individuals associate learning with being taught new information and digesting it logically. In a traditional classroom, students are supposed to actively listen to and absorb the teacher's speech. As part of the cumulative learning process, facts, figures, and other data are memorized. (Glover, J., Friedman, H., & Jones, G., 2002)

When assimilation and accommodation are included into the learning process, as defined by Piaget and interpreted by De Gues, the process becomes adaptive. Adequate adaptive reactions need the absorption of relevant information as well as the adaptation to that information. Because of the symbiotic relationship between learners and their environment, they grow, persist, and attain their full potential. When one either assimilates without accommodating or accommodates without assimilating, learning is unlikely to result in an adaptive response. Leaders who do not assimilate or adapt fall into a cultural trap from which they and their organizations are unlikely to emerge. The three instances below demonstrate the insufficiency of depending on assimilation and accommodation to bring about adaptation, followed by an example of adaptation. (Glover, J., Friedman, H., & Jones, G., 2002)

Leadership Responses to Change

	Assimilation	
	Low	High
Low	Maladaptive Cultural traps	Natural Selection
Accommodation	Serendipity	Maximum Adaptive potential
High		

Figure: 3 (Leadership Responses to Change)

Maladaptive Leadership Cultural Traps We fall into cultural traps when we fail to see the need to make adjustments in response to shifts in our surroundings. What we call "cultural traps" occur when a leader and their organization make decisions based on a lack of assimilation and adaptability in their learning processes. When top-level executives and their companies fall into cultural ruts, they become immobilized and resistant to change. They do not change because they are persuaded that their tried-and-true methods are the best. No matter how far a leader may have gotten in the

past, they will inevitably fall into a cultural trap if they cannot learn from either assimilation or accommodation. (Glover, J., Friedman, H., & Jones, G., 2002)

"Natural Selection"

Natural selection occurs when leaders ingest a large amount of data about their settings (called "high assimilation") but do not use that info to make any adjustments (low accommodation). Leaders in high assimilation and low accommodation conditions tend to be well-informed but take few adaptive moves. The efficacy

of leadership and organizations improves. Organizational natural selection, like biological natural selection, necessitates passive adaptation, with leaders either unwilling or unable to make meaningful changes to the status quo. They refuse to adapt because they believe their tried-and-true techniques are the finest. Natural selection leaves leaders' and organizations' adaptive success to chance, which is somewhat more damaging than a cultural trap. Natural selection-guided leaders may be swamped with evidence showing that the world is changing, yet they may do nothing in response. When accommodating behaviors are inadequate, an individual's adaptive fate is defined by external conditions. If this organization is unsuitable with its new circumstances, it may fail to adjust and finally perish. (Glover, J., Friedman, H., & Jones, G., 2002)

Serendipitous Adaptation

In the absence of accurate or enough information or feedback, a third technique for obtaining knowledge and making judgments is to adapt continually. The leader who adopts this approach is foolish if the change effort they chose is a good fit for the scenario, taking into account the interests of all important stakeholders and their company's particular requirements. This tendency is known as "serendipity," and it occurs when a leader prefers to accommodate individuals than incorporating them in decision-making. Leaders frequently launch new change projects without first reviewing how successfully their staff have adapted to the new norm. Managers and executives all around the world are preaching the gospel of change. It's conceivable that executives are praising change without giving much thought to whether the program is a suitable fit for the company and its stakeholders. (Glover, J., Friedman, H., & Jones, G., 2002)

Executives responsible for fortuitous adaptation believe that the business will benefit from their alterations in order to satisfy the new criteria. It's worth noting that no environmental data nor user feedback will be used in this fortunate adaptive process.

Changing procedures isn't always the solution to making a company more adaptive. (Glover, J., Friedman, H., & Jones, G., 2002)

Adaptive Leadership

High assimilation and high accommodation processes can unlock a leader's full adaptive potential. Decisions and adjustments made by leaders are based on constant, in-depth analysis of data gleaned from the surrounding environment. (Glover, J., Friedman, H., & Jones, G., 2002)

Executives that made the fortunate change to bring the firm up to code expect financial benefits. Unfortunately, no environmental data nor user feedback will be used in this fortunate adaptive process. Making a corporation more adaptable does not always need a policy change. (Glover, J., Friedman, H., & Jones, G., 2002)

Bill Gates symbolizes the sort of corporate CEO who does not let their organization's prior accomplishments in one nation restrict its prospects in another. Microsoft's early attempts to establish relationships and access the People's Republic of China's enormous market were not as productive as envisioned. Gates, his wife, and another couple biked across the countryside for a month to immerse themselves in Chinese culture after a Chinese legislator urged that he "spend some time in China to get to know the people." (Glover, J., Friedman, H., & Jones, G., 2002)

Gates corrected his original strategy for Microsoft's growth in China after realizing his error. He rethought Microsoft's long-term strategy in the PRC by 1) training locals so that the company could hire them to manage its interests there; 2) ignoring the PRC's contrasting views on intellectual property in favor of the larger goal of market dominance; and 3) adapting Microsoft's practices to the PRC's in order to remain competitive. (Glover, J., Friedman, H., & Jones, G., 2002)

Gates exemplifies the traits of an adaptable leader by demonstrating his ability to learn from experience and apply that knowledge to new situations. The things they alter aren't always improved upon, and occasionally they're left unchanged. There is a need for modification only in rare cases when adapting. Learning how to make use of existing examples is an important component of adjusting to a new setting. (Glover, J., Friedman, H., & Jones, G., 2002)

To effectively address the challenges facing their businesses, adaptable leaders must be able to think both critically and creatively. It takes practice to learn to doubt our own assumptions and look for evidence to support them. Generally accepting Copernicus's ideas took generations. However, eventually, the world caught on to his observations of

the solar system and realized that the earth, sun, and moon did not revolve around the sun. (Glover, J., Friedman, H., & Jones, G., 2002)

As well as making us feel uneasy, questioning long-held beliefs might irritate those around us. Despite our ability to accomplish things, we often avoid doing them. When our beliefs are challenged, we have to give ourselves hope that society and we can keep our heads above water. Since culture is so pervasive and resistant to change, it typically works to uphold the status quo in human institutions. Leaders have a formidable challenge when trying to keep up with the ever-changing needs of their organizations' settings. Some examples of assumptions rooted in cultural ideas that may one day need to be revised in light of new evidence are shown below. (Glover, J., Friedman, H., & Jones, G., 2002)

Many of our present beliefs rest on an implicit assumption similar to the trap that ultimately brought down the Inca empire: faith in the unquestionable advantages of economic progress. Many heads of state, especially those with Western worldviews, consider expansion inevitable. Such leaders see expansion favorably and want to facilitate it as one of their primary objectives. Despite the finite nature of the earth and its resources, the growth mentality is used to evaluate things like the stock market, the gross national product, and corporate earnings. (Glover, J., Friedman, H., & Jones, G., 2002)

However, past events demonstrate that expansion is only sometimes adaptive. No shortage of locations rose to prominence as tourist hotspots only to fall on hard times later in history. Executives in the tourist industry and those in government and the investment world have seen their fortunes rise and fall in tandem with the popularity of their respective industries. At first glance, tourists seem like a windfall for the local economy. However, as the saying goes, "all that glitters is not gold." When visitors arrive at their destination, they often realize that their expectations still need to be met. Due to an increase in crime, locks are being installed on doors that were previously unprotected. Paradise is gone, replaced with overcrowded, dirty beaches. (Glover, J., Friedman, H., & Jones, G., 2002)

To sum up, adaptive leadership is not something that happens; it involves constant absorption so that we can stay in touch with our environments and recognize when there are signs of change. We must also be flexible in areas where we believe the status quo and our presumptions to be true. That is when we can identify the essential methods to incorporate adaptability into our everyday structures and routines. (Glover, J., Friedman, H., & Jones, G., 2002)

3.2 The KAP Model

To answer the sub question 1 we will try to use the KAP model, which originated in 1950 in the field of family planning and population studies (Liao et al., 2022). This study model is widely used as a tool to determine the relationship among knowledge, attitudes, and practices in the field of social research (ibid).

KAP' model measures the knowledge, attitude and practices of a community on a certain subject which serves as an educational diagnosis of the community on that specific subject (Kaur et al., 2014). Kaur et al., (2014) also said, "The main purpose of this knowledge, attitude and practices (KAP) study is to explore changes in knowledge, attitude and practices of the community." The KAP model is related to some elements which are cognitive, affective and behavioral which are on the other hand subject to intervention from communicative actions that increases the level of knowledge, that changes attitudes and develop practices (Salas-Zapata et al., 2018).

To conduct the research based on KAP model a survey called KAP survey is undertaken; where the KAP survey means a representative survey of a target population which aims to elicit what is known (knowledge), believed (attitude), and done (practiced) in the context of the topic of interest (Andrade et al., 2020). The KAP surveys are said to be the highly focused evaluations that measure changes in human knowledge, attitudes and practices, in response to a specific intervention which mostly outreach, demonstration or education (Kaur et al., 2014). The KAP survey is able to identify a lack of knowledge, procedures and cultural beliefs, which helps to enhance the understanding and action to improve the situation (ibid). In another way it can be said that, KAP survey helps to highlight the factors, which influence a certain type of behavior, such as reasons behind certain attitude and practices towards a particular subject (ibid). The KAP model process is said to be originated from social learning theory of Albert Bandura, (1977) and Everett M. Rogers's, (1995) diffusion of innovation theory (Liao et al., 2022).

Knowledge is said to be the cognitive elements which is related to mental action such as perception, memory, learning and prediction during the time of processing information (Salas-Zapata et al., 2018). Simply knowledge is a state of high value where a person stays in a cognitive contact with reality (Zagzebski, 1999). Based on knowledge people can connect with phenomenon according to their knowing. It's also said as one's ability of doing imagination and one's way of perceiving things (Monde, 2012). The degree of knowledge examined by survey helps to locate the area where information and education efforts are remain to be exerted (ibid). There are four categories of knowledge for human being; which are, scientific and social scientific knowledge, local knowledge, tacit knowledge and self-reflective knowledge (Hulme, 2018). Knowledge and beliefs are different from each other, while the first one refers to knowing information which are based on scientific terms or universal truth or some past event while the second one refers to traditional ideas which someone may believe in (Launiala, 1970).

An attitude is an individual's behavioral constitution either positive or negative towards a person, object, institution or any discriminable aspects of an individual's world (Ajzen, 2014). According to Eagly & Chaiken, (1998), "People have attitudes when they love or hate things or people and when they approve or disapprove of them. Because people express their likes and dislikes in

many ways, all aspects of responding including emotions, cognitions and overt behavior are infused with the evaluative meaning that attitude imparts.” Attitude is said as the intermediate variable in between a situation and the responses performed to the particular situation by human being (Monde, 2012). It is not always directly observable as practices or behavior (ibid). Therefore the essence is that, attitude is the reflection of individual’s emotion towards a particular thing, event, person or organization, in either a positive or negative way.

Practice is the process of carrying out an idea actively which is distinct from the process of having an idea; where there is a linear relationship between them. It is as straight as, one has or gets an idea, then realizes it and articulates or learns a theory then uses or applies it. There might be a possible division of labor; one may has or get an idea and another can use it after realizing it (Lampert, 2009). Practices or behaviors are said to be the observable actions an individual in response to a stimulus. It is something which deals with the concrete with an action (Monde, 2012).

The purpose of the KAP survey; a method of quantitative data collection related to knowledge, attitude and practices or behavior is to quantify and measure a phenomenon through the use of questionnaires and processing the information in statistical process (Monde, 2012). A KAP survey can measure the extent of a familiar situation, to approve or disapprove a hypothesis, and can provide a new tangents of a situation’s reality (ibid). It has the ability of enhancing knowledge, attitude and practices around a specific theme, to indicate which is known and already done about numerous subjects related to a particular phenomenon (ibid). There are some steps or standards to conduct a KAP survey which is standardized by World Health Organization, (2008). The steps are,

1. Define the survey objectives: The first step of defining survey objectives aimed at reviewing existing information if there any. Reviewing existing data helps to avoid duplicating efforts or collecting the data unnecessarily. A thorough literature review is a help here, which tells what is already known and also suggests the areas where further investigation is necessary. Reviewing existing data also helps to identify the objectives more clearly. It also helps to understand how the results can be best used. Which in turn helps to determine who and what should be studied. Another important element of this step is identifying the survey population. While identifying, defining the population in terms of demographic characteristics, job or social category etc. is very important. After identifying the population sampling plan is coming ahead as sometimes it is impossible to collect data from a whole population specifically if the population is larger to reach everyone. In this case sampling is very crucial as a wrong selection of sample may result an analysis with biasness or error (World Health Organization, 2008).

2. Develop the survey protocol: After defining the objectives the next step identified is developing a survey protocol which requires writing the protocol to guide the implementation and record the goals, objectives, participants and methods that will be selected. It serves as a master plan or blue print that provides the steps involved in the survey, including who and what will be researched, and how, when and where the survey will take place. Another key element of this step is to define the key research question which indicates the objective of the survey.

Determining whether the survey requires ethical review or not also falls in this step. The researcher needs to consider whether the research constitutes research on human subjects and whether it needs to be approved by an ethical review board. Ethical review committees here review the research protocols for ensuring that the study procedures essentially protect the study participants. The participants need to be informed of the objective of the survey and must have the consent of participation and also it is important to maintain the confidentiality of the participants' responses (World Health Organization, 2008).

3. Design the survey questionnaire: For the purpose of developing a survey questionnaire, the researcher should always keep the goal of the survey in mind. The researcher should collect data only that is required to meet the purpose of the survey. The questions should be designed in a way so that information can be figured out from various demographic participants for the survey. As the survey questions are seeking information about people's knowledge, attitude and behavior on a particular area of interest, it should bear in mind that these elements encompass more complex and subtle social and psychological dynamics. The researcher should also make a data analysis plan to examine the data thoroughly to ensure that the information collected are linked back to the survey objectives. The data analysis plan should detail information such as, how to conduct the data management steps, description of statistical analysis to be performed (e.g. descriptive, hypothesis test etc.), identification of number and quality of the persons who will involve in data entry, description of software requirements for the analysis of the survey, detail timeline of analysis and production of data tables (World Health Organization, 2008).

4. Conduct the survey: Before conducting the survey, a wise decision is to set the timeline of conducting the survey which helps to complete the survey, analyzing it and preparing the report on time. If the researcher wants to hire employees for the survey purpose, a list of qualifications and qualities need to be recorded. If any employee is hired, it is obvious that they should be trained. In the training several things should be included, such as, the purpose of the survey, roles and responsibilities of the new hire, content and use of the survey questionnaire, information of consent and confidentiality procedures, proper interview techniques, including listening skills and probing techniques etc (World Health Organization, 2008).

5. Analysis of data: The analysis type depends on the research questions, the type of statistical analysis program and the amount of work done in-house. Entering the data in the data analysis software is significant in that sense, one mistake can lead to a huge gap in result, analysis and interpretation of data. Catching and correcting the data before analysis is an important step which is called cleaning the data. As the researcher cleans the data, the next part is to implement the data analysis plan. Coding the data, looking for differences between population groups, testing the relationship in the data, selecting the data presentation format etc. are the things that need to be followed (World Health Organization, 2008).

6. Using the data: In this step, the researcher will translate the findings into action depending on the stated purpose of the survey. Prioritizing specific problems that the intervention can address and selecting the intervention that can reduce the barriers and build and enabling factors are the important part here. After the completion of analysis of the data, the picture should be

assembled that is created by the data. The final survey report should be prepared and disseminated to relevant audiences. It might be beneficial for various stakeholders, could be from the government, non-profit-making organizations and related other audiences to attend a dissemination meeting where the survey results are presented or published (World Health Organization, 2008).

3.3 Theory of Planned Behaviour (TPB)

The theory of planned behavior or TPB is derived from Ajzen and Fishbein's theory of reasoned action and from its extension to the prediction of behavioral goals (Beck & Ajzen, 1991). A central factor of this theory is individual's *intention* to act as a given behavior; where intention is assumed to capture the motivational factor which on the other hand influence a behavior (ibid).

The Theory of Planned Behavior starts with an explicit definition of the behavior of interest from the perspective of its target, the action involved, the context which it occurs in and the time frame in which it occurs (Ajzen, 2020). Depending on the level of specificity or generality, each of these elements can be defined differently. Nonetheless, as soon as the behavior is defined, all the other constructs of the theory must corresponds to the behavior, grouped in all four elements. This is termed as the "Principle of Compatibility" (ibid).

Here, intention is seen as one immediate antecedent of the actual behavior (ibid). However, intention is not only the factor which influence behavior, but also there are some more non motivational factors work as well, such as availability of requisite opportunities and resources for example, time, money, skills, cooperation of others etc (ibid). These are all the factors collectively, which represent a person's actual control over a behavior (ibid). However, sometimes people may face situation, where they have little information about the behavior, available resources have been changed or some new or unfamiliar elements have entered into the situation, and in that case the theory of planned behavior deals with which is called perceived behavior control rather actual behavior control and which sometimes may seem unrealistic (ibid).

This theory is successfully used to predict and explain behavior with a larger extent, such as, from physical activity to drug use, from recycling to choice of travel mode, from safer sex to consumer behavior, and from technology adoption to protection of privacy etc (Ajzen, 2020). The TPB posits that there are 3 conceptually independent determinants of intention; which are, *attitude, subjective norm and perceived behavioral control* (Beck & Ajzen, 1991).

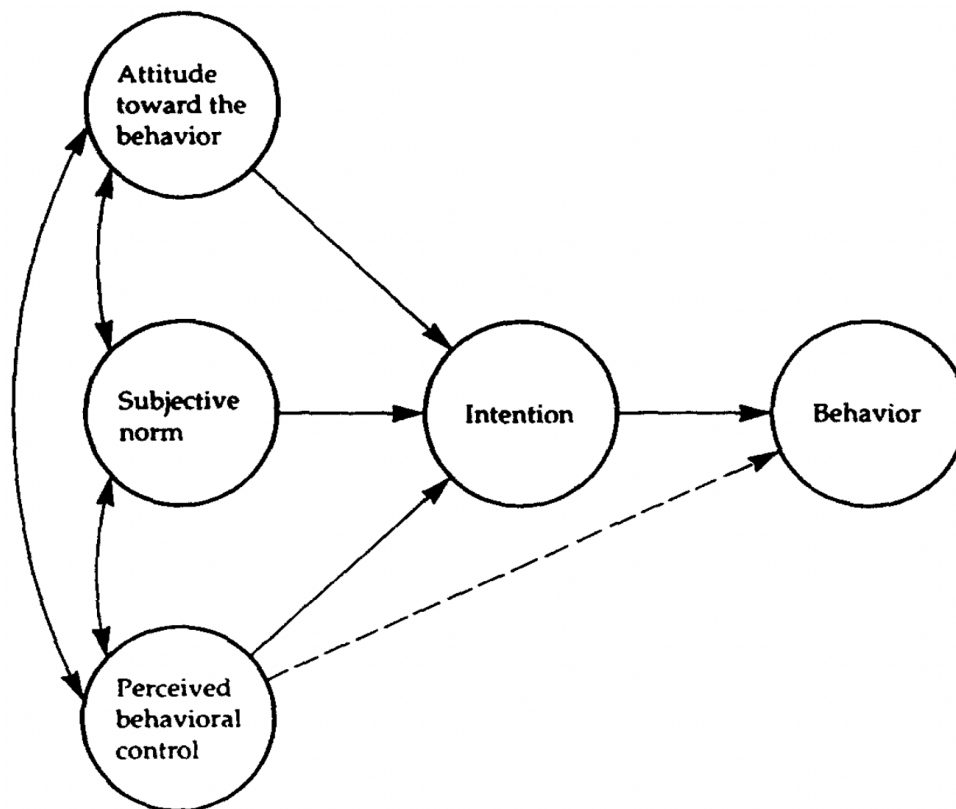


Fig. 4: Theory of planned behavior (Beck & Ajzen, 1991)

By *attitude* it refers to the degree of evaluating the behavior as favorable or unfavorable to a person (Beck & Ajzen, 1991). Ajzen ,(2020) refers that, "...attitude toward the behavior is assumed to be a function of readily accessible beliefs regarding the behavior's likely consequences, termed behavioral beliefs." On the other hand a behavioral belief is termed as a person's subjective probability of yielding certain outcome or experience by performing a behavior of interest (Ajzen, 2020). Behavioral beliefs are theorized to yield either a positive or a negative attitude toward that specific behavior (ibid).

The second determinant of the intention is *subjective norm*; a social factor, which refers to perceived social pressure to perform a behavior or not (Beck & Ajzen, 1991). A normative belief can be distinguished between two types; injunctive and descriptive (Ajzen, 2020). The injunctive normative belief is termed as a expectation or subjective probability that, a given individual or group approves or disapproves a performing behavior under that individual's or group's consideration (ibid). On the other hand, descriptive normative beliefs refers to an individual's beliefs whether to approve or disapprove others' performed behavior (ibid). These both types of beliefs are able to contribute to the comprehensive perceived social pressure to engage in the behavior or subjective norm (ibid).

The third noble antecedent of intention is the degree of *perceived behavioral control*, which refers to the perceived ease or difficulty to perform a behavior as well as it is presumed to reflect historical behavior and anticipated impediments and obstacles (Beck & Ajzen, 1991). Perceived

behavioral control is assumed to be based on accessible control beliefs as like attitudes are assumed to be based on accessible behavioral beliefs and subjective norms on accessible normative beliefs (Ajzen, 2020). Ajzen, (2020) also referred that, "These beliefs are concerned with the presence of factors that can facilitate or impede performance of the behavior. Control factors include required skills and abilities; availability or lack of time, money, and other resources; cooperation by other people; and so forth." A control belief is defined as an expectation or subjective probability of a person, that a given facilitating or inhibiting factor will have its presence in the situation of interest, where each control belief contributes to perceived behavioral control in association with the perceiving power of factor to ease or hinder the performance of the behavior (Ajzen, 2020).

Performance of behavior yields information about the actual outcomes; which is opposed to anticipated outcomes, experiences, reactions as well some facilitating and impeding factors encountered by the actor. This is a kind of feedback which in return is likely to change some of the behavioral, normative beliefs and control beliefs and therefore, it influences future intentions regarding the particular behavior in question. This is called feedback effects in the theory of planned behavior (Ajzen, 2020).

As like attitudes are presumed to be based on accessible behavioral beliefs and subjective norms on accessible normative beliefs, perceived behavioral control is assumed to be based on accessible control beliefs which are concerned with the presence of factors which have the ability to facilitate or impede performance of the behavior (Ajzen, 2020). The control factors that include required skills and knowledge, abilities, availability or lack of time, money and other necessary resources (ibid). In TPB perceived behavioral control is supposed to reduce or moderate the influence of attitude and subjective norm on intention, and actual behavioral control is assumed to moderate the influence of intention on behavior. That means, a favorable attitude and a supportive subjective norm are assumed to create a favorable behavioral intention to the extent that people believe that they are capable of performing a behavior (ibid). According to Beck & Ajzen, (1991), "As a general rule, the more favorable the attitude and subjective norm with respect to a behavior, and the greater the perceived behavioral control, the stronger should be an individual's intention to perform the behavior under consideration."

The theory of planned behavior has been used in several areas such as in health education campaigns. Anti drug campaigns sometimes provide data about the percentage of people engaging in risky behaviors such as smoking or drug use to change the subjective norm (Brookes, 2021). For example, the smoking teenagers are seen usually to be involved in a peer group who smoke, therefore the teenagers might think that this is the norm though most teenagers don't smoke. So, here exposure to statistics shows them the true extent of smoking should change their subjective norm (ibid).

Another study aimed at analyzing people's intention to use a park-and-ride facility (transferium) in Groningen, The Netherlands. The study found that, environmental concerns were directly connected to attitudes toward using the transferium. But, the three types of concerns were not directly involved with intention to use the transferium. Moreover, positive attitudes, positive

subjective norms, and high perceived behavioral control toward the use of the transferium were connected to stronger intention to use the transferium (de Groot & Steg, 2007).

There are some differences in between theory of reasoned action and theory of planned behavior. While formulating the theory of reasoned action, Ajzen and Fishbein, (1980) assumed that, “people inclined to perform a behavior of interest to the investigator were capable of performing it and that they could easily refrain from doing so if they decided against it”. Which means that performance of the behavior should be a direct function of behavioral intentions. They also assumed intentions are determined by the attitude toward the behavior and subjective norm. However, after working with this theory for several years, they realized that their assumption of perfect volitional control put extreme limitations on the theory’s ability to deal with the behavior that exhibits difficulty in execution (Ajzen, 2020). For this particular reason Ajzen revised the model where he added the construct of control. Here is the actual difference in between these two theories where theory of planned behavior includes actual and perceived behavioral control as additional determinants of intentions and behavior (ibid).

4. Philosophy of Science

We picked pragmatism as our scientific approach for our investigation. As our ontological conviction is that reality may be singular or plural, and our epistemological belief is that it can be measured or understood, pragmatism is best articulated from this perspective.

Pragmatism is a common sense-based philosophy. The analysis focuses on how individuals are persuaded to ask inquiries. An inquiry is viewed as a continuous process that considers the quality of human experience. This occurs along with the appearance and naming of problematic circumstances (Shields, P.M. 1998). The philosophy of pragmatists is founded on what individuals do and what they learn from their experiences. People are seen as active participants in the social world because their actions have an impact on and contribute to the social environment. The information that makes anything intriguing is often ideographic, and it frequently begins at the micro level. Pragmatism is a philosophy that focuses on how previous lessons might be applied in the present and what may occur as a consequence (Egholm, L. 2014).

Our study will look into how Jagger operates to see if we can get any insight about how customers may influence the restaurant's management into making changes. Also we will look how behavior of customers are influenced and how their knowledge on environment pollution caused by the livestock sector influence their behavior. We want to incorporate the insights of others into our research report by reading about their experiences.

Pragmatism cannot be limited to either realism or constructivism. In accordance with the pragmatic philosophy of science, participants in social phenomena will also provide explanations for them, but without complete autonomy to do so. Due to the events occurring in a

real-world situation, the number of alternate interpretations of the data is diminished. We are particularly concerned with the significance and implications of social actors' decisions. Thus, the significance of a phenomena may be determined from the changes it causes. To do so requires taking a processual viewpoint on the phenomena under investigation, in which the most exciting feature is not so much the facts themselves but rather the process by which they acquired a certain meaning. No, since Pragmatism denies Descartes' distinction between the physical body and thought. Individuals or groups may assert that they are idealistic or materialistic. It recognizes that the human body and intellect are closely connected and, as a result, constitute the most important aspect of any human effort (Egholm, L. 2014). In the course of our research, we interviewed participants and attempted to decipher the many ways in which individuals assign significance to a remarkable occurrence.

The pragmatic truth theory is founded on the relationship between individuals, groups, and assertions. This indicates that we've discovered evidence to support a particular claim, and that the tactics we've created as a consequence of our study are good tools for making sense of the world. In other words, it is not required for our knowledge to be correct in an absolute sense so long as it helps us understand the reality of the studied scenario (Egholm, L. 2014).

The purpose of the study is to determine the extent to which restaurants or restaurant industry leaders in Denmark are impacted by consumers and the new knowledge creation system. In addition, the research will attempt to determine how customer understanding of environmental change influences their behavior.

According to Shields, pragmatism is concerned with determining how close a condition is to the ideal through study. The study will provide certain dimensions and facts for our primary issue, which will validate our debate (Shields, P. M. 1998).

5. Methodology:

This section will be reviewing the approach towards accomplishing this research project, and will try to give the readers a unified and transparent picture of the methods used for research. In this study a qualitative case study research based on a interviews and survey research based on survey questionnaire are used.

A qualitative case study research enables a researcher to conduct a research with an in-depth exploration of phenomenon within some specific context through various data sources (Rashid et al., 2019). To reveal multiple facets of phenomenon this research strategy undertakes the exploration through various lenses (ibid).

In this research we have three different purposes which are to identify the role of the industry leader in influencing people towards a sustainable diet, to identify the factors that influence the behavior of people and to find how knowledge, attitude and practices of consumers are co-related. To accomplish the first purpose we will offer an analysis on the leadership strategies of the industry leaders; in our case we chose Jagger Copenhagen; a fast food chain shop. Analyzing the factors based on consumers behavior, attitude and so on, we will try to offer an

analysis to fulfill the the second purpose. Finally to satisfy the third purpose we will try to offer an analysis based on survey questionnaire using survey research.

The survey strategy allows researchers to collect data which they can analyze quantitatively by using descriptive and inferential statistics (Saunders et al., 2019). This strategy is popular among business and management researchers and is most frequently used to answer 'what', 'who', 'where', 'how much' and 'how many' questions (ibid). This strategy is regularly used to find out how a group of people thinks or behaves in relation to a particular issue (ibid).

In this study we used a mixed research method which comprises both qualitative and quantitative research, to answer the research questions. The purpose of qualitative research is to understand different processes, subjects or phenomena (Bougie & Sekaran, 2019). Whereas quantitative research is aimed to understand patterns, causes, and relationship between different variables (ibid). Combining these two researches, mixed research integrates advantages of both qualitative and quantitative study within a single study in an intention to overcome both of their respective limitations (Creswell & Creswell, 2018). In this study the qualitative data will be used to answer the main problem and second sub-question whereas the quantitative data will be used to answer the first sub-question.

The study was required to collect data from various sources. For this study data was collected from primary sources. The data was collected from open-ended interviews and surveys. We conducted interviews of the Chief Operating Officer (COO) of Jagger Copenhagen, Shift Manager and some customer interviews with different dietary habits such as omnivores, vegetarian, vegan etc. We conducted interviews of 3 customers to answer the first sub question among them 1 is vegan or vegetarian and rest 2 are all eaters. However, to answer the first sub-question we primarily conducted survey consisted of 76 participants and those 3 interviews were conducted to analyze the question more deeply. To answer the second sub-question we conducted interviews of 6 customers among them 2 were either vegan or vegetarian and rest 4 were all eaters.

Before conducting the interviews, a list of questions were prepared in such a way that meets our purposes again not impeding the interviewees to reveal their ethical standard. We did not strictly follow the interview guideline to have flexibility and kept our questionnaire open-ended, so that we can ask questions to the interviewees when necessary. We conducted each interviews in a face to face meeting except 2 customer interviews. Those 2 interviews were conducted over the phone. The face to face meeting gave us flexibility to gain in depth knowledge and flexibility at the time of questioning.

For the survey questionnaire, 76 participants attended who answered 100 percent of the questionnaire. Primarily we measured that our survey is needed 385 participants with 95% confidence level at 5% margin of error. However, we could not reach the target of sample size. We used Raosoft (online version) (Raosoft Inc, 2004) to calculate the sample size. The survey was conducted from 30th of October to 1st of December in 2022. For the study we used anonymous, open and self-completion questionnaire and data was collected via online through

google form. We designed the survey questionnaire in google form and sent the link of the form throughout social media (e.g. facebook and whatsapp). So, it is an online survey. We took help from a previous similar study but for another country to construct the questions for the survey questionnaire. However, we went through a number of literature review to gain an insight of the current knowledge about environment pollution and livestock production and consumption.

In the questionnaire, in most of the questions we used 3 points based likert scale. A likert scale is said as a psychometric scale which has multiple categories from where respondents choose to indicate their opinions, attitudes or feelings about a specific case (Nemoto & Beglar, 2014). In the survey questionnaire there are 5 sections where in total 29 questions were asked.

Description of the question section is given below.

1. Demographic and dietary information: In this section the participants were asked about their nationality, age, gender and diet type.
2. Knowledge on environment pollution: In this section questions were asked to get insight about the basic knowledge about environment pollution and the sources of the knowledge.
3. Knowledge on affects of livestock production and consumption on environment: In this section questions were asked to know if the participants have any knowledge on the affects of livestock consumption and production on environment. Questions, such as, greenhouse gas produced by the mentioned industry, deforestation caused by the mentioned industry, fresh water used by the mentioned industry and some others are notable. We used likert scales yes, no and don't know. Here yes is pointed as 1 and both no and don't know will be pointed as 0 as these two will be indicated as now knowledge or misinterpret knowledge.
4. Attitudes towards environment pollution caused by livestock industry: Here, different thoughts such as the best way to reduce the affects of livestock sector on environment, the context that is considered before buying animal products by the participants etc. were purposed to know. The likert scales will be used here are, disagree, neutral and agree. Except in two questions which are star (*) marked, all the 'agrees' in other questions in this section is pointed as 1 and neutral and disagree is pointed as 0.
5. Practices or behaviors: In this section questions were asked to understand the practices or behavior of participants on meat consumption, environmental awareness, pro-environmental behavior etc. Here the same likert scale as section 4 will be used along with same pointing method.

6. Limitations:

In this study we tried to document the role of leaders from the food industry towards influencing the consumers towards a responsible environmental behavior, we also tried to demonstrate the relationship among knowledge, attitude and behavior in this particular topic and how the behavior of the consumers are influenced. We tried to gather enough data to present a unbiased and significant analysis. However, we could not collect enough data from survey as well as we could not conduct enough interviews to draw more lines on this. As the survey was online, we

could not push people to participate in the survey. Which falls in selection bias but this is completely unintentional due to lack of time and resources. Again, we could not do the survey in person because it takes more time to do the survey in person to person. Also we did not have enough resources such as, tab or hard copy of the survey. Another problem of doing the survey by hard copy is it would be bothersome to the participants as there would be more than a page to complete the survey. There could be a potential limitation in the survey, which is social desirability bias of the participants; for which the participants might have a thought of answering the questions they think the researchers might wanted. In case of interviews, we could not reach to enough participants to collect more interviews which would give us enough data to avoid dependency on certain point.

7. Analysis and Discussion:

In order to answer the research questions we will offer analysis on the questions and discussions on the questions in this chapter. This includes analyzing of all the interviews including the COO of Jagger Copenhagen, Shift Manager and all the nine customers. We will also present analysis of the survey and make a discussion on it. The survey will be analyzed statistically. To back up the survey analysis we will also offer an analysis of some customers interview. We will divide this section into 3 sections. In the first we will talk about the roles of the industry leader, the in the second we will try to find out how the knowledge, attitude and behavior are correlated and finally in the third we will offer an analysis on how the behavior of customers is influenced.

7.1 Adaptive-leadership theory:

By understanding model of adaption, it is found that When assimilation and accommodation are incorporated into the learning process, it becomes adaptive. Adequate adaptive reactions need both the acquisition of relevant information and the adaption to that information. Learners grow, persist, and reach their full potential as a result of the symbiotic link between them and their environment. Learning is unlikely to result in an adaptive response when one either assimilates without accommodating or accommodates without assimilation. Leaders who do not integrate or adapt fall into a cultural trap from which neither they nor their businesses will likely emerge. The three examples showed the inadequacy of relying on assimilation and accommodation to achieve adaptation (Glover, J., Friedman, H., & Jones, G., 2002).

Cultural traps occur when leaders are rigid in their actions and refuse to allow any change in the company (Glover, J., Friedman, H., & Jones, G., 2002). In our research, we noticed the COO's comment that the restaurant is open to change and acting in response to customer demand rather of relying solely on what they have done in the past.

“Basically, we are selling what the customers want. “Yes,” so that's our top priority: selling something that customers want” (Appendix O 1.24-25).

When a leader and their organization make decisions based on not assimilating and making adjustments what they have learned, this is called a "learning gap." When top leaders and their organizations get stuck in cultural ruts, they become immobile and hard to change. They won't change because they think the ways they've always done things are the best (Glover, J., Friedman, H., & Jones, G., 2002). The Jagger is so agile with their customer response which we also find out from the shift manager of istadegale,

"Yes of course, As our management always try to serve what customer actual need is. If customer are not priorities our business will see the loss." (Appendix P I. 4-5)

When leaders with high assimilation and weak adaptation are well-informed but make few adaptive actions, natural selection occurs. Because they believe that their attempted tactics are superior, they refuse to change. Natural selection leaves adaptive leadership and organizational success to chance, which is more harmful than a cultural trap. Leaders guided by natural selection may be flooded with information indicating that the world is changing, yet they may take no action as a result. When accommodating actions fail, external circumstances decide an individual's adaptive fate (Glover, J., Friedman, H., & Jones, G., 2002). From our interview with COO of Jagger we can state that they try to accommodate the market data and other scenarios to run their organization,

"in terms of training, I know some kitchen managers ...who demonstrated how to make a new burger to everyone, ... feedback. Yeah. We get them from multiple sources" (Appendix O I. 85-87).

We can also add from the interview of shift manager,

"If any changes take place manager take responsibility to letting us know every details. We have our training session ... have some training places" (Appendix P I. 9-11).

This is known as "serendipity," and it occurs when a leader prefers to accommodate folks over involving them in decision-making. Sometimes, leaders launch fresh change projects before determining how successfully their people have adapted to the new norm. Globally, managers and leaders preach the gospel of transformation. It is easy for CEOs to celebrate change without evaluating whether the program is suitable for the organization and its stakeholders (Glover, J., Friedman, H., & Jones, G., 2002). In our case the Jagger COO is different from serendipity,

"in our context, we can see that the veggie burger grew 13% from last year. they have increased by more than 25% in the last year.... we can certainly say that it's going to be a vegetarian option" (Appendix O I. 25-35).

So, we can say they have clear assimilations what they are doing in business and they also test the market very carefully with high accommodation system of their restaurant,

“At first our management try this burger in two outlets for few days and then we collect the feedback form customers with different sources if it’s okay with all the things then our management will sell it to all of our outlets. (Appendix P I. 14-16)”

Adaptive potential can be harnessed by employing high-level assimilation and accommodation procedures. Organizational leaders are obligated to make choices and implementing changes based on a continuous, in-depth analysis of data gathered from the world around them (Glover, J., Friedman, H., & Jones, G., 2002). With high assimilation and high accommodation leaders can be perfectly adaptive with situations. From our interview with COO of Jagger we got some clear statements that always try to understand the market,

“we’re posting a lot more about options because we can see a trend in society, a trend in society that wants vegetarian options.” (Appendix O I. 77-79).

They also priorities the market data and customer feedback by accommodating in the system to solve the problems.

It takes deliberate effort to always study as much as we can about our surrounds for being an adaptive leader that can change conditions. We must also be flexible in areas where we think the current situation is ideal. At that time, we will be able to focus on the core strategies for integrating flexibility into our normal processes and routines (Glover, J., Friedman, H., & Jones, G., 2002). The leaders are so focus on their situation and have enough information also they have the practices in their restaurant which is driven from the assimilation. They are adapting with new trend in the market specially when we ask about the environment,

“Copenhagen is a food capital. And we see a lot of vegetarian restaurants now popping up everywhere focused on sustainable meat production, free-range beef, organic beef, and such impact on traditional livestock production” (Appendix O I. 107-111).

The restaurant using organic beef and also introducing lot of options for vegetarians as part of sustainability. Additionally, they are updating their restaurant with trend-appropriate cooking and service staff that has received sufficient training. The tools are there for Jagger to take appropriate input, develop ideas from it, and apply them to the system. As per shift manager,

“I believe our restaurant is more of customer choices when customers want new things, we tried to provide it if not than we try to avoid” (Appendix P I. 19-20).

Discussion for Adaptive leadership and knowledge creation :

Before discuss about the leadership approach we can explain how the knowledge is created for the organization.

From Nonaka, I., Toyama, R., & Konno, N. (2000), The authors present a model of knowledge generation that is divided into three parts: the "SECI" process, which generates new information by combining tacit and explicit knowledge; "ba," the common environment in which new information is generated; and "knowledge assets," which are the SECI process's inputs, outputs, and moderators. When employees learn from one other's experiences, the organization grows. "Knowledge conversion" involves exchanging and analyzing two types of information. Transformation enhances tacit and explicit knowledge. Four information-transformation methodologies exist.

When people interact with one another, they are engaging in the process of socialization, which entails the transmission and modification of tacit knowledge. Due to its intangible characteristics, tacit knowledge may only be obtained by shared experience, such as time spent together or living in the same place. Whenever a business interacts with a client or a supplier, they are able to pick up and use new bits of tacit knowledge (Nonaka, I., Toyama, R., & Konno, N. 2000). In the restaurants the socialization take place when the customer give feedback to service stuffs about the food and other stuffs. COO said,

“we take the feedback in house. So, when the guest is resting or eating at the restaurant, the whole thing is like that” (Appendix O I. 89-90).”

Its often normal in a restaurant collecting feedback from customers to ensure food quality. This is creating tacit knowledge for the restaurant about customer need and market trending. Jagger shift manager also said they are collecting the information in the same way,

“In physical, we got feedback about the burger from our eat in customers” (Appendix P I. 24).

When knowledge gets articulated from a tacit to an explicit state, it is externalized. Explicit information is obtained from both inside and outside the organization, and after being integrated, altered, or otherwise processed, it contributes to the production of new knowledge. Internalization is the translation of overt knowledge into covert understanding. (Nonaka, I., Toyama, R., & Konno, N. 2000). Jagger knowledge conversion is happening among the customer, service people, kitchen staff, and

management of the restaurants. It helps them to generate knowledge from the market and accommodate them into their system. At some point COO of Jagger said,

“because everyone is now talking about inflation, crises, energy crises, and other such things, we can see a decrease in the amount of organic food here” (Appendix O I. 112-113)”

Which indicates their adoption with the market situation and use of knowledge.

According to the proverb, "Nothing is made without a place," knowledge cannot be made without a physical setting. This is exactly what the word "Ba" means, which can be translated as "place." Jagger knowledge creation places are their stores, online feedback from different platform as they mention in their interview

“In physical, we got feedback about the burger from our eat in customers. For digital customer feedback we use Facebook, Instagram, Trustpilot as well as our own website” (Appendix P I. 24-25).

The website is really helpful to drag out different complaint other opinions from customers, one of the customers giving feedback like, “Ordered food from jagger yesterday via Wolt. After 2 hours I had 2 ice cold burgers delivered. Subsequently, I contacted Jagger, who, in fact, does not bear any of the responsibility” (A/S,T. 2022).

The promotional activity also a big tool to draw the customers attention most of them are take place with direct marketing activity like postering in the important places and posting advertisement to the digital media most likely Facebook and Instagram. As per COO of Jagger,

“we are doing it; we just had a huge campaign to recruit new help, a huge poster down there, and ads all over the city” (Appendix O I. 69-70), “We post the falafel and the vegetarian options on social media. So that would be mainly Facebook and Instagram” (Appendix O I. 74-75).

Facebook advertising from jagger for their new addition in the menu, “NEW BURGER ON THE MENU, our falafel burger is now available at all restaurants It is made with crispy cabbage, falafel patty from the falafel experts at Nordisk Falafel, our homemade tzatziki, mayo and homemade chili in our organic bun. So delicious do you know anyone that loves falafel?” (facebook 2022).

The building elements of knowledge-creating processes are knowledge assets. According to our definition, assets are "necessary firm-specific resources for producing value for the business." Knowledge assets are the inputs, outputs, and regulating aspects of the knowledge creation process. For example, the act of producing

knowledge generates trust among organizational members, which in turn affects the performance of "ba" as a platform for the knowledge-creation process (Nonaka, I., Toyama, R., & Konno, N. 2000). Jagger knowledge assets are experiences with customers when they consider the feedback, assimilation of the trend could be considering as conceptual knowledge, accommodating the concept and experience with their internal system which creating systematic knowledge for the jagger. Moreover, the routine knowledge is regular practice in the restaurant like taking feedback, serving customer, know the trend etc.

Taken together, SECI, "ba", and knowledge assets provide a paradigm for creating new knowledge inside an organization. As part of the SECI process in "ba", businesses must draw upon their existing body of knowledge to generate new data. The newly created data becomes part of the organization's knowledge assets and becomes the foundation for yet another round of analysis, iteration, and improvement. Managers, however, may put in place a number of circumstances necessary for the business to actively and dynamically develop knowledge. This process heavily relies on knowledge producers, who are the managers at the intersection of the company's vertical and horizontal information flows and who collaborate with their peers to generate new ideas through "ba." There is no way to "control" the creation of new knowledge in the conventional sense; instead, "distributed leadership" in the form of "middle-up-down" management is necessary (Nonaka, I., Toyama, R., & Konno, N. 2000).

It is understood the knowledge is create from our action and to make organization operation toward suitability. According to COO of jagger,

“we must be more environmentally conscious... but it's also because we can see that there's a trend in society that leads to this. So, we won't go, fully vegetarian.... We must now always consider the needs of our customers” (Appendix O 1.40-44)

So, we can understand that new knowledge is created, and the restaurant collects the knowledge, as we discussed earlier in this section. Jagger leaders are following adaptive leadership and continuously acting in assimilation and accommodation. Animal agriculture accounts for 14.5% of all anthropogenic greenhouse gas emissions worldwide (Cheng, M., McCarl, B., & Fei, C. 2022). Many scientific investigations have found that "traditional" vegetarians are more concerned about their health than meat eaters. Vegetarian and vegan diets have been linked to a reduced relative risk of chronic illness, according to a meta-analysis of 98 cross-sectional studies (including BMI, lipid variables, and fasting glucose). This held true whether the research involved humans or animals. Vegans and vegetarians have been shown to live longer and healthier lives than meat eaters due to factors such as increased physical activity, decreased body fat percentage, and less reliance on tobacco. This is because vegetarians and vegans have generally had more healthy lives than the general public.

(Macdiarmid, J. I. 2022). Customers are choosing the plant-based diet more and more for sustainable environment which leads the restaurant to accommodate new food vegan options to their menu. Jagger is being influenced by the vegetarian customers

“Now we have highest burger options for vegetarian after our new falafel burger... 50% of our burger options. Before we had only 2 burgers for vegetarians” (Appendix P I. 27-30).

Vegetarian Customers are playing an important role to increase the option in the food menu of jagger. On the other hand, Jagger are trying to keep their regular meat option to serve the market demand,

“we won't go, fully vegetarian” (Appendix O I.42-43).”

Its all about the serving the right things for the market. In our survey we got 72.4 percent people are caring about the preserving animal rights and in an environment friendly way whereas jagger are selling organic beef,

“we use organic beef” (Appendix O I.15).

Adaptable leadership is not a natural occurrence; rather, it necessitates ongoing absorption in order to stay in touch with our surroundings and notice indicators of change. In areas where we remain certain that the current quo and our beliefs are correct, we must also demonstrate some adaptability. At that point, we will be able to identify the important strategies for incorporating adaptation into our everyday structures and routines (Glover, J., Friedman, H., & Jones, G., 2002). Jagger is highly assimilating about the customer influences derived from external forces like environmental pollution and trends in the market for eating a plant-based diet, as well as accommodating with introducing many options in the burger menu, including organic beef and homemade buns. Moreover, the restaurant is considering not to introduce any new meat burger in their menu which a indication that meat consumption is decreasing in the market,

“the general trend in society, in which people are increasingly choosing vegetarian options, those two factors indicate that we will not, and most likely will not, introduce another new need for beef (Appendix O I.32-34).”.

In point of fact, the sales of dairy products and meat manufactured from plants topped \$29 billion in the year 2020, and it was anticipated that they would reach \$162 billion by the year 2030. This indicates that alternatives to meat and dairy products that are derived from plants now make up around 8% of the worldwide market for "protein foods." According to the Bloomberg Intelligence Report, the market for meals derived from plants is expected to increase by a factor of five by the year 2030 (Minassian, L. 2022).

Jagger's consumer base is evident, which pushes them to restrict meat options in their operations. It also indicates that if the restaurant has a big number of vegetarian customers, it may be conceivable for the establishment to proceed with the bare minimum of meat selections.

7.2 How knowledge, attitude and practices are correlated:

In this section of analysis and discussion we will analyze the survey that we conducted with a purpose to study how the knowledge related to livestock affects on environment, attitudes towards it and behaviors of the customers towards it are co-related. For this purpose we will offer a statistical analysis of the data which is conducted through SPSS V. 28 (IBM, Armonk, NY, USA). In this analysis we will particularly perform two analysis which are the relationship among the variables and the mediation. The relationship among the variables will be calculated by Pearson Correlations and mediation will be analyzed using linear regression model using Sobel test.

Description of sample characteristics

This study includes 76 participants aged between 18-59 years, the average age was 30.05 years (SD 8.41). The sample characteristics are presented below table.

Table. 1: Description of sample characteristics (appendix J)

Character	n=76	%
Nationality		
Danish	43	56.58
Non Danish but from EU/EEA	22	28.95
Other than Danish or EU/EEA	11	14.47
Gender		
Female	36	47.37
Male	31	40.79
Other	2	2.63
Prefer not to say	7	9.21
Diet type		
Carnivore	6	8
Mixed	6	8
Omnivores	39	51
Pescatarian	4	5
Pollotarian	7	9

Vegan	4	5
Vegetarian	10	13

The table 1 shows that most participants were from Denmark and most of them were women; though there were some participants who did not prefer to mention. Most of the participants' diet type is omnivores; who eats everything.

Level of knowledge on affects of livestock sector on environment

We asked eight (8) questions to the participants to identify their level of knowledge on the affects of livestock sector on environment. Each question was answered 'yes', 'no', and 'I don't know'. Answer 'yes' is considered as correct and answer 'no' and 'I don't know' are considered as incorrect. Correct answers were scored 1 and incorrect answers are scored 0.

Table. 2: Distribution of the responses of the knowledge questions (appendix J).

Statement	Yes	No	Don't Know
1. Do you think livestock production or meat production and consumption has a negative affect on environment?	67%	8%	25%
2. Do you agree that livestock excreta (urine and feces) can be damaging for environment.	63%	8%	29%
3. Cattle are the no. 1 agricultural source of greenhouse gases worldwide. Do you think this is true?	57%	11%	33%
4. Livestock production is estimated to contribute almost 14.5% of total global greenhouse gas (GHG) emissions. Do you agree?	49%	3%	49%
5. Livestock production is the largest land use sector on the terrestrial surface. Which reduces fertile land to produce crops. Do you agree?	51%	11%	38%
6. The livestock industry is responsible for about 90% of rainforest destruction. Do you agree?	36%	14%	50%
7. 33 percent of croplands are used for livestock feed production and 26 percent of the Planet's ice-free land is used for livestock grazing. Do you agree?	36%	1%	63%
8. Agriculture uses more freshwater than any other human activity, and nearly a third of this is required for livestock. Do you think it's correct?	58%	9%	33%

To construct the knowledge variable we considered the correct answers provided by the participants. The mean of the knowledge variable is 0.5197 and standard deviation is 0.35

Attitudes towards the affect of livestock sector on environment

To understand the attitudes of the participants we asked the participants to 'agree', 'disagree' or stay 'neutral' on the mentioned statements. The responses were recorded on 3 point likert scale such as, 3 for agree, 2 for neutral and 1 for disagree. However there are some questions where the scale order is reversed.

Table. 3: Distribution of responses to the attitudes questionnaire (appendix J).

Statement	Agree	Disagree	Neutral
1. I don't think that livestock production and consumption affect environment and I think this issue is exaggerated.*	9%	58%	33%
2. To me, vegan diet is the best one for reducing environmental impact of the livestock industry.	32%	24%	45%
3. It is important to me that the meat I consume is produced by preserving animal rights and in an environment friendly way.	72%	5%	22%
4. I think that the issue of environmental pollution due to livestock farming and consumption should be one of the top prioritise things in Denmark.	49%	14%	37%
5. I think that the children should be made aware about environmental pollution from the very early stage.	79%	4%	17%
6. I think that the restaurants should reduce meat usage and the groceries should reduce meat selling.	33%	41%	26%
7. I am prepared to buy more vegan food, even though it is expensive.	28%	45%	28%
8. The political parties in Denmark should mark this issue as their election manifesto.	39%	13%	47%

*rating scale is reversed.

To form the attitude variable we calculate the mean of each participant's response including the reversed scale question. The mean value of attitude variable is 2.29 and SD is 0.43

Behavior in response to the affect of livestock on environment

To analyze the behavior we asked the participants to put their response of their behaviors as 'yes', 'no', and 'sometimes'. Here, 'yes' is scales as 1 and 'no' and 'sometimes' are scaled as 0. There is a question where the scale is reversed as 'yes' and 'sometimes' as 0 and 'no' as 1.

Table. 4: Distribution of responses to the behavior questionnaire (appendix J).

Statement	Yes	No	Sometimes
1. I check whether the food is økologisk or organic before buying.	49%	5%	46%
2. I consider vegetarian or vegan food as my first choice.	22%	51%	26%
3. I try to consume meat products as little as possible.	42%	32%	26%
4. I prefer having meat than vegetables and fish.*	36%	45%	20%
5. I try to support communities or organisations which are trying to make people aware about the hazards caused by livestock production and consumption.	37%	29%	34%
6. I try to read writings about hazards caused from livestock industry and make myself and my family and friends aware about it.	41%	21%	38%

*rating scale is reversed.

To construct the behavior variable we considered the mean response of each participant. The mean value of behavior variable is 0.40 and standard deviation is 0.33

Relationship among knowledge, attitude and behavior

To analyze the relationship among knowledge, attitude and behavior we used Pearson's correlations. We found positive and strongly significant relationships between knowledge and attitude where, $r = .695$ and $p < .001$, between knowledge and behavior with $r = .612$ and $p < .001$, between attitude and behavior with $r = .715$ and $p < .001$ (appendix M). Here, r is denoted as correlation and p is the probability value or p-value. It indicates that these three variables are significantly correlated with each other and changes in one variable will change the others. Therefore, the more the changes in knowledge, the more changes will be in attitude which in turns will change the behavior.

Analyzing the mediation affect

It is analyzed that various transformation process to the organism mediates the effects of stimuli on behavior. The mediator function is said to be third variable which carries a generative mechanism through which the focal independent variable get the ability to influence the dependent variable of interest (Baron & Kenny, 1986). In this analysis part we will try to find out the effects of attitude variable as a mediator to influence the behavior variable by the knowledge variable. For this we will follow the Baron & Kenny, (1986) method which is conducted by estimating three regression equation (ibid). The first one for our analysis is regressing the attitude as mediator on the knowledge as independent variable; second, regressing the behavior as dependent variable on the knowledge as independent variable; and third, regressing the behavior as dependent variable on both the Knowledge as independent variable and on the attitude as mediator. According to Baron & Kenny, (1986) to establish mediation, the following conditions in our analysis must hold: first, the knowledge as independent variable must affect the attitude as mediator in the first equation; second, the knowledge as independent variable must be shown to affect the behavior as dependent variable in the second equation; and third, the attitude as mediator must affect the behavior as dependent variable in the third equation. Baron & Kenny, (1986) also told that, when all the above mentioned conditions go accordingly, then the effects of the independent variable (knowledge in our case) on the dependent variable (behavior in our case) must be less in the third regression equation than in the second. Based on the method, our case model of mediator is as follows,

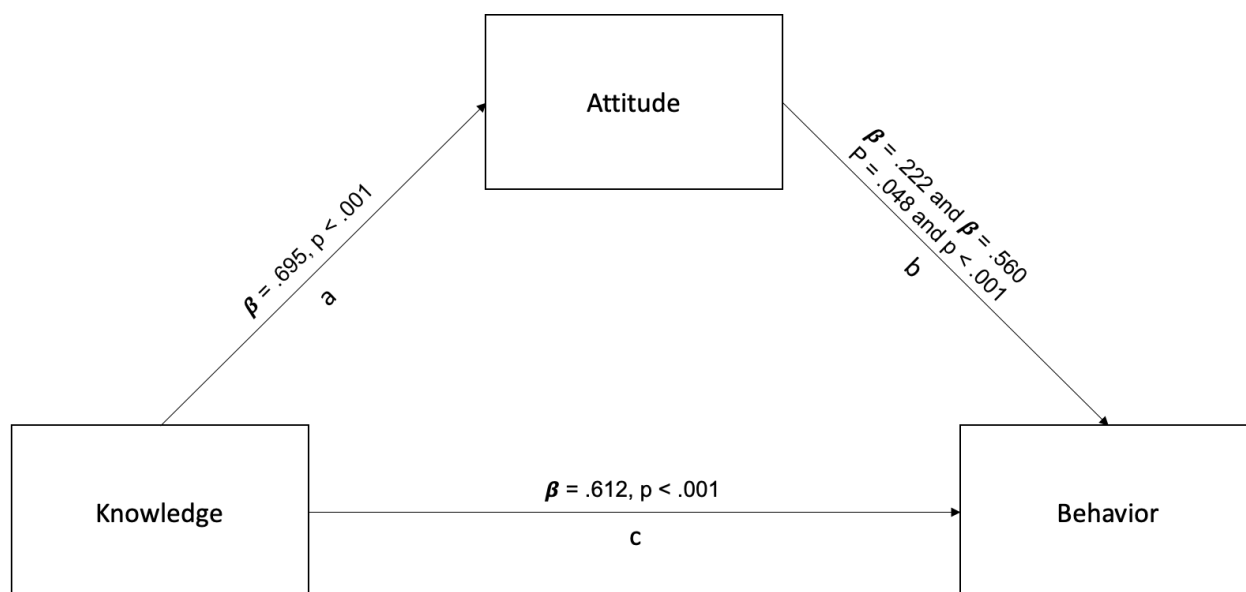


Figure 5: the mediator model of knowledge, attitude and behavior (Baron & Kenny, 1986)

Therefore, based on the model we can establish three paths for the regression analysis. Path (a) predictive ability of knowledge on attitude, path (c) predicting ability of knowledge on behavior and path (b) predicting ability of knowledge and attitude on behavior. After the regression analysis, we found that, in the first path (a) the knowledge variable predicted the attitude variable with a standardized coefficients beta $\beta = .695$. Which indicates for every 1% change in knowledge will change the attitude by 69.5%. This is statistically significant ($p < .001$). In the path path (c) the knowledge variable predicted the behavior with a standardized coefficients beta $\beta = .612$ which means for every 1% of change in knowledge behavior will be changed by 61.2%. This is also statistically significant ($p < .001$). In the final path (b) both knowledge and attitude variables predicted the behavior variable with a standardized coefficients beta respectively $\beta = .222$ and $\beta = .560$. Which means for every 1% change in knowledge and attitude, the behavior will be changed by 22.2% and 56% respectively (appendix N). This is also statistically significant. However, the significance level of knowledge on behavior is reduced to 0.048 than previous. Which indicates a weaker significance compared to that of attitude. When we look at the third equation where we examined the predictive ability of both knowledge and attitude as independent variables on behavior as dependent variable we can see the effect of knowledge reduced from the second equation. On path (b) the β value was .612. However, on path (c) the β value reduced to .222 on knowledge predicting behavior. According to Baron & Kenny, (1986), a mediator will work when it reduces the effects of independent variable on dependent variable. So, it can be said that, in our case the attitude variable has a role on behavior by mediating the effects of knowledge on behavior. This study was trying to analyze the relationship among knowledge, attitude and behaviors among consumers related to the affects of livestock sector on environment. The study found that the relationship between attitude and behavior is stronger than the relationship between knowledge and behavior. It indicates that the pro-environmental attitude is stronger than pro-environmental knowledge among the participants. This is also observed in the interviews those were taken of 3 participants. We asked them several questions regarding knowledge on

the affects of livestock sector on environment. The participants demonstrated little knowledge on this topic and in some cases they even didn't have any. Even the vegan participant has little knowledge on this. For instance, when we asked her if she knows anything about the affects of livestock production and consumption on environment, she replied,

“Um, I don't have enough knowledge to remember how much of impact it has. Um, I have years ago I have, uh, read a lot of articles about it. Um, but I can remember like how much besides that. It's a lot. Yeah.” (appendix C; l:33-35)

When we asked the same question to the other 2 participants, they represented no knowledge on this. For example,

“Well, I don't actually have any knowledge at that point.” (appendix A; l: 26)

“I don't know anything about this.” (appendix B; l: 39)

When we asked questions to all these 3 participants to analyze their attitude towards this topic, most of them showed a pro-environmental attitude except one participant. They were positive towards reducing the affect of livestock on environment. We asked them questions such as, if they are ready to accept alternative of meats, if they accept if this agenda is chosen to be one of the top prioritized agendas or not etc. Except one participant rest two of the participants agreed. For example, when we asked what if any political party will make this topic as their election agenda, what will be their response. The comments of the participants are as follows,

“Um, I would be glad to hear about it. I think like, even though I don't know a lot about it, um, when I choose my political party to vote for, I actually look for the environmental stuff as well. Um, I actually also voted for the environmental protection program. We haven't done our, so yeah, I think it's a good, good cause.” (appendix A; l: 57-60)

“I Would, I would support it. Definitely. Yeah.” (appendix C; l: 73)

“Again, I think it's good that we have to talk about it, but I think there's more things out in the world that's more important right now.” (appendix B; l: 77-78)

Besides this question, we also asked several others to understand their attitude in this topic. The result was similar; except one rest of the participant showed a pro-environmental attitude.

We asked several other questions regarding their practice in concern of reducing the affects of livestock on environment. Except one participant, rest of the two participants could not show any pro-environmental behavior particularly on this issue. Though two of them are practicing some other activities so that they have less footprint on environment pollution. However, on this particular topic, only one participant showed pro-environmental behavior, though the participant has less knowledge on this. When asked them what was their action in this particular issue to generate lesser affects, one participant told,

“Um, so by eating vegan diet, I, I don't support the livestock production. This hasn't a good effect. And besides that, I also, um, mostly buy secondhand, uh, cloths, um, furniture as well.”
(appendix C; I: 98-100)

When we consider all the interviews of the participants we can see that every participant either has less or no knowledge on this particular issue. However, except one participant, rest of them are not practicing pro-environmental attitude, though one of them showed pro-environmental attitude. Moreover, the participant did acknowledge that he did not have enough knowledge to change his mind.

“Um, definitely not enough. I know, I know some stuff, but not enough to like convince me to change my diet, for example.” (appendix A; I: 20-21)

These 3 interviews drawn three different scenario. For all the participants, they posed less or no knowledge on this, one participant showed positive attitude and positive practice, other one showed positive attitude but no pro-environmental practice and the other participant did not show neither positive attitude nor positive practice towards this particular issue. So, it is evident that the knowledge doesn't have any direct effect on behavior. On the other hand attitude has a direct effect on pro-environmental behavior. Which also goes with many other researches on this specific issue. It's been studied that in US and Europe there were some consumers who are concerned about the production on animal as food, however, they showed a limited knowledge on this, which in turn made them to consume animal products without an intention to reduce the consumption (Dopelt et al., 2019). Also some other studies found that acquiring knowledge on environment during an educational activity and an increase in positive attitudes towards it have a clear positive relationship (ibid). Here, knowledge is important but knowledge itself cannot predict responsible environmental behavior. One of the significant component here is the emotional one which is related to attitudes and values, which has the necessary driving force to turn knowledge into responsible environmental behavior (Pe'er et al., 2007).

7.3 How the behavior is influenced:

We will analyze this part on the basis of Theory of Planned Behavior (TPB). As mentioned in the theory chapter TPB is an outcome to predict the behavior of human being based on their intention, again which is influenced by attitude, subjective norm and perceived behavioral control. We will discuss these three factors to analyze the intention and finally the behavior.

Attitudes towards the environment

Attitude is the degree to evaluate a specific behavior as favorable or unfavorable to a person (Beck & Ajzen, 1991). It also indicates a person's beliefs about the consequences of a certain behavior (Ajzen, 2020). In order to understand the attitude of the customer towards the environment we asked several questions on how much one care for environment, how much they know about environment pollution and whats the reason of getting knowledge about it, what kind actions did they take, what are the consequences of those action they think about etc. 4 participants out of 6, mentioned that they do care for the environment and they had taken some steps from their part to have less affect of livestock sector on the environment. 1

participant tried to avoid the question of caring for environment by answering in a different way. For example, one participant said,

"I mean, that's why like the two, three days we have like the meat, no meat days where we like eat vegetarians or just like, like veggies. Um, but other than that, like try to use less the car, use public transport even though, you know, it's an alternative, but it's still polluting..." (Appendix E, I: 21-23)

Another participant said,

"Um, I'm really passionate on sustainability. so I do care a lot. I, I do what I can. So I buy sustainable..." (Appendix G, I: 23-24)

The participants who did not show positive in caring for environment, said,

"I wish I could say I care a lot where I take it into like my daily life when I make a choice. Yeah. But I do not." (Appendix F, I: 31-32)

When we asked the participants about their actions on reducing the affect of livestock on environment, they mentioned several things such as, some of them don't meat at all and eating vegetables more, some of them reduced eating meats or meat based products such as milk, cheese etc. and adopting alternatives such as nut milk, encouraging family members to eat less meat or livestock products etc. For example one participant said,

"I don't eat, for example, a beef at all. For time, when I make a lasagna, it's vegetarian always." (Appendix D, I: 51-52)

"...like speak kindly of it you know and I think my family has been, they've started to eat less, less meet as well. Not because I've like pushed them to, but I don't know, they might have felt inspired." (Appendix I, I: 60-62)

The interesting fact is that there are some participants who started eating less meats not because of environmental concern but being pushed by someone.

"...why is actually my boyfriend because he eats a lot more vegetarian. Even though he's not a vegetarian, he does make the choice of not eating as much meat and it's actually because of him and that I started not eating so much meat as I used to." (Appendix F, I: 45-48)

Again, there is a participant who cannot eat less meat because of family tradition. As traditionally they eat a lot of meat, her family is not willing to reduce the meat consumption.

"...I think that's so far what I can do because it's hard when you live with traditional parents that eats a lot of lamb or cow and, uh, yeah." (Appendix E, I: 53-55)

We also asked the participants about the results of their actions they have taken with the purpose to know if they do have belief on it or not. Some of them believe that only their individual action is not enough, everybody especially the larger organizations should come out of their stance and participate here. Another participant believe that if everybody starts from their position, one day it will be a culture. Like he said,

"...but I feel like if everyone is kind of like conscious about how much livestock production and gets inspired by other people, we might see drastic change. And I feel like in some years it might be more normal to be vegetarian or vegan or just to eat a lot less meat. So, in that way I would say I hope it, it changes something." (Appendix I, I: 68-71)

Most of the participants are expecting some stances from bigger body or organizations than their individual action.

We asked the participants about their knowledge on environment pollution and affects of livestock on it. We tried to understand their knowledge level, what was their intention of having the knowledge, if they are interested in environment pollution which provokes them to gain knowledge or it is something else. Most of them have average level of knowledge according to them and one participant who is vegetarian has a good knowledge about it. Interestingly, another vegan participant has lower level of knowledge but still she decided to eat vegan, though it is for ethical reason which includes environment as well. Like she said,

"...when I started eating vegan was what the ethical reasons and the environment." (Appendix H, I: 20-21)

Most of the participants gained knowledge on it because of their academic purpose, which indicates their intention to gain academic knowledge rather than for the sake of environment. A survey on 3000 participants conducted by Aarhus University Denmark showed that 38% eat meats everyday who reduced meat consumption and almost half defined themselves as meat eaters (Aarhus University, 2022).

Subjective norm:

Subjective norm which is a social factor refers to the perceived social pressure to perform a specific behavior or not (Beck & Ajzen, 1991). In subjective norm a person can be influenced by a person or a group of people to perform a behavior again the individual can influence another person or a group (ibid). The subjective norm is an important factor to define a person's behavior. To understand the subjective norm among the participants we asked them if they were influenced or motivated by some one else or any other factors, similarly if they are willing to influence others in this case. Most of the participants mention this as their individual choice rather than imposed one. However, still almost all of them are influenced by the family or friends or some other nonsocial factors. Almost everyone also ready to help others in this case to transfer the knowledge they have to others but they prioritize individual's decision rather than forcefully influencing. For example,

"Um, the one with the palm trees and the tuna, which from, um, WFF, where it's, they make a lot of campaigns and of course there's some bias in it but I would also say there's more truth than bias in it. Um, yeah. So of course influence, but it was also my own choice." (Appendix D, I: 64-66)

One participant has a very strong influence by another person to choose eating vegetarian.

"Yeah, I would, well, again, I think mostly my boyfriend, him pushing me to not eating like meat and such. Um, the same with having more and more friends going vegetarian that, so that's also pushing me into that direction of making more choices of like more environmental friendly." (Appendix F, I: 54-57)

One participant said about the social media influence on her. She was motivated by the instagram influencers. However, she mentioned the reason of being trendy of this topic now a days. She said,

"...like those Instagram influencers. Cause I think becoming more sustainable is becoming more of a trend. So that also has a factor, but I don't actually know how much things will change based on that, you know!" (Appendix G, I: 81-84)

In our case subjective norm plays an important role to motivate or encourage participants to act more in environment friendly way while choosing diet plan.

Perceived behavioral control:

Perceived behavioral control in TPB determines the control factors that can impede or influence a particular behavior. Where the control factors are money, time, required skills, knowledge, attitudes etc (Ajzen, 2020). When a person has control over perceived behavioral control it indicates that the person has a positive intention towards the behavior (ibid). We asked several questions to the participants such as, if they faced any challenges, if the challenges impede them to behave positively to the environment or not and how could they overcome the challenges, to identify if they have perceived behavioral control or not. Some participants mentioned about price of the vegetarian or vegan food, time, political will, social standing, someone's norm towards the food, the availability of information, the interest of the big industries, the interest of the government, culinary options in the diners etc. However, most of the participants agree on a point which is money or price for buying sustainable products other than meats which are quite expensive. For example,

“Uh, maybe to a certain extent but I do think there is still limits, uh, with the example of, uh, even just income and not having the money to buy what's needed to go completely like environment friendly” (Appendix F, 169-71)

Another participant also mentioned,

“I think maybe just from my personal experience, I think income is a big one.” (Appendix G, I: 109)

These factors sometimes challenge them, impede them not to have a sustainable diet which is environment friendly. These factors in some cases are out of their hand, making them helpless. These perceived behavioral control factors seems not favorable all the time for them. But still they try to maintain.

“I think it's just trying to like, even as a picky eater, at least trying to figure out what do you like and then make dishes out of that instead and trying to like find supplementary for few things you do not like.” (Appendix F, I: 92-94)

According to TPB behavior is yielded from the intention towards the behavior while intention has 3 antecedents which indirectly influence behavior. Attitude towards the particular behavior determines the positive or negative beliefs towards the behavior. The important factor is in which way people think about that particular behavior and if they are aware about the consequences of that particular behavior. In our participants we found everyone except one participant has a positive attitude towards the behavior. They have the knowledge about environment pollution, have knowledge about the affects of livestock sector on environment; though not in a better way, they have some actions to have lower footprint on GHG emissions. Again some of them believe that the larger organizations and government should come forward here, and individual action is not enough, still they are trying from their side. So, in this case it can be said that attitude towards the environment is playing a significant role towards the intention of reducing the affects of livestock sector on environment.

The subjective norm which yields normative belief, has two variations, one is injunctive normative belief and the other is descriptive normative belief. The subjective norm determines the social pressure towards performing a particular behavior or not. In our case every participant showed there is a significant positive relation between subjective norm and intention. Every participant was influenced or motivated by their family members or friends or boyfriend. Another interesting factor is that one participant was also influenced by social media influencer. One participant's family is traditionally meat eater, however, she had influence from her friends. One participant had influence of her boyfriend. Again, almost every participant are ready to influence or motivate others and ready to support people if someone need help in this particular case. Which shows that people can be motivated or influenced towards a positive intention to reduce the livestock sector's affect on environment. So, it is obvious that subjective norm plays a significant role in building intention in this particular study.

The perceived behavioral control which is the third antecedent of intention refers to the control mechanism of intention. How easy or difficult it is to perform a particular behavior. In this study it is observed that most of the participants showed lower perceived behavioral control. That means they faced some challenges which impede them sometimes not to act on reducing the livestock affect on environment. Most of them are not under their control such as, price, availability of information, availability of resources etc. Sometimes, they are confined to eat meat or meat based products due to the availability of resources, gap between price and income, lack of nutrition information. According to Beck & Ajzen, (1991), the greater the perceived behavioral control along with favorable attitudes and subjective norm, the stronger and individual's intention towards the behavior. In this study it is also observed that most of the participants have lower behavioral control due to lack of different elements in their everyday life.

In our study, it is observed that the behavior of most of the participants are not strong enough due to lower control in perceived behavior, though most of them showed positive attitude and positive subjective norm. Again, attitude towards the environment is observed not so much strong. The possible cause could be having enough knowledge which is seen most of the participants are lack of. While knowledge is one of the important elements towards more positive attitude which we have observed in our previous study while analyzing the relationship among knowledge, attitude and behavior. So, in our study it can be said that perceived behavioral control is the antecedent which is influencing the participants not to participate actively in lowering the affect of livestock sector on environment.

8. Conclusion:

According to the findings of our study, the Jagger restaurant's executives employ a flexible leadership style, which has prompted them to introduce more vegetarian choices to their menu. In addition, they use organic beef to attract new clients, helping sustain the natural environment. This new information helps restaurants better comprehend their customers' activities, which indicates a potentially more significant market for plant-based diets and a decreased interest in animal-based foods. In response to the steady flow of market-related information, the restaurant has enlarged its selection of burgers. In addition, they are teaching their staff how to collect and distribute information throughout the system properly. It is a natural effect of customers who choose to be ecologically conscious and exclude beef from their typical diet and daily activities. The study also reveals evidence that the plant-based diet is expected to become a significant sector in the near future, which is one way to reduce the use of beef products. If a growing number of people pick restaurants that serve plant-based meals, the usage of goods generated from cattle will decrease, resulting in a more sustainable environment. The study found that knowledge, attitude and behavior towards environment pollution due to livestock sector has a significant correlation. However, the effect of knowledge on behavior is mediated by the attitude. Attitude is reducing the impact of knowledge on behavior while increasing its own impact on behavior. So, it can be said that knowledge affecting the attitude and attitude in turn affecting the behavior. And finally, in this study the behavior of the participants towards reducing the impact of livestock sector on environment, is influenced mostly by the perceived behavioral control such as lack of enough money, proper information, availability of resources etc. and attitude towards the environment and their subjective norm are also high. In fact, the attitude is being influenced mostly by lack of knowledge on the impact of livestock sector on environment. Therefore, not having much control on perceived behavioral control factors effect their behavior mostly.

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